Identification of Underrepresented Populations for Gifted Programs

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Abstract

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Gifted education typically refers to programs designed to meet the needs of learners who have demonstrated a need for accelerated and enriched academic instruction. There has been a documented divergence between the proportion of underrepresented populations, including people of low socioeconomic status, certain races, and the very young, attending a given school district and the proportion of the same populations identified for the district's gifted programs. This literature review analyzes the effectiveness of current assessment procedures in identifying underrepresented populations for gifted programs used by public school systems in the United States, and Washington State in particular. In addition, it reviews the multitude of alternative assessment procedures to identify students' strengths and talents, including performance-based assessments and professional development for teachers. Implications of these findings, recommendations for revised practices, and areas for future investigation will be discussed.

Identification of Underrepresented Populations for Gifted Programs

As a teacher in a gifted program for the past five years, I have had time to notice and ask questions about the population I have the opportunity to teach. One such question relates to the racial and socioeconomic status breakdown of the learners in my classroom versus the population found in a typical general education classroom within my district. Why is it that my classroom has no Hispanic or Black students, very few students of limited financial means, and so many students of Asian and Caucasian descent? Is this pattern typical of gifted programs, or is my classroom merely an anomaly? These questions guided my initial research.

Looking specifically at Washington State during the 2008-2009 school year, White and Asian students made up a greater percentage of the population of students in public school districts' gifted programs than they did of the total public school population (see Table 1). The percentage of Hispanic, Black, and American Indian/Alaska Native students in gifted programs was consequently less than that of the percentage they made up of the total public school population (Pauley & Hess, 2010). These percentages resembled informal comparisons made between my classroom and another at the same grade level in the general education population at my school.

As I continued my research, I noted that these findings were not specific only to Washington State. Looking at all students in public elementary and secondary schools in the United States, White and Asian students made up 61.7% of the total public school population during the 2005-2006 school year, and 77.3% of the total population identified as gifted in public schools during that same year (National Center for Education Statistics, 2008; Sable & Garofano, 2007). Across the entire country, this evidence suggests that White and Asian students are more likely to be identified for gifted programs than their different-race peers.

I soon discovered that the discrepancies between these percentages of students enrolled in public schools versus the percentages of those same racial and socio-economic groups of students enrolled in highly capable programs, particularly the overrepresentation of White, Asian, and wealthy students, have been the focus of numerous state- and district-wide plans to alter the identification processes so that the population of students in gifted programs becomes more representative of the entire district's, state's, and country's population. In fact, the United States Department of Education created the Jacob K. Javits Gifted and Talented Students Education Program for the sole purpose of serving the needs of students considered "traditionally underrepresented" in gifted and talented programs through research and providing grants to individuals and organizations intending to meet this purpose through their work (United States Department of Education, 2015). These findings led to my ultimate guiding question around which this literature review is focused: what methods are currently being used to identify students for gifted programs, and how effective have they been at identifying students from historically underrepresented populations (Black, Hispanic, and American Indian/Alaskan Native)? Additionally, considering the changes made to the Washington Administrative Codes regarding the ages for which highly capable programming options must be made available, what identification methods are developmentally appropriate for identifying strengths and talents in K-3 learners?

Why identify students for gifted programs? Although there is no nationally agreed-upon definition of "giftedness," of the 43 responses gathered by the National Association for Gifted Children (NAGC) in their *2012-2013 State of the States in Gifted Education* report (2013b), 32 states had mandates for gifted programming identification or services offered to students. Reasons cited for creating additional programming options for highly capable learners

varied, and included classroom teachers finding it difficult to challenge their highest students in a

general education setting, pressure on teachers to focus on supporting their struggling students'

needs, and a lack of training on best practices in gifted education in many teacher training

programs (NAGC, 2014). In fact, according to the same report, only three states have a

requirement that general education teachers have training of any kind in gifted education, and

eight responding states estimate that 5% or fewer of their general education teachers receive

processional development in gifted education (NAGC, 2013b).

