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Giftedness: Conceptualizations and Identification Practices of School Psychologists

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GIFTEDNESS:
CONCEPTUALIZATIONS AND IDENTIFICATION PRACTICES OF SCHOOL PSYCHOLOGISTS

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The concept of giftedness has evolved significantly from its early conceptualization as a single score on an intelligence test to modern conceptualizations that reflect multiple, distinct areas in which giftedness may be demonstrated. Although Dr. Marland's landmark 1972 report proposed additional areas in which an individual may be characterized as gifted, currently there is no consensus on a uniform definition of giftedness. Many educators and psychologists have proffered their interpretation of giftedness, but school psychologists, the educational professionals who often conduct evaluations to determine eligibility for gifted services, historically have had little input into this debate.

This study utilized three vignettes to examine how school psychologists perceived giftedness. The first vignette reflected an individual with an IQ score of 130 and a strong academic profile while the second vignette reflected an individual whose IQ score was slightly lower than 130 and also had a strong academic profile. The final vignette described an individual with strong artistic skills but did not meet the

traditional benchmark of an IQ score of 130 or higher. Participants also answered a variety of demographic questions about themselves and their place of employment.

Data analyses suggested that school psychologists overwhelmingly associate giftedness with an IQ score near or above 130. Conversely, only 33% of participants identified the individual with strong artistic skills as gifted. Participants from Ohio, a state with a well-defined and inclusive definition of giftedness, were more likely to identify the artistic individual as gifted, suggesting that state definitions of giftedness influence school psychologists' perceptions of giftedness.

Although the results of this study are tempered by both the low return rate on the survey and the small size of the sample, they suggest that school psychologists support a more traditional conceptualization of giftedness. Additional research is recommended to confirm the results of this study and to further explore specific characteristics that school psychologists believe reflect giftedness.

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CHAPTER I

INTRODUCTION

There are many words that can be associated with individuals whose abilities outstrip those of their peers: Mensa, high IQ, savant, prodigy. In many instances these words are associated with high levels of intellectual functioning, but they can also pertain to demonstrated skills, such as music or visual arts, including painting and sculpting. One term often has been used to describe individuals with superior skills: gifted (Renzulli, 1978). Researchers, educators, and parents have provided various definitions of giftedness over the years, although, presently, there is no unifying definition of giftedness (Robertson, Pfeiffer, & Taylor, 2011). One area that is impacted significantly by this lack of unification is public education (Renzulli, 1978). Individual states are permitted, but are not required to offer gifted services to students (Zirkel, 2004); however, individual school districts are required to determine specific evaluation procedures to comply with their state's definition, which, potentially, can lead to discussion and debate.

For example, envision that a school district's board of education has convened a committee to develop a gifted identification policy that reflects the state's definition of giftedness. This state's definition identifies multiple

criteria that could be used to demonstrate a need for gifted education services. Members of the school district committee, including administrators, teachers, guidance counselors, community members, and the district's school psychologist, have little difficulty coming to an agreement that a student with an IQ score of 130 or higher should qualify for gifted services. There is considerable debate among the committee members, however, over the development of a rubric to evaluate students whose IQ scores fell below 130. The members identify a variety of skills that could reflect gifted characteristics, including academic performance, acquisition and retention of information, and classroom behaviors, and IQ scores. Following this identification process, the members of the committee develop a rubric that contains the skills and their assigned point totals. The committee establishes a threshold point total that, if exceeded, would indicate that the student qualified for the gifted program.

As the members of the committee finish their work, the school psychologist poses a question regarding students who may be artistically gifted and their potential for being identified as gifted pursuant to the rubric. As developed, the rubric does not address the identification of such individuals. During a debate on the issue, some members of the committee argue that there simply could not possibly be many of this type of

individual in the school district and, therefore, there is no need to categorize these potential individuals as gifted. For those students who may be gifted in the arts, including music, painting and sculpture, these dissenting committee members maintain that the students' regular teachers do a thorough job of providing enriching opportunities for them in their general art and music courses without the need for any particular identification or differentiation. The members table further discussion on the topic, although the majority of the committee members show little enthusiasm for revisiting the matter in the future.

This scenario reflects the very real and very difficult process of trying to identify, based on limited data, those individuals who are gifted. While the members of committee in the above anecdote were able to arrive at a consensus, each member perceived a different set of characteristics that was indicative of a gifted student. The lack of a universally-accepted definition of giftedness, which has persisted throughout the history of gifted education, continues to be debated (Renzulli, 2002). The purpose of this study was to explore the various views of giftedness and to add to the debate by including the opinions of an underrepresented population in the debate: school psychologists (Robertson, Pfeiffer, & Taylor, 2011).

The concept of giftedness originated in the late 1800's with Sir Francis Galton, who studied heredity (Jolly, 2005). Galton's views on individuals who excelled over their peers influenced Lewis Terman (Borland, 1997), who later adapted the original intelligence test by Alfred Binet for use in the United States. Early researchers of giftedness, such as Terman, used a definition based solely on the results of intelligence testing. Currently, an IQ score of 130, which on many intelligence tests represents a score that is 2 standard deviations above the mean, continues to be the most prevalent conceptualization of giftedness in the United States today (Alvino, McDonnel, & Richert, 1981; Baldwin, 2005; Birch, 1984; Robertson et al., 2011).

While an IQ score of 130 was considered the original definition of giftedness, other models of giftedness later emerged. Many contemporary definitions of giftedness were influenced by the Marland Report (Stewart, 1999), a 1972 report from Director of Education, Sidney Marland, to the United States Congress on giftedness and education (Marland, 1972).

In the report, Director Marland defined gifted and talented children as "those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance" (p. 8). Director Marland further stated that gifted and talented students "require differentiated educational

programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society" (p. 8). Based upon these definitions, the Marland Report identified six areas in which an individual could be gifted: general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability (Marland, 1972). According to the Marland definition, which is championed by Renzulli, multiple criteria may be used to qualify a student as gifted.

The current federal statute, which defines gifted and talented students as those "who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the schools in order to fully develop those capabilities" (No Child Left Behind Act of 2001, 20 U.S.C. § 7801), reflects the Marland definition of giftedness. Further, a number of states, including Pennsylvania, Ohio, and West Virginia have definitions of giftedness that focus on multiple criteria (22 Pa. Code § 16.21, 2008; Policy 2419: Regulations for the Education of Exceptional Students, 2014; Ohio Administrative Code 3301-51-15, 2008). Likewise, the National Association of Gifted Children (NAGC)

definition of giftedness reflects a variety of aptitudes and achievements in which an individual may be gifted (NAGC, 2013).

One population that has a significant impact on the identification of gifted students, however, is remarkably absent from the field of gifted research: school psychologists (Robertson et al., 2011). In recent years, several researchers sought to provide research relating to giftedness from the perspective of the school psychologist, although neither author studied the manner in which school psychologists perceive giftedness. Dr. Steven Pfeiffer, a school psychologist with significant experience working with gifted individuals, has published research on gifted identification practices (Pfeiffer, 2002, 2012, 2013), as well as developing his own theory of giftedness (Pfeiffer, 2013). Robertson et al. (2011), citing the lack of research on giftedness that focused on school psychologists, surveyed school psychologists to determine their knowledge of giftedness, as well as their comfort in conducting gifted evaluations. The sample was comprised of 300 school psychologists and was a representative sample of the membership of the National Association of School Psychologists membership.

Specific results published in the study included the finding that 66% of the study's participants rarely or never conducted gifted evaluations while only 9.5% rated their expertise in identifying gifted students as high. In

particular, doctoral-level school psychologists rated themselves as having a higher level of expertise in identifying gifted students than non-doctoral school psychologists, and school psychologists with 11 or more years of experience rated themselves as having a higher level of expertise in identifying gifted students than school psychologists with fewer years of experience. Additionally, the results indicated that half of the school psychologists surveyed were employed by school districts that utilized an IQ cutoff score as their criteria for being identified as gifted.

Through a wealth of professional writings and public information, many educators, parents, and researchers have commented on the definition of giftedness. Few, however, have sought the perspective of the school psychologist, a professional who is trained in both child development and assessment (Robertson et al., 2011). This study sought to add to the research on giftedness by examining a population that has been neglected in research and to contribute to the ongoing discussion about the definition of giftedness.

Statement of the Problem

The purpose of this particular study was to examine practicing school psychologists' conceptualizations of what types of individuals should be identified as gifted. The experiences of the researcher in conducting gifted evaluations,

in addition to discussions with other school psychologists and a review of gifted literature, suggested three scenarios that were investigated as potential operationalizations of giftedness within the context of contemporary educational definitions of giftedness.

The first scenario of a potentially gifted student involved an individual with an IQ score of 130 or higher on a standardized intelligence test (Borland, 1997). This scenario represented the traditional definition of mental giftedness that has been embraced by educational community for decades (Horowitz & O'Brien, 1986). Next, the second scenario represented an individual with high scores on a variety of measures but did not have an IQ score of 130 or higher. This scenario reflected contemporary theories of giftedness in which individuals can be identified as gifted without meeting the IQ threshold of 130 (NAGC, 2013). Finally, the third scenario involved individuals with strong creative and artistic skills but presenting sub-130 IQ scores. This scenario reflected newer theories of giftedness which identified gifted individuals through demonstrated skills (NAGC, 2013; Renzulli, 2000). These theories suggested that giftedness is not limited skills that are measured through the administration of an intelligence test.

Participants in the study read short vignettes that were based on the three scenarios presented above. Based on the

information imparted by the scenarios, study participants then were asked to determine if the individual in each vignette should or should not be identified as gifted. Simultaneously, the study examined potential trends between characteristics of the participants and their responses to the three vignettes.

Problem Significance

There is an expansive body of research that pertains to giftedness, including conceptualizations of giftedness, characteristics of gifted students, and evaluations of students for giftedness. Previous studies have surveyed an extensive number of parents, students, and educational professionals, but few studies have examined responses obtained directly from school psychologists. Most studies that focused on school psychologists examined trends in assessment tools and knowledge of characteristics of gifted individuals. To date, no study has examined what type of individual a school psychologist would conceptualize as gifted. This is significant because, in many states, it is the school psychologist who is responsible for assessing students and, subsequently, making recommendations for gifted eligibility. Therefore, a study to evaluate school psychologists' conceptualization of giftedness would add to the body of research pertaining to the definition of giftedness.

Definition of Terms

Eligibility Determination – Eligibility determination is the part of an evaluation where the school district makes a statement regarding the eligibility of a student for services (gifted or special education). Eligible students are then offered additional supports, while non-eligible students remain in their current program (typically regular education).

Gifted – This term refers to individuals who are thought to be exceptional. Traditionally, this term referred to individuals with an IQ score of 130 or higher (Baldwin, 2005; Borland, 1997). There is no consensus in the field of gifted research on a standard definition for this term. For this study, the term gifted was used for individuals who are formally identified as gifted by a school district.

Gifted Identification – this term is used for the present study to examine whether or not the participant believes that an individual meets the criteria set forth by a particular state to potentially receive gifted services. An evaluation team would use the information to determine formal eligibility for gifted services.

IQ – IQ is a term that is the traditional abbreviation for Intelligence Quotient, a score derived from standardized tests of intelligence, such as the Wechsler series. There is considerable debate over what truly is meant by IQ. The

original definition of IQ was a single score derived from an individual's response to Dr. Alfred Binet's intelligence test (Nettlebeck & Wilson, 2005). As the fields of assessment and intelligence progressed through research and the development of advanced statistical analyses, IQ transitioned from a single score to multiple scores, which may be separate from each other (Guilford, 1967; Sternberg, 1984)or which may represent a hierarchy of skills (Schrank, McGrew, & Woodcock, 2001). For the purposes of this study, the term IQ represented scores on tests of intelligence.

LEA – LEA stands for Local Education Agency, a term found in federal educational legislation. In most situations, it refers to a school district.

Psychoeducational Evaluation – Psychoeducational evaluations are evaluations conducted by school personnel to determine if a student meets criteria as being exceptional (special education or giftedness) and demonstrate a need for curriculum modifications in order to be successful.

Talented – This term refers to individuals who may not have an IQ of 130 or above, but presents a strong set of skills, academic and/or personal, that are thought to be significantly above those of the average individual. Gagne (1985) argued that giftedness is competence in domains of ability and talented refers to human performance. Gagne (1999) acknowledged that,

for most of the field of gifted education, the terms gifted and talented are used synonymously.

Study Variables

This study assessed school psychologists' responses on multiple variables. The dependent variable was participant responses to vignettes that described profiles of three different individuals who were considered for gifted services. The vignettes were identified as Typical, Multiple Criteria, and Talented. The Typical vignette described an individual with an IQ score of 130 or higher. An individual with an IQ score below 130 and an exceptionally strong academic profile was portrayed in the Multiple Criteria vignette. Finally, the Talented vignette depicted an individual with strong artistic skills.

The study contained 12 predictor variables: Age of the Participant, Sex of the Participant, Race of the Participant, Highest Level of Training, Number of Years Practicing as a School Psychologist, School District Enrollment, School District Race, Involvement in the Gifted Identification Process, LEA Gifted Identification Policy, Comfort Level in Conducting Gifted Evaluations, Number of Gifted Evaluations per Year, and Number of Gifted Students Identified per Year. The study contained three mediator variables: Agreement with LEA Gifted Identification Policy, Order of the Vignettes, and State of

Employment. All variables are described in detail in Chapter III.

Research Questions and Hypotheses

Seven research questions were examined in this study. The first research question focused on responses to the three vignettes. The three subsequent research questions scrutinized the responses to the predictor and mediator variables, as well as examining the potential relationships between the independent variable, predictor variables, and mediator variables. The participants' responses to the predictor variables were studied in the fifth research question. The sixth research question surveyed the strength of the relationship between the predictor variables and responses on the vignettes. The final research question focused on potential correlations between the predictor variables. A summary of the seven research questions and hypotheses was shown in Table 1.

Research Question 1

How many participants will identify the individual in each vignette as gifted? It was hypothesized that at least 75.0% of participants will identify the individual in the Typical vignette as gifted. For the other two scenarios, it was hypothesized that at least 25.0% of participants will identify the individual in the vignettes as gifted.

Research Question 2

Will the mediator variable Order of the Vignettes influence response rates on the vignettes? It was hypothesized that presentation of the Typical vignette first will lead to a lower identification rate of the individual in the Multiple Criteria and Talented vignettes. It was the researcher's opinion that presentation of a profile of a stereotypical gifted student may make participants less likely to identify people who do not have a similar profile (as described in the other two vignettes). It was hypothesized that presentation of the Talented vignette will not have an impact on response rates to the Typical and Multiple Criteria vignette. It was the researcher's opinion the inclusion of a vignette that focuses on artistic skills instead of IQ should not affect how participants rate the other two vignettes, in which IQ scores are prominently featured. It was hypothesized that the presentation of the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette. It was the researcher's opinion that presentation of a vignette in which the individual's IQ was less than 130 may make participants give less weight to IQ scores and more weight to the overall profile of the individual in the vignettes when determining whether or not they are gifted.

Research Question 3

Will the mediator variable Agreement with Local Education Agency (LEA) Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses on the three vignettes? It was hypothesized that participants who agree with their LEA's gifted identification will response to the vignettes in a manner consistent with the LEA's Gifted Identification Policy. For example, if the LEA Gifted Identification Policy is an IQ score of 130, that participant will not identify the individual in the Multiple Criteria and Talented Vignettes as gifted. It was the researcher's belief that participants will answer questions based on their individual beliefs. It logically is consistent for a person who agrees with their LEA's Gifted Identification Policy to respond to the questions in a manner that is consistent with the policy.

Research Question 4

Will the mediator variable State of Employment influence responses on the three vignettes? It was hypothesized that State of Employment would affect responses. Specifically, it was hypothesized that individuals from Pennsylvania and West Virginia would have a lower identification rate on the Talented vignette than individuals from Ohio. Ohio's definition of giftedness specifically addresses individuals who may be

artistically gifted, while Pennsylvania's definition alludes to multiple ways that a person may demonstrate giftedness and West Virginia's definition does not address artistic abilities. It also was hypothesized that the mediator variable State of Employment will not influence responses on the Typical and Multiple Criteria variables. All three state definitions address individuals with IQ scores of 130 (or scores close to 130). Since the Typical Multiple Criteria vignettes include IQ scores that approach 130, the researcher believed that there would be little variability in participant responses to these two vignettes, regardless of the state in which they were employed.

Research Question 5

What are the anticipated responses by the participants on the predictor variables? It was hypothesized that 78.0% of participants would be female (Sex), 90.0% of participants would identify their race as Caucasian (Race) and 3.0% of participants would identify their race as African American (Race). It was hypothesized that 16.0% of participants will have obtained their doctorate (Highest Level of Training). It is hypothesized 60.0% of participants would utilize an IQ cutoff score of 130. Additionally, 75.0% of participants would rate their comfort level in conducting gifted evaluations as uncomfortable or very uncomfortable. It was hypothesized that the majority of

participants (75.0%) conduct 10 or fewer gifted evaluations per year and it was hypothesized that the majority of participants (75.0%) identify 5 or fewer gifted students per year. The remainder of the predictor variables (Number of Years Practicing as a School Psychologist, School District Enrollment, School District Race, and Involvement in Gifted Identification Process) were included to provide descriptive information on the sample and no formal hypothesis for responses of participants were identified.

Research Question 6

What will be the relationships between the predictor variables and responses on the vignettes? The Typical vignette was designed to reflect an individual who fits the traditional conceptualization of a gifted student, and it was the expectation of the researcher that the majority of participants would identify this individual as gifted. As a result, there should be no differences among the predictor variables and responses to the typical vignettes.

It was hypothesized that younger participants would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. It was hypothesized that school psychologists possessing a doctorate would be more likely to identify the individual in the vignettes as gifted. Larger school districts have a larger pool of students from which to

draw students for evaluations, leading to potentially more students being identified as gifted. As a result, it was hypothesized that school psychologists employed by larger school districts would be less likely to identify the individual in the vignettes as gifted.

Based on the research that suggests additional criteria beyond just an IQ test should be utilized when assessing students of races other than Caucasian, it was hypothesized that school psychologists whose school districts' whose racial makeup are more diverse would be more likely to identify the individual in both vignettes as gifted. For the variable Involvement in the Gifted Identification Policy, it was hypothesized that participants who are not involved in the gifted identification process are less likely to identify the individual in the vignettes as gifted.

The variable LEA Gifted Identification Policy was separated into individual variables based on the potential responses by participants to describe their school district's gifted identification policy, which could be either a single selection or multiple selections. It was the researcher's opinion that school psychologists who select IQ as their LEA's gifted identification policy would be less likely to identify the individual in both vignettes as gifted. It was hypothesized that individuals who select the other options (multiple

criteria, rubric, other) would be more likely to identify the individual in each vignette as gifted, as these options suggest that qualifying for services is based on an overall profile, not just an IQ score.

Because the typical gifted evaluation procedure was based on an IQ score, it was hypothesized that school psychologists who conduct higher numbers of gifted evaluations were less likely to identify the individual in the vignettes as gifted. Additionally, it was hypothesized that school psychologists who identify a higher number of gifted students per year were less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted.

Research Question 7

What are the strengths of the relationships between the predictor variables in the study? Strength of the relationship (Cohen & Cohen, 1983) was characterized as being either small (.10), medium (.30), or large (.50). It was the personal opinion of the researcher that several of the variables would be correlated. It was hypothesized that the following variables would have small effect sizes: Age of Participant and Highest Level of Training, Age of Participant and Number of Years Participating as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. It was hypothesized that the following

variables would have medium effect sizes: Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year; LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations. It was hypothesized that there were be no large effect sizes between the predictor variables.

Assumptions

Participants were a representative sample of school psychologists currently practicing in the states of Pennsylvania, Ohio, and West Virginia. Participants were instructed to provide honest answers that reflect their individual professional opinions rather than basing their answers their school district's gifted identification policy. It was assumed that the vignettes provided sufficient information for participants to make an informed professional, decision when determining whether the individual in the vignette is gifted.

It was assumed that, while the criteria for gifted eligibility in each state are not identical, the criteria were substantially similar and responses from participants from each of the states could compared and trends in responses could have been generalized to all three states. No two state definitions

were exactly alike, due to fact that each state develops its own definition of giftedness. Chapter II contains the formal definitions of giftedness from each of the three states and an analysis of their common and unique components.

Table 1

Research Questions and Hypotheses

Research Questions	Hypotheses
1. How many participants will identify the individual each vignette as gifted?	At least 75.0% of participants will identify the individual in the Typical vignette as gifted. At least 25.0% of participants will identify the individual in the Multiple Criteria and Talented vignettes as gifted.
2. Will the order of the vignettes influence response rates on the vignettes?	The presentation of the Multiple Criteria vignette first will lead to an increased identification rate on the Talented vignette.
3. Will the mediator variable Agreement with LEA Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses to the three vignettes?	Participants who agree with their LEA's Gifted Identification Policy will answer the vignettes in a manner consistent with their LEA's policy.
4. Will State of Employment influence responses on the three vignettes?	Participants from Pennsylvania and West Virginia will have a lower identification rate on the Talented vignette than individuals from Ohio. State of Employment will not affect responses on the Typical and Multiple Criteria vignettes.
5. What are the anticipated responses by the participants on the predictor variables?	Responses by participants are predicted for multiple predictor variables.
6. What will be the relationships between the predictor variables and responses on the vignettes?	Multiple variables will predict responses on the vignettes.
7. What are the strengths of the relationships between the predictor variables in the study?	Multiple variables will demonstrate small and medium relationships.

Note. LEA = Local Education Agency.

Limitations of the Study

There were several limitations related to this study. The main limitation was the limited number of states to which the results of this study are pertinent. As giftedness is not a federally required category for specialized educational services, each state is free to determine whether they would provide gifted services and to develop its own definition of giftedness (Zirkal, 2004). Consequently, the results of this study may not be generalized to the remaining states.

As previously noted, states are not required to offer gifted services (Zirkal, 2004). States that choose to offer gifted services developed their own definition of giftedness, which may not be consistent with gifted definitions from other states. This limitation also extended to the states used in this study. The analysis of the state definitions presented in Chapter II demonstrates that while all three state definitions had common characteristics, each state also contained criteria that were not found in the other states' definitions.

There were a number of limitations regarding the vignettes used in this study. While the wording for each vignette was designed to convey accurate representations of individuals who may be evaluated for gifted services, participants may have misconstrued the directions as they answered the questions. Additionally, participants may not have had immediate access to

the descriptive variables that related to their particular school district. Finally, participants may have had a negative experience relating to gifted identification, either professional or personal, which may have influenced their responses.

There was a possibility that some of the participants did not believe that there are gifted students or that gifted education should be offered by schools, which may have influenced their responses. Conversely, responses from participants who were regularly involved in gifted identification or had strong positive feelings about gifted identification may have responded in an unexpected manner to the vignettes. It also was possible that participants may have limited, if any, exposure to gifted identification and may not have been able to articulate who should be identified as gifted. Finally, there may have been an unknown or undisclosed characteristic of the participants that may have had a significant impact on their responses.

Chapter Summary

The history of gifted research is permeated with a lack of consensus about what actually constitutes giftedness. Various definitions included higher levels of intelligence, academic skills, creativity, or leadership skills. While a significant amount of research has been conducted with gifted educators,

parents, and students, school psychologists were a population that was rarely represented in gifted research (Robertson et al., 2011).

The purpose of this study was to examine school psychologists' conceptualizations of giftedness in three states. Participants examined vignettes representing three different conceptualizations of giftedness and determined whether the individual in each vignette should be identified as gifted. Results were analyzed to determine response rates to the vignettes and potential relationships between the vignettes and the mediator and predictor variables.

CHAPTER II

LITERATURE REVIEW

"Historically, the identification of gifted and talented students has been inextricably linked to intelligence tests" (Brown, Renzulli, Gubbins, Siegle, Zhang, & Chen, 2005, p. 69). A single score on a test was the sole identifying criteria in the original definitions of both intelligence and giftedness. As psychologists and educators examined the constructs of both giftedness and intelligence, the original, simplistic definitions were discarded and a variety of multi-faceted theories emerged; however, in both fields, no formal consensus has been reached on what is intelligence and what is giftedness.

This chapter provides an in-depth review of the evolving definitions of intelligence and giftedness. The review of intelligence examines the evolution of intelligence from a single score to a multi-faceted construct and describes several of the tests developed to assess intelligence. The review of giftedness examines the evolution of gifted definitions, describes the state definitions of giftedness for participants in this study, and discusses the inclusion of creativity as part of giftedness.

Intelligence and Intelligence Testing

Theories of intelligence and intelligence testing share a long and contentious history. Over time, the construct of

intelligence evolved from the inclusion of a small number of intellectual abilities (Sternberg, 1997) unitary to multiple intellectual abilities (Gardner, 1983; McGrew, 2009). While researchers suggest that there are many components to intelligence, considerable disagreement among researchers remains as to the presence or absence of a general intelligence quotient (Gardner, 1983; Sternberg, 1997). The first intelligence test was designed to identify students who may have needed additional support in school (Binet & Simon, 1916). Over the years, the use of intelligence testing grew to include the identification of individuals with superior intellectual skills (Jolly, 2008). To date, there is no consensus on a definition of intelligence, although CHC theory has been demonstrated to have both strong psychometric properties and significant influence on the development of intelligence tests (Keith & Reynolds, 2010).

Theories of Intelligence

The concept of intelligence has its roots in research conducted by Frenchman, Alfred Binet. In the early 1900's, Binet was commissioned to create an assessment for the French government to identify students who struggled academically, and who might need additional support (Jolly, 2005). To achieve this goal, Binet endeavored to measure systematically the skills of students and determine if their skills were significantly

lower than desired. Binet's efforts resulted in the development of his theory of intelligence. According to this theory, Binet stated that intelligence was comprised of three skills: direction, adaptation, and criticism (Sternberg, 1997). To examine these three skills, Binet created a tool that included solving academic problems and assessed various types of practical knowledge (Binet & Simon, 1916).

The theories of intelligence discussed below were separated into two groups. The majority of theories of intelligence agreed that intelligence was comprised of multiple cognitive abilities. Theories differed in the inclusion or absence of a general intelligence. The first group of theories posited the existence of a general intelligence, while the second group of theories posited that there was no general intelligence.

Theories with a unitary conceptualization of intelligence. Several conceptualizations of intelligence advanced the existence of a general intelligence (Spearman, 1927; McGrew, 2009). Theorists who subscribed to this viewpoint did not argue that intelligence was comprised of multiple cognitive abilities. Rather, they argued for the existence of a unifying construct, which they described as general intelligence. Through the creation of a new statistical procedure, Charles Spearman developed his theory of intelligence that contained a description of overall intelligence, called g. Cattell-Horn-

Carroll factor theory, one of the most influential modern theories of intelligence, described a general measure of intelligence, in addition to multiple specific cognitive skills (Alfonso, Flanagan, & Radwan, 2005).

Spearman and g. The concept of a general intelligence, referred to as g, can be traced to Charles Spearman (Kaplan & Saccuzzo, 2001). Spearman developed a statistical analysis called factor analysis while examining teacher academic evaluations of students (Kane & Brand, 2003). Spearman noted a correlation between the academic variables, which he believed was due to a general measure of intelligence. Spearman called his general intelligence g (Spearman, 1927). Many modern intelligence tests contain a general intelligence score, which included the Full Scale Intelligence Quotient from the Wechsler series of intelligence tests and the General Intellectual Ability from the Woodcock Johnson series.

CHC factor theory. Cattell-Horn-Carroll (CHC) factor theory became the dominant theory of intelligence in the field of intelligence testing (Alfonso, Flanagan, & Radwan, 2005). CHC theory was an amalgam of two different theories, Cattell's Gf-Gc theory and Carroll's three factor stratum theory (Alfonso et al., 2005). Cattell's theory postulated two intellectual abilities, named fluid intelligence (Gf) and crystallized intelligence (Gc) (Schrank, McGrew, & Woodcock, 2001). Fluid

intelligence was comprised of reasoning skills, and crystallized intelligence was comprised of acquired knowledge. Cattell's theory was expanded by John Horn to include memory skills (storage and retrieval of information) and processing skills (performing tasks fluently and automatically) (McGrew, 2009; Schrank et al., 2001).

John Carroll used factor analysis on multiple data sets from intelligence tests to develop a three stratum theory of intelligence (Schrank et al., 2001). His theory contained many of the intellectual abilities identified by Cattell and Horn. Carroll identified three strata of abilities (Schrank et al., 2001). The first stratum contained specific abilities; the second stratum contained categorical abilities, which were comprised of abilities from the first stratum; and the third stratum contained a single cognitive ability, which was described as general intelligence. Examples of second stratum abilities included fluid reasoning and crystallized reasoning. Examples of first stratum abilities for fluid reasoning included general sequential reasoning, induction, quantitative reasoning, and speed of reasoning.

Cattell's work was published in the 1930's and the work of Horn and Carroll were published in the 1990's (McGrew, 2009). The two theories were synthesized into modern CHC theory by James McGrew (Alfonso et al., 2005). To date, CHC theory

continues to have the strongest influence in the fields of intelligence and intelligence testing (Alfonso et al., 2005; Keith & Reynolds, 2010). "Most new and revised individually administered tests of intelligence are either based on CHC theory or pay allegiance to the theory" (Keith & Reynolds, 2010, p. 635).

Theories with a multi-dimensional conceptualization of intelligence. Theories with a multi-faceted conceptualization of intelligence differed in the number and types of intelligences, but they shared a common trait. These theories, unlike the preceding theories of intelligence, did not suggest a general intelligence. These theories included Howard Gardner's theory of multiple intelligences, one of the most recognizable theories of multiple intelligences.

Guilford and structure of intellect. J. P. Guilford developed the Structure of Intellect model of intelligence. This theory contained three aspects of intelligence: content, product, and operation (Guilford, 1967). According to Guilford, each aspect was comprised of multiple cognitive skills. Guilford did not believe that his theory of intelligence was the most accurate representation of intelligence; rather, he believed that his theory would spur further research. Guilford's work provided a theoretical background for research

into the areas of creativity (Barron & Harrington, 1981; Guilford, 1975) and social intelligence (Chen & Michael, 1993).

Gardner's multiple intelligences. Unlike, Spearman, Howard Gardner's theory of intelligence did not contain a general factor. Instead, Gardner's theory of multiple intelligences, developed by studying savants and prodigies, had two prerequisites: a set of skills for problem-solving and the potential for the acquisition of new knowledge (Gardner, 1983). Gardner (1983) used a set of eight criteria to identify intelligence: the potential to isolate the skill due to brain damage; the existence of idiot savants, prodigies, and other exceptional individuals; an identifiable core operation or set of operations; a distinctive developmental history, along with a definable set of expert end state performances; an evolutionary history and evolutionary plausibility; support from experimental psychological tasks; support from psychometric findings; and susceptibility to encoding in a symbol system.

Based upon these criteria, Gardner proposed a set of eight intelligences (Gardner & Moran, 2006): linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, naturalistic, interpersonal, and intrapersonal. Linguistic intelligence involved knowledge of language, which may include vocabulary or ease in learning additional languages. Musical intelligence involved skill with musical instruments or vocal skills.

Logical-mathematical intelligence involved logical reasoning and critical thinking skills. Spatial intelligence involved mental pictures of objects. Bodily-kinesthetic intelligence involved coordination and muscle control. Naturalistic intelligence involved classifying and grouping objects based on their characteristics. Interpersonal intelligence involved interpersonal relations. Intrapersonal intelligence involved introspection.

Sternberg's triachic theory. Robert Sternberg developed a theory of intelligence that primarily focused on success. Called successful intelligence (Sternberg, 1984), it was comprised of three sets of components that interact with each other: metacomponents, performance components, and knowledge-acquisition components. Metacomponents activated the other two components and then monitored the actions and results of the other two components. Performance components referred to how tasks were carried out. Knowledge-acquisition components allowed the individual to gain information.

Intelligence Tests

Alfred Binet developed the first formal test of intelligence to identify school children with academic difficulties. His achievement spurred the development of many additional tests of intelligence. Each test had a unique history and theoretical basis for the test's development.

Several intelligence test series were discussed, as well as the unique characteristics of two popular intelligence test series and how those characteristics influenced gifted evaluations. Several difficulties related to the measurement of intelligence also were discussed. Finally, the development of nonverbal intelligence tests and their potential role in gifted evaluations was discussed.

Terman and the Stanford Binet. Binet's work came to the attention of Lewis Terman, an American psychologist, in the early 1900's. Terman revised the Binet-Simon, the original English translation of Binet's instrument. Terman's revised instrument contained directions to standardize the administration of the instrument, as well as provided a set of norms to allow the comparison of results between diverse individuals who were given the test (Jolly, 2008). There have been five editions of the Stanford Binet (Williams, Weiss, & Rolfhus, 2003). Terman's second edition of the Stanford Binet included two alternate forms, L and M (Williams et al., 2003), which were combined into the Stanford Binet L-M, the third edition of the test. The Stanford Binet L-M, presented a unique controversy in the history of gifted assessments, in that it was the last iteration of the Stanford Binet to utilize ratio IQ scores instead of standard scores (Ruf, 2003). The change from ration IQ scores to standard scores, which is discussed in

greater detail later in this chapter, led to disagreement over the potential identification of highly gifted individuals (Ruf, 2003). As a result, some gifted experts recommend the use of the Stanford Binet L-M as a supplemental assessment (Silverman & Kearney, 1992b). Early versions of the Stanford Binet also had a high number of verbal items, but nonverbal items were added in subsequent versions, as well as scales of additional intellectual abilities (Williams et al., 2003).

David Wechsler and the Wechsler series. David Wechsler's history in the field of intelligence testing started with his work with the development of the United States' Army Alpha and Beta tests that were used in World War I. Noting that the Stanford Binet test was developed primarily to assess children, he wanted an instrument to assess adults (Kaplan & Saccuzzo, 2001). While he initially started with the assessment of adults, Wechsler adapted later versions of his instrument for use by children.

Wechsler's test utilized a point system in which individuals earned points for correct answers; the points then were converted into standard scores. Wechsler developed his scale to include both a verbal and a performance scale. His scales were the first to include measures for working memory and processing speed (Kaplan & Saccuzzo, 2001). A hallmark of the Wechsler series is the ability of psychologists to examine

subtest scores patterns (Kaplan & Saccuzzo, 2001). While this process should be done cautiously, it can yield information that was not available with other tests of intelligence (Sattler, 2001).

Woodcock-Johnson Tests of Cognitive Abilities. The developers of the Woodcock-Johnson Tests of Cognitive Abilities decided to take a different approach to the development of an intelligence test. Rather than creating an instrument to measure aspects of a theory of intelligence developed by a person, the Woodcock Johnson Test of Cognitive Abilities was developed based on CHC factor theory (McGrew, 2009; Schrank et al., 2001). As previously stated, CHC theory was based on a meta-analysis of intelligence tests and reflected a hierarchy of cognitive abilities.

The Woodcock-Johnson was developed to measure the specific strata of CHC theory. This decision has had a lasting impact on intelligence test development. Many intelligence tests that contain a measure of general intelligence and specific intellectual abilities, including the Stanford Binet and Wechsler series, report how they measure multiple CHC factors (Keith & Reynolds, 2010; Wechsler, 2003), even though these tests were not based on CHC theory (Keith & Reynolds, 2010).

Nonverbal intelligence tests. The goal of nonverbal tests was to assess intelligence while controlling for the language

and background (culture, socio-economic status) of the individual (Lohman, 2005). Nonverbal intelligence tests focus on the assessment of fluid reasoning. One of the strengths of nonverbal intelligence tests was that the assessments required little or no verbal interaction between the test administrator and the individual taking the test. Testing procedures permitted directions be delivered in pantomime, and responses were permitted to be verbal or nonverbal.

Problems with intelligence testing. Results from intelligence tests can provide meaningful information on a student. This information can then be used to identify individual strengths and can assist in determining eligibility for gifted services. Unfortunately, results from multiple research studies (Lynn, 1999; Nettlebeck & Wilson, 2005; Sattler, 2001) have identified several areas of concern that may limit the utility of scores on an intelligence test.

Lack of consensus. As previously discussed, there is no consensus among researchers as to how intelligence should be defined (Nettlebeck & Wilson, 2005). Early research on intelligence focused on the single score generated by intelligence tests. Over time, a number of alternative theories of intelligence have been proposed, including ones by Sternberg and Gardner. Each theory had a strong theoretical background, although subsequent research studies have provided little

empirical evidence to support the theories of Sternberg and Gardner (Pyryt, 1996). The theory of intelligence that currently has the most empirical and theoretical support is CHC Theory, and most tests of intelligence are based, at least partially, on CHC theory, due to its strong psychometric support from factor analytic research (Keith & Reynolds, 2010).

The lack of consensus over the definition of intelligence led to difficulties in assessing intelligence. Intelligence tests were developed to assess a specific theory of intelligence. While it can be argued that all intelligence tests measure intelligence, it cannot be argued that all intelligence tests measure the same conceptualization of intelligence. As previously noted, many intelligence tests cited CHC theory as part of the theoretical basis for the intelligence test. Only one test, however, was based entirely on CHC theory. All other tests measured different theories of intelligence, which may or may not reflect CHC theory, partially or fully.

Score bias. One use of intelligence tests was to provide a means of comparing two individuals' intellectual functioning by examining their scores (Sattler, 2001), but there has been debate as to whether or not comparisons are fair when certain groups score differently on the tests. Results from multiple research studies have shown two demographic categories in which

intelligence scores may be biased. The first demographic category in which biases may be present in intelligence test scores was race. Historically, African Americans have scored below Caucasians on intelligence tests (Pyryt, 1996; Sternberg, 1997). While improvements in test development and sampling procedures have led to a smaller gap in scores between these two groups (Dickens & Flynn, 2006), these differences continue to be present.

Joseph and Ford (2006) stated that all intelligence tests have cultural biases in them and these biases can negatively affect individuals from different cultures when they are taking an intelligence test. Other researchers argued that environmental influences, such as education and poverty, play a significant role in African Americans' lower scores on intelligence tests (Brooks-Gunn, Klebanov, & Duncan, 1996; Ford, Grantham, & Whiting, 2008).

Due to concerns about potential biases with intelligence tests, some psychologists suggest that nonverbal intelligence tests should be utilized (Lohman, 2005). Gonzales and Roll (1985) found that Mexican Americans' and Anglo Americans' scores were comparable on both a measure of nonverbal intelligence and on a measure of verbal intelligence if their cultures were similar to each other. While this would suggest that nonverbal intelligence tests potentially could eliminate biases thought to

exist in traditional, standardized intelligence tests, nonverbal intelligence tests measure some, but not all of the intellectual skills measured by traditional intelligence tests.

The second demographic category in which intelligence tests may be biased is sex. Males and females tend to obtain different results on intelligence tests. Females tend to perform better on tasks that require language and memory, in addition to tasks that require the rapid processing of information (Halpern, 1997; Halpern & LeMay, 2000). Males tend to perform better on tasks that require fluid reasoning and visual spatial skills (Halpern, 1997; Halpern & LeMay, 2000). Moreover, there are biological differences in brain development that may affect scores. Lynn (1999) reported that females' brains tend to be smaller than males' brains, but the female brain matures more rapidly than the male brain. This led to females scoring higher than males on intelligence tests up to age 16, after which males tended to score higher than females by approximately four IQ points (Lynn, 1999).

Special Topics

The uses of intelligence testing to identify giftedness created a number of ongoing issues when conducting gifted evaluations. One concern noted by the test developers of the Wechsler series of intelligence tests was that gifted individuals obtained a different score profile than non-gifted

individuals, which led to the development of a second score to represent general intelligence and an additional set of norms. The test developers of the Stanford Binet series changed how IQ scores were calculated, which led to a debate on the use of various editions of the intelligence test. Furthermore, concerns of cultural biases in test development and limited English proficiency led some researchers to argue for the use of nonverbal intelligence tests in the identification of gifted students.

General ability index. The Wechsler series developed the General Ability Index (GAI), which is an alternative IQ to the Full Scale IQ scores (FSIQ) (Raiford, Weiss, Rolfhus, & Coalson, 2005). The FSIQ was the score that represented general intellectual functioning on the Wechsler intelligence tests. The GAI originally was developed for the Wechsler Intelligence Scales for Children, Third Edition, to provide a way to calculate an overall score that negated the influence of two subtests, Arithmetic and Coding.

The WISC III contained seven indexes: Full Scale, Verbal Scale, Performance Scale, Verbal Comprehension Index (VCI), Freedom From Distractibility Index, Perceptual Organization Index (POI), and Processing Speed Index (Sattler, 2001). The Verbal Scale was comprised of the verbal Comprehension Index and the Freedom from Distractibility Index. The Performance Index

was comprised of the Perceptual Organization index and the Processing Speed Index.

Test developers noted that, for some individuals, scores on Arithmetic (a subtest of the Freedom from Distractibility Index) were lower than scores on the subtests for VCI. As a result, there was a discrepancy between Verbal Scale and VCI scores (Raiford et al., 2005). A similar pattern emerged for Coding. In some instances, scores on the Performance Scale were lower than scores on POI, which was a result of Coding scores that were lower than subtest scores for POI (Raiford et al., 2005).

On the Wechsler Intelligence Scale for Children, Fourth Edition (WISC IV) the use of the GAI is recommended when there are significant discrepancies between two of the four composite scores (verbal comprehension, perceptual reasoning, working memory, and processing speed), or when there are differences between subtests for working memory or processing speed (Raiford et al., 2005). Gabel (2006) noted that "anecdotally, many individuals note that students with high cognitive abilities tend to be more reflective and demonstrate qualities associated with perfectionism in their processing style" (p. 166). As a result, these students may not perform as well on tasks that require speed (Gabel, 2006).

Extended norms. The WISC IV also included a group of extended norms to identify highly gifted individuals (Zhu,

Cayton, Weiss, & Gabel, 2008). This set of norms was provided by the National Association of Gifted Children (NAGC), who noted that the standardization sample for the WISC IV included no individual with a full scale IQ score of 150 or higher. The NAGC noted that individuals might max out the questions on a subtest without meeting the ceiling requirement. Intelligence tests assess individuals on subtests until they reach a specific number of questions wrong, called a ceiling (Sattler, 2001). The NAGC noted that when a subtest's ceiling has not been reached, subtest scores and index scores might not be an accurate reflection of cognitive abilities. The NAGC provided a sample of students that were used to test the norms (Zhu et al., 2008). While use of the extended norms may be beneficial in differentiating between gifted and highly gifted, most definitions of giftedness are based on a minimum score of 130 and do not differentiate between gifted individuals and highly gifted individuals.

Ratio IQ versus standard scores. The Stanford Binet series has a long history of use in the identification of gifted individuals. Early versions of intelligence tests, including early editions of the Stanford Binet, utilized ratio IQ scores. Ratio IQ scores compared a person's chronological age to his or her mental age and presented this comparison as a ratio (Ruf,

2003). The Stanford Binet L-M was the last of the Stanford Binet tests to include the use of ratio IQ scores.

The Stanford Binet, Fourth Edition, the successor to the Stanford Binet L-M, utilized standard scores. Standard scores were based on a normal distribution with a mean of 100 and a standard deviation of 16. Typically, standard scores do not extend beyond 160, a score that was three standard deviations above the mean. In contrast, ratio IQ scores can extend beyond 200, which produced scores that were more than three standard deviations above the mean (Ruf, 2003).

Advocates of highly gifted individuals (Silverman & Kearney, 1992a) argued that the change to standard scores left gifted educators unable to identify and appropriately serve highly gifted individuals, those with IQ's more than three standard deviations above the mean. The authors argued that the Stanford Binet L-M should continue to be utilized in gifted assessments (Silverman & Kearney, 1992b). Due to significant flaws in the development of the Stanford Binet L-M, which included outdated norms and bias in test item construction, Silverman and Kearney (1992a) argued that it should be used to differentiate levels of giftedness and not for identification purposes.

Role of nonverbal intelligence tests in gifted evaluations. As previously noted, there are concerns of bias in the development of intelligence tests. Many researchers argued that biases found in intelligence tests had a negative effect on the identification of gifted minority students (Ford, 2005; Ford et al., 2008). Lohman (2005) noted that some gifted advocates recommended the use of nonverbal intelligence tests when assessing minority students for gifted services; however, Lohman also argued that nonverbal intelligence tests only measure one cognitive skill and should not be used as the primary intelligence test when identifying gifted students.

Additionally, Lassiter, Harrison, Matthews, and Bell (2001) found that scores on the Comprehensive Test of Nonverbal Intelligence (CTONI) were lower than scores on the fluid intelligence component of the Kaufman Adolescent and Adult Intelligence Test, especially for individuals with higher scores. This result suggested that traditional intelligence tests provided a more complete assessment of fluid intelligence than nonverbal intelligence tests. Although nonverbal intelligence tests should not be used as the primary instrument to assess intelligence for gifted evaluations, nonverbal intelligence test scores may provide additional meaningful data as part of a gifted evaluation. An appropriate use of a nonverbal intelligence test would be when, after administering a

traditional intelligence test, concerns are noted that language or cultural issues may have impacted scores (Ford, 2005; Ford et al., 2008). Scores on the nonverbal intelligence test could then be compared to scores from the traditional intelligence test to determine the accuracy of the results from both intelligence tests.

Intelligence and Intelligence Testing Summary

The history of intelligence can be characterized as a progression in the complexity of both the definition of intelligence and the instruments designed to assess intelligence. What started as a means to identify struggling students has developed into a complex construct, encompassing multiple of cognitive abilities. There are numerous tests that can be used to measure intelligence, and these tests can be used, and have been used historically, to identify those individuals whose skills are significantly higher

Giftedness

The evolution of the definition of giftedness paralleled the evolution of the definition of intelligence. Both definitions originated relatively simple constructs and were then reshaped over the years, in part, due to advances in statistical procedures used to analyze data from increasingly complex instruments purporting to measure the construct of intelligence. The following sections detail the history of

gifted definitions, with an acknowledgment that a lack of consensus on gifted definitions has resulted in myriad operationalizations of giftedness promulgated in state education regulations. The state definitions for Pennsylvania, Ohio, and West Virginia, the states where participants were recruited for this study, are then described and compared.

Early Definition

The original definition of giftedness can be traced to the work of Lewis Terman (Jolly, 2008). Terman was a psychologist in the 1900's with interests in the fields of giftedness and intelligence testing (Jolly, 2008). Terman, who revised Alfred Binet's original intelligence test, used the score on his intelligence test to identify gifted individuals (Jolly, 2008).

Terman originally identified as gifted those individuals who obtained a score of 135 or higher (Brown et al., 2005). A score of 135 was equivalent to a percentile rank of 99 out of 100. Individuals with a percentile rank of 99 represented the individuals with the highest skills when compared to same age peers. Presently, an IQ score of 130, which is two standard deviations above the mean on most standardized intelligence tests and has a percentile rank of 98 out of 100, remains a component of the most common definition of giftedness (Horowitz & O'Brien, 1986). Terman's original conceptualization of giftedness, a single score on an intelligence test (Baldwin,

2005; Borland, 1997) would remain the standard definition of giftedness until the 1970's, when a report by Sidney Marland would provide a new framework for conceptualizing giftedness (Stewart, 1999).

The Marland Report

While the concept of giftedness developed because of advances in the field of education, it was not originally considered an identification that allowed for differentiated services in schools. Gifted education formally was recognized as being a component of education in an amendment of the Elementary and Secondary Education Amendments of 1969 (Marland, 1972). In 1972, Sidney P. Marland, Jr., the United State Commissioner of Education, presented a report to the United States Congress that included his rationale for the inclusion of gifted services for eligible students in public schools. The report, which came to be known as the Marland Report, described gifted children in the following manner:

> Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by

the regular school in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:

1. general intellectual ability
2. specific academic aptitude
3. creative or productive thinking
4. leadership ability
5. visual and performing arts
6. psychomotor ability. (Marland, 1972, p. 20)

Director Marland also provided the following commentary regarding his proposed definition of giftedness:

It can be assured that utilization of these criteria for identification of the gifted and talented will encompasses a minimum of 3 to 5 percent of the school population. Evidence of gifted and talented abilities may be determined by a multiplicity of ways. These procedures should include objective measures and professional evaluation measure which are essential components of identification. Professionally qualified persons include such individuals as teachers, administrators, school psychologists, counselors, curriculum specialists, artists, musicians, and others with special training who are also qualified to

appraise pupil's special competencies. (Marland, 1972, p. 20)

The Marland Report definition of giftedness was a departure from the original definition of giftedness because it suggested that giftedness is a multifaceted construct. Initially, giftedness was based solely on scores from an intelligence test (Horowitz & O'Brien, 1986). The Marland report identified multiple areas in which a student can be gifted. Marland retained the original definition of giftedness but added additional areas, none of which were assessed by intelligence tests available at that time.

Modern Theories of Giftedness

Multiple researchers have taken the Marland definition of giftedness and used it to construct alternative descriptions of giftedness. The lasting influence of the Marland report was its influence on subsequent definitions of giftedness. Contemporary theories of giftedness are marked by a de-emphasis on intelligence while increased consideration of other skills. Contemporary definitions of giftedness were separated into two categories. The first category of contemporary definitions focused on the identification of gifted students in schools. The identification of individuals with exceptional skills who have the potential to be successful throughout life, not just in school is the hallmark of the second category.

Educational theories of intelligence. The theories presented in this section continue to include a traditional conceptualization of intelligence as part of the definition of giftedness. In contrast to the historical model of giftedness, a score of 130 or higher is not required. The theories shared common ground in the identification of multiple areas in which an individual may be identified as gifted.

Baldwin. Alexinia Baldwin developed a definition of giftedness in response to concerns in the historical underrepresentation of minorities in gifted education. Baldwin (2005) proposed four areas of giftedness: cognitive, creative, psychosocial, and psychomotor. Baldwin developed an Identification Matrix that provided a mechanism to assess these four areas and develop an overall score, which then was utilized to determine eligibility for gifted services. The matrix contained sections to assess cognitive, psychosocial, creative, psychomotor, motivation, creative problem-solving skills. The purpose of the matrix was to identify a gifted student as anyone who met a minimum point total on the matrix, as opposed to a single score on an intelligence test (Baldwin, 2005).

Gagne. Gagne's (1985) theory of giftedness distinguished between gifted and talented individuals. To Gagne, giftedness "corresponds to competence which is distinctly above average in one or more domains of ability" (p. 108) and talent "refers to

performance, which is distinctly above average in one or more fields of human performance" (p. 108). The terms gifted and talented, according to Gagne, were different and should not be used interchangeably. Additionally, Gagne demonstrated that his distinction could be applied to the Marland definition (Gagne, 1985). Gagne argued that the domains of general intellectual ability, creative and productive thinking skills, and psychomotor skills fell under the category of gifted. The domains of scholastic aptitude, leadership, and visual and expressive arts, according to Gagne, fell under the category of talented.

National Association of Gifted Children. The National Association of Gifted Children is an organization that works to support gifted individuals through supports to families and schools. The NAGC developed the following definition of giftedness:

> Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains. Domains include any structured area of activity with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, sports). (National Association of Gifted Children, 2013)

This definition shared many similarities with the Marland Definition; however, it did not provide specific information as to how to quantify levels aptitude or competence.

Pfeiffer and tripartite giftedness. Dr. Steven Pfeiffer, a school psychologist and researcher in the area of giftedness, developed his own theory of intelligence based on his life experiences (Pfeiffer, 2013). Pfeiffer had a daughter who demonstrated strong skills in soccer, culminating in participation in elite national youth soccer programs. He also had the opportunity to work with the Duke Talent Identification Program, which focused on supporting the education of gifted individuals.

Pfeiffer argued there were three methodologies by which an individual could be identified as gifted: high intelligence, outstanding accomplishments, and the potential to excel (Pfeiffer, 2013). The high intelligence methodology included individuals with extremely high scores on intelligence tests. The outstanding accomplishments methodology includes individuals with superior academic performance. The potential to excel methodology identifies individuals who have not met criteria for the other two methodologies, due to socioeconomic disadvantages, but may have the potential to demonstrate exceptional skills when given additional academic supports.

The Columbus Group and synchronous development. The Columbus Group was a group of "theorists, practitioners, and parents in Columbus, Ohio" (Morelock, 1992, para. 38) who gathered in 1991 to discuss giftedness and gifted development. This group proposed the following definition of giftedness:

> Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases higher intellectual capacity. The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching, and counseling in order for them to develop optimally. (Morelock, 1992, para. 39)

While the Columbus group definition is included in the educational definitions of giftedness, it is unique from the other definitions in that it focuses not on meeting a set of criteria to qualify for gifted, but instead is sensitive to the fact that development of skills, whether they be cognitive, academic, or emotional, is not equal within the individual or across individuals. Parents and educators should be cognizant of the fact that each person is unique and that an individual's psychoeducational profile and skill development should be taken

into consideration when determining appropriate educational supports.

Success theories of intelligence. The preceding theories of intelligence focused an academic conceptualization of intelligence, seeking to identify those individuals who may qualify, and benefit from, additional supports in school. The following two theories focused on the identification of individuals who had the potential to achieve significant accomplishments in life, not just in school. Renzulli's theory of giftedness identified two types of giftedness, educational and creative, while Sternberg's theory of giftedness was based on his theory of successful intelligence.

Renzulli. Educational physiologist Joseph Renzulli articulated two complaints with the utilization of IQ scores to identify giftedness (Renzulli, 2000). The first complaint was that intelligence had multiple dimensions, regardless of the actual theory of intelligence that an individual believes is valid (Renzulli, 2000). His second complaint was that psychologists, while able to measure the components of IQ, were not necessarily able to measure actual intelligence (Renzulli, 2000). This inability was a result of the ongoing debate over what cognitive skills comprise intelligence.

As a result, Renzulli differentiated between two types of giftedness: school house giftedness and creative-productive

giftedness (Renzulli, 2000). School house giftedness described individuals who performed well on tests of cognitive abilities and who do well academically in school. Appropriate gifted adaptations for these individuals included curriculum modifications, such as compacting the curriculum (presenting the information at a quicker pace than in the regular classroom) or enriching it.

Creative-productive giftedness occurred when "a premium is placed on the development of original material and products that are purposefully designed to have an impact on one or more target audiences" (Renzulli, 2000, p. 97-98). These individuals focused on using their actual skills and reasoning skills to address real life problems.

Renzulli pointed out that the individuals who are most successful in life are those who are creative and productive, stating, "History does not remember persons who merely scored well on IQ tests or those who learned their lessons well" (Renzulli, 2000, p.98). In response, Renzulli proffered a characterization of giftedness that was comprised of three different skills: above average intelligence, task commitment, and creativity (Renzulli, 1978).

Above average ability referred to cognitive skills or skills in specific academic/practical areas while task commitment was a form of motivation, in which the individual

seeks to complete tasks. Finally, creativity was the ability to think in novel ways, of which divergent thinking is a component. Based upon these concepts, Renzulli (2000) offered the following definition of gifted behavior: "Gifted and talented children are possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance" (p. 104).

Sternberg. Sternberg argued that his theory of successful intelligence could be utilized to identify gifted students (Sternberg & Grigorenko, 2002). Successful intelligence was comprised of executive functioning skills (skills used to identify and solve problems), practical performance skills, and knowledge acquisition. Sternberg and Grigorenko (2002) argued that the theory of successful intelligence is compatible with both Gardner's theory of multiple intelligences and the theory championed by Renzulli. Both Sternberg's and Renzulli's theories of giftedness share a strong focus on creativity as being a necessary part of giftedness.

Is Creativity an Aspect of Giftedness?

Creativity is a psychological construct that many considered a component of giftedness (Hunsaker & Callahan, 1995). Creativity was listed in the Marland Report's definition of giftedness and played a major role in Sternberg's and Renzulli's theories of intelligence; however, it is a concept

that was not easily defined or measured objectively (Houtz & Krug, 1995; Treffinger, 1986).

Houtz and Krug (1995) offered the following definition of creativity: “creativity is a result of a system of variables operating in combination” (p. 285); however, their definition was a vague generalization about creativity, not a true definition that could be operationally defined and studied. Current theories of creativity have focused on the research of divergent thinking tasks (Runco, 1993). Divergent thinking tasks were novel tasks and situations. In contrast, convergent tasks, which were the initial focus of research on creativity (Runco, 1993), were familiar tasks that allow an individual to use knowledge and skills in a familiar manner. Many research studies focused on using novel tasks, but Macedo and Cardoso (2002) argued that it is better to use unexpected tasks to measure creativity, rather than just novel tasks.

When examining creativity as a component of giftedness, Beattie (2000) believed that creativity can be assessed in an educational setting, but maintains that it should be evaluated at a secondary level, as opposed to the primary level. Alternatively, Runco (1993) argued that students at the primary level are developing knowledge and skills. At the secondary level, he contended, students have acquired knowledge and skills than can then be applied to new situations and tasks. In their

evaluation of giftedness and creativity, Hunsaker and Callahan (1995) presented three contrasting views of the relationship between giftedness and creativity: giftedness and creativity are different constructs, creativity is a fundamental component of giftedness, or that creativity is a specific form of giftedness.

Kim (2005) conducted a meta-analysis of 21 studies that linked creativity and intelligence. Creativity tasks in these studies included fluency, flexibility, and originality. Tests characterized as intelligence tests in the studies included the Terman Concept Mastery Test, California Test of Mental Maturity, Wechsler Intelligence Scale for Children, School and College Ability Test, Sequential Tests of Educational Progress, and the Peabody Picture Vocabulary Test. Kim (2005) found an overall correlation between intelligence and creativity of 0.174, which was characterized as “negligible” (p. 25). The major difficulty in interpreting the results of the study, according to Kim, was the identification of tests as intelligence tests. While all testes measured cognitive processes, not all of them could be characterized as intelligence tests. Therefore, no formal link between intelligence and creativity could be established.

Jausovec (2005) devised two experiments to determine if creativity and intelligence are related. For both experiments, participants were divided into groups based on results of the Wechsler Adult Intelligence Scales and creativity tests from the

Torrence Tests of Creative Thinking. Participants were further separated into four groups: average in both creativity and intelligence, gifted (high intelligence and high creativity), creative (high creativity and average intelligence), and intelligent (high intelligence and average creativity). For both experiments, all participants were connected to electroencephalogram equipment and were given two problems, each with two levels of complexity.

The first experiment examined closed solution problems and required the participants to utilize convergent thinking. In the second experiment, participants were provided open problems that required divergent thinking. Results from the first experiment indicated that creativity did not impact performance on tasks that required convergent thinking and intelligence did not impact performance on tasks that required divergent thinking. Based on the results, Jausovec (2005) suggested that intelligence and creativity are separate cognitive processes.

In addition to difficulties with how to link creativity and giftedness, Hunsaker and Callahan (1995) emphasized that many school districts include creativity as in their gifted evaluations, but districts had not defined creativity, focused only on one aspect of creativity, or they had a lack of focus on the products and environmental dimensions of giftedness. Bauer and McKool (2009) argued that the best way to assess creativity

is by using a consensual assessment technique. This technique showed little evidence of bias, it was independent of any other theory of creativity, and it was a subjective mechanism.

The definition and assessment of creativity was a mirror to that of intelligence. The definition of creativity has changed over time, but there has been no consensus on a formal definition. Likewise, there has been no formal method developed to measure creativity, although there have been subjective assessment tools designed to aspects of creativity. Results from studies of intelligence and creativity suggest that intelligence and creativity are two different cognitive processes. Difficulties with defining and assessing giftedness also have called into question the inclusion of creativity into definitions of giftedness.

How do States Define Giftedness?

The preceding paragraphs discussed the evolution of the definition of giftedness from a single score to multiple ways in which an individual may demonstrate giftedness. These definitions were developed by eminent psychologists and gifted experts. Although many of definitions of giftedness found in gifted research were advanced by individuals, another group also had established definitions of giftedness: states' departments of education.

While the Marland definition was the first federal definition of giftedness, no federal law requires that states provide gifted services (Zirkel, 2004). Individual states are permitted, however, to develop their own definition for gifted students. Based on information from the NAGC (2008), 32 states mandate the identification of gifted students. Additionally, some states allow, but do not necessarily require, local school districts to define and identify gifted students.

Pennsylvania, West Virginia, and Ohio are three states that require schools to provide gifted services to qualifying students. These three states are geographic neighbors and were the focus of this study. Presented below are the current state definitions of giftedness.

Pennsylvania. Pennsylvania's definition of giftedness focuses primarily on scores of 130 or higher on a test of intelligence but the controlling regulation notes that gifted identification is more than just a score of 130 and identifies additional areas in which giftedness can be manifested (22 Pa. Code § 16.21, 2008).

> (d) Each school district shall establish procedures to determine whether a student is mentally gifted. This term includes a person who has an IQ of 130 or higher or when multiple criteria as set forth in this chapter and in Department Guidelines indicate gifted ability.

Determination of gifted ability will not be based on IQ score alone. Deficits in memory or processing speed, as indicated by testing, cannot be the sole basis upon which a student is determined to be ineligible for gifted special education. A person with an IQ score lower than 130 may be admitted to gifted programs when other educational criteria in the profile of the person strongly indicate gifted ability. Determination of mentally gifted must include an assessment by a certified school psychologist.