It has been determined by those states mandating gifted programming options that

students with strengths and talents must have opportunities to participate in some form of

alternative education, whether it is differentiation within the regular classroom, a once-a-week

enrichment program, a self-contained program specifically for students identified as gifted, or

any other district-created option. These states, and those districts that identify and serve gifted

students without a state mandate, recognize that students with strengths and talents have unique

needs, and that these needs may be better met with these programming options. However, due to

differences in opinion on what "giftedness" entails, there can be a disconnect between the

practices employed by a district to identify students for their programs and what needs those

programs actually serve.

Giftedness is not solely defined by academic ability. Therefore, to have a student's

participation in a program for talented youth be dependent upon his or her ability to take an

academic assessment of any kind goes against the very definition of giftedness to which the state

adheres: "Outstanding abilities are seen within students' general intellectual aptitudes, specific

academic abilities, and/or creative productivities within a specific domain. These students are

present not only in the general populace, but are present within all protected classes"

(Washington Administrative Code [WAC] 392-170-035). In the following sections, the current processes used to identify students for gifted programs in Washington State are examined and alternatives are presented to improve the equity of this process.

Defining underrepresentation. According to the New Oxford American Dictionary (2014) underrepresented is defined as "provide[d] with insufficient or inadequate representation." Reis has defined underrepresented populations as "students from economically disadvantaged populations, various minority and cultural groups, as well as gifted students with various disabilities such as learning disabilities, visual and hearing impairments, and physical handicaps" (Reis, 2001). Dickson has defined underrepresented populations as "culturally, linguistically, ethnically diverse learners and learners from diverse social and economic backgrounds" (Dickson, 2012). Coleman (2003) has defined underrepresented as "children from culturally/linguistically diverse and/or economically disadvantaged families and gifted children with disabilities." For the purposes of this paper, this term is used to distinguish those populations frequently identified for gifted programs from those populations that are not.

<div align="center">Literature Review</div>

Identification of highly capable students in Washington State. The process used to identify students for participation in highly capable programming is ultimately decided at the district level, with some guidelines provided by the state. In Washington State, the selection process for gifted programming options is outlined in the Washington Administrative Codes. This process includes an annual public announcement of the services available in the district along with the nomination forms and testing dates, a nomination process including "data or evidence from teachers, other staff, parents, students, and members of the community" (Washington Administrative Code [WAC] 392-170-045), an optional screening process to

eliminate students who "based on clear, current evidence, do not qualify for eligibility" (WAC 392-170-045), and an assessment process requiring "multiple objective criteria for identification of students who are among the most highly capable" (Washington Administrative Code [WAC] 392-170-055). Concerning the assessment process, "there is no single prescribed method for identification of students among the most highly capable," leaving the specific details of these "multiple objective criteria" up to the districts themselves to decide (WAC 392-170-055). Although the purpose of these assessments is to determine which students have strengths and talents that would be best met in a highly capable program offered by the district, the decisions made throughout this process by states and districts can impact the likelihood that students from certain demographics will be identified for their programs, regardless of whether they would benefit from alternative programming options.

Students can be missed at each step of this identification process within and outside of Washington State. For example, the annual notification process is often completed through the school district's website or emails between parents and teachers (Washington Administrative Code [WAC] 392-170-042). Families with limited access to the Internet are more likely to miss online communications than families with multiple computers within easy reach at home. During the nomination process, adults in a child's life have the opportunity to nominate him or her for testing, though the likelihood of that happening can depend on the student's behaviors in class, academic performance, or the parents' awareness that such programs exist (Harradine, Coleman, & Winn, 2014; Jacobs, 1971). Depending on the assessments chosen, students within certain demographics are more likely to be identified for gifted programs than other students. Each of these steps in the identification process may impact a student's likelihood that he or she will be identified.

In order to develop an understanding of the current research literature surrounding the practices in identifying students for gifted programs within and outside of Washington State, I began searching the ERIC EBSCO database using the following search terms: "identification of children AND highly capable AND study" (0 results), "identification of children AND gifted AND study" (2 results), "identification AND highly capable" (3 results), and "identification of children AND gifted" (19 results). The following criteria were then set to narrow down the results of these searches to those that would be beneficial for the purposes of this literature review.

Criteria for inclusion and exclusion. Studies were included in this literature review if they met the following criteria:

1. The study focused on a comparison of at least two methods used to identify students for gifted programs.

2. The study participants' races and/or socioeconomic statuses were reported along with their results for each of the identification methods.