(e) Multiple criteria indicating gifted ability include:

(1) A year or more above grade achievement level for the normal age group in one or more subjects as measured by nationally-normed and validated achievement tests able to accurately reflect gifted performance. Subject results shall yield academic instruction levels in all academic subject areas.

(2) An observed or measured rate of acquisition/retention of new academic content or skills that reflect gifted ability.

(3) Demonstrated achievement, performance or expertise in one or more academic areas as evidenced by excellence of products, portfolio or research, as well as criterion-referenced team judgment.

(4) Early and measured use of high level thinking skills, academic creativity, leadership skills, intense academic interest areas, communications skills, foreign language aptitude or technology expertise.

(5) Documented, observed, validated or assessed evidence that intervening factors such as English as a second language, disabilities defined in 34 CFR 300.8 (relating to child with a disability), gender or race bias, or socio/cultural deprivation are masking gifted abilities. (22 Pa. Code § 16.21(d)-(e) 2008)

The Pennsylvania definition of giftedness emphasizes that a high score on an intelligence test is a necessary aspect of giftedness, but high scores are not the only criteria that defines giftedness. The definition identifies a variety of ways in which a student may demonstrate giftedness. The Pennsylvania definition also places the onus on school districts to determine how gifted students are identified.

West Virginia. West Virginia's definition of giftedness provides a very specific set of criteria that a student must meet in order to be eligible for gifted services. The definition also discusses procedures to use when there are concerns related to results from an intelligence test and an

alternate mechanism for evaluating students from historically underrepresented populations.

Definition: Giftedness is exceptional intellectual abilities and potential for achievement that requires specially designed instruction and/or services beyond those normally provided in the general classroom instruction. An eligibility committee will determine that a student is eligible for special education services as a gifted student in grades one (1) through eight (8) when the following criteria are met:

(1) General intellectual ability with a full scale score at the 97th percentile rank or higher on a comprehensive test of intellectual ability with consideration of 1.0 standard error of measurement at the 68% confidence interval;

(2) At least one of the four core curriculum areas of academic achievement at the 90th percentile rank or higher as measured by an individual standardized achievement test, or at least one of the four core curriculum areas of classroom performance demonstrating exceptional functioning as determined during the multidisciplinary evaluation; and

(3) The need for specially designed instruction and/or services beyond those normally provided in the general

classroom. Differentiated instruction for gifted students may include enrichment of the content emphasizing the development of higher-level thinking, including critical thinking, creative thinking, and problem solving skills and/or acceleration of content while the student remains in the chronologically appropriate grade. Related services may include, for example, guidance and counseling. This is not an all-inclusive list.

Special Considerations

Intellectual Ability. If the student's general intellectual ability score is unduly affected by performance in one or more composite scores, the evaluator may use, for purposes of eligibility, an alternate general ability index or an individual composite measure as permitted in the test manual or other technical reports. The evaluator must include a statement in the report indicating which score is the better indicator of the student's intellectual abilities and the supporting reasons for this determination.

Historically Underrepresented Gifted Population. Historically Underrepresented Gifted Population are those students whose giftedness may not be apparent

> due to low socioeconomic status, a disability in accordance with this policy, or a background that is linguistically or culturally different. If it is determined that the eligibility criteria and/or assessment instruments discriminate against a student because the student belongs to a historically underrepresented gifted population, eligibility for gifted services shall be based upon criteria that complement the definition and eligibility for gifted as described in this policy. To determine whether a student demonstrates the potential for intellectual giftedness when the student does not meet the eligibility criteria as described in this policy, the eligibility committee must consider all data gathered by the multidisciplinary evaluation team. These date include, but are not limited to, individual achievement, group achievement, classroom performance, teacher input, inventories, scales, checklists, rubrics and parent information.

The following lists different procedures that the eligibility committee may use in determining eligibility of a student who belongs to a historically underrepresented population. This is not an exhaustive list.

A. Using an alternative assessment to identify giftedness in minority students.

B. Using a matrix to get a total picture.

C. Using parent, student, and teacher rating scales to give added information. (Policy 2419: Regulations for the Education of Exceptional Students, 2014)

The West Virginia definition provides a detailed description of the criteria that should be utilized when determining eligibility for gifted services. The definition limits gifted evaluations to students in grades 1 through 8. Finally, the West Virginia definition identifies concerns with identifying gifted students from underrepresented populations and discusses how these students should be identified.

Ohio. The Ohio definition of giftedness also provides a specific set of criteria that a student must meet to be eligible for gifted services. Ohio identifies students under one of four categories: superior cognitive ability, specific academic ability, creative thinking ability, or visual or performing arts ability.

The board of education of each district shall identify gifted students enrolled in that district in grades kindergarten through twelve as follows:

(a) A child shall be identified as exhibiting “superior cognitive ability” if the child did either of the following within the preceding twenty-four months:

(i) Scored two standard deviations above the mean, minus the standard error of measurement, on an approved individual standardized intelligence test administered by a licensed or certified school psychologist or licensed psychologist; or

(ii) Accomplished any one of the following:

(a) Scored at least two standard deviations above the mean, minus the standard error of measurement, on an approved standardized group intelligence test;

(b) Performed at or above the ninety-fifth percentile on an approved individual or group standardized basic or composite battery of a nationally-normed achievement test or;

(c) Attained an approved score on one or more above grade-level standardized, nationally-normed approved tests.

(b) A child shall be identified as exhibiting “specific academic ability” superior to that of children of similar age in a specific academic ability field, if, within the preceding twenty-four months the child performs at or above the ninety-

fifth percentile at the national level on an approved individual or group standardized achievement test of specific academic ability in that field. A child may be identified as gifted in more than one specific academic ability field.

(c) A child shall be identified as exhibiting "creative thinking ability" superior to children of a similar age, if within the previous twenty-four months, the child scored one standard deviation above the mean, minus the standard error of measurement, on an approved individual or group intelligence test and also did either of the following:

(i) Attained a sufficient score, as established by the department of education, on an approved individual or group test of creative ability; or

(ii) Exhibited sufficient performance, as established by the department of education, on an approved checklist by a trained individual of creative behaviors.

(d) A child shall be identified as exhibiting "visual or performing arts ability" superior to that of children of similar age if the child has done both of the following:

(i) Demonstrated to a trained individual through a display of work, an audition, or other performance or exhibition, superior ability in a visual or performing arts area; and

(ii) Exhibited to a trained individual sufficient performance, as established by the department of education, on an approved checklist of behaviors related to a specific arts area. (Ohio Administrative Code 3301-51-15, 2008)

Ohio's gifted definition identifies four different areas in which a student may be identified as gifted: superior cognitive ability, specific academic ability, creative thinking ability, and visual or performing arts ability. The definition describes multiple pieces of data that can be utilized in identifying a student as gifted. In Ohio, superior cognitive ability is based on scores on group intelligence tests or achievement tests, instead of individual intelligence tests.

Analysis of state definitions. According to the federal definition of giftedness, each state that permits schools to offer gifted services must establish its own definition of giftedness. The Marland definition of giftedness, which identified six potential areas in which an individual could be identified as gifted, can be used as the basis for an analysis of the similarities and differences in the state definitions of giftedness.

General intellectual ability. All three state definitions contain a numerical designation as a measure of general intellectual ability to determine if a student may be identified

as gifted. Pennsylvania targets an IQ score of 130 (22 Pa. Code § 16.21, 2008), while West Virginia targets a score in the 97th percentile and is within the 68% confidence interval (Policy 2419: Regulations for the Education of Exceptional Students, 2014). Ohio allows for the use of a score from an individual or group measure, requiring a score two standard deviations above the mean minus the standard error of measurement (Ohio Administrative Code 3301-51-15, 2008).

Pennsylvania's IQ criterion is the most stringent, requiring a score to meet or exceed a specific number (22 Pa. Code § 16.21, 2008). Both West Virginia's criteria (Policy 2419: Regulations for the Education of Exceptional Students, 2014) and Ohio's criteria (Ohio Administrative Code 3301-51-15, 2008) are more flexible in their acceptance of scores in that allow the consideration of measurement error when evaluating whether the obtained IQ score meets criterion. Additionally, Ohio allows for the use of scores from either a group or individual intelligence test (Ohio Administrative Code 3301-51-15, 2008), while Pennsylvania (22 Pa. Code § 16.21, 2008) and West Virginia (Policy 2419: Regulations for the Education of Exceptional Students, 2014) specify the use of individual intelligence tests.

Newcomer and Bryant (1993) reported four concerns with taking group intelligence tests. First, group tests required

the individual to read the directions, while with individual intelligence tests the directions are read by the test administrator. Second, response sheets on group tests often allowed the person taking the test to select from several potential answers, which may have led to guessing and potentially inflated scores. Third, "group tests tend to use recognition rather than recall" (p. 14). Group intelligence tests are comprised of multiple choice format questions. When answering these questions, an individual is more likely to select an answer that is familiar, instead of solving the problem and comparing the individual's solution to the various choices. Finally, individuals may lose focus on tests without the awareness of the test administrator, which can negatively influence scores. Therefore, some challenges to the validity of group-administered intelligence tests need to be considered when using such data for eligibility decision making.

Specific academic aptitude. Each of the states' definitions includes criteria that focus on academic achievement. Pennsylvania targets scores a year or more above grade level on a nationally-normed achievement test and/or demonstrated academic achievement (22 Pa. Code § 16.21, 2008). West Virginia targets scores in the 90th percentile or higher on an individual standardized achievement test or strong classroom performance in one or more areas of the core curriculum (Policy

2419: Regulations for the Education of Exceptional Students, 2014), and Ohio requires scores at or above the 95th percentile on an individual or group achievement test (Ohio Administrative Code 3301-51-15, 2008).

Both West Virginia (Policy 2419: Regulations for the Education of Exceptional Students, 2014) and Ohio (Ohio Administrative Code 3301-51-15, 2008) provide explicit information as to how an individual demonstrates advanced academic achievement, including the use of standardized achievement tests. Pennsylvania's definition, in comparison, presents a significant problem for evaluators because it seeks to identify above grade level performance utilizing scores from a nationally-normed achievement test (22 Pa. Code § 16.21, 2008). This creates a challenge as the primary score obtained from this type of test is a standard score typically calculated from an age-based comparison.

Nationally-normed achievement tests can provide grade equivalent scores, but these scores are difficult to interpret and do not signify that a student is achieving at a specific grade level (Sattler, 2001). Instead, grade equivalent scores provide a comparison of the results to a specific grade level. For example, a grade equivalent score of 5.9 indicates that the individual's performance was similar to that of a student in the ninth month of the fifth grade. This result does not suggest

that the student should be a fifth grade student. As a result, using grade-based comparisons to be consistent with Pennsylvania's requirement that achievement be measured well above grade-peers presents a psychometric flaw that undermines the validity of the very data used to make eligibility decisions.

Pennsylvania's definition does permit the examination of student work products and criterion-referenced team judgment (22 Pa. Code § 16.21, 2008), but student work samples and team judgment are subjective measures, instead of an objective measure, such as a nationally-normed achievement test. As a result, Pennsylvania's definition of academic achievement is inconsistent with assessment best practices (Sattler, 2001) and relies on subjective measures of achievement.

Creative or productive thinking. Although Pennsylvania, West Virginia, and Ohio all mention creativity in their definitions, it is defined differently by each state. Pennsylvania's definition identifies, but does not define, academic creativity as one of the potential multiple criteria for identification (22 Pa. Code § 16.21, 2008). The West Virginia definition recognizes creative thinking as an area for allowing differentiated instruction but does not include it in

the definition of gifted (Policy 2419: Regulations for the Education of Exceptional Students, 2014).

In Ohio, the statutory definition of giftedness contains criteria for creative thinking ability (Ohio Administrative Code 3301-51-15, 2008), which includes scores on an individual or group creativity test, including the Torrance Test of Creative Thinking Figural and Verbal Forms A & B (Ohio Chart of Approved Gifted, 2012), and demonstration of creative performance, through evaluations, including the Clark's Drawing Ability Test and the Dance Talent Assessment Process (Ohio Chart of Approved Gifted, 2012).

Leadership ability. Leadership is included in Pennsylvania's definition of giftedness but does not define leadership or provide any guidance on how to evaluate students for this trait (22 Pa. Code § 16.21, 2008). West Virginia and Ohio omit such abilities from their identification criteria (Policy 2419: Regulations for the Education of Exceptional Students, 2014) (Ohio Administrative Code 3301-51-15, 2008).

Visual and performing arts. Pennsylvania's definition contains two sections under its multiple criteria that may indicate gifted ability that could refer to the visual and performing arts, criteria three and four (22 Pa. Code § 16.21, 2008). However, neither criterion specifically identifies the visual and performing arts. West Virginia contains no criteria

in its definition (Policy 2419: Regulations for the Education of Exceptional Students, 2014). In contrast, the Ohio definition contains specific information to identify giftedness in the visual and performing arts through demonstrated skills and scores on a state approved checklist of relevant behaviors (Ohio Administrative Code 3301-51-15, 2008; Ohio Chart of Approved Gifted, 2012).

Psychomotor ability. No state includes specific criteria that to identify any type of physical activity or skill that would enable a student to be eligible for gifted services (22 Pa. Code § 16.21, 2008; Ohio Administrative Code 3301-51-15, 2008; Policy 2419: Regulations for the Education of Exceptional Students, 2014).

Other factors. There are some distinguishing features to each state's definition of giftedness. For example, the gifted identification process for West Virginia is relegated to grades one through eight (Policy 2419: Regulations for the Education of Exceptional Students, 2014), while the process in the other two states encompasses all grade levels. West Virginia's definition also allows for the use of composite scores instead of the general intellectual ability score and includes criteria for the

evaluation of individuals from historically underrepresented gifted populations.

Pennsylvania is the only state to use the term “mentally gifted” which it defines as an IQ score of 130 or higher or if multiple criteria are met (22 Pa. Code § 16.21, 2008). Additionally, Pennsylvania’s criteria examine rates of acquisition and retention, foreign language aptitude, and technology (22 Pa. Code § 16.21, 2008). Pennsylvania also requires that the evaluation consider intervening factors that may mask gifted abilities such as learning disabilities racial or sexual bias, and socio-cultural deprivation (22 Pa. Code § 16.21, 2008). Definitions in Ohio and West Virginia do not consider these factors.

State definition summary. Each of the states’ definitions of giftedness reflects the majority of the areas identified in the Marland Definition but differs in its individual criteria and specificity of skills. Each definition also contains unique elements. The sampling of these three definitions demonstrates the lack of consensus within the domain of public education as to how giftedness should be defined and highlights the difficulties that school districts and, therefore, school psychologists, face in identifying members of the gifted population. For the current study, these three states were selected as a convenience sample. While no two states have the

exact same definition of giftedness, the preceding section demonstrated that the three state gifted definitions share commonalities, including higher scores on intelligence tests and the inclusion of multiple criteria to qualify as gifted.

School Psychologists and Gifted Identification

The debate on the definition of giftedness has lasted for many years, which resulted in spirited discussions between researchers and educators. School psychologists rarely were included in these discussions. These professionals received training in the fields of psychology, which included instruction in psychometrics and test administration, and educational psychology. Further, many states, including Pennsylvania and West Virginia, identified school psychologists as the individuals to administer and interpret intelligence tests. Ohio does not require the participation of a school psychologist in a gifted eligibility determination process, but evaluations by school psychologists may be considered. Oftentimes, the school psychologist will make the recommendation to school district personnel as to whether an individual should be identified as gifted. Despite the recommended, if not required, inclusion of evaluations conducted by school psychologists, these professionals rarely have served as participants in gifted identification research.

A study by Alvino et al. (1981) examined assessment practices of school psychologists based on the federal definition of giftedness. They found a wide variety of assessment instruments were used in gifted evaluations, although a number of instruments were used to assess areas or skills outside of the identified purpose of the instrument. An example would be the use of scores an achievement test to address creativity skills (Alvino et al., 1981).

Forty-nine instruments were identified in the study as being used by school psychologists to provide evidence in one or more of five federal categories of giftedness: general intellectual, specific academic, creativity, arts, and leadership. Many of the instruments were used to obtain information in multiple categories. Some of the uses, such as interviews and parent and teacher nominations, may have been appropriate uses (Alvino et al., 1981). Other uses may not have been appropriate, such as using scores from the Wechsler Intelligence Test for Children (WISC) to obtain information on academic skills, creativity, and artistic skills. Intelligence tests like the WISC were designed to measure intellectual abilities, not creativity or artistic talent.

The authors noted that many instruments were utilized inappropriately and that the results from the study suggested confusion over the federal definition of giftedness and how

school psychologists should assess students based on the federal definition (Alvino et al., 1981). This study was conducted approximately 10 years after the Marland definition was published; however, the confusion over how to define and identify gifted students clearly continues to exist.

Robertson et al. (2011) surveyed school psychologists to determine their knowledge of giftedness, as well as their comfort in conducting gifted evaluations. The authors recruited participants through the National Association of School Psychologists (NASP), and demographics of the participants matched the general NASP membership, obtaining a sample of 300 participants. Participants anonymously completed a 37-question, online survey, which was comprised of three sections: general information (participant demographics and information about his or her place of employment), graduate training and professional development (questions focused on knowledge of gifted concepts and authorities), and current practice (gifted identification practices and other work experiences related to gifted children).

The authors found a lack of training in gifted evaluations and a lack of general knowledge about giftedness among school psychologists (Robertson et al., 2011). Results from the study indicated that over half of school psychologists rarely or never conduct gifted evaluations and school psychologists with

doctoral degrees and those with many years of practical experience in the field reported more expertise in conducting gifted evaluations. Finally, half of the participants reported that their school district used an IQ score as the sole criterion for qualifying for gifted services (Robertson et al., 2011).

Giftedness Summary

The term giftedness initially was developed to identify those individuals who scored remarkably higher on tests of intelligence. Over time, the term giftedness evolved into a variety of definitions, starting with the Marland Report's definition of giftedness. A number of new definitions of giftedness have been proposed, with each definition sharing a common theme: strong intellectual functioning and additional skills; however, each definition took a unique perspective on these two criteria. As a result, there is no consensus from the fields of gifted research and education regarding a working definition of giftedness.

With the exception of school psychologists, many professionals associated with gifted individuals, including teachers, professors, and researchers, have weighed in with their definitions of giftedness. Robertson et al. (2011) discussed the lack of gifted research involving school psychologists, but their study focused on gifted identification

practices and not definitions or conceptualizations of giftedness. The purpose of the current study was to add to the field of gifted research by examining the perceptions of school psychologists regarding who is gifted. Three short vignettes served as the mechanism by which to understand how school psychologists conceptualization giftedness. The vignettes focused on three different potentially gifted individuals and mirrored the various types of giftedness that have been theorized over the years: high intelligence, above average intelligence and strong academic skills, and strong artistic abilities.

Chapter Summary

The histories of the definition and measurement of intelligence and definitions of giftedness have followed similar trajectories. The original definitions of both intelligence and giftedness were synonymous with scores on early intelligence tests. Over time, contemporary theories of intelligence have conceptualized the construct as a multi-dimensional. Concurrent with this evolution of theories of intelligence was a diverse set of sophisticated instruments purporting to measure the multiple domains of intelligence.

While the definition and measurement of intelligence has evolved over the last century, so too has the definition of giftedness. Early conceptualizations of giftedness were wedded

to the methods by which intelligence was measured at the time: a heavy emphasis on a single IQ score. As theories of intelligence progressed and the resultant tests that measured the construct became more sophisticated, so too did definitions of giftedness evolve to include consideration of exceptional skills and talents not typically measured by intelligence tests.

Presently, there is no unifying definition of giftedness or intelligence. Definitions of giftedness have been developed and critiqued by educators and researchers, but little input has been sought from school psychologists, who often were the individuals who conducted evaluations to determine if a student qualifies for gifted services. The purpose of the current study was to examine school psychologists' perceptions of giftedness which may or may not be consistent with contemporary theories of giftedness and measurement of intelligence.

CHAPTER III

METHOD

As noted in Chapters I and II, there is a large body of literature about giftedness. This body of literature detailed the definitions of giftedness from a variety individuals, including parents, educators, and researchers. Little attention had been paid to the views of school psychologists concerning giftedness (Robertson et al., 2011). Robertson et al. (2011) focused on school psychologists and their experiences evaluating students for gifted programs, but did not examine school psychologists' conceptualizations or operationalizations of giftedness.

The purpose of this study was to examine school psychologists' perceptions of the characteristics of gifted students through their responses to demographic variables and three vignettes. First, participants answered multiple demographic questions that were analyzed to evaluate their influence on participants' responses to the vignettes. The participants subsequently read three vignettes which each contained specific characteristics of a fictitious student and required the participant to determine whether the student should be identified as being gifted. As previously noted, an evaluation team would be required to determine whether or not an individual would actually receive gifted services. Due to a

lack of research into profiles of students traditionally evaluated for gifted services, the vignettes were based on both the experiences of the researcher, both from conducting evaluations and from discussions with other school psychologists regarding gifted evaluations as well as current definitions of giftedness. This chapter provides a description of the sample, the design, the procedures, and the data analyses used in this study.

Design

In this study, all participants answered 14 questions pertaining to their individual demographic characteristics and experiences conducting gifted evaluations (see Appendix C). Participants next read a series of three vignettes that described data from students referred for a multidisciplinary gifted evaluation (see Appendix C). The vignettes were administered in a random order to minimize ordering effects on participants' responses. For each of the three vignettes, participants were required to determine whether the individual should be identified as gifted. All survey questions and vignettes were reviewed by a panel of experts prior to their inclusion in the survey.

After completion of the survey, participants had the opportunity to register an email address for a chance to win one of four $25 Visa gift cards (see Appendix D). The procedure for

registering an email address was anonymous and no names were solicited from participants. The winning individuals were required to provide a mailing address for the gift card (see Appendix E).

Population

The population of interest for this study was school psychologists who currently are practicing in Pennsylvania, West Virginia, or Ohio. Recruitment of participants was accomplished through media outlets sponsored by state school psychologist associations in Pennsylvania, Ohio, and West Virginia. These states were chosen for their proximity to each other, as well as the similarities of their definitions of giftedness, as described in Chapter II. This sample was convenience sample. Due to the recruitment through state associations, potential participants were current members of their respective state associations for school psychologists.

Sample

The sample for this study was school psychologists who currently were working in the states of Pennsylvania, West Virginia, or Ohio. Potential participants received an email from their state school psychology association that described the purpose of the study and provided a link to the online survey that was accessed by interested potential participants

(see Appendix A). The sample size for this study was 75 participants.

Measurement

Study Variables

This study was comprised of three types of variables: dependent variables, predictor variables, and mediator variables. The dependent variables were responses to the vignettes that addressed three different scenarios of potentially gifted individuals. The predictor variables were variables that may, based either on research or the opinion of the researcher, affect responses on the vignettes. The mediator variables were variables that potentially could influence the relationship between predictor variables and responses on the vignettes. All study variables, along with their reliability and validity, are reported in Table 2.

Dependent variables. This study contained multiple dependent variables, which were the responses to the three vignettes that described an individual who may or may not be gifted. An individual who represented the researcher's conceptualization of an individual who should be identified by the majority of participants as being gifted, based on information from multiple assessments was described in the first vignette. The second vignette outlined the qualifications of an individual with an assessment profile similar to, but not as

strong as, the individual in the first vignette. Finally, the third vignette depicted an individual with very strong artistic skills.

Individualized scores from the Wechsler Intelligence Scales for Children, Fourth Edition (WISC IV); Woodcock Johnson Tests of Achievement, Third Edition (WJ-III Ach); and the Gifted Rating Scales, as well as information about classroom performance, classroom behaviors, and, for the Talented Vignette, information on artistic skills were provided in each of the vignettes. Specifically, scores for the Full Scale IQ score and the four Index scores in the vignettes fell within the 95% confidence interval for a score of 130 for each respective scale. Additionally, the mean score for the Full Scale IQ scores, and Index scores were 100. Due to measurement errors associated with scores from intelligence tests, as well as all educational tests, an individual score is not assumed to be an individual's true score. Confidence intervals represent a range that "likely includes the examinee's true score" (Sattler, 2001, pg. 109) with one of the common confidence intervals being the 95% confidence interval. This interval presents the statistical argument that, 95 out of 100 times, the individual's true score would fall within the stated range of scores (Sattler, 2001).

The Typical Evaluation vignette described an individual who has strong academics, good behavior, and a Full Scale IQ score

at or above 130. The Multiple Criteria vignette described an individual who is similar to the individual in the Typical Evaluation vignette, demonstrating very strong cognitive and academic scores, but whose Full Scale and Index scores fell below the 130 threshold. The scores for the Multiple Criteria vignette purposely fell within the 95% confidence interval of the standard scores at or above 130 so that an argument could be made that, based on the overall academic profile of the individual in the vignette and scores that fell within the confidence interval, the individual in the vignette could be identified as gifted. Finally, the Talented vignette described an individual with very strong artistic skills. The individual's scores on the WISC IV and WJ Ach were lower than that of the individuals in the Typical and Multiple Criteria vignettes. The individual in the Talented Vignette did rate highly for Creativity and Artistic Talent on the Gifted Rating Scales.

The vignettes were accessed electronically through Qualtrics. Each subject reviewed and responded to the corresponding question of gifted eligibility for each of the three vignettes. It also must be noted that the confidence intervals for all standard scores presented in the vignettes are unbalanced. The reliability of the vignettes was described as being good. The vignettes were developed from both a review of

gifted literature and the professional experiences of the researcher. The content validity of the vignettes, which were developed by the researcher and reviewed by a team of doctoral-level school psychologists, also was described as being good.

Predictor variables. Predictor variables were defined as variables that may have an impact, or moderate, responses on the vignettes. Multiple predictor variables were examined in this study, as shown in Table 3. They were (a) Age of the Participant, (b) Sex of the Participant, (c) Race of the Participant, (d) Highest Level of Training, (e) Number of Years Practicing as a School Psychologist, (f) School District Enrollment, (g) School District Race, (h) Involvement in the Gifted Identification Process, (i) LEA Gifted Identification Policy, (j) Comfort Level in Conducting Gifted Evaluations, (k) Number of Gifted Evaluations per Year, and (l) Number of Gifted Students Identified per Year. The reliability and validity of all predictor variables, with the exception of School District Race and School District Enrollment, are reported to be excellent. This suggests that there is a strong likelihood that the variables will measure the same characteristics for all participants (reliability) and that the survey questions measure the characteristic of the participant, or their school district, that they are purporting to measure (validity).

The validity for School District Enrollment and School District Race were described as being good instead of excellent. It is the researcher's opinion that, while school psychologists may know the general makeup of their school district, they may not know the exact numbers and percentages. It is possible that participants will give approximations of the true values for their school district instead of exact numbers.

Predictor variables were grouped into three clusters by the researcher for descriptive purposes: Participant Demographics, LEA Demographics, and Involvement with Gifted Evaluations. Participant Demographic variables included Age of Participant, Sex of Participant, Race of Participant, Highest Level of Training, and Number of Years Practicing as a School Psychologist. LEA Demographic variables included School District Enrollment and School District Race. Involvement with Gifted Evaluations variables included Involvement in Gifted Identification Process, LEA Gifted Identification Policy, Comfort Level in Conducting Gifted Evaluations, Number of Gifted Evaluations per Year, and Number of Gifted Students Identified per Year.

Table 2

Variables, Source, Validity, and Reliability

Latent Variable	Observed Variable	Source	Validity	Reliability
Gifted Identification	Typical Vignette Multiple Criteria Vignette Talented Vignette	Participant Report	Good	Good
Order of Vignettes	Order of vignettes	Survey	Excellent	Excellent
Age of Participant	Years	Participant Report	Excellent	Excellent
Sex of Participant	M/F	Participant Report	Excellent	Excellent
Race of Participant	Categories	Participant Report	Excellent	Excellent
Highest Level of Training	Specialist/ Doctorate	Participant Report	Excellent	Excellent
Number of Years Practicing as a School Psychologist	Years	Participant Report	Excellent	Excellent
School District Enrollment	Number of Students	Participant Report	Excellent	Good
School District Race	Categories	Participant Report	Excellent	Good
Involvement in Gifted Identification Process	Y/N	Participant Report	Excellent	Excellent
LEA Gifted Identification Policy	Categories	Participant Report	Excellent	Excellent
Agreement with LEA Gifted Identification Policy	Y/N	Participant Report	Good	Good
Comfort Level in Conducting Gifted Evaluations	Categories	Participant Report	Excellent	Excellent
Number of Gifted Students Identified per Year	Number	Participant Report	Excellent	Excellent
State of Employment	PA/OH/WV	Participant Report	Excellent	Excellent
Number of Gifted Evaluations per Year	Number	Participant Report	Excellent	Excellent

Note. LEA = Local Education Agency. PA = Pennsylvania; WV = West Virginia; OH = Ohio.

Rationale for participant demographics. The participant demographic variables Age of Participant, Sex of Participant, and Race of Participant were demographic variables typically found in psychological research. Highest Level of Training and Number of Years Practicing as a School Psychologist were selected as variables to measure general knowledge of school psychology (Highest Level of Training) and experience in the field of school psychology (Number of Years Practicing as a School Psychologist). One may argue that, as school psychologists pursue advanced training in school psychology, they may have received additional instruction or coursework on giftedness. Likewise, as school psychologists' years of practice increases, they may have had exposure to new and unique situations related to giftedness, both in terms of their general practice and eligibility evaluations.

Rationale for LEA demographics. The school district predictor variables were State of Employment, School District Enrollment, and School District Race. School District Enrollment was selected due to the potential for larger school districts to have a greater number of gifted evaluations due to the larger pool of students that could be evaluated. School District Race was chosen based on research described in Chapter II making the case that certain ethnicities are underrepresented in gifted services. It was possible that school districts with

high populations of specific minorities will have a fewer number of gifted evaluations.

Rationale for involvement in gifted evaluations. Involvement in Gifted Evaluations variables were intended to reflect the work experiences of the school psychologist in conducting gifted evaluations. Individuals who conduct more gifted evaluations than their peers may have a more concrete conceptualization of giftedness, regardless of the specifics of the conceptualization (Involvement in the Gifted Identification Process). Likewise, school psychologists who conduct a higher number of gifted evaluations or identify a higher amount of students as gifted may have more concrete conceptualizations of giftedness.

Comfort Level in Conducting Gifted Evaluations provided a means to determine if familiarity with conducting gifted evaluations may influence responses on the vignettes, regardless of actual work experiences. Individuals who have a higher comfort level in conducting gifted evaluations may have a more concrete conceptualization of giftedness. LEA Gifted Identification Policy sought to identify the common identification policy used by school psychologists to qualify or disqualify a student for gifted services. As previously noted, there is a wide range of practices in the identification of gifted students. This variable sought to determine the formal

identification policy of LEAs and whether or not the specific policy affected the responses of participants on the vignettes.

Mediator variables. Mediator variables were defined as variables that may influence the relationship between predictor variables and responses on the vignettes. There were three mediator variables in this study: Agreement with LEA Gifted Identification Policy, State of Employment, and Order of the vignettes. Agreement with LEA Gifted Identification Policy indicated whether the participant agreed with the LEA Gifted Identification Policy. It is possible that, in some instances, a school psychologist does not agree with the LEA's policy but is obligated to follow the policy. If this is the case, a school psychologist's agreement or disagreement with the LEA policy may influence the relationship between LEA Gifted Identification Policy and responses to the vignettes, although not how they conduct gifted evaluations at their place of employment.

State of Employment was chosen to control for the potential influence of the unique state definitions of giftedness. The gifted definitions of the three states for this study, Pennsylvania, Ohio, and West Virginia, were discussed in detail in the previous chapter. While there were similarities in the three definitions, it was possible that the unique components of

a specific state's definition may influence responses on the vignettes.

Order of Vignettes was chosen to control for potential influences that may be caused by the order in which respondents completed each vignette. For example, participants who read the Typical vignette first may have a narrower view of giftedness (IQ of 130), which could make it less likely that they would identify the individual in the Multiple Criteria or Talented vignettes as being gifted. Conversely, participants who read the Multiple Criteria or Talented vignette first may be more likely to identify the individual in the other vignettes as gifted. This was the only predictor variable that did not require a response from participants. Qualtrics, the program used to develop and administer the survey, permits researchers to have specific questions presented in a random order. The researcher elected for the vignettes to be presented in a random order to participants.

The reliability and validity of Agreement with LEA Gifted Identification Policy only was reported as good. The researcher believed that this predictor variable requires participants to make a judgment on a policy. Participants may not have professionally considered the content of their LEA's policy prior to participation in this study. Further, while participants may have contemplated the content of the policy,

they may not have standing to suggest changes to the policy, which could lead to a begrudging acceptance of the policy. As a result, the reliability and validity of this mediator question could not be described as excellent. Reliability and Validity of the two other mediator variables were described as excellent.

Table 3

Predictor and Mediator Variables

Cluster	Variables
Participant Demographics	Age of Participant Sex of Participant Race of Participant Highest Level of Training Number of Years Practicing as a School Psychologist
LEA Demographic Variables	School District Enrollment School District Race
Involvement with Gifted Evaluations	Involvement in Gifted Identification Process LEA Gifted Identification Policy Comfort Level in Conducting Gifted Evaluations Number of Gifted Evaluations per Year Number of Gifted Students Identified per Year
Order of Vignettes	
Mediator Variables	Agreement with LEA Gifted Identification Policy State of Employment Order of Vignettes

Note. LEA = Local Education Agency.

Threats to Internal Validity

One purpose of research is to determine the interaction between the predictor, mediator, and the dependent variables. There are several ways that outside variables also can affect the interaction between the independent and dependent variables

(Parker, 1993). For the current study, two threats to internal validity were identified: confounding and selection bias.

Confounding

The confounding threat occurs when an anticipated and uncontrolled variable influences participants' responses. This was a major threat to validity due to two concerns. The first concern was related to the participants' training programs. Training programs have different professors who have their own professional and personal views of various issues related to the field of school psychology. These views likely had an effect on their instruction delivered to graduate students, who ultimately are the participants in this study. The second concern was the very neutral composition of the vignettes. The impersonality of the vignettes may have influenced how school psychologists answered, as opposed to vignettes that are more realistic and reflective of the various personalities involved in evaluations. While there is no way to control for the previous training of the participants, a panel of experts did review the vignettes prior to their addition to survey. This panel reviewed the details of each individual vignette, which may decrease the likelihood that the content of the vignettes would have less of an impact on responses.

Selection Bias

While this study did not seek individuals with a specific bias towards or against gifted evaluations, individuals with a specific bias may have been more likely to participate in gifted evaluations. It is possible that individuals with more exposure to gifted students and experience conducting gifted evaluations were more likely to respond to the survey than individuals who had less exposure to gifted students and experience conducting gifted evaluations. Additionally, some individuals may have been less likely to complete surveys, possibly due to requests to complete multiple surveys or a lack of time to complete surveys. The inclusion of a chance to win gift cards was included to improve the chances of gaining participants who were not already motivated to complete the survey.

Threats to External Validity

A second goal of research is to apply the specific results of a study to a general population; however, there may be difficulties in the construction of the study and the characteristics of the sample of the study that may affect the generalizability of the results of a study (Parker, 1993). For the current study, two threats to external validity were identified, the Hawthorne Effect and limited scope.

Hawthorne Effect

The first threat to external validity was the Hawthorne Effect. This threat may occur when participants perform a task in the way that they believe the researcher would want them to perform the task. This study overtly sought participants' perceptions regarding qualifications for a gifted program. Therefore, participants may have selected the answer they felt the researcher wanted them to select. To counter this threat, very clear information was presented at the beginning of the survey that instructs participants to give answers that reflect their professional judgment.

Limited Scope

The second threat to the generalizability of this study is the limited scope of the sample. At the time that the current study was conducted, 39 states provided gifted services to students (NAGC, 2013). This study recruited a convenience sample of school psychologists from three states. Furthermore, participants who participated in the study may not be a representative sample of school psychologists from their states. Therefore, results may have been representative of the sample but not the population of interest for the study. As previously noted, the inclusion of a chance to win gift cards may affect positively the sample for the study. Additional research would

have to be conducted to replicate and expand the scope of this study.

Research Questions and Hypotheses

This study focused on seven research questions regarding how school psychologists conceptualize giftedness. Each hypothesis was developed based on either theory and empirical data or personal anecdote. Each research question and hypothesis is stated below and are summarized in Table 4.

Research Question 1

How many participants will identify the individual in each vignette as gifted? The typical student identified for gifted is a student with an IQ of 130 (Gottfredson, 1997). To date, no research has been conducted on school psychologists' conceptualizations of what constitutes giftedness. Consequently, there is no research to predict specific trends for the responses to the individual vignettes. It was hypothesized that at least 75.0% of participants will identify the individual in the Typical vignette as gifted. For the other two scenarios, it was hypothesized that at least 25.0% of participants will identify the individual in the vignettes as gifted.

Research Question 2

Will the predictor variable Order of the Vignettes influence response rates on the vignettes? It was hypothesized

that presentation of the Typical vignette first will lead to a lower identification rate of the individual in the Multiple Criteria and Talented vignettes as it is the researcher's opinion that presentation of a profile of a stereotypical gifted student may make participants less likely to identify people who do not have a similar profile (as described in the other two vignettes). Consequently, it was hypothesized that presentation of the Talented vignette will not have an impact on response rates to the Typical and Multiple Criteria vignette. The inclusion of a vignette that focuses on artistic skills instead of IQ should not affect how participants rate the other two vignettes, in which IQ scores are prominently featured. As a result, the presentation of the Multiple Criteria vignette first should lead to an increased identification rate on the Talented vignette. Likewise, the presentation of a vignette in which the individual's IQ is less than 130 may make participants give less weight to IQ scores and more weight to the overall profile of the individual in the vignettes when determining whether or not they are gifted.

Research Question 3

Will the mediator variable Agreement with Local Education Agency (LEA) Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses on the three vignettes? It was hypothesized that

participants who agree with their LEA's gifted identification will response to the vignettes in a manner consistent with the LEA's Gifted Identification Policy. For example, if the LEA Gifted Identification Policy is an IQ score of 130 and the participant agrees with the policy, that participant will not identify the individual in the Multiple Criteria and Talented Vignettes as gifted. It would be logically consistent for a person who agrees with their LEA's Gifted Identification Policy to respond to the questions in a manner that is consistent with the policy.

Research Question 4

Will the predictor variable State of Employment influence responses on the three vignettes? It was hypothesized that State of Employment will affect responses. Specifically, individuals from Pennsylvania and West Virginia should have a lower identification rate on the Talented vignette than individuals from Ohio. Ohio's definition of giftedness explicitly addresses individuals who may be artistically gifted, while Pennsylvania's definition merely alludes to multiple ways in which a person may demonstrate giftedness while West Virginia's definition does not address artistic abilities. The mediator variable State of Employment should not influence responses on the Typical and Multiple Criteria variables as all three state definitions address individuals with IQ scores of

130 (or scores close to 130). Since the Typical Multiple Criteria vignettes include IQ scores that approach 130, the researcher believes that there will be little variability in participant responses to these two vignettes, regardless of the state in which they are employed.

Research Question 5

What are the responses by participants on the predictor variables? Curtis, Castillo, and Gelley (2010) surveyed the demographics of members of the National Association of School Psychologists. It was hypothesized that responses for several of the variables will mirror the results of Curtis et al. (2010). It is hypothesized that 78.0% of participants will be female (Sex of Participant), 90.0% of participants will identify their race as Caucasian (Race of Participant) and 3.0% of participants will identify their race as African American (Race of Participant). It was hypothesized that 16.0% of participants will have obtained their doctorate (Highest Level of Training).

Results from the Robertson et al. (2011) study formed the theoretical basis for the hypotheses regarding the variables Involvement in the Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. Specifically, it was hypothesized 60.0% of participants will utilize an IQ cutoff score of 130 and 75.0% of participants will rate their comfort

level in conducting gifted evaluations as uncomfortable or very uncomfortable.

While there is no formal research to form hypotheses for the variables Number of Gifted Evaluations per Year and Number of Gifted Students Identified per Year, it is the personal experience of the researcher, corroborated with anecdotal records from other school psychologists, that few gifted evaluations are conducted per year and a only small percentage of students tested will qualify as gifted. The majority of participants (75.0%) will conduct 10 or fewer gifted evaluations per year and the majority of participants (75.0%) will identify 5 or fewer gifted students per year.

The remainder of the predictor variables (Age of Participants, Number of Years Practicing as a School Psychologist, School District Enrollment, School District Race, and Involvement in Gifted Identification Process) were included to provide descriptive information on the sample and no formal hypotheses for these variables were suggested.

Research Question 6

What will be the relationships between the predictor variables and responses on the vignettes? The Typical vignette was designed to reflect an individual who fits the traditional conceptualization of a gifted student, and it was the expectation of the researcher that the majority of participants

would identify this individual as gifted. As a result, there should be no differences among the predictor variables and responses to the Typical Vignette. While there was no available research to support hypotheses, it was the personal opinion of the researcher that there would be differences on responses to vignettes for the majority of the predictor vignettes.

It was hypothesized that younger participants would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Participants with a doctorate should be more likely to identify the individual in the vignettes as gifted as these participants have received a more extensive formal education, increasing the potential for instruction on the topic of giftedness. Modern theories of giftedness, as previously noted, focus less on a single IQ score and more on the overall profile of the individual. Larger school districts have a greater pool from which to draw students for gifted evaluations, leading to potentially more students being identified as gifted, therefore, participants employed by larger school districts would be less likely to identify the individual in the vignettes as gifted. It was the opinion of the researcher, based on conversations with peers, that smaller school districts have fewer students in their gifted program. School psychologists in these districts may feel pressured by their district administration to ensure that students are being

identified and placed in order to ensure that the district is able to continue to offer gifted services. As a result, these school psychologists may be more likely to focus less on the students' IQ scores and more on their overall profile.

Based on the research that suggests additional criteria beyond only an IQ test should be utilized when assessing students of races other than Caucasian, it was hypothesized that school districts with a more diverse racial makeup were more likely to identify the individual in both vignettes as gifted.

For the variable Involvement in the Gifted Identification Policy, it is possible that individuals who are less involved in the gifted identification process may have fewer experiences with gifted evaluations of students who demonstrate strong overall profiles but do not qualify for gifted services. As a result, it was hypothesized that participants who are not involved in the gifted identification process are less likely to identify the individual in the vignettes as gifted.

The variable LEA Gifted Identification Policy included four options: IQ, Multiple Criteria, Rubric, and Other. Participants were instructed to select all options that applied to their school district. Each option for LEA Gifted Identification Policy was separated into individual variables based on the potential responses by participants to describe their district's gifted identification policy, which could be either a single

selection or multiple selections. It was the researcher's opinion that individuals who selected IQ as their LEA's gifted identification policy would be less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted, since the IQ scores individuals in these vignettes were not 130 or higher. Individuals who selected the other options for their LEA's gifted identification policy(Multiple Criteria, Rubric, Other) would be more likely to identify the individual in each vignette as gifted, as these options suggest that qualifying for services is based on an overall profile, not just an IQ score.

As the typical gifted evaluation procedure is based on an IQ score, it was hypothesized that participants who conduct higher numbers of gifted evaluations would be more likely to use this criteria and, therefore, would be less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Additionally, it was hypothesized that participants who identify a higher number of gifted students per year were more likely not to identify the individual in the Multiple Criteria and Talented vignettes as gifted. As the researcher previously noted, some school psychologists may feel pressured to ensure that students are being identified as gifted so that gifted services may continue to be offered. It is possible that school psychologists who identify a higher number of gifted

students may feel less pressure to identify additional gifted students.

Research Question 7

What are the strengths of the relationships between the predictor variables in the study? Strength of the relationship (Cohen & Cohen, 1983) was characterized as being either small (.10), medium (.30), or large (.50). While no research was present to develop hypotheses, it was the personal opinion of the researcher that several of the variables would be correlated. It was hypothesized that the following variables would have small effect sizes: Age of Participant and Highest Level of Training, Age of Participant and Number of Years Practicing as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. Older school psychologists have a greater amount of time in which they could enroll in a doctoral program (Age of Participant and Highest Level of Training). Likewise, older participants have a greater number of years in which they may have practiced school psychology (Age of Participant and Number of Years Practicing as a School Psychologist). It is the researcher's opinion that individuals who are involved in identifying gifted students would be more comfortable in conducting gifted evaluations than those individuals who are not involved in conducting gifted evaluations (Involvement in Gifted

Identification Process and Comfort Level in Conducting Gifted Evaluations).

It was hypothesized that the following variables would have medium effect sizes: Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year, and LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations. It was the researcher's opinion that the more times a person performs a task, the more comfortable that person will become with the task. If this is true, then it is logical to suggest that the participants' comfort levels in conducting gifted evaluations would correlate to a higher amount of gifted evaluations or number of students being identified as gifted. It was hypothesized that there were be no large effect sizes between the predictor variables. Due to the lack of research in the area of school psychologists and giftedness, the researcher did not believe that the relationship between any of the predictor variables would be categorized as having a large effect size.

Table 4

Research Questions, Hypotheses, and Variables

Research Questions	Hypotheses	Variables
1. How many participants will identify the individual in each vignette as gifted?	At least 75% of participants will identify the individual in the Typical vignette as gifted. At least 25% of participants will identify the individual in the Multiple Criteria and Talented vignettes as gifted.	Responses to the three vignettes
2. Will the mediator variable Order of the Vignettes influence response rates on the vignettes?	The presentation of the Multiple Criteria vignette first will lead to an increased identification rate on the Talented vignette.	Order of Vignettes and responses to the three vignettes
3. Will the mediator variable Agreement with LEA Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses to the three vignettes?	Participants who agree with their LEA's Gifted Identification Policy will answer the vignettes in a manner consistent with their LEA's policy.	LEA Gifted Identification Policy, Agreement with LEA Gifted Identification Policy, and responses to the three vignettes
4. Will the mediator variable State of Employment influence the relationship between LEA Gifted Identification Policy and responses to the vignettes?	Participants from Pennsylvania and West Virginia will have a lower identification rate on the Talented vignette than individuals from Ohio. State of Employment will not affect responses on the Typical and Multiple Criteria vignettes.	State of Employment, LEA Gifted Identification Policy, and responses to the three vignettes
5. What are the anticipated responses by the participants on the predictor variables?	Responses for Sex of Participant, Race of Participant, and Highest Level of Training will mirror results from Curtis et al. (2010). Responses for Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations will mirror results of Robertson et al. (2011). Hypotheses for Number of Gifted Evaluations per Year and Number of Gifted Students Identified per Year are based on the researcher's own experiences and conversations with peers.	All predictor variables and responses to the three vignettes

Note. LEA = Local Education Agency.

(continued)

Table 4 *Research Questions, Hypotheses, and Variables* (continued)

Research Questions	Hypotheses	Variables
6. What will be the relationships between the predictor variables and responses on the vignettes?	There would be no differences between predictor variables and responses on the Typical Vignette. Responses to Age of Participant, School District Race, School District Enrollment, Involvement in Gifted Identification Process, LEA Gifted Identification Policy, Number of Gifted Evaluations per Year, and Number of Gifted Students Identified per Year will predict responses on the Multiple Criteria and Talented vignettes.	All predictor variables and responses to the three vignettes
7. What will be the strength of the relationships between the predictor variables?	Age of Participant and Highest Level of Training, Age of Participant and Number of Years Practicing as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations would have small effect sizes. Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year, and LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations would have medium effect sizes.	All predictor variables

Note. LEA = Local Education Agency.

Procedure

Emails were sent out from the state school psychologist associations in Pennsylvania, West Virginia, and Ohio to their members describing the nature of study and requesting the participation of the recipient. Participants were directed to follow a hyperlink to complete the survey, which was hosted on Qualtrics, an online survey tool. A copy of the text for the email communication is in Appendix B. Participants utilized the emailed link to access the Qualtrics survey. A copy of the text of the survey is in Appendix C.

The survey started with an explanation of the study and indicated that the participants could quit the survey at any time by closing the browser window. The survey noted that participation was voluntary and anonymous. Participants were first asked to answer a series of demographic questions. It was then requested that participants read three vignettes. At the conclusion of each vignette was a statement directing the participant to determine whether the individual presented in the vignette should qualify for gifted services. After the participant answered the questions to the three vignettes, the survey was complete.

At the completion of the first survey, participants were given the option to follow a link to a second Qualtrics survey, in which they could enter an email address for a chance to win

one of four $50 Visa gift cards. Appendix D contains the text of the second Qualtrics survey. All email addresses were assigned a random number and a random number generator was utilized to select four numbers. The email addresses that corresponded to the randomly selected numbers received an email from the researcher indicating that they had been selected to receive the gift card and a mailing address was requested in order to mail the gift cards. A text of this communication is in Appendix E.

Statistical Analyses

Several statistics were used to evaluate the hypotheses of this study. For the first and fifth research questions, the analysis utilized was a review of the responses by the participants to the questions. For the second, third, and fourth research questions, logistic regression was used to determine the relationship between the variables. Finally, the sixth and seventh research questions utilized correlations to determine the relationship between the variables. When conducting multiple analyses on a dependent variable, the Bonferroni adjustment (*p*/number of analyses) may be calculated so that the likelihood of a Type 1 error (false positive) is decreased (Pallant, 2010). Bonferroni adjustments were utilized for Research Questions 2, 3, and 4. Table 5 contains the research questions and their corresponding statistical analyses.

Table 5

Research Questions and Data Analyses

Research Questions	Data Analysis
1. How many participants will identify the individual each vignette as gifted?	Descriptive Statistics
2. Will the mediator variable Order of the Vignettes influence response rates on the vignettes?	Logistic Regression
3. Will the mediator variable Agreement with LEA Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses to the three vignettes?	Logistic Regression
4. Will the mediator variable State of Employment influence the relationship between LEA Gifted Identification Policy and responses to the vignettes?	Logistic Regression
5. What are the anticipated responses by the participants on the predictor variables?	Descriptive Statistics
6. What will be the relationship between the predictor variables and responses on the vignettes?	Logistic Regression
7. What will be the strength of the relationships between the predictor variables?	Pearson Product-Moment Correlations

Note. LEA = Local Education Agency.

Assumptions

In order to conduct a statistical analysis, data are required to meet specific assumptions. Violation of these assumptions may lead to inappropriate data analyses or invalid interpretations from those analyses. Assumptions for both logistic regression and the Pearson Product-Moment Correlation were reported below.

According to Burns and Burns (2008), data must meet three assumptions prior to conducting a logistic regression analysis:

1. The dependent variable is a dichotomy.
2. The categories must be mutually exclusive and exhaustive.
3. A larger sample is required for logistic regression than is required for a linear regression analysis. Burns and Burns (2008) recommended a minimum of 50 cases per predictor.

According to Wright (1995), a fourth assumption, that the model contains all relevant predictors and no irrelevant predictors, also must be met when conducting logistic regression analyses.

Data must meet five assumptions in order to calculate the Pearson Product-Moment Correlation (Lund, 2015):

1. The variables are interval or ratio data.
2. The variables are normally distributed.

3. A linear relationship exists between the variables.

4. There are minimal, if any, outliers.

5. The variance for the variables is linear (homoscedasticity).

The assumptions for logistic regression and the Pearson Product-Moment correlation are shown in Table 6.

Chapter Summary

In this chapter a description of the design and methodology for the study was presented, which included procedures for obtaining the data, instrumentation, and proposed statistical methods for data analysis. The purpose of this particular study was to examine practicing school psychologists' conceptualizations of what types of individuals should be identified as gifted. A secondary purpose was to examine the potential influences of respondent and LEA demographic variables on responses to the vignettes. Logistic regression analysis was used to examine the relationship between the predictor variables and responses to the vignettes. Logistic regression also was used to examine the effect of mediator variables on the relationship between several of the predictor variables and responses to the vignettes. Finally, Pearson Product-Moment correlations were used to examine the relationship between the predictor variables.

Table 6

Data Analyses and Assumptions

Data Analysis	Assumptions	Validation
Logistic Regression		
	1. The dependent variable is a dichotomy.	Variable Construction
	2. The categories are mutually exclusive and exhaustive.	Variable Construction
	3. Larger number of cases per predictor (50 is recommended).	Participant response
	4. The model contains only relevant predictors and no irrelevant predictors.	Variable selection during data analysis
Pearson Product-Moment Correlation		
	1. The variables are interval or ratio data.	Variable construction
	2. Variables are normally distributed.	Histogram
	3. There is a linear relationship between the variables.	Scatterplot
	4. There are few, if any, outliers.	Scatterplot
	5. Homoscedasticity	Scatterplot

CHAPTER IV

RESULTS

The goal of this study was to examine how school psychologists conceptualize giftedness. The concept of giftedness emerged from the work of Sir Francis Galton in the 1800's (Jolly, 2005). Giftedness has been linked to scores on intelligence tests since the 1900's due to the influence of Lewis Terman (Borland, 1997). Today, an IQ score of 130 continues to be the main criterion for giftedness (Horowitz & O'Brien, 1986), although modern theories of giftedness also promote additional criteria by which a person may be identified as gifted (Pfeiffer, 2013; Renzulli, 2000).

In the United States of America, individual states are permitted, but not required, to offer gifted services (Zirkel, 2004). Currently 32 states offer gifted services to students (NAGC, 2008). Each state that offers gifted services is required to develop its own definition of giftedness. Many educators and professionals have provided input into individual and state theories of giftedness, except for one type of educational professional: the school psychologist (Robertson et al., 2011).

Consequently, the purpose of this study was twofold. The first purpose was to survey how school psychologists in Pennsylvania, Ohio, and West Virginia conceptualized giftedness

by reading vignettes about three individuals being evaluated for gifted services then indicating whether or not each individual meets identification criteria as being gifted. Participants also responded to demographic questions regarding characteristics of themselves and their places of employment. Relationships between the demographic variables and responses to the vignettes also were explored.

As has been discussed, school psychologists were provided with three vignettes upon which the survey questions were based. The first vignette described an individual with a Full Scale IQ standard score of 130, strong academic skills (standard scores of 130 or higher), and strong scores on a gifted characteristics rating scale (all scores indicated a very high probability of being gifted). In contrast, the second vignette described an individual who was similar to the individual in the first vignette but whose cognitive skills were lower than the individual portrayed in the first vignette. This second individual obtained a Full Scale IQ standard score of 124, achievement standard scores of 129 or higher, and strong scores on a gifted characteristics rating scale (all ratings indicated a very high probability of being gifted). Within the second vignette, the IQ standard score was purposefully lowered to be meaningfully below the 130 threshold while still maintaining achievement scores consistent with giftedness. The third

vignette depicted an individual with strong artistic talents having been reported to have won local artistic talent shows, awards, and had artwork featured in galleries in New York City. The individual in the third vignette had a Full Scale IQ standard score of 115, achievement standard scores that ranged from 109 to 112, and scores on a gifted characteristics rating scale that indicated moderate probability of being gifted (Creativity and Artistic Talent were rated as very high probability of being gifted).

The second purpose of this study was to examine the relationships between predictor and mediator variables and responses on the vignettes. In completing the survey, participating school psychologists were asked to provide demographic information that, in turn, became the study's predictor variables. Predictor variables were characteristics of the participants or their place of employment and were hypothesized to predict responses on the vignettes. Mediator variables were hypothesized to influence the relationship between predictor variables and responses on the vignettes.

The remainder of this chapter is comprised of, first, an outline of the complications related to the data collection and data analysis. Second, a review of how the data met the assumptions for all analyses conducted is provided. Finally,

the statistical analyses and results for each of the seven research questions are reported.

Complications in Data Analysis and Collection

Four complications occurred during data collection: (a) low response rates for the survey, (b) incomplete surveys, (c) the coding of the data for analysis, and (d) the lack of responses for the gift cards that were offered as an incentive for completing the study.

Low Response Rate

Low response rate of actual participants compared to the potential sample of school psychologists who were members of their state associations in Pennsylvania, West Virginia, and Ohio resulted in the first complication in this study. Only 75 participants responded to the survey of which 6 were from Pennsylvania, 27 were from Ohio, and 14 were from West Virginia. Twenty-eight participants did not respond to this survey question.

In comparison, Association of School Psychologists of Pennsylvania (ASPP) staff stated that its membership was 393 (T. J. Runge, personal communication, January 6, 2015) while the equivalent West Virginia organization reported 90 members (C. L. Hare, personal communication, November 12, 2014). Staff from the Ohio School Psychologist Association declined to reply to inquiries regarding their membership statistics.

Although the Ohio School Psychologists Association did not respond to inquiries regarding its membership, this membership needed to be estimated in order to provide a basis of comparison for the data obtained as a result of the present survey. A 2004 survey by Charvat (2005) found that 1,342 school psychologists were employed in Pennsylvania; school psychologist employment in Ohio was similar at 1,173. Utilizing the data from the Charvat survey and the information provided by ASPP, a ratio which divided the number of current members of the Pennsylvania organization by the number of practicing school psychologists in that state was developed. When the resulting ratio was applied to Ohio data reported by Charvat, it was estimated there are 344 members of the Ohio School Psychologists Association.

Overall, it was estimated that 781 potential participants were recruited to complete the survey of which only 6% actually participated. By state, 2% of prospective Pennsylvania school psychologists and 3% of Ohio School psychologists participated, as compared to a 30% participation rate by West Virginia school psychologists. School psychologists from Ohio represented the largest proportion of the sample for the study, while school psychologists from West Virginia had the highest participation rate based on the membership of their state school psychology association.

Two factors may have led to these low response rates, the first being a simple unwillingness to participate in the survey on the part of the potential participants given frequent requests to participate in survey research. As a result of these numerous appeals for participation, prospective participants may decline many survey invitations, a phenomenon that may be described as “survey fatigue.”

The electronic medium used to by participants to access the survey could have been second factor resulting in low response rates. Castillo, Curtis, Brundage, March, and Stockslager (2014) examined response rates by members of the National Association of School Psychology (NASP) for paper (45.55%) versus electronic (37.68%) surveys. Their results suggested that, while paper and pencil surveys led to improved response rates, electronic surveys were associated with both lower costs (elimination of postage) and a decreased likelihood of data entry errors (many surveys can be exported directly into a computer-based data analysis program). Each method has distinct advantages and disadvantages and researchers should be cognizant of these differences when choosing a method to collect data. The researcher elected to utilize an electronic survey to efficiently distribute the survey to potential participants and also to import the collected data directly into SPSS. The response rate to the present survey was lower than that of

Castillo et al. (2014) which, as previously discussed, may be attributed to survey fatigue on the part of potential participants. Only West Virginia school psychologists, with their response rate of 30%, were comparable to the electronic participation rate reported in Castillo et al. (2014).

Incomplete Surveys

Seventy-five participants initiated the survey; however, 27 participants (36% of the total sample) did not answer all questions on the survey resulting in a second complication of this study. The lack of incomplete data may decrease the generalizability of results, since fewer data were collected for analysis. Additionally, the lower number of participant responses can negatively affect the likelihood that statistically significant differences between groups will be found.

Data Coding

The third area for potential complications was in the coding of the data for the analyses. Due to the response options available to participants on the survey, several of the predictor and mediator variables had to be recoded for data analyses. Variables were either recoded into dummy variables or were transformed, based on the responses of the participants from multiple categories into dichotomous variables.

Dummy variables. Three variables were converted into dummy variables. Dummy variables can be utilized to separate continuous data into separate groups for data analyses (Trochim, 2006) and are coded to reflect the presence or absence of a condition for the data. These dummy variables allow researchers to convert a single variable with multiple choices into several individual variables. Consequently, a researcher can examine the relationship between each of the new individual variables and an outcome. Dummy variables were created from the following variables: LEA Gifted Identification Policy (IQ, Multiple Criteria, Rubric, and Other), Order of Vignettes (Typical First, Multiple Criteria First, Talented First), and State of Employment (PA, WV, OH). As an example, if a participant responded that his/her state of employment was Pennsylvania, the dummy variable would be coded to reflect that the Pennsylvania response was present while the corresponding responses for West Virginia and Ohio were absent.

Recoding LEA gifted identification policy. The variable LEA Gifted Identification Policy presented a unique problem for dummy variable coding. Participants were able to select up to four choices to identify their districts' policies (IQ, Multiple Criteria, Rubric, and Other). Participants who selected Other were then able to describe their individual policy. This variable was recoded into four separate dummy variables (LEA

Gifted Identification Policy IQ, LEA Gifted Identification Policy Multiple Criteria, LEA Gifted Identification Policy Rubric, and LEA Gifted Identification Policy Other) based on the researcher's interpretation of the participant's narrative response. This subsequent conversion to dummy variables allowed the researcher to examine if a specific type of gifted identification policy influenced the participants' responses to the vignettes (Research Question 6) or if the responses were correlated with other predictor variables (Research Question 7).