3. At least some of the study participants were in the 5th grade or younger.

Although five of the 25 studies included in this review were written prior to the year 2000, they were included for several reasons. In the case of Pegnato and Birch (1959), this study is consistently referenced when the validity of teacher identification is discussed (Gear, 1978; Jacobs, 1971; Peters & Gentry, 2012). For those studies relating specifically to teacher identification and parent input, the number of studies within the databases used (see Table 2) that also met the inclusion criteria were limited, leading to the use of older research material for several sections of this literature review.

Research on current identification procedures nation wide. Next, I turned towards organizations focused on gifted learners with the hope that these organizations' websites would have information regarding the current identification practices used for gifted programs at the state level. The NAGC's *2012-2013 State of the States in Gifted Education* report included a table indicating each state's requirements for the identification of students for gifted programming. Of the 38 states that replied to the survey questions specifically regarding identification practices, 25 used a multiple criteria eligibility model, 18 used Intelligence Quotient (IQ) scores, 16 used achievement data, 14 used a range of state-approved assessments, and 7 used nominations (NAGC, 2013b). States were able to list multiple responses to this question. These different indicators led to further searches in the EBSCO database about each specific identification method, which were narrowed by incorporating the search terms "underrepresented," "minority," and "race" (see Table 2). Upon adding these search terms, a number of studies funded by the Jacob K. Javits Gifted and Talented Students Education Program were found. Within this literature review, the studies on Project Athena (Bracken, VanTassel-Baska, Brown, & Feng, 2007), the use of the Teacher Observation of Potential in Students (Harradine, Coleman, & Winn, 2014), Project Breakthrough (Swanson, 2006), and Georgia's multiple criteria eligibility model (University of Connecticut, 2006) were funded by grants from this program. The focus of each of these studies involved altering curriculum, instruction, identification practices, or a combination of all three in order to challenge the current practices used to identify underrepresented students for gifted programs. The following section discusses those practices commonly used by school districts within the greater Seattle area.

Assessment Options and Results

      Commonly used identification methods. In the greater Seattle area, Seattle Public

Schools, Bellevue School District, Lake Washington School District, Issaquah School District,

and Mercer Island School District all use the Cognitive Abilities Test (Lohman & Hagen, 2002)

as their cognitive assessment to identify students for their highly capable programs. Of these five

local districts, all but one (Issaquah School District) use the Iowa Assessments (Hoover, Dunbar,

& Frisbie, 2001, 2003) as their academic achievement tests (Holliday, 2013). For these reasons, I

began my research focusing on the Cognitive Abilities Test and the Iowa Assessments. In the

following section, the effectiveness of these two types of assessments in identifying

underrepresented learners is discussed.

      Achievement tests. For school districts intent on identifying students for their gifted

programs who are academically high achieving, the use of standardized academic tests is

common. One of the more frequently-mentioned standardized achievement assessments in my

research was the Iowa Test of Basic Skills (Hoover, Dunbar, & Frisbie, 2001, 2003). Now called

the Iowa Assessments, this test includes individual batteries assessing vocabulary, word analysis,

listening, language, mathematics, and reading for five- and six-year-old students. Computation,

social studies, and science are added to the assessment for seven- and eight-year-olds (Iowa

Testing Programs, 2015). Three pieces of research (Iowa Assessments, 2012; Iowa Department

of Education, 2011; Lakin & Lohman, 2011) were used in this literature review while analyzing

the Iowa Assessments. The Iowa Assessments (2012) national standardization from the year

2000 found discrepancies between the scores of Caucasian students and underrepresented

populations across all subjects. Iowa's Department of Education (2011) identified a gap in scores

between students of different socioeconomic statuses across multiple grade levels. Lakin and

Lohman (2011) identified this same gap, and noted that the gap in scores between students of low and high socioeconomic status grew as the students aged.

The 2000 national standardization of the Iowa Assessments (Hoover, Dunbar, & Frisbie, 2001, 2003) was conducted with 170,217 students from each geographic region of the United States in public and private schools. In this standardization, the average score of Caucasian students was above that of Black and Hispanic students in all subjects tested. In fact, multiple subject areas had a difference between Black and Caucasian students greater than half of a standard deviation, with the average score of Caucasian students universally above that of Black students (Iowa Assessments, 2012). For districts using the Iowa Assessments as one of their measures of giftedness, it is unlikely that all races would be proportionately represented based on these findings.