Of the nine participants who selected LEA Gifted Identification Policy Other, one participant wrote "Don't Know" instead of providing a narrative description of the LEA's gifted identification policy. Three participants reported the use of the IOWA scales, a standardized assessment which was developed to assist educators in determining if a student may benefit from a full grade level acceleration (Acceleration Institute, 2015). Two participants noted the use of IQ standard scores other than 130 for their LEA's gifted identification policy: IQ 127 and IQ 97th percentile +/- 1 SEM. Two of the participants reported both an IQ standard score and a score on an achievement test: (a) IQ 125 using SEM and 1 academic area in the 90th percentile and (b) IQ in 99th percentile on individually administered standardized assessment and 95th percentile on group or individually administered academic achievement test. The final participant

reported that his/her LEA's gifted identification policy was "State guidelines including intellectual, specific academic, arts & music, etc. [sic]"

Recoding variables from multiple categories into two categories. Two variables required recoding from multiple categories into two categories: Race of Participant and Comfort Level in Conducting Gifted Evaluations. Both variables permitted the participant to choose between multiple options. Race of Participant included seven distinct choices from which the participant was to select his or her answer and Comfort Level in Conducting Gifted Evaluations included four choices, although participants were able to select more than one choice. A separate rationale was used to justify the transformation of each variable.

Transformation of race of participants. Seventy-five participants (100% of the sample) responded to this question on the survey. Of those who responded, 73 reported that their race was White. Two participants selected an option other than White (one selected Black or African American and the other selected Some Other Race). Due to the low response rates for categories other that White, the researcher created a new variable for data analysis based on the selection of White as the participants' race. This new variable contained 73 yes responses (the participants reported their race as White) and two no responses

(the participants' race was not reported as White). The transformation of Race of Participant into a variable with two categories allowed the researcher to treat the variable as a dichotomy, which is considered interval data, instead of a multiple category nominal variable. This was advantageous for conducting correlations as one of the assumptions for analysis stipulated ordinal or interval data, although all but two participants reported their race as White.

Transformation of comfort level in conducting gifted evaluations. The variable Comfort Level in Conducting Gifted Evaluations offered participants four potential responses: Very Comfortable, Comfortable, Uncomfortable, and Very Uncomfortable. Fifty-one participants rated their comfort level as being Very Comfortable (23) or Comfortable (25); two participants rated their comfort level as Uncomfortable; and one participant rated his/her comfort level as being Uncomfortable. The positive categories (Comfortable and Very Comfortable) and negative categories (Uncomfortable and Very Uncomfortable) were combined and recoded as being Comfortable and Uncomfortable. The frequencies for all predictor variables, including the recoded variables, and the number of participants who did not provide an answer for each variable (which were then labeled as missing data) are reported in Table 7. Frequencies of the mediator

variables and responses to the three vignettes are reported in Table 8.

Table 7

Frequency Counts of Predictor Variables and Missing Variables

Variable	*n*	%	Missing Data
Age of Participants	75	100.0	0
Sex of Participants	75	100.0	0
Male	15	20.0	
Female	60	80.0	
Race of Participant	75	100.0	0
Caucasian	73	97.3	
Other	2	2.7	
Highest Level of Training	75	100.0	0
Master's	69	92.0	
Doctorate	6	8.0	
Number of Years Practicing as a School Psychologist	74	98.7	1
School District Enrollment	52	69.3	23
School District Race	52	69.3	23
0-89% Caucasian	27	36.0	
90%+ Caucasian	25	33.3	
Involvement in Gifted Identification Process	52	69.3	23
Yes	43	57.3	
No	9	12.0	
LEA Policy IQ	50	66.7	25
Yes	25	33.3	
No	25	33.3	
LEA Policy Multiple Criteria	50	66.7	25
Yes	35	46.7	
No	15	20.0	
LEA Policy Rubric	50	66.7	25
Yes	20	26.7	
No	30	40.0	
LEA Policy Other	54	72.0	21
Yes	11	14.7	
No	43	57.3	
Comfort Level in Conducting Gifted Evaluations	51	68.0	24
Comfortable	48	64.0	
Uncomfortable	3	4.0	
Number of Gifted Evaluations per Year	49	65.3	26
Number of Gifted Students Identified per Year	49	65.3	26

Note. LEA = Local Education Agency.

Table 8

Frequency Counts of Mediator Variables, Responses to the Vignettes, and Missing Variables

Variable	*n*	%	Missing
State of Employment	47	62.7	28
PA	6	8.0	
WV	14	18.7	
OH	27	36.0	
PA Only	47	62.7	28
Yes	6	8.0	
No	41	54.7	
WV Only	47	62.7	28
Yes	12	16.0	
No	35	46.7	
Ohio Only	47	62.7	28
Yes	27	36.0	
No	20	26.7	
Agreement with LEA Gifted Identification Policy	51	68.0	24
Yes	41	54.7	
No	10	13.3	
Order of Vignettes	49	65.3	26
Typical First	49	65.3	26
Yes	12	16.0	
No	37	49.3	
Multiple Criteria First	48	64.0	27
Yes	19	25.3	
No	29	38.7	
Talented First	48	64.0	27
Yes	18	24.0	
No	30	40.0	
Typical Vignette	49	65.3	26
Yes	49	100.0	
No	0	0.0	
Multiple Criteria Vignette	47	62.7	28
Yes	43	57.3	
No	4	5.3	
Talented Vignette	48	64.0	28
Yes	16	21.3	
No	32	42.7	

Note. LEA = Local Education Agency. PA = Pennsylvania; WV = West Virginian; OH = Ohio.

Lack of Responses for Gift Cards

This study offered an incentive to participants as a means of improving the response rate to the survey. After completing the survey, participants were directed to a second Qualtrics

survey in which they were asked to submit an email address (Appendix D). Four random email addresses were to be selected and additional information would be requested by the researcher so that a gift cards could be mailed to the participants (Appendix E). Seventy-five individuals participated in the study; however, none of the participants entered an email address in the second survey. As participants were not able to enter this information prior to completing the survey, the lack of responses had a minimal effect on participation in the survey.

Data Analyses

Data from the Qualtrics survey were imported into SPSS version 22 for the analyses. As noted in Chapter III, the data analysis of Research Question 1 required the calculation of the percentage of participants endorsing each of the vignettes as a characterization of a gifted student. The data analytic technique utilized for Research Questions 2, 3, 4, and 6 was logistic regression. The percentage of participants' responses to the predictor variables was used to confirm or reject the hypotheses for Research Question 5 while the Pearson Product-Moment correlation was employed for Research Question 7.

Testing of Logistic Regression Assumptions

Logistic regression analyses are based on four assumptions. The first assumption is that the outcome variable (i.e., dependent variable) is dichotomous. As previously noted, participants responded to each vignette with either a yes or no response. Consequently, the first assumption was met.

The second assumption of logistic regression is that the categories are mutually exclusive. As participants could only select one of two responses, the second assumption also was met. The third assumption is that each variable has approximately 50 cases. No variables met the criteria of 50 cases. Although none of the number of cases met the recommended threshold, there is disagreement among statisticians regarding the required number of cases necessary to conduct logistic regression. Vittinghoff and McCulloch (2006) reported a general rule that 10 total cases per variable is minimally required to conduct logistic regression. Those authors also examined logistic regression analyses where less than 10 cases were used and concluded that less than 10 cases could be used for logistic regression. All cases for the current study exceeded 10 cases and the majority of cases that were below 50 responses contained 45-49 responses. The third assumption also was met.

The fourth assumption is that the logistic regression model contains all relevant predictors and does not contain irrelevant

predictors. It was hypothesized that individual predictor variables, or the interaction between LEA Gifted Identification Policy and Agreement with LEA Gifted Identification Policy, would predict responses on the vignettes. These hypotheses were based on the opinions of the researcher and a lack of research on school psychologists' conceptualizations of giftedness. Logistic regression analyses were conducted separately for individual predictor variables and each vignette. The researcher also had hypothesized that specific mediator variables may influence the relationship between predictor variables and responses on the vignettes, again based on the researcher's opinions and a lack of research on this subject. Only hypothesized predictor and mediator variables were used when conducting these additional logistic regression analyses and no extraneous variables were added to the logistic regression analyses. As a result, the fourth assumption was met.

Testing of Pearson Product-Moment Correlation

As previously noted, data must meet five assumptions in order to calculate the Pearson Product-Moment correlation. The first assumption is that the data are interval or ratio. All

moderator variables in this study were dichotomies thereby satisfying this assumption.

The second assumption was that the variables are distributed normally. A review of the histograms for each predictor variable indicated that normal distributions were present for five variables: (a) Age of Participant, (b) State of Employment Ohio, (c) School District Race, (d) LEA Gifted Identification Policy IQ, and (e) LEA Gifted Identification Policy Rubric. All other predictor variables violated this assumption. Consequently, Pearson Product-Moment correlations could be calculated only for the five predictors that met this assumption. An alternative measure of the relationship between two variables that required fewer assumptions about the data's properties, called the Kendall's Tau B (Huck, 2012), was utilized to examine the relationship between predictor variables that did not meet the statistical assumptions of the Pearson Product-Moment correlation.

The third assumption is that there is a linear relationship between the variables. As the scatterplot for the predictor variables indicated that relationships were linear, this assumption was met. The fourth assumption is that there are few outliers. This assumption was met when a review of the scatterplots indicated that there were no outliers. The final assumption of the Pearson Product-Moment correlation is that the

variances are equal (homoscedasticity; Pallant, 2010). A review of the scatterplots indicated that the variance was equal. Consequently, this last assumption was met.

Testing of Kendall Tau B Assumptions

Kendall's Tau B is a measure of association between two variables. The only assumption for Kendall's Tau B is that the data are ordinal (Hill & Lewicki, 2007). No assumptions are made about the distribution of the data. As all predictor variables were either interval or dichotomous, the assumption was satisfied.

Research Question 1

Research Question 1 was: How many participants will identify the individual each vignette as gifted? It was hypothesized that at least 75.0% of participants would identify the individual in the Typical vignette as gifted. For the other two scenarios, it was hypothesized that at least 25.0% of participants would categorize the individual in the vignettes as gifted.

Data indicated that all participants who provided an answer to the Typical vignette (n = 49) classified the individual in the Typical vignette as gifted (100.0%). For the Multiple Criteria vignette, 43 out of 49 participants identified the individual as being gifted (91.5%). For the Talented vignette,

16 out of 48 participants concluded that the individual was gifted (33.3%). These results are reported in Table 9.

Table 5

Percent of Respondents Who Concluded the Vignette Represented a Gifted Student

Vignette	*N*	%	Missing
Typical	49	65.3	26
Yes	49	100.0	
No	0	0.0	
Multiple Criteria	47	62.7	28
Yes	43	91.5	
No	4	8.5	
Talented	48	64.0	27
Yes	16	33.3	
No	32	66.7	

Note. Percentages for Typical, Multiple Criteria, and Talented vignettes are based on the overall sample of 75 participants; all other percentages are based on the total number of participants who responded to the question.

Review of Hypotheses

Three hypotheses were presented for this research question. The first hypothesis was that at least 75.0% of participants would identify the individual in the Typical Vignette as gifted. All participants (100%) identified the individual in the Typical vignette as gifted. This hypothesis was confirmed. The second hypothesis was that at least 25.0% of participants would classify the individual in the Multiple Criteria vignette as gifted. The majority of participants (91.5%) categorized the individual in the Multiple Criteria Vignette as gifted, therefore, this hypothesis was confirmed. The final hypothesis was that at least 25.0% of participants would categorize the individual in the Talented vignette as gifted. Sixteen

participants (33.3%) identified the individual in the Talented vignette as gifted, confirming this hypothesis.

Research Question 2

Research Question 2 was: Will the mediator variable Order of the Vignettes influence response rates on the vignettes? A number of hypotheses were developed related to this research question. Fundamentally, it was hypothesized that the order of vignette presentation would have a partial effect on whether respondents would identify a student as gifted in the three scenarios.

First, it was hypothesized that presentation of the Typical vignette first would lead to a lower identification rate of the individual in the Multiple Criteria and Talented vignettes. The second hypothesis was that the presentation of the Talented vignette first would not have an effect on response rates to the Typical and Multiple Criteria vignette. Finally, it was hypothesized that the presentation of the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette.

Dummy variables were created to reflect the presentation of either the Typical vignette first (yes or no), the Multiple Criteria vignette first (yes or no), or the Talented vignette first (yes or no). Direct logistic regression was performed using each of these variables and responses on the Multiple

Criteria and Talented vignettes. All participants identified the individual in the Typical vignette as being gifted. Due to the lack of variability in responses, the Typical vignette was withdrawn from further data analyses for Research Question 2. A Bonferroni correction procedure was applied given the multiple comparisons performed on the data (Pallant, 2010).

Research Question 2 Multiple Criteria Vignette

A detailing of prediction improvement, disaggregated by prediction variables, is offered in Table 10. The addition of individual prediction variables (Typical First, Multiple Criteria First, Talented First) to the prediction of responses to the Multiple Criteria vignette demonstrated that the model improved classification by 1.2 – 7.0%. The presentation of the either the Talented vignette or the Multiple Criteria vignette led to minimal improvements in the predicted probability of classification (1.2% and 2.2%, respectively). Presentation of the Typical vignette first led to the largest increase (7.0%). The Wald's chi squares (χ^2), reported in Table 10, were examined to determine whether statistically significant differences existed between participants who identified the individual in the Multiple Criteria vignette as gifted versus participants who did not identify the individual in the vignette as gifted, based on the variable entered into the regression analysis. None of the three conditions of the variable Order of the Vignettes

resulted in significant differences in responses on the Multiple Criteria vignette.

Table 10

Logistic Regression Analysis of Order of the Vignettes and Multiple Criteria Vignette

First Vignette	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Typical[a]	.070	−1.329	1.549	1.549	.265	.213
Multiple Criteria[b]	.022	.770	1.195	.415	2.160	.519
Talented[c]	.012	.575	1.197	.231	1.778	.631

Note. $df = 1$. [a]$n = 47$. [b]$n = 47$. [c]$n = 47$.

The classification accuracy of the overall model did not improve from 91.5% with the inclusion of the mediator variable Order of the Vignettes. The rates of change in the classification accuracy are reported in Table 11.

Table 11

Change from the Predicted to Actual Responses on the Multiple Criteria Vignette Based on Order of the Vignettes

First Vignette	Initial Predicted Response %	Response % with First Vignette	Rate of Change
Typical	91.5	91.5	0.00
Multiple Criteria	91.5	91.5	0.00
Talented	91.5	91.5	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the Multiple Criteria vignette. Response % with Variable = the percentage of predicted responses to the Multiple Criteria vignette using Order of Vignettes as a Predictor.

There were no significant differences in responses to the Multiple Criteria vignette, regardless of the vignette that was first presented. Improvements in predictability over the null model based on which vignette was read first ranged from 1.2 – 7.0%. Finally, addition of the variable Order of the Vignette

did not increase the classification accuracy of the overall model from that of the null model.

Research Question 2 Talented Vignette

A detailing of prediction improvement, disaggregated by prediction variables (Typical First, Multiple Criteria First, Talented First), is offered in Table 12. The addition of individual prediction variables to the prediction of responses to the Talented vignette demonstrated that the model improved classification by 0.5 – 4.5%. Presentation of the Multiple Criteria vignette and the Talented vignette first led to minimal improvements in the predicted probability of classification (0.5% and 1.1%, respectively). Presentation of the Typical vignette first led to the largest increase (4.5%). The Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the Talented vignette as gifted versus participants who did not identify the individual in the vignette as gifted, based on the variable entered into the regression analysis. Neither of the three conditions for the order of the vignettes led to significant differences in responses on the Talented vignette, as reported in Table 12.

Table 12

Logistic Regression Analysis of Order of the Vignettes and Talented Vignette

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Typical First[a]	.045	−1.008	.852	1.399	.365	.237
Multiple Criteria First[b]	.005	.260	.622	.174	1.296	.677
Talented First[c]	.011	.395	.626	.398	1.485	.528

Note. *df* = 1.
[a]*n* = 48. [b]*n* = 48. [c]*n* = 48.

The classification accuracy of the overall model did not improve from 66.7% with the inclusion of the mediator variable Order of the Vignettes. The rates of change in the classification accuracy are reported in Table 13.

Table 13

Change from the Predicted to Actual Responses on the Talented Vignette based on Order of the Vignettes

First Vignette	Initial Predicted Response %	Response % with Variable	Rate of Change
Typical First	66.7	66.7	0.00
Multiple Criteria First	66.7	66.7	0.00
Talented First	66.7	66.7	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the Talented vignette; Response % with Variable = the percentage of predicted responses to the Talented vignette using Order of Vignettes as a Predictor.

There were no significant differences in responses to the Talented vignette, regardless of the vignette that was presented first. Improvements in predictability over the null model based on which vignette was read first ranged from 0.5 – 4.5%. Finally, addition of the variable Order of the Vignette did not increase the classification accuracy of the overall model from that of the null model.

Review of Hypotheses

The first hypothesis was that the presentation of the Typical vignette first would lead to lower identification rates on the Multiple Criteria and Talented vignettes. Results from the logistic regression analyses indicated that the presentation of the Typical vignette first did not affect responses on the Multiple Criteria vignette and the Talented vignette. This hypothesis was rejected.

The second hypothesis was that the presentation of the Talented vignette as the first vignette would not affect response rates to the Typical and Multiple Criteria vignettes. All participants identified the individual in the Typical vignette as gifted, suggesting that the placement of the Talented vignette did not affect responses on the Typical vignette. Results of the logistic regression analysis for the presentation of the Talented vignette first indicated that there were no differences in responses to the Multiple Criteria vignette. This hypothesis was confirmed.

The third hypothesis was that the presentation of the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette. Results of the logistic regression analysis indicated that presentation of the Multiple Criteria vignette first did not significantly affect

responses on the Talented vignette. This hypothesis also was rejected.

Research Question 3

Research Question 3 was: Will the mediator variable Agreement with Local Education Agency (LEA) Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses on the three vignettes? It was hypothesized that participants who agree with their LEA's gifted identification would respond to the vignettes in a manner consistent with the LEA's Gifted Identification Policy. All participants identified the individual in the Typical vignette as gifted. LEA Gifted Identification Policy and Agreement with LEA Gifted Identification Policy did not influence responses to the Typical vignette. Dummy variables were created for each of the LEA Gifted Identification Policy options (IQ, Multiple Criteria, Rubric, and Other). Interaction terms were established from each individual LEA Gifted Identification policy and the mediator variable Agreement with LEA Gifted Identification Policy. As previously noted, there was no variability in responses to the Typical vignette and, consequently, the Typical vignette was eliminated from data analyses for this research question. A Bonferroni correction procedure was applied given the multiple comparisons performed on the data (Pallant, 2010).

Research Question 3 LEA Gifted Identification Policy IQ

Logistic regression analyses were conducted using the predictor variable LEA Gifted Identification Policy IQ, the mediator variable Agreement with LEA Gifted Identification Policy, and the Multiple Criteria and Talented vignettes. A detailing of prediction improvement, disaggregated by prediction variables (LEA Gifted Identification Policy IQ and the interaction), is offered in Table 14. The addition of individual variables to the prediction of responses to the Multiple Criteria and Talented vignettes demonstrated that the model improved classification by 16.9 – 24.3%. LEA Gifted Identification Policy IQ led to greater improvement in predicting responses for the Multiple Criteria vignette (24.3%) than the Talented vignette (16.9%).

The logistic regression analyses for LEA Gifted Identification Policy IQ and the interaction term also are reported in Table 14. The Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the vignettes as gifted versus participants who did not identify the individual in the vignettes as gifted, based on the variable entered into the regression analysis. LEA Gifted Identification Policy IQ and the interaction term did not lead to significant differences in responses to the vignettes.

The classification accuracy of the overall model did not improve from 68.1% (Talented vignette) or 91.3% (Multiple Criteria vignette) with the inclusion of the predictor variable LEA Gifted Identification Policy IQ and the interaction term. The rates of change are reported in Table 15.

Overall, LEA Gifted Identification Policy IQ and the interaction term did not influence responses on the Multiple Criteria and Talented vignette. Improvements in predictability over the null model based on the presence or absence of an IQ score as a component of participants' LEAs' gifted identification policies ranged from 16.9 – 24.3%. Finally, addition of the variable LEA Gifted Identification Policy IQ and the interaction term did not increase the classification accuracy of the overall model from that of the null model.

Research Question 3 LEA Gifted Identification Policy Multiple Criteria

Logistic regression analyses were conducted using the predictor variable LEA Gifted Identification Policy Multiple Criteria, the mediator variable Agreement with LEA Gifted Identification Policy, and the Multiple Criteria and Talented vignettes. A detailing of prediction improvement, disaggregated by prediction variables (LEA Gifted Identification Policy Multiple Criteria and the interaction), is offered in Table 16.

Table 14

Logistic Regression Analysis of LEA Gifted Identification Policy IQ and the Vignettes

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Multiple Criteria Vignette[a]	.243					
LEA Gifted Identification Policy IQ		−19.817	8770.826	.000	.000	.998
LEA Gifted Identification Policy IQ * Agreement with LEA Gifted Identification Policy		3.48	1.281	.074	1.417	.786
Talented Vignette[b]	.169					
LEA Gifted Identification Policy IQ		−21.021	17974.842	.000	.000	.999
LEA Gifted Identification Policy IQ * Agreement with LEA Gifted Identification Policy		20.104	17974.842	.000	538491573.900	.999

Note. df = 1. LEA = Local Education Agency.
[a]*n* = 46. [b]*n* = 47.

Table 15

Change from the Predicted to Actual Responses on the Vignettes based on LEA Gifted Identification Policy IQ

Vignette	Initial Predicted Response %	Response % with Variable	Rate of Change
Multiple Criteria	91.3	91.3	0.00
Talented	68.1	68.1	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the vignettes. Response % with Variable = the percentage of predicted responses to the vignettes using LEA Gifted Identification Policy IQ and the interaction term as variables.

The addition of individual variables to the prediction of responses to the Multiple Criteria and Talented vignettes demonstrated that the model improved classification by 6.5 – 17.1%. LEA Gifted Identification Policy Multiple Criteria led to greater improvement in predicting responses for the Talented vignette (17.1%) than the Multiple Criteria vignette (6.5%).

The logistic regression analyses for LEA Gifted Identification Policy Multiple Criteria and the interaction term are reported in Table 16. The Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the vignettes as gifted versus participants who did not identify the individual in the vignettes as gifted, based on the variable entered into the regression analysis. LEA Gifted Identification Policy Multiple Criteria and the interaction term did not lead to significant differences in responses to the vignettes. The classification accuracy of the overall model did not improve from 68.1% (Talented vignette) or 91.3% (Multiple Criteria vignette) with the inclusion of the predictor variable LEA Gifted Identification Policy Multiple Criteria and the interaction term. The rates of change are reported in Table 17.

Overall, LEA Gifted Identification Policy Multiple Criteria and the interaction term did not influence responses on the

Multiple Criteria and Talented vignette. Improvements in predictability over the null model based on the presence or absence of multiple criteria as part of participants' LEAs' gifted identification policies ranged from 6.5 – 17.1%. Finally, addition of the variable LEA Gifted Identification Policy Multiple Criteria and the interaction term did not increase the classification accuracy of the overall model from that of the null model.

Research Question 3 LEA Gifted Identification Policy Rubric

Logistic regression analyses were conducted using the predictor variable LEA Gifted Identification Policy Rubric, the mediator variable Agreement with LEA Gifted Identification Policy, and the Multiple Criteria and Talented vignettes. A detailing of prediction improvement, disaggregated by prediction variables (LEA Gifted Identification Policy Rubric and the interaction), is offered in Table 18. The addition of individual prediction variables to the prediction of responses to the Multiple Criteria and Talented vignettes demonstrated that the model improved classification by 12.2 – 15.0%. LEA Gifted Identification Policy IQ led to greater improvement in predicting responses for the Multiple Criteria vignette (15.0%) than the Talented vignette (12.2%).

Table 16

Logistic Regression Analysis of LEA Gifted Identification Policy Multiple Criteria and the Vignettes

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Multiple Criteria Vignette[a]	.065					
LEA Gifted Identification Policy Multiple Criteria		−.080	1.320	.004	.923	.952
LEA Gifted Identification Policy Multiple Criteria * Agreement with LEA Gifted Identification Policy		1.344	1.487	.817	3.833	.366
Talented Vignette[b]	.171					
LEA Gifted Identification Policy Multiple Criteria		−21.510	15191.513	.000	.000	.999
LEA Gifted Identification Policy Multiple Criteria * Agreement with LEA Gifted Identification Policy		20.797	15191.513	.000	1076983113.000	.999

Note. df = 1. LEA = Local Education Agency.
[a]*n* = 46. [b]*n* = 47.

Table 17

Change from the Predicted to Actual Responses on the Vignettes based on LEA Gifted Identification Policy Multiple Criteria

	Initial Predicted Response		
Vignette	%	Response % with Variable	Rate of Change
Multiple Criteria	91.3	91.3	0.00
Talented	68.1	68.1	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the vignettes. Response % with Variable = the percentage of predicted responses to the vignettes using LEA Gifted Identification Policy Multiple Criteria and the interaction term as variables.

The logistic regression analyses for LEA Gifted Identification Policy IQ and the interaction term are reported in Table 18. The Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the vignettes as gifted versus participants who did not identify the individual in the vignettes as gifted, based on the variable entered into the regression analysis. LEA Gifted Identification Policy Rubric and the interaction term did not lead to significant differences in responses to the vignettes.

There was a 2.10% increase in classification accuracy for the model that contained the variable LEA Gifted Identification Policy Rubric and scores on the Talented vignette. This positive change did not meet the accepted threshold of a meaningful increase in predictability (≥ 5.00%; How2Stats, 2015a). There was no change for the Multiple Criteria vignette. The rates of change are reported in Table 19.

Overall, LEA Gifted Identification Policy Rubric and the interaction term did not influence responses on the Multiple Criteria and Talented vignette. Improvements in predictability over the null model based on the presence or absence of multiple criteria as part of participants' LEAs' gifted identification policies ranged from 12.2 – 15.0%.

Table 18

Logistic Regression Analysis of LEA Gifted Identification Policy Rubric and the Vignettes

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Multiple Criteria Vignette[a]	.150					
LEA Gifted Identification Policy Rubric		−2.639	1.592	2.747	.071	.097
LEA Gifted Identification Policy Rubric * Agreement with LEA Gifted Identification Policy		1.099	1.443	.579	3.000	.447
Talented Vignette[b]	.122					
LEA Gifted Identification Policy Rubric		.651	1.308	.248	1.917	.619
LEA Gifted Identification Policy Rubric * Agreement with LEA Gifted Identification Policy		.827	1.330	.387	2.286	.534

Note. df = 1. LEA = Local Education Agency.
[a]*n* = 46. [b]*n* = 47.

Table 19

Change from the Predicted to Actual Responses on the Vignettes Based on LEA Gifted Identification Policy Rubric

Vignette	Initial Predicted Response %	Response % with Variable	Rate of Change
Multiple Criteria	91.3	91.3	0.00
Talented	68.1	70.2	+2.10

Note. Initial Predicted Response % = the percentage of predicted responses to the vignettes. Response % with Variable = the percentage of predicted responses to the vignettes using LEA Gifted Identification Policy Rubric and the interaction term as variables.

Finally, the addition of the variable LEA Gifted Identification Policy Rubric and the interaction term led to a small increase in classification accuracy of 2.10% for the Talented vignette, although this rate of change was not meaningful.

Research Question 3 LEA Gifted Identification Policy Other

Logistic regression analyses were conducted using the predictor variable LEA Gifted Identification Policy Other, the mediator variable Agreement with LEA Gifted Identification Policy, and the Multiple Criteria and Talented vignettes. A detailing of prediction improvement, disaggregated by prediction variables (LEA Gifted Identification Policy Other and the interaction), is offered in Table 20. The addition of individual prediction variables to the prediction of responses to the Multiple Criteria and Talented vignettes demonstrated that the model improved classification by 2.4 – 8.8%. LEA Gifted Identification Policy Other led to greater improvement in

predicting responses for the Multiple Criteria vignette (8.8%) than the Talented vignette (2.4%).

The logistic regression analyses for LEA Gifted Identification Policy Other and the interaction term are reported in Table 20. The Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the vignettes as gifted versus participants who did not identify the individual in the vignettes as gifted, based on the variable entered into the regression analysis. LEA Gifted Identification Policy Other and the interaction term did not lead to significant differences in responses to the vignettes.

The classification accuracy of the overall model did not improve from 68.1% (Talented vignette) or 91.3% (Multiple Criteria vignette) with the inclusion of the predictor variable LEA Gifted Identification Policy Other and the interaction term. The rates of change are reported in Table 21.

Overall, LEA Gifted Identification Policy Other and the interaction term did not influence responses on the Multiple Criteria and Talented vignette. Improvements in predictability over the null model based on the presence or absence of other criteria as part of participants' LEAs' gifted identification policies ranged from 2.4 – 8.8%. Finally, addition of the variable LEA Gifted Identification Policy Other and the

interaction term did not increase the classification accuracy of the overall model from that of the null model.

Review of Hypotheses

It was hypothesized that all participants who agreed with their LEA's gifted identification policy would respond to the vignettes in a manner consistent with the LEA's Gifted Identification Policy. None of the options for LEA Gifted Identification Policy (IQ, Multiple Criteria, Rubric, Other) predicted responses to the Multiple Criteria and Talented vignettes. Consequently, no hypotheses were validated for this research question.

Research Question 4

Research Question 4 was: Will the mediator variable State of Employment influence responses on the three vignettes? It was hypothesized that individuals from Pennsylvania and West Virginia would have a lower identification rate on the Talented vignette than individuals from Ohio. It also was hypothesized that the mediator variable State of Employment will not influence responses on the Typical and Multiple Criteria variables. Dummy variables were created to reflect state of employment in Pennsylvania, West Virginia, or Ohio. All participants identified the individual in the Typical vignette as gifted.

Table 20

Logistic Regression Analysis of LEA Gifted Identification Policy Other and the Vignettes

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Multiple Criteria Vignette[a]	.088					
LEA Gifted Identification Policy Other		19.093	28420.721	.000	195815132.5	.999
LEA Gifted Identification Policy Other * Agreement with LEA Gifted Identification Policy		.000	32226.069	.000	1.000	1.000
Talented Vignette[b]	.024					
LEA Gifted Identification Policy Other		.898	1.459	.379	2.455	.538
LEA Gifted Identification Policy Other * Agreement with LEA Gifted Identification Policy		−.288	1.607	.032	.750	.858

Note. *df* = 1. LEA = Local Education Agency. [a]*n* = 46. [b]*n* = 47.

Table 21

Change from the Predicted to Actual Responses on the Vignettes Based on LEA Gifted Identification Policy Other

Vignette	Initial Predicted Response %	Response % with Variable	Rate of Change
Multiple Criteria	91.3	91.3	0.00
Talented	68.1	68.1	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the vignettes. Response % with Variable = the percentage of predicted responses to the vignettes using LEA Gifted Identification Policy Other and the interaction term as variables.

As a result, the Typical vignette was excluded from subsequent data analyses for this research question. Direct logistic regression was performed individually for each of these variables and responses on the Multiple Criteria and Talented vignettes.