In addition to racial achievement gaps, differences between scores of students at different socioeconomic levels on the ITBS have been documented. Over a period of nine years, the Iowa Department of Education (2011) documented the difference in percentages of students in Iowa scoring at a proficient level on Iowa Tests (Hoover, Dunbar, & Frisbie, 2001, 2003). At grades 4, 8, and 11, the gap between students eligible for free or reduced price lunch and students whose family income made them ineligible for these services was consistently between 18 and 28 percent in both math and reading between 2001 and 2010. According to the Iowa Department of Education (2011), "higher socioeconomic students performed significantly better on average than low socioeconomic students with no indication of gap closing" (p. 6). Lakin and Lohman (2011) found a similar discrepancy between students of different socioeconomic statuses, with fourth grade students receiving free lunch scoring, on average, 21.3 points lower on the reading portion of the ITBS than students paying full price for lunch. This gap increased to a 26.9 point

difference for sixth grade students. Despite Lakin and Lohman's comparatively smaller sample size, with 6591 students assessed during both their fourth and sixth grade years, compared to the national standardization's single assessment of 170,217 students, the use of the same students over a two-year period adds another aspect to the analysis of the Iowa Assessments and the comparative scores of different populations. Based on this data, the use of achievement tests in school districts' and states' entrance criteria unfairly biases the number of low socioeconomic and minority students identified for gifted programming options.

Aptitude tests.

Cognitive Abilities Test. Three separate studies (Bracken, VanTassel-Baska, Brown, & Feng, 2007; Lakin & Lohman, 2011; Reavis, 2007) conducted using the Cognitive Abilities Test (CogAT; Lohman & Hagen, 2002) are discussed in the following paragraphs. Bracken et al. (2007) found that the use of the CogAT nonverbal battery and the Universal Nonverbal Intelligence Test (UNIT; Bracken & McCallum, 1998), in comparison to the previously-existing methods of identification used by each school district in the study, allowed for the identification of a greater number of students of low socioeconomic status. Two of the three studies (Lakin & Lohman, 2011; Reavis, 2007) found that there was a correlation between race and CogAT score, with White students outperforming their non-White peers across all three batteries. In summary, although the use of the nonverbal battery of the CogAT led to the identification of a greater number of Title I learners for gifted programs, the correlation between race and score on the CogAT still shows a bias against underrepresented populations.

The CogAT (Lohman & Hagen, 2002) includes three separate batteries assessing students' verbal, quantitative, and nonverbal reasoning. Although a strong understanding of the English language is nearly a requirement for success on the verbal and quantitative batteries,

nonverbal tasks offer an opportunity to identify students whose English proficiency may otherwise prevent high achievement on a given assessment. Lakin and Lohman (2011) conducted a longitudinal study to determine the differences in various aptitude and achievement scores amongst 6,591 fourth and sixth grade students within different categories in a large Midwestern school district between 1994 and 2001. Despite the claim that nonverbal assessments require less knowledge of the English language, the mean score of fourth grade English Language Learners on the nonverbal CogAT Form 6 was 13 points lower than that of non-ELL students. It should be noted that this gap on the nonverbal CogAT was less than that found on the quantitative (14.3 points) and verbal (20.7 points) (Lakin & Lohman, 2011), indicating that the nonverbal battery at least decreased the advantage of non-ELL students over English Language Learners in comparison to the quantitative and verbal batteries.

Lohman cautions against relying solely on nonverbal tests, stating, "Nonverbal tests alone cannot tell us whether students will succeed in classes conducted in Spanish, English, or any other language" (Lohman, 2007, p. 1). Despite this warning, multiple studies have been conducted using the CogAT nonverbal battery (Lohman & Hagen, 2002) as a tool to identify additional minority students for gifted programs. In Project Athena, Bracken and his colleagues utilized the CogAT nonverbal assessment in addition to the UNIT (Bracken & McCallum, 1998) and concluded that the use of these two nonverbal measures allowed for the identification of "nearly twice as many Title I students as gifted compared to the school district's identification procedures" (Bracken et al., 2007, p. 64). Within this study, however, the previously used identification procedures were not listed, making it difficult to determine why the use of nonverbal assessments caused an improvement in the likelihood that underrepresented populations would be identified.