Research Question 4 Multiple Criteria Vignette

A detailing of prediction improvement, disaggregated by prediction variables (PA, WV, OH), is offered in Table 22. The addition of individual prediction variables to the prediction of responses to the Talented vignette demonstrated that the model improved classification by 0.0 – 2.3%. Employment in Pennsylvania had the greatest increase in predicted probability (2.3%). Employment in Ohio led to a negligible increase in predictability (0.5%) while employment in West Virginia led to no increase (0.0%).

The Wald's chi squares (χ^2), reported in Table 22, were examined to determine whether statistically significant differences existed based on the participants' state of employment. None of the three conditions of the variable State of Employment led to significant differences in responses on the Multiple Criteria vignette. The classification accuracy of the overall model did not improve from 91.5% with the inclusion of the mediator variable State of Employment. The rates of change in the classification accuracy are reported in Table 23.

Table 22

Logistic Regression Analysis of State of Employment and Multiple Criteria Vignette

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Pennsylvania[a]	.023	-.930	1.249	.554	.395	.457
West Virginia[b]	.000	.031	1.206	.048	1.031	.980
Ohio[c]	.005	.329	1.047	.099	1.389	.754

Note. df = 1.
[a]*n* = 47. [b]*n* = 47. [c]*n* = 47.

Table 23

Change from the Predicted to Actual Responses on the Multiple Criteria Vignette based on State of Employment

Variable	Initial Predicted Response %	Response % with Variable	Rate of Change
Pennsylvania	91.5	91.5	0.00
West Virginia	91.5	91.5	0.00
Ohio	91.5	91.5	0.00

Note. Initial Predicted Response % = the percentage of predicted responses to the Multiple Criteria vignette; Response % with Variable = the percentage of predicted responses to the Multiple Criteria vignette using State of Employment as a Predictor.

Overall, State of Employment did not influence responses on the Multiple Criteria vignette. There were no significant differences in responses to the Multiple Criteria vignette, regardless of the participants' state of employment. Improvements in predictability over the null model based on which vignette was read first ranged from 0.0 – 2.3%. Finally, addition of the variable State of Employment did not increase the classification accuracy of the overall model from that of the null model.

Research Question 4 Talented Vignette

A detailing of prediction improvement, disaggregated by prediction variables (PA, WV, OH), is offered in Table 24. The addition of individual prediction variables to the prediction of responses to the Multiple Criteria and Talented vignettes demonstrated that the model improved classification by 2.4 – 35.0%. Employment in Ohio had the greatest increase in predicted probability (35.0%). Employment in West Virginia led to a similar increase in predictability (29.4%) while employment in Pennsylvania led to a slight increase (2.4%).

The Wald's chi square (χ^2), reported in Table 24, were examined to determine whether statistically significant differences existed based on the participants' state of employment. Employment in Ohio significantly predicted responses on the Talented vignette. Participants from Ohio were 20 times more likely to identify the individual in the Talented vignette as gifted. Employment in Pennsylvania and West Virginia did not predict responses on the Talented vignette.

Table 24

Logistic Regression Analysis of State of Employment and Talented Vignette

Variable	Nagelkerke R^2	*B*	SE	Wald's χ^2	Exp (B)	*p*
Pennsylvania[a]	.024	−.953	1.144	.694	.386	.405
West Virginia[b]	.294	−20.915	11602.711	.000	.000	.999
Ohio[c]	.350	3.019	1.096	7.587	20.462	.006**

Note. $df = 1$.
[a]$n = 47$. [b]$n = 47$. [c]$n = 47$.
**$p < 01$.

The classification accuracy of the overall model did not improve from 68.1% for participants from Pennsylvania and West Virginia. There was a 2.10% increase in accuracy for participants from Ohio, which did not meet the threshold recommended by How2Stats (2015a). The rates of change in the classification accuracy are reported in Table 25.

Table 25

Change from the Predicted to Actual Responses on the Talented Vignette based on State of Employment

Variable	Initial Predicted Response %	Response % with Variable	Rate of Change
Pennsylvania	68.1	68.1	0.00
West Virginia	68.1	68.1	0.00
Ohio	68.1	70.2	+2.10

Note. Initial Predicted Response % = the percentage of predicted responses to the Multiple Criteria vignette; Response % with Variable = the percentage of predicted responses to the Talented vignette using State of Employment as a Predictor.

Participants from Ohio were more likely than participants from Pennsylvania and West Virginia to identify the individual in the Talented vignette. There also was a slight but non-significant increase in the overall predictability of the model for the mediator variable State of Employment Ohio. Improvements in predictability over the null model based on participants' states' of employment ranged from 2.4 – 35.0%. Employment in Pennsylvania and West Virginia did not predict responses on the Talented vignette or increase the predictability of the overall model.

Review of Hypotheses

It was hypothesized that individuals from Pennsylvania and West Virginia would have a lower identification rate on the Talented vignette than individuals from Ohio. Consequently, this hypothesis was confirmed. It also was hypothesized that the mediator variable State of Employment would not influence responses on the Typical and Multiple Criteria vignettes. This hypothesis also was confirmed. Finally, all participants identified the individual in the Typical vignette as gifted. This hypothesis was confirmed.

Research Question 5

Research Question 5 was: What are the responses by the participants on the predictor variables? The sample of the study was 80.0% female (78.0% was hypothesized). Ninety-seven percent of participants identified their race as Caucasian (90.0% was hypothesized). Approximately 1% of participants identified their race as African American (1.3% of the sample; 3.0% was hypothesized). Eight percent of the sample had obtained their doctorate (16.0% was hypothesized). Fifty percent of participants reported that their LEA's gifted identification policy utilized an IQ standard score of 130 as the minimum threshold for qualifying for gifted services (60.0% was hypothesized). Additionally, 5.9% of participants rated their comfort level in conducting gifted evaluations as either

Uncomfortable or Very Uncomfortable (75.0% was hypothesized). Participants reported that 65.3% conducted ten or fewer gifted evaluations per year (75.0% was hypothesized). Finally, 69.4% of participants identified five or fewer students as gifted per year (75.0% was hypothesized).

Hypothesized and actual responses by participants to the predictor questions are reported in Table 26. The researcher identified several predictor variables but did not hypothesize participant response rates. These variables were: Age of Participant, Number of Years Practicing as a School Psychologist, School District Enrollment, School District Race, and Involvement in the Gifted Identification Process. Response rates on these variables also are reported in Table 26.

Review of Hypotheses

Responses by participants to the survey questions corresponding to the variables Sex of Participant, Race of Participant, and Highest Level of Training were similar to those reported by Curtis et al. (2010). Responses by participants to the two demographic survey questions derived from the research of Robertson et al. (2011) were mixed. Similar results were obtained for the use of an IQ standard score as a criterion for identifying gifted students (60.0% was hypothesized and 50.0% was obtained from the current study). Conversely, participant responses to the survey question that pertained to Comfort Level

with Conducting Gifted Evaluations were the opposite of the results reported by Robertson et al. (2011). It was hypothesized that 75.0% of participants would report being Uncomfortable or Very Uncomfortable with conducting gifted evaluations; however, participants from the current study overwhelmingly (48 of 51; 94.1%) reported being Comfortable or Very Comfortable with conducing gifted evaluations.

Overall, the characteristics of this sample matched those of Curtis et al.'s 2010 study. The similarities between the samples supported the position that this study's sample, though small, was representative of school psychologists from Pennsylvania, West Virginia, and Ohio who were members of their states' school psychology associations. Conversely, results from this study were divergent to those reported by Robertson et al. (2011) in that participants from the current study reported a higher than anticipated comfort level with conducting gifted evaluations.

Research Question 6

Research Question 6 was: What are the relationships between the predictor variables and responses on the vignettes? It was hypothesized that there should be no variability among the predictor variables and responses to the Typical vignette.

Table 26

Hypothesized and Actual Responses to the Predictor Variables

Predictor Variable	*n*	missing	Response
Age of Participant	75	0	
Hypothesized			No hypothesis
Actual			Ages ranged from 23 to 67
Sex of Participant	75	0	
Hypothesized			78.0% of participants will identify themselves as female
Actual			80.0% of participants identified themselves as female
Race of Participant	75	0	
Hypothesized			90.0% of participants will identify their race as Caucasian; 3.0% of participants will identify their race as African American
Actual			97.3% of participants identified their race as Caucasian and 1.3% identified their race as African American
Highest Level of Training	75	0	
Hypothesized			16.0% of participants will have their doctorate
Actual			8.0% of participants reported obtaining their doctorate
Number of Years Practicing as a School Psychologist	74	1	
Hypothesized			No hypothesis
Actual			Number of years practicing as a school psychologist ranged from 0–40
School District Enrollment	52	23	
Hypothesized			No hypothesis
Actual			Enrollments ranged from 160–150,000
School District Race	52	23	
Hypothesized			No hypothesis
Actual			48.1% of participants reported that 90% or higher of their student population identified their race as White

Note. LEA – Local Education Agency.

Table 26 *Hypothesized and Actual Responses to the Predictor Variables* (continued)

Predictor Variable	*n*	missing	Response
Involvement in Gifted Identification Process	52	23	
Hypothesized			No hypothesis
Actual			82.7% of participants were involved in the gifted identification process
LEA Gifted Identification Policy IQ	50	25	
Hypothesized			60.0% will utilize and IQ cutoff score of 130
Actual			50.0% of participants reported utilizing an IQ score of 130.
LEA Gifted Identification Policy Multiple Criteria	50	25	
Hypothesized			No hypothesis
Actual			70.0% of participants reported utilizing multiple criteria
LEA Gifted Identification Policy Rubric	50	25	
Hypothesized			No hypothesis
Actual			40.0% of participants reported utilizing a rubric
LEA Gifted Identification Policy Other	54	21	
Hypothesized			No hypothesis
Actual			20.4% of participants reported utilizing other criteria
Comfort Level in Conducting Gifted Evaluations	51	24	
Hypothesized			75.0% will rate themselves as uncomfortable or very uncomfortable
Actual			5.9% of participants rated themselves as being uncomfortable or very uncomfortable
Number of Gifted Evaluations per Year	49	26	
Hypothesized			75.0% will conduct 10 or fewer gifted evaluations per year
Actual			65.3% of participants conducted 10 or fewer gifted evaluations per year
Number of Gifted Students Identified per Year	49	26	
Hypothesized			75.0% will identify 5 or fewer students per year
Actual			69.4% of participants identified 5 or fewer gifted students per year

Note. LEA – Local Education Agency.

It also was hypothesized that younger participants would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Additionally, it was hypothesized that individuals with a doctorate would be more likely to identify the individual in the vignettes as gifted.

Participating school psychologists employed by larger school districts were hypothesized to be less likely to identify the individual in the vignettes as gifted. Further, it was hypothesized that the school psychologists whose school districts were comprised of a more diverse racial makeup were more likely to identify the individual in both the Multiple Criteria and Talented vignettes as being gifted. In addition, it was hypothesized that participants who were not involved in the gifted identification process would be less likely to identify the individual in the vignettes as gifted. It was hypothesized that individuals who select IQ as their LEA's gifted identification policy would be less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted.

It was hypothesized that individuals who select the other options (Multiple Criteria, Rubric, Other) would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. It was hypothesized that individuals who conduct higher numbers of gifted evaluations would be less

likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Finally, it was hypothesized that individuals who identify a higher number of gifted students per year were more likely not to identify the individual in the Multiple Criteria and Talented vignettes as gifted.

Due to the fact that all participants identified the individual in the Typical vignette as gifted, the Typical vignette was excluded from data analysis for Research Question 6. Direct logistic regression was performed individually for each of the predictor variables and responses on the Multiple Criteria and Talented vignettes. A Bonferroni correction procedure was applied given the multiple comparisons performed on the data (Pallant, 2010).

Research Question 6 Multiple Criteria Vignette

A detailing of prediction improvement, disaggregated by prediction variables, is offered in Table 27. The addition of individual variables to the prediction of responses to the Multiple Criteria vignette demonstrated that the model improved classification by 0.0 – 39.2%. No increases were associated with Sex of Participant and Race of Participant, while the most significant changes were associated with Number of Years Practicing as a School Psychologist (22.1%) and School District Enrollment (39.2%).

Table 27

Predictor Variable Improvement in Probability of Predicting Responses to the Multiple Criteria Vignette

Variable	*n*	Nagelkerke R^2
Age of Participant	47	.106
Sex of Participant	47	.000
Race of Participant	47	.000
Highest Level of Training	47	.026
Number of Years Practicing as a School Psychologist	47	.221
School District Enrollment	39	.392
School District Race	47	.035
Involvement in the Gifted Identification Process	47	.009
LEA Gifted Identification Policy IQ	46	.239
LEA Gifted Identification Policy Multiple Criteria	46	.028
LEA Gifted Identification Policy Rubric	46	.125
LEA Gifted Identification Policy Other	46	.088
Comfort Level in Conducting Gifted Evaluations	47	.017
Number of Gifted Evaluations per Year	45	.002
Number of Gifted Students Identified per Year	45	.025

Note. LEA = Local Education Agency.

The logistic regression analyses for the predictor variables and responses to the Multiple Criteria Vignette are reported in Table 28. Wald's chi square (χ^2) was examined to determine whether statistically significant differences existed between participants who identified the individual in the Multiple Criteria vignette as gifted versus participants who did not identify the individual in the vignette as gifted, based on the variable entered into the regression analysis. Statistical analyses did not yield any significant relationships between the predictor variables and responses to the Multiple Criteria vignette. School District Enrollment was the only predictor variable whose addition to the model led to an increase of classification accuracy (2.60%), but this rate of change did not meet the threshold recommended by How2Stats (2015a). The rates

of change in the classification accuracy are reported in Table 29.

Research Question 6 Talented Vignette

A detailing of prediction improvement, disaggregated by prediction variables, is offered in Table 30. The addition of individual prediction variables to the prediction of responses to the Talented vignette demonstrated that the model improved classification by 0.0 – 31.1%. No increases were associated with Race of Participant, Highest Level of Training, and School District Race. The most substantial changes were associated with Number of Gifted Evaluations per Year (26.5%) and Number of Gifted Students Identified per Year (31.1%).

The logistic regression analyses for the predictor variables and responses to the Talented Vignette are reported in Table 31. The Wald's chi square (χ^2) were examined to determine whether statistically significant differences existed between participants who identified the individual in the Talented vignette as gifted versus participants who did not identify the individual in the vignette as gifted, based on the variable entered into the regression analysis. Statistical analyses did not yield any significant relationships between the predictor variables and responses to the Talented vignette. Additionally, no variables led to an increase in classification accuracy over

the null model. Two variables, Number of Gifted Evaluations per Year and Number of Gifted Students Identified per Year, led to a decrease in classification accuracy. It is possible that the overall skewed distribution and limited range of responses to these survey questions led to the decreased classification accuracy. The changes in classification accuracy are reported in Table 31.

In summary, no significant relationships between predictor variables and responses to the Talented vignette were noted. The inclusion of two variables into a prediction model led to a decrease in predictive accuracy.

Review of Hypotheses

Ten hypotheses had been proposed for this research question. The first hypothesis was that there would be no difference among predictor variables and responses on the Typical vignette. As all participants identified the individual in the Typical vignette as gifted, this hypothesis was confirmed. The second hypothesis was that younger participants would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Results indicated that Age of Participant did not predict responses to either vignettes, causing this hypothesis to be rejected.

Table 28

Logistic Regression Analysis of Predictor Variables and Multiple Criteria Vignette

Variable	*B*	SE	Wald's χ^2	Exp (B)	*p*
Age of Participant	-.063	.044	2.032	.939	.154
Sex of Participant	.095	1.210	.006	1.100	.937
Race of Participant	--	--	--	--	--
Highest Level of Training	18.900	23205.422	.000	161547484.300	.999
Number of Years Practicing as a School Psychologist	-.105	.053	3.959	.900	.047
School District Enrollment	.001	.001	2.880	1.001	.090
School District Race	.959	1.194	.644	2.609	.422
Involvement in the Gifted Identification Process	.539	1.226	.193	1.714	.660
LEA Gifted Identification Policy IQ	-19.545	8770.826	.000	.000	.998
LEA Gifted Identification Policy Multiple Criteria	.802	1.054	.579	2.231	.447
LEA Gifted Identification Policy Rubric	-1.792	1.200	2.229	.167	.135
LEA Gifted Identification Policy Other	19.093	13397.656	.000	195815132.500	.999
Comfort Level in Conducting Gifted Evaluations	-18.876	28420.721	.000	.000	.999
Number of Gifted Evaluations per Year	.009	.042	.044	1.009	.835
Number of Gifted Students Identified per Year	-.060	.081	.551	.942	.458

Note. df = 1. No values were returned as part of the SPSS output for Race of Participant. LEA = Local Education Agency.
*$p < .05$.

Table 29

Change from the Predicted to Actual Responses on the Multiple Criteria Vignette based on State of Employment

Variable	Initial Predicted Response %	Response % with Variable	Rate of Change
Age of Participant	91.5	91.5	0.00
Sex of Participant	91.5	91.5	0.00
Race of Participant	91.5	91.5	0.00
Highest Level of Training	91.5	91.5	0.00
Number of Years Practicing as a School Psychologist	91.5	91.5	0.00
School District Enrollment	89.7	92.3	2.60
School District Race	91.5	91.5	0.00
Involvement in the Gifted Identification Process	91.5	91.5	0.00
LEA Gifted Identification Policy IQ	91.3	91.3	0.00
LEA Gifted Identification Policy Multiple Criteria	91.3	91.3	0.00
LEA Gifted Identification Policy Rubric	91.3	91.3	0.00
LEA Gifted Identification Policy Other	91.3	91.3	0.00
Comfort Level in Conducting Gifted Evaluations	91.5	91.5	0.00
Number of Gifted Evaluations per Year	91.1	91.1	0.00
Number of Gifted Students Identified per Year	91.1	91.1	0.00

Note. Initial Predicted Response % stands for the percentage of predicted responses to the Multiple Criteria vignette. Response % with Variable stands for the percentage of predicted responses to the Multiple Criteria vignette with the inclusion of the individual predictor variables. LEA = Local Education Agency.

Table 30

Predictor Variable Improvement in Probability of Predicting Responses to the Talented Vignette

Variable	*n*	Nagelkerke R^2
Age of Participant	48	.033
Sex of Participant	48	.007
Race of Participant	48	.000
Highest Level of Training	48	.000
Number of Years Practicing as a School Psychologist	48	.057
School District Enrollment	39	.088
School District Race	48	.000
Involvement in the Gifted Identification Process	48	.033
LEA Gifted Identification Policy IQ	47	.101
LEA Gifted Identification Policy Multiple Criteria	47	.001
LEA Gifted Identification Policy Rubric	47	.124
LEA Gifted Identification Policy Other	47	.023
Comfort Level in Conducting Gifted Evaluations	48	.047
Number of Gifted Evaluations per Year	46	.265
Number of Gifted Students Identified per Year	46	.311

Note. LEA = Local Education Agency.

Table 31

Logistic Regression Analysis of Predictor Variables and Talented Vignette

Variable	*B*	SE	Wald's χ^2	Exp (B)	*p*
Age of Participant	.026	.024	1.133	1.026	.287
Sex of Participant	.368	.760	.234	1.444	.628
Race of Participant	--	--	--	--	--
Highest Level of Training	.000	1.265	.000	1.000	1.000
Number of Years Practicing as a School Psychologist	.040	.029	1.981	1.041	.159
School District Enrollment	.000	.000	1.137	1.000	.286
School District Race	.000	.617	.000	1.000	1.000
Involvement in the Gifted Identification Process	-.847	.787	1.160	.429	.282
LEA Gifted Identification Policy IQ	-1.204	.658	3.345	.300	.067
LEA Gifted Identification Policy Multiple Criteria	-.095	.667	.020	.909	.886
LEA Gifted Identification Policy Rubric	1.344	.658	4.176	3.833	.041
LEA Gifted Identification Policy Other	.675	.760	.788	1.964	.375
Comfort Level in Conducting Gifted Evaluations	20.574	28420.716	.000	861586362.900	.999
Number of Gifted Evaluations per Year	-.122	.055	4.919	.885	.027
Number of Gifted Students Identified per Year	-.331	.135	6.001	.718	.014

Note. df = 1. No values were returned as part of the SPSS output for Race of Participant. LEA = Local Education Agency.

Table 32

Change from the Predicted to Actual Responses on the Talented Vignette based on Predictor Variables

Variable	Initial Predicted Response %	Response % with Variable	Rate of Change
Age of Participant	66.7	66.7	0.00
Sex of Participant	66.7	66.7	0.00
Race of Participant	66.7	66.7	0.00
Highest Level of Training	66.7	66.7	0.00
Number of Years Practicing as a School Psychologist	66.7	66.7	0.00
School District Enrollment	69.2	69.2	0.00
School District Race	66.7	66.7	0.00
Involvement in the Gifted Identification Process	66.7	66.7	0.00
LEA Gifted Identification Policy IQ	68.1	68.1	0.00
LEA Gifted Identification Policy Multiple Criteria	68.1	68.1	0.00
LEA Gifted Identification Policy Rubric	68.1	68.1	0.00
LEA Gifted Identification Policy Other	68.1	68.1	0.00
Comfort Level in Conducting Gifted Evaluations	66.7	66.7	0.00
Number of Gifted Evaluations per Year	69.6	65.0	-4.60
Number of Gifted Students Identified per Year	69.6	63.0	-6.60

Note. Initial Predicted Response % = the percentage of predicted responses to the Talented vignette. Response % with Variable = the percentage of predicted responses to the Talented vignette using the predictor variables. LEA = Local Education Agency.

It was hypothesized that participants with a doctorate would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. This hypothesis was rejected because Highest Level of Training did not predict responses to either vignette. The fourth hypothesis was that participants from larger school districts would be less likely to identify the individual in the vignettes as gifted. As School District Enrollment did not significantly predict responses on the vignettes, this hypothesis was rejected.

It also was hypothesized that individuals whose school districts had a more racially diverse population would be more likely to identify the individual in the vignettes as gifted. This hypothesis was rejected because School District Race did not significantly predict performance on the vignettes. The sixth hypothesis was that participants who were not involved in their district's gifted identification process would be less likely to identify the individual in the vignettes as gifted. Because Involvement in the Gifted Identification Process did not predict responses on the vignettes, this hypothesis was rejected.

The seventh hypothesis was that participants who identified an IQ score as their LEA's gifted identification policy would be less likely to identify the individual in the vignettes as gifted. Conversely, the eighth hypothesis was that individuals

who selected Multiple Criteria, Rubric, or Other would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Since none of the options for LEA Gifted Identification Policy (IQ, Multiple Criteria, Rubric, and Other) predicted responses to the Multiple Criteria and Talented vignettes, these hypotheses were rejected.

The ninth hypothesis was that individuals who conducted higher numbers of gifted evaluations would be less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Number of Gifted Evaluations per Year did not influence responses to the vignettes. The final hypothesis was that individuals who identified a higher number of gifted students per year would be less likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted. Results from the logistic regression analyses indicated that there was no statistically significant relationships between Number of Gifted Students Identified per Year and responses to the two vignettes.

Research Question 7

Research Question 7 was: What are the strengths of the relationships between the predictor variables in the study? As previously noted, effect sizes, based on the recommendation of Cohen and Cohen (1983) are interpreted as small (.10), medium (.30), or large (.50). It was hypothesized that the following

variables would have small effect sizes: Age of Participant and Highest Level of Training, Age of Participant and Number of Years Participating as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. It was hypothesized that the following variables would have medium effect sizes: Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year, and LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations. Finally, it was hypothesized that there were be no large effect sizes between the predictor variables.

As previously noted, only five variables met the assumptions for the Pearson Product-Moment correlation: Age of Participant, State of Employment OH, School District Race, LEA Gifted Identification Policy IQ, and LEA Gifted Identification Policy Rubric. For all other variable combinations, Kendall's Tau B correlations were calculated. While the Pearson Product-Moment Correlation examines the linear relationship between two variables (Lund Corporation, 2015), the Kendall's Tau B examines the concordance between ranked pairs of data (Huck, 2012). The relationship is represented by the symbol τ_b (Huck, 2012; How2Stats, 2015b). Kendall's Tau B relationship values are represented in the same numerical manner as the Pearson Product-

Moment Correlation (-1 to +1). Specific sample sizes were reported for significant correlations.

None of the 10 Pearson Product-Moment correlations were statistically significant. Twenty-four significant Kendall's Tau B correlations were identified. These correlations were grouped according to their effect size (large, medium, and small) for descriptive purposes.

Significant Correlations with Large Effect Sizes

Participants who conducted a higher number of gifted evaluations were more likely to report that they also identified a higher number of gifted students, $\tau_b = .718$, $p < .000$, $n = 48$. Older participants were more likely to spend a larger number of years practicing as a school psychologist, $\tau_b = .665$, $p < .000$, $n = 74$. Participants from Ohio identified fewer gifted students per year, $\tau_b = -.693$, $p < .000$, $n = 45$. Finally, participants from Ohio reported that they conducted fewer gifted evaluations, $\tau_b = -.638$, $p < .000$, $n = 45$.

Significant Correlations with Medium Effect Sizes

Participants who selected Multiple Criteria to reflect their LEA's gifted identification policy were less likely to also select Other, $\tau_b = -.488$, $p < .001$, $n = 50$. Participants from West Virginia were more likely to report that their school district was comprised of a larger percentage of White students, $\tau_b = .357$, $p < .015$, $n = 47$. Additionally, participants from

West Virginia were more likely to conduct a larger number of gifted evaluations, $\tau_b = .392$, $p < .002$, $n = 45$. Finally, these participants also were more likely to identify a greater number of gifted students, $\tau_b = .446$, $p < .001$, $n = 45$.

Participants from Pennsylvania were more likely to report that their LEA's gifted identification policy included an IQ standard score of 130, $\tau_b = .355$, $p < .017$, $n = 46$. Participants from Ohio were more likely to report that they have been employed as a school psychologist for a greater number of years, $\tau_b = .343$, $p < .006$, $n = 47$. Additionally, participants from Ohio were less likely to be involved in the gifted identification process, $\tau b = -.390$, $p < .008$, $n = 47$.

Participants who were involved in the gifted identification process reported a higher Comfort Level in Conducting Gifted Evaluations, $\tau_b = .350$, $p < .013$, $n = 51$. These participants also reported conducting a higher number of gifted evaluations, $\tau_b = .443$, $p < .000$, $n = 49$. Participants who were involved in the gifted identification process also reported that they identified a greater number of gifted students, $\tau_b = .457$, $p < .000$, $n = 49$.

Significant Correlations with Small Effect Sizes

Participants from Pennsylvania reported that they identified a greater number of gifted students, $\tau_b = .292$, $p < .024$, $n = 45$. Participants from Pennsylvania reported

younger ages than their counterparts in West Virginia and Ohio, $\tau_b = -.283$, $p < .022$, $n = 47$. Participants who reported that they were comfortable conducting gifted evaluations reported that they were more likely to conduct a greater number of gifted evaluations, $\tau_b = .244$, $p < .045$, $n = 49$. Participants with their doctorate reported a lesser Comfort Level in Conducting Gifted Evaluations than their counterparts with a Master's degree or Specialist certification, $\tau_b = -.292$, $p < .039$, $n = 51$.

Female participants were more likely to report that their LEA's gifted identification policy included other criteria, $\tau_b = .270$, $p < .049$, $n = 54$. Female participants also reported working for school districts with larger populations than male participants, $\tau_b = .238$, $p < .041$, $n = 52$. Participants who reported that their LEA's gifted identification policy included other criteria also reported that they were less likely to conduct gifted evaluations, $\tau_b = -.256$, $p < .038$, $n = 48$. Finally, participants who had worked for a greater number of years were less likely to report that their LEA's gifted identification policy contained multiple criteria, $\tau_b = -.236$, $p < .050$, $n = 50$. The Pearson Product-Moment and Kendall's Tau B correlations are reported in Table 33.

Table 33

Pearson Product-Moment and Kendall's Tau B Correlations between Predictor Variables

Variable	Age of Participant	Sex of Participant	Race of Participant	Highest Level of Training	Number of Years Practicing as a School Psychologist
Age of Participant	–	-.124	.140	.023	.665**
Sex of Participant		–	.124	-.098	-.096
Race of Participant			–	.049	.105
Highest Level of Training				–	.088
Number of Years Practicing as a School Psychologist					–
State of Employment PA					
State of Employment WV					
State of Employment OH					
School District Enrollment					
School District Race					
Involvement in the Gifted Identification Process					
LEA Gifted Identification Policy IQ					
LEA Gifted Identification Policy Multiple Criteria					
LEA Gifted Identification Policy Rubric					
LEA Gifted Identification Policy Other					
Comfort Level in Conducting Gifted Evaluations					
Number of Gifted Evaluations per Year					
Number of Gifted Students Identified per Year					

Note. Sample sizes for variable pairs ranged from 39 to 75. LEA = Local Education Agency. PA = Pennsylvania; WV = West Virginia; OH = Ohio.

[ppm]Pearson Product-Moment correlation.

*p < .05. **p < .01.

(continued)

Table 33 *Pearson Product-Moment and Kendall's Tau B Correlations between Predictor Variables* (continued)

Variable	State of Employment PA	State of Employment WV	State of Employment OH	School District Enrollment	School District Race
Age of Participant	.283*	.066	.285[ppm]	-.164	.087[ppm]
Sex of Participant	-.090	.208	-.171	.238*	.253
Race of Participant	–	–	–	.058	–
Highest Level of Training	.161	-.153	.049	.128	-.238
Number of Years Practicing as a School Psychologist	-.234	-.161	.343**	-.184	-.042
State of Employment PA	–	-.224	-.444**	.013	-.216
State of Employment WV		–	-.680**	.194	.357*
State of Employment OH			–	-.226	-.179[ppm]
School District Enrollment				–	-.230
School District Race					–
Involvement in the Gifted Identification Process					
LEA Gifted Identification Policy IQ					
LEA Gifted Identification Policy Multiple Criteria					
LEA Gifted Identification Policy Rubric					
LEA Gifted Identification Policy Other					
Comfort Level in Conducting Gifted Evaluations					
Number of Gifted Evaluations per Year					
Number of Gifted Students Identified per Year					

Note. Sample sizes for variable pairs ranged from 39 to 75. LEA = Local Education Agency. PA = Pennsylvania; WV = West Virginia; OH = Ohio.

[ppm]Pearson Product-Moment correlation.

*$p < .05$. **$p < .01$.