When comparing the scores of 4th grade students, White students outperformed their non-White peers on all three batteries of the CogAT (Lohman & Hagen, 2002), with a difference of 7.1 points on the nonverbal battery, 7.7 points on the quantitative battery, and 10.6 points on the verbal battery (Lakin & Lohman, 2011). There was also a correlation between socioeconomic status of these students and their scores on each of the batteries, with students paying full price for lunch scoring 16.3 points higher than students receiving free lunch on the verbal battery, 12.3 points higher on the quantitative battery, and 11.7 points higher on the nonverbal battery (p. 607). In summary, White children and those from high socioeconomic statuses and scored higher on the CogAT than their underrepresented peers.

In his doctoral dissertation, Reavis (2007) analyzed the identification practices used by a school district in South Carolina for discrepancies in race. In order for a student to be identified as gifted in this district using the CogAT (Lohman & Hagen, 2002), he or she must score at the 93rd national age percentile or higher on either the verbal, quantitative, nonverbal, or composite batteries. When looking specifically at the district's 4,322 second graders and comparing the percentage of each racial group identified as "gifted" using the CogAT as its sole measure, Reavis found that 4.8% (132 out of 2,766) of the White population, 0.2% of the Black population, 7.4% (5 out of 67) of the Asian population, 0% (0 out of 337) of the Hispanic population, and 0.7% (1 out of 141) of students classified as "other" were identified based on these criteria. As Reavis concluded, "when CogAT was the only identification method used, overall findings indicated a significant relationship between race/ethnicity and giftedness" (pp. iv-v). In this conclusion, Reavis related students' CogAT scores to giftedness. Today, there are many more measures of giftedness, and Reavis's conclusion that CogAT scores and race are correlated indicate the need for additional alternative methods of identification.

Naglieri Nonverbal Ability Test. The Naglieri Nonverbal Ability Test, Second Edition (Naglieri, 2008), claims to surpass the CogAT Form 6 (Lohman & Hagen, 2002) in its neutrality concerning ethnic groups and English Language Learners (Giessman, Gambrell, & Stebbins, 2013). This test does not require students to read, write, or speak, and is said to measure general ability rather than different categories of cognitive abilities (Naglieri & Ronning, 2000, p. 330). In four separate studies using the Naglieri Nonverbal Ability Test (NNAT) to assess students, two of the four (Carman & Taylor, 2010; Giessman, Gambrell, & Stebbins, 2013) found a disadvantage in average scores amongst students from underrepresented groups. Naglieri and Ronning, (2000) found that students performed similarly when students from different races were compared while keeping other factors such as socioeconomic level, gender, and region, among others, the same between the two groups. Lewis, (2001) compared several nonverbal assessments including the NNAT and found that each assessment identified some students missed by the other tests. The following paragraphs explain these studies in detail, showing that students from underrepresented populations still are at a disadvantage to be identified as gifted when the NNAT is used.

Based on an analysis of matched samples of students, White and African American, White and Hispanic, and White and Asian, representing the same percentages of each socioeconomic level, gender, region of the United States, urbanicity, and school level (elementary, middle, or high school), Naglieri and Ronning (2000) found that the matched samples "generally performed similarly" (p. 331) on the NNAT (Naglieri, 1997), and that the measurement of the difference in score between the two populations (the *d* ratios), ranging from 0.02 to 0.41, were considered small.

Carman and Taylor (2010), however, found a significant relationship between ethnicity and NNAT (Naglieri, 1997) scores of 2,072 kindergarten students from a suburban public school district in the South. After dividing their population of kindergarteners into overidentified (White and Asian students) and underidentified (all other ethnicities), the mean score of the overidentified population was 12.2 points higher than that of the underidentified population. Additionally, students qualifying for free/reduced price lunch had a mean score 14.8 points lower than students not qualifying for such services, indicating that there was a correlation between socioeconomic status and score on the NNAT as well (Carman & Taylor, 2010).

Giessman, Gambrell, and Stebbins (2013) went so far as to compare student performance on the NNAT Form 2 (Naglieri, 2008) and the CogAT Form 6 (Lohman & Hagen, 2002) in terms of ethnic subgroups. Looking specifically at a Midwestern school district's 5,833 second grade students taking the CogAT 6 between 2005 and 2010 and 4,035 kindergarten, first, and second grade students taking the NNAT2 during the 2010-2011 school year, they concluded that within their sample, "the CogAT 6 Nonverbal battery is similar to the NNAT2 in identifying students from underrepresented groups at hypothetical cut scores and was better than the NNAT2 at moderating the mean score disadvantage to Black, Hispanic, Multiracial, and non-Asian ELL students" (p. 107). Essentially, although both assessments (CogAT 6 and NNAT2) showed gaps in scores between the overidentified and underidentified students, the disadvantage to minority groups was found to be less on the CogAT 6.

Lewis (2001) analyzed the results of another study conducted by Stephens, Kiger, Karnes, and Whorton (1999) using nonverbal assessments. This study compared the use of the NNAT (Naglieri, 1997), the Raven's Progressive Matrices (Raven, Court, & Raven, 1996), and the Culture Fair Intelligence Tests (Cattell & Cattell, 1965) when administered to a sample of

189 students between the third and eighth grades in a rural southern elementary school. Lewis

found that although all three nonverbal assessments identified culturally diverse students, each

test identified some students that the others missed because some of the tests asked questions

that, at that moment in time, were the "right questions for that student" (p. 118). Despite this

supporting the idea that multiple nonverbal assessments would be most successful at identifying

a wider range of talented youth, in order to meet the requirements set by each state for the

identification of students for gifted programs, the only guidance districts have in selecting their

assessments is to ensure that they select "multiple objective criteria" (WAC 392-170-055). The

fact that different tests identify different children means that the district makes an arbitrary

decision if and when it selects a specific assessment for identification purposes. Even if a district

decides to use an abilities test as one of its identification methods, the choice of which

assessment to use made by each district has the potential to limit the students identified while

taking it.

Even when districts use aptitude tests like the CogAT (Lohman & Hagen, 2002) and the

NNAT (Naglieri, 1997) to identify strengths in young learners, strong nonverbal ability does not

necessarily indicate that a child will be successful in that district's highly capable programs.

Many of these programs include academic acceleration and enrichment that require high

academic achievement in addition to cognitive ability. No matter what test is selected to use for

identification purpose, unless it is tied to the programming, it is not useful.

Alternatives to Testing

      Challenges in identifying strengths and talents in the very young. Several factors

impact the ability of young students to take assessments such as those listed in the previous

section, including changes in measurements of cognitive ability over time, difficult-to-assess

behaviors considered typical of gifted young learners, and students' emotional well-being having an increased impact on their test taking abilities (Hoeksema, 1982; McCall, Appelbaum, & Hogarty, 1973; Rubenzer, 1979).

Students who have not yet entered kindergarten are rarely given the opportunity to demonstrate having strengths and talents. Students of this age also may not yet be able to sit through assessments, hold a pencil, or respond to test questions given by a proctor. Hoeksema (1982) also notes that the very young are impacted more by changes in mood (including nervousness about being tested), which can then impact their ability to take an assessment. The successful identification of these children's strengths and talents also has significantly less readily available research: 14 out of 24 studies I found focused on students at grades three and above, and many that included learners as young as kindergarten included those young learners as a part of a larger K-5 or K-8 population (see Tables 4-8). None of the studies I found in my initial review that involved the use of assessments to identify gifted learners included children younger than five years old. For these reasons, I consider the very young to also be an underrepresented population in today's gifted programs.

In Washington State, the 2014-2015 school year was the first year where public school districts were required to identify and serve highly capable learners in grades K-1. Immediately after the Washington Administrative Codes were released with this requirement in early 2013, school districts around the state began to hold meetings to share current identification practices and brainstorm how to effectively identify strengths and talents in their youngest students. As evidenced by the search of identification methods, the use of standardized academic and cognitive ability assessments still dominated practice (Holliday, 2013). In conclusion, they still biased who would be identified for gifted programs. Additionally, standardized assessments were

not designed to identify strengths and talents in young children who had not yet had prior experiences that would advantage them on the test.