(continued)

Table 33 *Pearson Product-Moment and Kendall's Tau B Correlations between Predictor Variables* (continued)

Note. Sample sizes for variable pairs ranged from 39 to 75. LEA = Local Education Agency. PA =

Variable	Involvement in Gifted Identification Process	LEA Gifted Identification Policy IQ	LEA Gifted Identification Policy Multiple Criteria	LEA Gifted Identification Policy Rubric	LEA Gifted Identification Policy Other
Age of Participant	.028	-.122[ppm]	-.182	-.034[ppm]	.195
Sex of Participant	-.130	-.094	-.164	-.210	.270*
Race of Participant	–	–	–	–	–
Highest Level of Training	-.105	.084	.165	.138	-.143
Number of Years Practicing as a School Psychologist	.007	-.044	-.236*	.036	.224
State of Employment PA	.173	.355**	.269	.105	-.191
State of Employment WV	.265	-.151	-.009	-.250	-.043
State of Employment OH	-.390**	-.100[ppm]	-.236	.217[ppm]	.211
School District Enrollment	.131	-.220	.042	-.256	.036
School District Race	.135	-.201[ppm]	-.009	-.098[ppm]	.194
Involvement in the Gifted Identification Process	–	.058	.239	.094	-.261
LEA Gifted Identification Policy IQ		–	.218	.082[ppm]	-.260
LEA Gifted Identification Policy Multiple Criteria			–	.089	-.488**
LEA Gifted Identification Policy Rubric				–	-.276
LEA Gifted Identification Policy Other					–
Comfort Level in Conducting Gifted Evaluations					
Number of Gifted Evaluations per Year					
Number of Gifted Students Identified per Year					

Pennsylvania; WV = West Virginia; OH = Ohio.

[ppm]Pearson Product-Moment correlation.

*p < .05. **p < .01.

(continued)

Table 33 *Pearson Product-Moment and Kendall's Tau B Correlations between Predictor Variables* (continued)

Variable	Comfort Level in Conducting Gifted Evaluations	Number of Gifted Evaluations per Year	Number of Gifted Students Identified per Year
Age of Participant	.130	-.084	.029
Sex of Participant	-.139	.060	.128
Race of Participant	—	—	—
Highest Level of Training	-.292*	-.097	-.084
Number of Years Practicing as a School Psychologist	.108	-.147	-.106
State of Employment PA	.081	.249	.292*
State of Employment WV	.123	.392**	.446**
State of Employment OH	-.181	-.638**	-.693**
School District Enrollment	-.119	.150	.164
School District Race	.069	-.009	-.004
Involvement in the Gifted Identification Process	.350*	.443**	.457**
LEA Gifted Identification Policy IQ	.084	.114	.068
LEA Gifted Identification Policy Multiple Criteria	-.165	.233	.148
LEA Gifted Identification Policy Rubric	-.138	-.138	-.204
LEA Gifted Identification Policy Other	.118	-.256*	-.142
Comfort Level in Conducting Gifted Evaluations	—	.244*	.217
Number of Gifted Evaluations per Year		—	.718
Number of Gifted Students Identified per Year			—

Note. Sample sizes for variable pairs ranged from 39 to 75. LEA = Local Education Agency. PA = Pennsylvania; WV = West Virginia; OH = Ohio.

[ppm]Pearson Product-Moment correlation.

*p < .05. **p < .01.

Review of Hypotheses

Three predictor variable correlations were hypothesized to have small effect sizes: Age of Participant and Highest Level of Training, Age of Participant and Number of Years Practicing as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. The correlation effect size between Age of Participant and Highest Level of Training was not significant. The correlation effect size between Age of Participant and Number of Years Practicing as a School psychologist was large (τ_b = .665). The correlation effect size between Involvement in the Gifted Identification

Process and Comfort Level in Conducting Gifted Evaluations was medium (τ_b = .350). Hypotheses for the small variable pair effect sizes were rejected.

Three predictor variable correlations were hypothesized to have medium effect sizes: Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year, and LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations. There was a small effect size for Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year (τ_b = .244). Correlation pairs for Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year correlations were non-significant for all choices (IQ, Multiple Criteria, Rubric, and Other). Consequently, this hypothesis was rejected.

Finally, it was hypothesized that there were be no large effect sizes between the predictor variables. Large effect sizes were reported for five variable pairs: (a) Age of Participant and Number of Years Practicing as a School Psychologist (τ_b = .665), (b) State of Employment West Virginia and State of Employment Ohio (τ_b = -.680), (c) State of Employment Ohio and Number of Gifted Evaluations per Year (τ_b = -.638), (d) State of Employment Ohio and Number of Gifted

Students Identified per Year (τ_b = −.693), and (e) Number of Gifted Evaluations per Year and Number of Gifted Students Identified per Year (τ_b = .718). This hypothesis was rejected.

Chapter Summary

The purpose of this study was to examine school psychologists' perceptions of giftedness. Participants were recruited through the state school psychology associations in Pennsylvania, Ohio, and West Virginia and asked to complete an online survey. This survey was comprised of demographic questions about each participant, demographics about the school district in which they served, and their practices and beliefs regarding giftedness. Participants then read three vignettes, each describing the characteristics of a potentially gifted student, and asked to determine whether the individual in the vignette would qualify as gifted.

There were several complications to the collection and interpretation of data from the survey. Of the 75 participants who initially completed the survey, only 49 answered the majority of questions on the survey and were included in the data analysis. It was estimated that the response rate by potential participants to surveys was 15%. The low response rate may have been negatively impacted by the use of an electronic survey (Castillo et al., 2014). The structure of several research questions may also have contributed to the low

response rates. Participants may not have known their district's enrollment and racial profile, which may have led to participants dropping out of the survey.

Multiple predictor variables were recoded into dichotomous variables for data analysis purposes, including School District Enrollment and School District Race. LEA Gifted Identification Policy provided four options (IQ, Multiple Criteria, Rubric, and Other). Participants were able to select multiple options, with led to difficulties in interpreting this variable for its prediction of responses to the vignettes and its relationships with other predictor variables. Each option for this variable was recoded into individual variables, such as LEA Gifted Identification Policy IQ, for analysis. Two mediator variables also were recoded into dichotomous variables: Order of Vignettes and State of Employment.

The four assumptions required to conduct logistic regression (Burn & Burns, 2008; Wright, 1995) were met by the data from this study. The Pearson Product-Moment correlation assumption that the data are distributed normally was violated for the majority of variables, which necessitated using an alternate correlation statistic: the Kendall's Tau B. The single assumption for the Kendall's Tau B was met (Hill & Lewicki, 2007).

Seven research questions were developed for this study. Research Question 1 was: How many participants will identify the individual in each vignette as gifted? All participants identified the individual in the Typical vignette as gifted and at least 25% of participants identified the individual in the Multiple Criteria and Talented vignettes as gifted. The hypotheses for Research Question 1 were confirmed.

Research Question 2 was: Will the mediator variable Order of Vignettes influence response rates on the vignettes? Three hypotheses were posited. The first was that the presentation of the Typical Vignette first would lead to lower identification rates on the other two vignettes. This hypothesis was rejected. The second hypothesis was that the presentation of the Talented vignette first would not affect responses on the Typical and Multiple Criteria vignettes. This hypothesis was confirmed. The third hypothesis was that the presentation of the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette. This hypothesis was rejected.

Research Question 3 was: Will the mediator variable Agreement with Local Education Agency (LEA) Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses on the three vignettes? It was hypothesized that individuals who agreed with

a specific LEA gifted identification policy (IQ, Multiple Criteria, Rubric, or Other), would respond to the vignettes in a manner consistent with the LEA's policy. LEA Gifted Identification Policy did not predict responses on the vignettes and Agreement with LEA Gifted Identification Policy did not affect the relationship between LEA Gifted Identification Policy and responses on the vignettes. The hypotheses for this research question were rejected.

Research Question 4 was: Will the mediator variable State of Employment influence the relationship between LEA Gifted Identification Policy and responses to the vignettes? It was hypothesized that individuals from Pennsylvania and West Virginia would have a lower identification rate on the Talented vignette than individuals from Ohio. This hypothesis was confirmed. It also was hypothesized that the mediator variable State of Employment would not influence responses on the Typical and Multiple Criteria variables. This hypothesis was confirmed.

Research Question 5 was: What are the responses by the participants on the predictor variables? Response rates were hypothesized for seven of the predictor variables (Sex of Participant, Race of Participant, Highest Level of Training, LEA Gifted Identification Policy IQ, Comfort Level with Conducting Gifted Evaluations, Number of Gifted Evaluations per Year, and Number of Gifted Students Identified per Year. Participant

responses, with the exception of Comfort Level with Conducting Gifted Evaluations, were similar to the hypothesized responses. It had been predicted that the majority of participants would report being Uncomfortable with conducting gifted evaluations; instead, all but three participants reported being Comfortable with conducting gifted evaluations.

Research Question 6 was: What will be the relationship between the predictor variables and responses on the vignettes? The hypothesis that there would be no differences for predictor variables and responses to the Typical vignette was confirmed. Participants who evaluated and identified a higher number of gifted students were less likely to identify the individual in the Talented Vignette as gifted, but no differences were found in responses on the Multiple Criteria vignette. All other hypotheses were rejected.

Research Question 7 was: What are the strengths of the relationships between the predictor variables in the study? As previously noted, effect size, based on the recommendation of Cohen and Cohen (1983) was described as small (.10), medium (.30), or large (.50). It was hypothesized that the three variable pairs would have small effect sizes and an additional three pairs would have medium effect sizes. No variable pairs where hypothesized to have a large effect size. All hypotheses

were rejected. Additionally, 24 variable pair correlations were significant.

CHAPTER V

DISCUSSION

Theories of giftedness have evolved since the original conceptualization of giftedness in the early 1900's. During that era, Lewis Terman associated giftedness the score on his revision to Binet's original test of intellectual functioning (Jolly, 2008). Most modern theories of giftedness continue to include high scores on such a test as one component of their characterization of giftedness (Robertson et al., 2011); however, these theories have expanded the definition of giftedness to include other factors, including, but not limited to, academic abilities, artistic talents, and creativity (Baldwin, 2005; Pfeiffer, 2013, Renzulli, 2000).

The purpose of this study was to examine the factors related to the contemporary school psychologists' perceptions of giftedness. Participants in the study, school psychologists from Pennsylvania, West Virginia, and Ohio, were solicited through their respective state school psychology organizations. Each participant completed a survey that was comprised of demographic questions and three vignettes that presented students who may be designated as gifted pursuant to various definitions of giftedness. Through the use of demographic questions, the researcher sought to gather data regarding the characteristics of the individual participants and their

attitudes towards gifted evaluation, as well as information which described the participants' school districts of employment and their districts' gifted evaluation procedures. Participants then were instructed to indicate if they believed the individual in each vignette should be identified as gifted. Participants were not asked if an evaluation team determine that the individual would actually receive gifted services. By evaluating the participants' responses to these inquires, the researcher was able to extrapolate school psychologists' perceptions of giftedness.

Review of Research Questions

An extensive literature review yielded two studies that examined school psychologists' perceptions of giftedness. The hypotheses for participant responses to the demographic variables were based on results from these two prior studies. All other hypotheses were exploratory and were based on the researcher's experiences and logical arguments.

Overall, the participants' responses to the demographic variables and the vignettes were similar to the hypothesized results. None of the predictor variables predicted responses to the Multiple Criteria and Talented vignettes. Additionally, State of Employment was the only mediator variable that influenced responses on the Talented vignette. Finally, there were significant correlations between multiple predictor

variables. A full review of all research questions, hypotheses, and results is set forth in the following paragraphs.

Study Variables

This study was comprised of three dependent variables, three moderator variables, and 12 predictor variables. The dependent variables were the participants' classification of the individuals presented in the three vignettes as gifted or not gifted. The three vignettes were: the Typical vignette, the Multiple Criteria vignette, and the Talented vignette. The Typical vignette described an individual who presented with an IQ standard score in excess of 130 and a strong academic profile. An individual with an IQ standard score below 130 but possessing a similarly strong academic profile was portrayed in the Multiple Criteria vignette. Finally, the Talented vignette depicted an individual with strong artistic skills; however, this individual's academic achievement and IQ standard scores were significantly lower than the individuals described in the other vignettes.

The study contained 12 predictor variables: Age of the Participant, Sex of the Participant, Race of the Participant (Caucasian or Other Race), Highest Level of Training (Doctorate, Master's/Specialist), Number of Years Practicing as a School Psychologist, School District Enrollment, School District Race (based on percentage of students who were Caucasian),

Involvement in the Gifted Identification Process, Local Educational Agency (LEA) Gifted Identification Policy (IQ, Multiple Criteria, Rubric, or Other), Comfort Level in Conducting Gifted Evaluations (Comfortable or Uncomfortable), Number of Gifted Evaluations per Year, and Number of Gifted Students Identified per Year. Additionally, the study contained three mediator variables: Agreement with LEA Gifted Identification Policy, Order of the Vignettes, and State of Employment. Seven research questions were developed to examine potential responses to the variables and potential relationships between the predictor variables, mediator variables, and responses to the vignettes.

Research Question 1

How many participants will identify the individual in each vignette as gifted? Three hypotheses were proposed for Research Question 1. It was hypothesized that at least 75.0% of participants would identify the individual in the Typical vignette as gifted. For the other two scenarios, it was hypothesized that at least 25.0% of participants would categorize the individual in the vignettes as gifted.

The results of this research question were somewhat consistent with these hypotheses. Every participant who provided a response to the Typical vignette identified the individual as gifted, which exceeded the hypothesized percentage

(75.0%). Likewise, 16 participants (33.3%) identified the student in the Talented vignette as gifted (25.0% was hypothesized).

In contrast, all but four (91.5%) of the participants who provided a response to the Multiple Criteria vignette identified the individual as gifted. This result was substantially higher than the hypothesized percentage (25.0%) and was not anticipated because the student in this vignette presented with a Full Scale IQ standard score of 124 (six points below 130) and a Perceptual Reasoning Index score of 123 (seven points below 130). Unfortunately, the study did not provide an opportunity for participants to qualify their rationale for their conclusions and it is not possible to determine with any certainty why this particular result occurred.

It is the researcher's opinion that participants focused on the overall profile of the individual in vignette when determining that the individual in the Multiple Criteria should be identified as being gifted. School psychologists often weigh information from various sources, which may include classroom behavior, grades, and both local and standardized assessments, when determining eligibility for gifted services. The profile of the student in the Multiple Criteria vignette, which included Woodcock Johnson Tests of Achievement, Third Edition scores around or above 130, high ratings on the Gifted Rating Scales,

and a strong school-based academic profile, suggested that this student had demonstrated mastery of their current school-based curriculum. Even though the student did not meet the traditional criteria of an IQ score of 130, participants may have elected to identify the student so that he/she could have exposure to the more challenging assignments and enriching experiences that often are component of gifted education services.

The sample of this study identified the student in the Talented vignette at a higher-than-hypothesized rate (33.3% versus 25.0% hypothesized). Although the response rate was higher than anticipated, it fell substantially short of the identification rate for the student in the Multiple Criteria vignette. Standard scores for the individual in the Talented vignette from the Wechsler Intelligence Scales for Children, Fourth Edition (WISC IV) and Woodcock Johnson Tests of Achievement, Third Edition (WJ-III Ach) fell within the average to high average range, in contrast to standard scores in the superior range for the individual in the Multiple Criteria vignette. The average to high average standard scores may have influenced participants not to identify the individual in the Talented vignettes as gifted. In contrast, participants' decisions to identify the individual in the Talented vignette as being gifted may have been influenced by the numerous accolades noted in the vignette.

Overall, responses to the vignettes suggest that school psychologists continue to place a heavy emphasis on standardized assessment scores, particularly standard scores from tests of intellectual functioning, when considering eligibility for gifted services, concentrating on scores from tests of intellectual functioning. Even though IQ standard scores may play a primary role in gifted identification, the results from this study further suggest that school psychologists may consider information from a variety of assessments and sources when evaluating students for gifted eligibility. There does, however, continue to be a lack of consensus amongst school psychologists as to the determination of gifted eligibility for individuals who obtain an IQ standard score lower than 130 but have very strong artistic talents.

Research Question 2

Will the mediator variable Order of the Vignettes influence responses on the vignettes? Three hypotheses were developed for this research questions. It was hypothesized that the presentation of the Typical vignette first would lead to a lower identification rate of the individual in the Multiple Criteria and Talented vignettes. The second hypothesis was that the placement of the Talented vignette first would not have an impact on response rates to the Typical and Multiple Criteria vignette. Finally, it was hypothesized that the presentation of

the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette.

The presentation of the Typical vignette first did not predict responses on the two other vignettes. There are two potential reasons why this hypothesis was rejected. The first potential reason is that there were not enough participants in the study to accurately measure the effects of the order of the vignettes. As previously noted, there was a low response rate on the survey, which limited the power to detect statistically significant response rates. The other potential reason is that participants, as intended by the researcher, considered each vignette independently of the others.

Presentation of the Talented vignette first did not, as was hypothesized, predict responses to the Typical and Multiple Criteria vignettes. This result reinforces the viewpoint that individuals with strong artistic skills, often referred to as being talented, fall outside of the traditional conceptualization of giftedness. Finally, the third hypothesis was that the presentation of the Multiple Criteria vignette first would lead to an increased identification rate on the Talented vignette. This hypothesis was rejected and suggests that, when conducting gifted evaluations, school psychologists are more willing to consider additional data when an

individual's IQ standard score is slightly below 130 than when it is significantly lower than 130.

Research Question 3

Will the mediator variable Agreement with LEA Gifted Identification Policy influence the relationship between LEA Gifted Identification Policy and responses to the three vignettes? It was hypothesized that participants who agree with their LEA's gifted identification policy would respond to the vignettes in a manner consistent with that policy. Results indicated that this mediator variable ultimately had no effect on responses to the vignettes. As reported in Chapter IV, the structure of the variable LEA Gifted Identification Policy made it difficult to identify each LEA's formal gifted identification policy. Consequently, participant responses to Agreement with LEA Gifted Identification Policy could not be attributed solely to one of the options from which participants could select (IQ, Multiple Criteria, Rubric, or Other). This, in turn, made it difficult to evaluate whether or not participants agreed with all, or only part of their LEA's policy. In future studies, the variable LEA Gifted Identification Policy should be restructured to require that participants select a single answer that best describes their LEA's gifted identification policy. This revision should clarify participants' agreement or disagreement with their LEA's gifted identification policy and may lead to

significant relationships for LEA Gifted Identification Policy and significant mediation from Agreement with LEA Gifted Identification Policy.

Research Question 4

Will the mediator variable State of Employment influence the relationship between LEA Gifted Identification Policy and responses to the vignettes? Two hypotheses were proposed for this research question. It was hypothesized that participants from Pennsylvania and West Virginia would have a lower identification rate on the Talented vignette than participants from Ohio. Additionally, it was hypothesized that State of Employment would not affect responses on the Typical and Multiple Criteria vignettes.

As hypothesized, participants from Ohio had a higher identification rate on the Talented vignette than participants from West Virginia and Pennsylvania. As previously noted, Ohio's definition of giftedness contains multiple, explicit criteria that address non-academic areas in which a student may be gifted (Ohio Administrative Code 3301-51-15, 2008). In comparison, Pennsylvania's definition briefly describes ways in which a person can demonstrate giftedness, including demonstrated achievement through work products (20 PA Code § 16.21(d)-(e), 2000); however, the definition emphasizes an IQ standard score of 130 or higher. West

Virginia's definition of giftedness focuses on standard scores from IQ tests and achievement tests only (Policy 2419: Regulations for the Education of Exceptional Students, 2014).

The Multiple Criteria vignette represented an individual whose IQ standard score was close to, but did not meet or exceed, 130. The profile of the individual in this vignette also closely matched the profile of the individual in the Typical vignette. Due to the similarities in profiles of the individuals in these two vignettes, the researcher believed that the exact criteria of the state definitions should have a minimal impact, if any, on responses. All but three of the 47 participants who answered the Multiple Criteria vignette identified the individual as being gifted. Additionally, all participants identified the individual in the Typical vignette as gifted. Overall, these results suggest that state definitions of giftedness do affect the way in which school psychologists perceive giftedness, especially when an individual does not meet the traditional definition of giftedness.

Research Question 5

What are the anticipated responses by the participants on the predictor variables? It was hypothesized that responses for several variables would mirror the results of Curtis et al. (2010). It was hypothesized that 78.0% of participants would be female (Sex of Participant), 90.0% of participants would

identify their race as Caucasian (Race of Participant) and 3.0% of participants would identify their race as African American (Race of Participant). It also was hypothesized that 16.0% of participants would have obtained their doctorate (Highest Level of Training).

Research conducted by Robertson et al. (2011) formed the basis for hypotheses in regards to LEA Gifted Identification Policy and Comfort Level with Conducting Gifted Evaluations. It was hypothesized that 60.0% of participants would utilize an IQ cutoff standard score of 130 and 75.0% of participants would rate their comfort level in conducting gifted evaluations as Uncomfortable or Very Uncomfortable. The final two hypotheses were based on the personal experience of the researcher: the majority of participants (75.0%) would conduct 10 or fewer gifted evaluations per year and the majority of participants (75.0%) would identify 5 or fewer gifted students per year.

Generally, responses to the pertinent predictor variables were similar to those obtained by Curtis et al. (2010). The majority of the sample was female and Caucasian with percentages for both of these variables being higher than those reported by Curtis et al. (2010). Only 8.0% of participants reported having their doctorate (16.0% hypothesized). Likewise, 65.3% of participants conducted 10 or fewer evaluations (75.0%

hypothesized) and 69.4% of participants identified five or fewer students as gifted per year (75.0% hypothesized).

Responses for number of participants that reported using an IQ standard score of 130 as a criterion for determining giftedness was similar to the result reported by Robertson et al. (2011) in that 50.0% of participants from the current study reported using an IQ standard score of 130 (60.0% hypothesized). Participant responses to the variable Comfort Level with Conducting Gifted Evaluations differed significantly from the 75.0% of participants who were hypothesized to rate their comfort level as being Uncomfortable or Very Uncomfortable. In contrast, only 5.9% of participants rated their comfort level as being Uncomfortable or Very Uncomfortable. This result may have occurred, in part, due to the variations between those populations studied by Robertson et al. (2011) and the population which was the focus of the present study. Robertson et al. (2011) was a national study of school psychologists that recruited participants from states in which gifted services were not offered. The current study specifically sought out participants from states with statutes that mandate gifted services to students. As a result, participants in this study may have more experience conducting gifted evaluations and may have been more likely to rate themselves as being comfortable

with conducting gifted evaluations participants in the Robertson et al. (2011) national study.

The differences in results between the present study and the Robertson et al. (2011) study also may have been affected by the usage of different terminology. This study utilized four terms: Very Comfortable, Comfortable, Uncomfortable, and Very Uncomfortable. The Robertson et al. (2011) study utilized the terms high, low to medium low, and medium high or high. It is possible that using precisely the same terms in both studies would have led to similar study results. A third reason that the results of the present study deviate from the hypotheses may be attributable to the small sample size. It is possible that a larger sample would have more closely matched the characteristics of the sample from the Robertson et al. (2011) study and, consequently, may have produced responses similar to those from the Robertson et al. (2011) study.

Research Question 6

What will be the relationship between the predictor variables and responses on the vignettes? Ten hypotheses were proposed for this research question:

1. There should be no differences between predictor variables and responses on the Typical vignette.
2. Younger participants would be more likely to identify the individual in the Multiple Criteria and Talented vignettes as gifted.
3. Individuals with a doctorate would be more likely to identify the individual in the vignettes as gifted.

4. Larger school districts were more likely less likely to identify the individual in the vignettes as gifted.
5. School districts with a more diverse racial makeup were more likely to identify the individual in the vignettes as gifted.
6. Participants who are not involved in the gifted identification process would be less likely to identify the individuals in the vignettes as gifted.
7. Participants who select IQ as their LEA's gifted identification policy would be less likely to identify the individual in the vignettes as gifted.
8. Participants who select Multiple Criteria, Rubric, or Other as their LEA's gifted identification policy would be more likely to identify the individual in the vignettes as gifted.
9. Participants who conduct higher numbers of gifted evaluations would be less likely to identify the individual in the vignettes as gifted.
10. Participants who identified a higher number of gifted students would be less likely to identify the individual in each vignette as gifted.

The first hypothesis, that there would be no differences among predictor variables and responses on the Typical vignette, was confirmed. Conversely, hypotheses 2-10 were not confirmed, as there were no significant differences between the predictor variables and responses on the vignettes. The rejection of these hypotheses may have been due, as noted for previous research questions, to the small sample size of this study. A larger sample size may have led to significant differences between conditions of the predictor variables and responses on the vignettes. Alternatively, a larger sample size may have provided similar results, which would suggest that the predictor

variables are not associated with school psychologists' perceptions of giftedness.

Research Question 7

What will be the strength of the relationships between the predictor variables? Correlations and effect sizes between six variable combinations were hypothesized. Effect sizes (Cohen & Cohen, 1983) was characterized as being either small (.10), medium (.30), or large (.50). It was hypothesized that three variable pair correlations would have small effect sizes: Age of Participant and Highest Level of Training, Age of Participant and Number of Years Practicing as a School Psychologist, and Involvement in Gifted Identification Process and Comfort Level in Conducting Gifted Evaluations. Three variable pair correlations were hypothesized to have medium effect sizes: Comfort Level in Conducting Gifted Evaluations and Number of Gifted Evaluations per Year, Comfort Level in Conducting Gifted Evaluations and Number of Gifted Students Identified per Year, and LEA Gifted Identification Policy and Comfort Level in Conducting Gifted Evaluations. Finally, it was hypothesized that there would be no correlation pairs with large effect sizes.

Review of hypotheses. Two of the variable pairs that were predicted to have small effect sizes were significantly correlated: Age of Participant and Number of Years Practicing as

a Psychologist (large effect size) and Involvement in the Gifted Identification Process and Comfort Level with Conducting Gifted Evaluations (medium effect size). Only one of the variable pairs predicted to have a medium effect size was statistically significant: Comfort Level with Conducting Gifted Evaluations and Number of Gifted Evaluations per Year; however, the results of this study suggested that this variable pair had a small effect size. No other predicted variable pairs were statistically significant. It also was predicted that there would be no variable pairs with significant and large effect sizes but results from this study suggested that four variable pairs had large effect sizes: Number of Gifted Evaluations and Number of Gifted Students Identified per Year; State of Employment Ohio and Number of Gifted Students Identified per Year, Age of Participant and Number of Years Practicing as a School Psychologist, and State of Employment Ohio and number of Gifted Evaluations per Year.

Based on these results, it was concluded that older participants were more likely to have practiced as a school psychologist for a greater number of years. Additionally, participants who were involved in the gifted evaluation process were found to be more likely to conduct a higher number of gifted evaluations. Finally, participants who were more comfortable with conducting gifted evaluations were more likely

to conduct a larger number of evaluations. All other results were not found to be statistically significant.

Significant predictor pair correlations. Twenty-one additional correlation pairs were statistically significant. Participants from Pennsylvania were more likely to report the use of an IQ standard score to determine the eligibility of gifted students (medium effect size). They also reported that they were younger than participants from the two other states (small effect size). Participants from Ohio reported that they were more likely to be older than participants from the two other states (medium effect size). The Ohio participants also were less likely to be involved in the gifted identification process (small effect size).

Several significant correlations were reported for State of Employment and the predictor variables Number of Gifted Evaluations per Year and Number of Gifted Students Identified per Year. Participants from Pennsylvania and West Virginia were more likely to conduct a larger number of gifted evaluations and to identify a larger number of gifted students than participants from Ohio. These results correspond to the small negative relationship between participants from Ohio and the predictor variable Involvement in the Gifted Identification Process. Participants who reported that their LEA's gifted identification policy included criteria other than an IQ standard score,

multiple criteria, or a rubric were less likely to conduct gifted evaluations (small effect size). Few participants indicated that their LEA utilized other criteria and most participant responses reflected the use of standardized IQ and achievement scores. Interpretation of this relationship is affected negatively by the overall structure of the predictor variable LEA Gifted Identification Policy. If these results are replicated, it would be beneficial to examine the responses to all survey questions by participants who selected Other. It is possible that this relationship is a consequence of the relationship between the participant and another predictor variable, such as State of Employment.

Older participants were less likely to report that their school district utilized multiple criteria to evaluate students for gifted services (small effect size). It is possible that older school psychologists are more comfortable with a traditional definition of giftedness and, consequently, are less likely to encourage their school district to consider multiple criteria into gifted evaluations. Finally, participants with their doctorate reported being less comfortable with conducting gifted evaluations than their counterparts. The researcher is unsure why this result was significant. Only six participants reported that they had obtained their doctorate. Of those six, half reported that their age was in the 30's and that they had

practiced school psychology for six years or less. The remaining three doctoral participants reported their ages between 40 and 50 years and that they had been employed as school psychologists for between 15 and 23 years.

Additionally, five of the six participants with doctorates reported being Comfortable with conducting gifted evaluations. Only one participant with their doctorate actually reported being Uncomfortable with conducting gifted evaluations. That participant was in his/her 50's and had been a school psychologist for 20 years. This examination of the characteristics of the doctoral students and the lack of overt trends in responses to the survey questions suggests that this significant result is due either to the small data set or from the use of the Kendall's Tau B correlation, which requires that data meet less stringent criteria for analysis than the Pearson Product-Moment correlation.

An alternate rationale for the result is that their comfort levels with conducting gifted evaluations were tempered by their increased academic instruction. A participant with their doctorate has taken a greater number of graduate level courses in school psychology, increasing the likelihood of enrolling in courses pertaining to giftedness and gifted evaluations. School psychologists with their doctorates also may have a greater awareness of deficits in their knowledge of giftedness and

gifted evaluations. This increased awareness may have led to a greater discomfort level with conducting gifted evaluations than participants with a Master's degree or Specialist's certification in School psychology. This study would have to be replicated with a larger number of participants with doctorates in order to establish a relationship with their comfort levels with conducting gifted evaluations.

Several correlations pairs, although statistically significant, did not add meaningful insight into the gifted evaluation process. Participants who conducted a higher number of gifted evaluations were more likely to identify a larger number of gifted students (large effect size). Older participants were more likely to have spent more years practicing as a school psychologist (large effect size). In addition, participants who were involved in the gifted identification process reported a higher comfort level with conducting gifted evaluations (medium effect size), conducted a higher number of gifted evaluations (medium effect size), and identified a higher number of gifted students (medium effect size). Finally, participants who reported that they were more comfortable with conducting gifted evaluations also conducted a greater number of gifted evaluations per year (small effect size).