The measurement of cognitive ability in young children is not stable over time. McCall, Appelbaum, and Hogarty (1973) conducted a longitudinal test looking at the IQ scores of students from 2 ½- through 18-years-old, and found that the average child's IQ score changed 28.5 IQ points during that time (1.78 standard deviations, more than enough of a change to take a child from the average range to gifted). They also found a significant shift in students' IQ scores at around 6 years of age, which they partially attribute to the beginning of schooling. Considering the fact that school districts in Washington State are now required to begin assessing students for giftedness at age 5, the understanding that a cognitive measurement is likely to shift in the next year of the child's life brings into question the validity of the use of this type of assessment to identify young learners for gifted programs.

In Riverside Publishing Company's *Cognitive Abilities Test Form 7 Score Interpretation Guide*, the authors acknowledge that large changes in an individual's scores have been known to happen between kindergarten and first grade, as well as between third and fourth grade (Riverside Publishing Company, 2013). They also write, "for 10 percent of the students, their standard age scores will change more than 10 points" (p. 61). This 10 percent, according to Riverside Publishing Company, tends to contain the youngest students taking the CogAT (Lohman & Hagen, 2002) along with students having extreme scores. Even the creators of the assessment most frequently used in the greater Seattle area acknowledge that very young students have a higher likelihood that their scores will change significantly over time, bringing into question the validity of this assessment to identify young gifted learners in public school districts.

The behavioral indicators of young gifted learners can also be difficult to assess. Rubenzer (1979) created a list of behaviors displayed by gifted and talented pre-kindergarten children, including "proficiency in drawing, music, and other art forms," "early walking," and "older playmates" (p. 311). For children who are just beginning to read and may not yet be developmentally able to endure lengthy assessments, these behaviors can serve as indicators that these children may have strengths and talents that require enrichment beyond what is typically provided in preschool and the early years of elementary school.

Kuo, Maker, Su, and Hu (2010) state, "the earlier gifted children are identified and provided with appropriate programs, the better their chances of fully actualizing their potential" (p. 365). When children are not challenged adequately, they add, students can begin to feel negatively about school to the point of achieving below their ability level. Based on these findings, I suggest that districts end their practice of emphasizing ability and achievement test scores as their identification methods (see Table 3). The following sections explain several alternatives, with the hope that these methods can be used to identify these children's abilities early in their lives.

Alternative identification practices. While conducting this literature review, five alternative identification practices became the focus of my research due to availability of studies and frequency of their inclusion in database search results. Multiple criteria eligibility models, teacher identification, teacher professional development, parent input, and performance-based assessments all approach the identification of students for gifted programs differently than traditional methods. The equity of each method, successes, and critiques can be found in the following sections.

Multiple criteria eligibility models. One method used to offer additional opportunities to identify strengths and talents in young learners is the multiple criteria eligibility model. Although this model has several iterations, the general rule is that there are multiple categories of talent being assessed with varying criteria listed. In order for a student to be identified for the district's gifted programs, he or she must qualify in a certain number of categories designated by the district. This offers an opportunity for some students who do not meet an arbitrary threshold for identification in one of the chosen areas to "make up for it" with strength in other areas.

The state of Georgia was the focus of my research regarding this identification model because it was one of the trailblazers in using the multiple criteria eligibility model statewide. Heath's 2002 dissertation focused on Georgia's model for identifying gifted learners, and was a significant source of information regarding this process (see Table 5).

Georgia uses both the composite and individual scores of the CogAT (Lohman & Hagen, 2002), achievement scores on the Iowa Assessments (Hoover, Dunbar, & Frisbie, 2001, 2003) or any norm-referenced test, creativity using the Torrance Tests of Creative Thinking (Torrance, 1984) and the Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli, Smith, White, Callahan, Hartman, & Westberg, 2002), and motivation using the Gifted Rating Scale for K-5 students (Pfeiffer & Jarosewich, 2003). In order for a child to qualify for highly capable programming options in Georgia, he or she must meet the given criteria in three of the four given areas (Lee County School District, 2012).