Research question 7 summary. Six variables pairs were hypothesized to have significant effect sizes (three small and three medium) and no variable pairs were hypothesized to have a significant and large effect size. Only three of the predicted variable pairs had significant effect sizes. Two of the pairs had greater than anticipated effect sizes and the third variable pair had a smaller than anticipated effect size. Although the researcher hypothesized that no variable pairs would have large effect sizes, results from this study found that four variable pairs had large effect sizes. Twenty-one additional variable pairs were reported to have significant effect sizes. Many of these correlations included the variable State of Employment. Participants from Pennsylvania were more likely to report the use of an IQ standard score of 130 or higher when determining eligibility for gifted services. Participants from Pennsylvania and West Virginia were more likely to conduct gifted evaluations than participants from Ohio. Additionally, Participants with their doctorate reported a lower comfort level with conducting gifted evaluations than their counterparts with a less advanced degree. Finally, several variable pairs, while significant, did not add meaningful information to the field of gifted education.

Existing Literature and Current Findings

The history of giftedness inexorably is tied to the history of intelligence testing. Since the early 1900's, the definitions of both intelligence and giftedness have evolved from early, simplistic constructs to multi-faceted ones that reflect current conceptualizations. Consensus, however, is lacking as to the specific skills that comprise both intelligence and giftedness, despite the commonality among definitions.

Conceptualizations of Intelligence

Lewis Terman, an early twentieth century psychologist, revised Alfred Binet's original intelligence test for use in the United States of America (Jolly, 2008). Terman's revised intelligence test produced a quantitative representation of a test subject's intelligence in the form of a single score. Contemporary theories of intelligence, however, can be divided into two distinct categories. The first category includes those theories that hypothesize intelligence as comprising both a general intelligence and additional specific cognitive skills. The most prominent theory that espouses this definition of intelligence is Cattell-Horn-Carroll (CHC) theory, which has heavily influenced current tests of intellectual functioning (Alfonso et al., 2005). Theories that posit intelligence as having multiple aspects but no general intelligence, such as

Howard Gardner's theory of multiple intelligences (Gardner, 1983) represent the second category of intelligence. In general, while modern theories of intelligence conceptualize intelligence as having multiple aspects, regardless of the presence or absence of a general intelligence, the theories differ as to which specific cognitive abilities should comprise intelligence.

Conceptualizations of Giftedness

As a result of the development of his revised test of intelligence, Terman elected to classify individuals who achieved a score in excess of 135 as being gifted (Brown et al., 2005), a conclusion which became the basis for the common definition of giftedness of an IQ standard score of 130 (Horowitz & O'Brien, 1986). Sidney P. Marland, the United States Commissioner of Education, in his 1972 report to the United States Congress on gifted education, expanded upon Terman's definition and outlined six areas in which an individual may be gifted (Marland, 1972): general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability.

Contemporary theories of giftedness typically can be classified in one of two ways: educational or success. Theories of giftedness that include high intellectual functioning as well

as other criteria, which may differ with each definition, are included in the educational category of giftedness. While there are multiple theories which may be classified in this manner (National Association of Gifted Children, 2013; Pfeiffer, 2013), there is little agreement among these various theories as to the specific criteria which must be met in order to determine if an individual should be considered to be gifted; however, all of these theories generally focus on giftedness and how it is manifested in school-age individuals.

The success category of gifted theories is populated with those theories that define giftedness as the potential to experience success not only in education, but in life as well. For example, Joseph Renzulli's theory of creative-productive giftedness was based on his belief that individuals should be judged by their success in life and not by scores on an intelligence test (Renzulli, 2000). Likewise, Sternberg did not include intelligence scores in his definition of giftedness, but rather focused on executive functioning skills, practical performance skills, and knowledge acquisition (Sternberg & Grigorenko, 2002).

Identification Practices

Although theoretical definitions of giftedness may focus on either educational or practical potential, the purpose of this study was to determine how school psychologists define

giftedness, with an emphasis on the educational definitions of giftedness. The lack of consensus as to how educational giftedness ought to be defined is reflected in how individual state statutes define giftedness. The statues of three states from which participants were recruited, Pennsylvania, West Virginia, and Ohio, each include a different definition of characteristics which individuals must demonstrate to be identified as gifted.

In the same way that state statutes differ as to a definition of giftedness, research on gifted identification practices by school psychologists across multiple states also noted a lack of consensus concerning both gifted definitions and identification practices (Alvino et al., 1981; Robertson et al., 2011). While some school psychologists employ multiple criteria or rubrics to establish if a student may be identified as gifted, many school psychologists report that an IQ standard score of 130 was the sole criterion utilized to identify gifted students (Robertson et al., 2011).

Integration of Previous Research and Current Results

The sample of this study, as indicated by the results, was reflective of national trends in that most participants were female, had a Master's degree or Specialist's certification, and were Caucasian. Due to the small sample size, the generalizability of the results from this study is limited. The

results of this study confirmed that there continues to be no consensus as to how school psychologists perceive giftedness. The 100% identification rate of the Typical vignette supports previous research that an IQ score of 130 continues to be one of the main criteria used to define giftedness (Horowitz & O'Brien, 1986). The majority of participants also identified as gifted the individual in the Multiple Criteria vignette, which supports current educational theories that define giftedness as being comprised of multiple traits and as being more than a single IQ standard score.

Results from the Talented vignette were mixed. The majority of participants (32 of 49; 65.3%) reported that the individual in the Talented vignette was not gifted. Participants who conducted a higher number of gifted evaluations and identified a higher number of gifted students also were less likely to identify the individual in the vignette as gifted. These results also support the research of Horowitz and O'Brien (1986) that an IQ standard score of 130 remains one of the main criterion for defining giftedness. State definitions of giftedness did impact responses to the Talented vignette in that school psychologists from Ohio, a state which includes multiple criteria in its definition of giftedness, were more likely than school psychologists from the other two states to identify the student in the Talented vignette as gifted.

Participants from this study, like the majority of the educational community, agree that individuals with an IQ standard score of 130, should qualify for gifted services. Giftedness in the arts, however, continues to be an area of controversy, with the sample of this study disagreeing as to whether these individuals should qualify for gifted services. Other results demonstrate that conceptualizations of giftedness are influenced by state definitions of giftedness. Additionally, the results show that school psychologists overwhelmingly reported that they were comfortable with conducting gifted evaluations, which directly contrasts research conducted by Robertson et al. (2011).

Limitations

There are multiple limitations to this study that affected the quality of the data, the statistical procedures employed, and the interpretation of the results. Consequently, the validity of the results from the study, as well as the generalizability of the results, are somewhat diminished. Limitations are reported for participant recruitment, data collection, and data analysis.

Recruitment

Potential participants were recruited through their state school psychology associations. Seventy-five participants participated in the survey, which led to an estimated response

rate of 6% of the total potential sample for the study. It was hypothesized that this low participation rate may have been due to the recruitment of subjects through electronic means and may have been impacted by participants often being recruited for surveys. The low response rate made it difficult to generalize results to all school psychologists from Pennsylvania, Ohio, and West Virginia.

Data Collection

All study participants accessed an electronic survey and responded to the demographic questions and three vignettes. The survey included a sample of 75 participants but only 48 participants answered every survey question. Consequently, the results derived from this study, regardless of their statistical significance, may not reflect the actual practices and beliefs of the study's sample. Future research would need to replicate these results with a larger sample that completed the entire survey in order to gauge the generalizability to the population of school psychologists in PA, OH, and WV.

Data from this study included 14 demographic variables that were divided into three clusters, as noted in Chapter III: Demographics, LEA Demographics, and Involvement in Gifted Evaluations. Many of the participants who did not provide responses to the vignettes also did not answer questions about the demographics of their school district of employment. It is

possible that participants did not know the exact enrollment of their school district or the racial breakdown of their school district's student population. Participants may have not have desired to spend additional time researching this information and, consequently, did not complete every question on the survey.

While School District Enrollment requested a single response from participants, School District Race required participants to slide seven numerical scales to reflect percentages and required that the total percentage added up to 100%. It may have been more appropriate either to eliminate these queries or to provide specific response groups (e.g., 0-2000, 2001-5000, 5001-1000, 10,001+ for School District Enrollment and 0-74% Caucasian and 75%+ Caucasian for School District Race). Either of these alternatives may have led to increased completion rates to the survey among participants.

The variable LEA Gifted Identification Policy provided a different challenge as a consequence of the survey question's structure. The researcher originally intended for participants to specify the policy used by their school district to identify gifted students; however, the construction of the survey question permitted participants to specify all of the individual components of the gifted identification policy approved by the participant's school district. This structure generated

confusion as to the overall policy employed by each district. For example, in response to this inquiry, one participant selected both the IQ 130 and Rubric boxes. Accordingly, the researcher was not able to determine if the district utilized two separate policies for the identification of gifted students or if the IQ standard score was one component of the gifted rubric.

In order to eliminate this problem in future studies, participants should be required to select a single response that best describes their district's gifted identification policy. Explanations of the various options relating to school district policies also should be provided to study participants. It is reasonable to accept that, in the current study, some participants who indicated that their districts utilized gifted rubrics also would have indicated that these gifted rubrics contained multiple criteria, had the inquiry been structured differently. Explaining the response options and requiring that participants select only one response may have led to less confusion among participants, the consequence of which may be significant results derived from the subsequent statistical analyses.

Data Analysis

As noted in Chapter IV, relationships between the moderator variables were to be calculated using the Pearson Product-Moment

Correlation. Unfortunately, the data were not normally distributed and, as a result, the Kendall's Tau B correlation was utilized. This correlation has fewer and less stringent assumptions but also limits how the data can be interpreted. The Pearson correlation reflects how responses to one variable predict responses to a second variable, while the Kendall correlation examines whether participants answered both variables in a similar or dissimilar manner. The Kendall correlation reflects only a general trend in responses by participants and does not imply that variable responses from one variable can be used to predict responses on a second variable. A larger sample size may have led to a more normal distribution of data, which would have allowed the researcher to calculate Pearson correlations. This calculation may have produced correlations that would have allowed for a more confident interpretation of the results.

The structure of the variable LEA Gifted Identification Policy negatively impacted the examination of potential relationships between the participants' school district policies governing gifted identification and the participants' responses to the questioned posed based on the vignettes. Since many participants selected multiple options for their LEA's gifted identification policy, it was difficult to determine if any of the LEA Gifted Identification Policy options were related to

responses on the vignettes. For example, one participant selected both IQ and Multiple Criteria and also indicated that the person in the Multiple Criteria vignette was gifted. It is unclear for this participant if an IQ standard score is a component of the multiple criteria used to determine eligibility for gifted services or if there are two separate policies for determining gifted eligibility. The participant's response on the vignette, consequently, could not be attributed to the selection of either to IQ or Multiple Criteria.

The structure of this variable also complicated the potential effects of the mediator variable Agreement with LEA Gifted Identification Policy. While participants could select multiple gifted identification policies, they could only select yes or no for the variable Agreement with LEA Gifted Identification Policy. As a result, the researcher could not determine if a participant's yes or no answer reflected the participant's agreement or disagreement with a component of the LEA Gifted Identification Policy or with the overall identification policy. For example, it is possible that a participant could agree with his or her district's use of a gifted rubric but the participant did not agree with the inclusion of an IQ standard score of 130 as one of the criterion of the rubric. If, as suggested previously, participants had been required to select the one option for LEA Gifted

Identification Policy that was the most closely aligned with their LEA's policy, then the participants' responses may have directly reflected their general agreement or disagreement with their LEA's policy.

Implications for Future Research

The results from a study should not only confirm or reject hypotheses, they also should spur additional research to both replicate the results and to explore new research questions derived from the results of the original study. These additional research questions may be developed by altering the design of the present study or by examining the present study's significant results in greater detail. Regardless of the structure of future studies, replication of the results from this study is paramount because the small sample size limited the statistical power to determine meaningful results and many research hypotheses were rejected. Additional surveys that obtain similar results would validate the results of the present study. Seven areas for future research also are proposed to examine specific aspects of the study design and results from the study.

States Included in the Sample

The first area for future research addresses the states are included in the sample. As previously noted, 33 states currently offer gifted services. This study could be expanded

to include all of those states, gaining a representative view of all school psychologists who are involved in gifted evaluations. It may also be beneficial to conduct the study with school psychologists in states where gifted services are not offered. These school psychologists' perceptions would not be influenced by a state definition and, therefore, their responses may reflect their personal opinions of giftedness.

Additional Vignettes

The vignettes in this study represented three scenarios that school psychologists may encounter when conducting gifted evaluations; however, there are an infinite number of other scenarios that could be included in future vignettes. One such additional vignette could describe a student whose IQ is above 130 with high achievement scores but who is not performing well academically in the classroom. The provision of gifted services by a school district requires that the individual be eligible for gifted services and demonstrate a need for additional supports. A student with an IQ standard score of 130 but poor grades may not be demonstrating a need for gifted services and it is possible that evaluation teams may determine that this individual should not receive gifted services. Further, an individual whose IQ is less 130, is talented artistically, and whose academic achievement is above average could be portrayed in a second possible vignette. Another potential vignette could

depict an individual who has an IQ of 130 or higher but has significant behavioral difficulties in school and poor classroom performance. The expansion of the number of vignettes could help researchers more specifically determine whom school psychologists would identify as gifted.

Vignettes with Updated Assessments

Following the completion of this survey, the authors of the Woodcock-Johnson and Wechsler intellectual and achievement tests published updated instruments. This study included data from the Wechsler Intelligence Scales, Fourth Edition, and the Woodcock Johnson Tests of Achievement, Third Edition. Future research, however, should utilize the new instrumentation. The Woodcock Johnson Tests of Achievement, Fourth Edition, utilizes the same names for the broad achievement categories as its predecessor and reflects a broad assessment of overall reading and math skills (LaForte, McGrew, & Schrank, 2014). The consistency in both the terminology and skills that are assessed by the instruments improve the likelihood that future results can be interpreted in light of the results from this study.

There is a significant change, however, in the indices from the WISC IV to the new Wechsler Intelligence Scale for Children, Fifth Edition (WISC V). The WISC IV contains an overall measure of intellectual functioning and four additional index scores: the Full Scale Intelligence Quotient, the Verbal Comprehension

Index, the Perceptual Reasoning Index, the Processing Speed Index, and the Working Memory Index. The WISC V also contains an overall measure of intellectual functioning but contains five index scores: the Full Scale Intelligence Quotient, the Verbal Comprehension Index, the Visual Spatial Index, the Fluid Reasoning Index, the Working Memory Index, and the Processing Speed Index. The Perceptual Reasoning Index, which was utilized for the vignettes, has been eliminated from the WISC V (Pearson Clinical, 2015a). Fluid Reasoning is one of the new scales on the WISC V. It "measures the child's ability to detect the underlying conceptual relationship among visual objects and use reasoning to identify and apply rules" (Pearson Clinical, 2015b, para. 1). Any future vignettes should utilize the terminology of the WISC V. The continuation of the Full Scale Intelligence Quotient and the Verbal Comprehension Index terms between versions of the WISC may minimize confusion from future participants.

Participant Rationale for Vignette Responses

It also may be helpful to conduct qualitative research to provide participants the opportunity to provide a narrative explanation as to why they did or did not identify the individual in a vignette as gifted. Responses then could be examined and potentially categorized as follows: every individual with an IQ of 130 or higher should be identified as

gifted, the student's IQ was not 130 or higher, or individuals with artistic skills are not gifted. By requiring participants to articulate their rationale for their determinations, instead of the researcher postulating these conclusions, even greater insight may be gained as to how school psychologists perceive giftedness. Participant responses could also be examined to determine if there are common themes as to why participants did or did not identify the individual as being gifted.

School Psychologists Definitions of Giftedness

This line of inquiry also could be expanded by requesting that participating school psychologists describe how they believe giftedness should be defined. The drawback to this type of study is both the amount of time required to conduct such a survey and the amount of time necessary to analyze the responses for similarities and differences. If pursued, this research would be best conducted with a national sample of school psychologists in order to provide consensus on how giftedness is perceived.

Participants Who Were Evaluated for Gifted Services

Another area of future research could examine whether or not the participant ever was evaluated and/or received gifted services in school. The way in which a participant was evaluated for gifted services also may impact his/her responses on the vignettes. For example, a participant who qualified

under a specific policy (IQ, Multiple Criteria, Rubric, or Other) may be more likely to support that method of evaluating gifted students and not support the other methods. Conversely, a participant who did not qualify using a particular method may be disinclined to support that method and be more inclined to support the other methods.

School Psychology Training Programs and Responses to Vignettes

The last area of future research might examine the participants' training programs and how gifted evaluations were portrayed. It is possible that there are differences in the amount of time and importance that is placed on instructing graduate students to conduct gifted evaluations. The researcher's graduate program, while providing only a single course on giftedness and gifted evaluations, nevertheless strongly supported gifted evaluations and the importance of identifying and supporting the needs of gifted students. Participants from programs that placed less emphasis on gifted evaluations may be less inclined to identify individuals in the vignettes as gifted. Additionally, the manner in which participants were trained to conduct gifted evaluations subsequently may affect responses to the vignettes. For instance, a training program that espouses a traditional model of gifted identification, focusing on an IQ score of 130 or higher, may influence a participant not to identify the

individual in the Multiple Criteria and/or Talented vignettes as gifted. Participants could also be asked to identify the amount of additional training/professional development they have pursued or received after obtaining their graduate degree. Participants who are exposed to, or seek out, additional trainings may respond to the vignettes in a different manner than individuals who receive no additional training.

Implications for the Practice of School Psychology

The results of this study, although tempered by the small sample size, yielded several implications for school psychologists. The primary conclusion is that school psychologists from Pennsylvania, West Virginian, and Ohio do evaluate giftedness based on the overall profile of the student and not just their IQ standard score. This inference is based on responses to the Multiple Criteria vignette, in which participants overwhelmingly identified the individual as being gifted (91.5%), even though the scores from the WISC IV were below 130.

The second implication is that there continues to be variance concerning the definition of giftedness outside of strong intellectual functioning and academic achievement. While 33.3% of participants identified the individual in the Talented vignette as gifted was more than hypothesized, this result still

is dramatically lower than the identification rate of the individual detailed in the Multiple Criteria vignette.

The third implication is that the statutory definitions of giftedness approved in each state do have an impact on how that state's school psychologists perceive giftedness. For example, school psychologists from Ohio, a state whose statutory provisions addressing giftedness provides the most detail as to how a student may be identified as be gifted in the areas of the performing arts and creativity, were more likely to identify the individual in the Talented vignette as gifted. The final implication derived from the results of this study is that, regardless of their views of giftedness, school psychologists rate themselves as being comfortable with conducting gifted evaluations. This implication is ironic, given that there is continued controversy within the field of school psychology, and the field of giftedness as well, as to what actually constitutes giftedness. It suggests that participants believe that their individual perceptions of giftedness are appropriate, despite the aforementioned lack of consensus as to how giftedness should be defined.

Summary

The purpose of this study was to examine how school psychologists perceive giftedness. Historically, an IQ score of 130 or higher was used to identify giftedness. Over time, the

definition has changed to incorporate multiple factors, which may or may not include an IQ standard score of 130; however, there is no generally agreed upon definition of giftedness. In public education, individual states may adopt their own definition of giftedness. Participants from three states that neighbor each other, Pennsylvania, Ohio, and West Virginia, were recruited to participate in a survey that contained demographic questions about the participant, their school district, and culminated in three vignettes describing an individual who was being evaluated for gifted services.

Results of this study confirmed that school psychologists considered students with an IQ standard score of 130 or higher to be identified as gifted. Additionally, participating school psychologists classified students with IQ standard scores approaching 130 and possessing strong academic and behavioral characteristics as gifted. There is, however, a lack of consensus among these school psychologists as to whether students who demonstrate superior skills in the areas of the arts should be identified as gifted. While this study was not able to determine if individual factors relating to a participant and their place of employment affect how giftedness is perceived, a participant's state definition of giftedness did influence responses to the vignettes. Finally, although there is no consensus on how to define giftedness, study participants

overwhelmingly reported being comfortable conducting gifted evaluations, suggesting that they feel comfortable with how they personally and professionally define giftedness.

Since the early 1900's, psychologists and educators have acknowledged the presence of students who were considered to be gifted and in need of additional educational supports. Following Dr. Marland's report to the United States Congress which expanded the definition of giftedness in this country (Marland, 1972), newer theories of giftedness that expand the definition beyond a single IQ standard score have emerged and have been integrated into both educational practice and educational policy. Though there continues to be disparities between gifted theories and a lack of consensus of a standardized definition of giftedness, students' academic needs and experiences have been, and will continue to be, enriched as a result of these expanded definitions. School psychologists, as the educational professionals who evaluate students for gifted services, should continue to have a voice in defining giftedness and advocate more strongly for gifted definitions that reflect current research in the fields of both intelligence and giftedness.

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Appendix A

IRB Approval Letter

Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

June 22, 2012

Benjamin Stumpf
5108 La Rae Drive
Erie, PA 16506

Dear Mr. Stumpf:

Your proposed research project, "Giftedness: Conceptualizations and Identification Practices of School Psychologists," (Log No. 12-124) has been reviewed by the IRB and is approved as an expedited review for the period of June 18, 2012 to June 18, 2013.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond June 18, 2013 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at http://www.iup.edu/page.aspx?id=91683 .

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies, including, but not limited to, policies regarding program enrollment, topic approval, and conduct of university-affiliated activities.

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

xc: Dr. Timothy Runge, Dissertation Advisor
Ms. Brenda Boal, Thesis and Dissertation Secretary

Appendix B

Cover Letter to Participants

Date

To Whom It May Concern,

You have been invited to participate in a research study because you are a school psychologist who currently is practicing in Pennsylvania, Ohio, or West Virginia. The following information will provide you with background information so that you can better decide if you would like to participate in the research study.

The purpose of this study was to examine the gifted identification procedures and practices of school psychologists. I am interested in identifying the specific ways in which school districts identify gifted students, as well as your perceptions on the gifted identification process. Results of this study will be used to describe common practices and perceptions of school psychologists. To accomplish the goal of this study, you are invited to voluntarily and anonymously complete an electronic survey. It is anticipated that the survey will take less than 15 minutes of your time. The Indiana University of Pennsylvania's (IUP) Institutional Review Board for the Protection of Human Subjects has approved this project.

Questions on this survey are not of a sensitive nature, thus there are no known risks or discomforts to you as a potential participant. Completion of this electronic survey is completely voluntary. You are not obligated in any way to complete the survey nor is there any penalty for refusing to participate. Please not that even if you agree to complete the survey, you can withdraw at any time by simply exiting the survey. If you choose to participate, your responses are submitted anonymously. That is your specific responses to survey questions cannot be directly connected to you.

Informed consent to participate in this study is granted by you when you access the survey. If you are willing to participate, please click on the link (insert link of survey) which will take you directly to the survey. You can withdraw your consent to participate at any time by closing the survey. If you would like to participate in this survey, please complete the survey by September 1, 2012. If you wish to obtain a copy of the final results of this study, please send me an email via the Qualtrics survey program or to the email address listed below.

Once you have completed the survey, you will have to opportunity to follow a link to a second, separate survey. This survey will

allow you to enter an email address for a chance to receive one of four $25 Visa gift cards. Winners will be contacted via email once the deadline for survey submission has passed. Please note that there is no way to link information on the two surveys. They are completely separate from one another. A physical address will be required of the winning email addresses to receive the gift card.
For more information, please contact Mr. Stumpf at ncsl@iup.edu. Thank you for your time and consideration.

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Appendix C

Copy of Survey Instrument

Sample Demographics

Q1 Dear Participant,
Thank you for agreeing to participate in this doctoral dissertation survey. Please note that your participation is strictly voluntary and anonymous. If, at any time, you wish to discontinue participating in this study, please close your internet browser. Results are only saved if you complete the entire survey.

Thank you for your participation
- ❍ Continue to the study (1)

Q2 Age of Participant

Q3 Sex of Participant
- ❍ Male (1)
- ❍ Female (2)

Q4 Race of Participant
- ❍ White (1)
- ❍ Black or African American (2)
- ❍ American Indian and Alaska Native (3)
- ❍ Asian (4)
- ❍ Native Hawaiian and Other Pacific Islander (5)
- ❍ Some Other Race (6)
- ❍ Two or More Races (7)

Q5 Highest Level of Training
- ❍ Master's/Specialist (1)
- ❍ Doctorate (2)

Q6 Number of Years Practicing School Psychology

Q7 School District Enrollment

Q8 School District Race (Percentages) Note: Percentages must add to 100 and all sliders must be moved to 0 or higher

_____ White (1)
_____ Black or African American (2)
_____ American Indian and Alaska Native (3)
_____ Asian (4)
_____ Native Hawaiian and Other Pacific Islander (5)
_____ Some Other Race (6)
_____ Two or More Races (7)

Q9 Are you involved in the gifted identification process for your district?

- ❍Yes (1)
- ❍No (2)

Q10 LEA Gifted Identification Policy (Check all that apply)

- ❑IQ 130 (1)
- ❑Multiple Criteria (2)
- ❑Gifted Rubric/Matrix (3)
- ❑Other: please describe (4) _____

Q11 Do you agree with your LEA's gifted identification policy?

- ❍Yes (1)
- ❍No (2)

Q12 What is your comfort level in conducting gifted evaluations?

- ❍Very Comfortable – I have a significant amount of experience conducting gifted evaluations and am very confident in the results of my gifted evaluations (1)
- ❍Comfortable – I have some experience conducting gifted evaluations and am reasonably confident in the results of my gifted evaluations (2)
- ❍Uncomfortable – I have some experience conducting gifted evaluations and but am not completely confident in the results of my gifted evaluations (3)
- ❍Very Uncomfortable– I have little experience conducting gifted evaluations and am not very confident that the results of my gifted evaluations are valid (4)

Q13 Number of Gifted Evaluations You have Conducted Per Year

Q14 Number of Students You have Identified as Gifted Per Year

Q15 Student ABC has been a high achieving student for several years. ABC has always completed work early, and work samples are always very strong. Student ABC will volunteer answers and works well in groups, often taking a leadership role. No behavioral or social difficulties are reported, and ABC has many

friends. ABC is reported to have a strong sense of humor and an advanced vocabulary. ABC was referred for an evaluation for gifted services and received the following scores on the Wechsler Intelligence Scales for Children, Fourth Edition (WISC IV), the Woodcock Johnson Tests of Academic Achievement, Third Edition (WJ-III Ach), and the Gifted Rating Scales.

Note: WISC IV and WJ-III Ach scores represent standard scores. Results on the WISC IV and WJ-III Ach report 95% confidence intervals. Gifted Rating Scales provides scores as t scores. In order to ensure that scores are interpreted correctly, descriptive terminology that reflects ranges of t scores has been provided.

WISC IV (95% CI)	WJ-III Ach (95% CI)	Gifted Rating Scales (Probability of Gifted)
Full Scale IQ 135 (129-139)	Broad Reading 132 (129-135)	Intellectual Very High Probability
Verbal Comprehension 130 (121-135)	Broad Math 130 (127-133)	Academic Very High Probability
Perceptual Reasoning 133 (123-138)	Broad Writing 133 (129-137)	Motivation Very High Probability
Processing Speed 128 (116-134)		Creativity Very High Probability
Working Memory 132 (122-137)		Artistic Talent High Probability
		Leadership Very High Probability

In your professional opinion, and not based on your district's gifted identification policy, should ABC be eligible for gifted services?

- ❍Yes (1)
- ❍No (2)

Q16 Student JKL has been a high achieving student for several years. JKL has always completed work early, and work samples are always very strong. Student JKL will volunteer answers and works well in groups, often taking a leadership role. No behavioral or social difficulties are reported, and JKL has many

friends. JKL is reported to have a strong sense of humor and an advanced vocabulary. JKL was referred for an evaluation for gifted services and received the following scores on the Wechsler Intelligence Scales for Children, Fourth Edition (WISC IV), the Woodcock Johnson Tests of Academic Achievement, Third Edition (WJ-III Ach), and the Gifted Rating Scales.

Note: WISC IV and WJ-III Ach scores represent standard scores. Results on the WISC IV and WJ-III Ach report 95% confidence intervals. Gifted Rating Scales provides scores as t scores. In order to ensure that scores are interpreted correctly, descriptive terminology that reflects ranges of t scores has been provided.

WISC IV (95% CI)	WJ-III Ach (95% CI)	Gifted Rating Scales (Probability of Gifted)
Full Scale IQ 124 (118-128)	Broad Reading 135 (132-138)	Intellectual Very High Probability
Verbal Comprehension 128 (120-133)	Broad Math 129 (126-132)	Academic Very High Probability
Perceptual Reasoning 123 (114-129)	Broad Writing 135 (132-138)	Motivation Very High Probability
Processing Speed 128 (116-134)		Creativity Very High Probability
Working Memory 132 (122-137)		Artistic Talent High Probability
		Leadership Very High Probability

In your professional opinion, and not based on your district's gifted identification policy, should JKL be eligible for gifted services?

- ❍Yes (1)
- ❍No (2)

Q17 Student XYZ is a very talented artist. XYZ has shown strong artistic skills from an early age. XYZ has won local artist talent shows sponsored by the community and local university. XYZ was chosen for private lessons by a local college art professor. XYZ's artwork has been featured in the State Capital and on local and regional television news programs. Several of

XYZ's art pieces have been featured in galleries in New York City. XYZ has entered the prestigious Scholastic Art & Writing Awards, winning several regional and national honors. XYZ was given the WISC IV, WJ-III Ach, and the Gifted Rating Scales.

Note: WISC IV and WJ-III Ach scores represent standard scores. Results on the WISC IV and WJ-III Ach report 95% confidence intervals. Gifted Rating Scales provides scores as t scores. In order to ensure that scores are interpreted correctly, descriptive terminology that reflects ranges of t scores has been provided.

WISC IV (95% CI)	WJ-III Ach (95% CI)	Gifted Rating Scales (Probability of Gifted)
Full Scale 115 (109-119)	Broad Reading 110 (107-113)	Intellectual Moderate Probability
Verbal Comprehension 110 (103-116)	Broad Math 112 (109-115)	Academic Moderate Probability
Perceptual Reasoning 119 (110-125)	Broad Writing 109 (105-113)	Motivation Moderate Probability
Processing Speed 109 (99-117)		Creativity Very High Probability
Working Memory 110 (102-117)		Artistic Talent Very High Probability
		Leadership Moderate Probability

In your professional opinion, and not based on your district's gifted identification policy, should XYZ be eligible for gifted services?

- ❍Yes (1)
- ❍No (2)

Appendix D

Request for Email Address

Please enter an email address. Four email addresses will be selected randomly to receive a $25 Visa gift card. Winning participants will be contacted to provide a mailing address to receive their reward. Email addresses will not be linked to the participants' previous responses from the survey.

Appendix E

Cover Letter for Award of Gift Card

Dear Participant,

Thank you for entering your email for a chance to win a $50 Visa gift card. Your email was randomly selected to receive one of the four prizes. In order to receive your prize, you need to reply to this email and provide a physical address. Please maintain a copy of this email for your records. A copy of this email, as well as your response, will be maintained by the researcher for a minimum of three years.

Sincerely,

Mr. Stumpf
Student Researcher