Supported with a Javits Grant, Georgia saw a 206% increase in the number of African American students and a 570% increase in the number of Hispanic students in their gifted programs during the first nine years of using this model (National Association for Gifted Children, 2007). In a shorter four-year comparison (1996-2000), Heath also noted that for

African Americans, the probability of being identified for Georgia's gifted programs was 350%

higher when using the multiple criteria eligibility model than through its previous identification

method, where students needed to meet a given threshold in both assessments of cognitive ability

and academic achievement. Although every population group identified for their gifted programs

experienced growth in Georgia during this model's first nine years (their gifted programs grew

by 91% overall from 1996-2005), the only group that grew less than 91% in the same period was

the White population. The number of African American, Asian, Hispanic, Native American, and

Multiracial students in their gifted programs all grew by at least 129% (University of

Connecticut, 2006). Georgia saw this pattern continue into the upper grades, with the population

of African American students participating in Advanced Placement courses in high school

increasing by 71% between 2002-2006, while the population of Hispanic students participating

in these courses increased by 180% (University of Connecticut, 2006), showing that not only

were more underrepresented students entering the gifted programs in Georgia, but they were

staying in these programs through high school. Since the success of Georgia's implementation of

this new identification model, twenty-five states and school districts have adopted similar

identification procedures in an attempt to identify more students from underrepresented

populations for their gifted programs, including California, Illinois, Maryland, Oregon,

Pennsylvania, Texas, and Washington (National Association for Gifted Children, 2013a).

　　　Despite the success of the multiple criteria eligibility model in identifying historically

underrepresented groups for Georgia's gifted programs, in order for students to qualify, they

must submit data for all four of the categories presented in their model (Heath, 2002). Their

youngest students eligible for these programs (kindergarteners, in Georgia) must sit through at

least two assessments including the CogAT (Lohman & Hagen, 2002) and a norm-referenced

academic assessment in order to be eligible for gifted programming. Among the gifted

population, few students have consistent strengths in each area of assessment (Renzulli, Siegle,

Reis, Gavin, & Sytsma Reed, 2009). Students that do not test well, including those for whom

long sit-down assessments are developmentally inappropriate, are automatically excluded from

Georgia's gifted programs, even if they perform well on the measures of creativity and

motivation scales. The following sections discuss additional options that provide opportunities

for students to demonstrate strengths and talents without the use of standardized tests.

     Teacher identification. The use of teacher rating scales to identify highly capable

learners has historically been criticized as lacking the objective validity that standardized

assessments can provide (Jacobs, 1971; Pegnato & Birch, 1959; Speirs Neumeister, Adams,

Pierce, Cassady, & Dixon, 2007). One of the most frequently-cited articles regarding the

inadequacy of teacher identification of gifted students was a study conducted by Pegnato and

Birch (1959), which compared teacher "judgment" to a number of other identification practices

including honor roll participation, artistic and musical creativity, participation in student council,

mathematics ability, intelligence tests, and achievement tests. According to Pegnato and Birch,

teachers were not effective at identifying gifted students, in this study only identifying 91

students (out of the 154 they selected as gifted) having an IQ score within the top 1% of the

population in their study. This is evidence, they claim, that teacher ratings should not be relied

upon when identifying gifted students. However, the teachers' ability to identify solely those

students with the top 1% of IQ scores does not equate to their ability to identify students with

strengths and talents, particularly knowing that students' IQs are known to change over time

(McCall, Appelbaum, & Hogarty, 1973).

In the years since Pegnato and Birch's study, three of the follow-up studies included in this literature review (see Table 6) claim teacher nominations are at least similarly effective in identifying highly capable students as more objective methods like achievement tests and IQ scores, with some studies finding them more effective (Gagne, 1994; Gear, 1978; Peters & Gentry, 2013). In fact, Renzulli (1990) argues that allowing teachers to nominate students provides an opportunity for students whose strengths may be missed by typical standardized assessments to be identified for gifted programs.

Districts and organizations that allow teacher identification as one of the methods used to find their highly capable learners often have teachers use a rating scale created specifically to support their ability to identify these children. Harradine, Coleman, and Winn (2014) conducted a study where over 1,000 teachers were given The Teacher's Observation of Potential in Students (Coleman, Shah-Coltrane, & Harrison, 2010) as a part of Using Science, Talents, and Abilities to Recognize Students – Promoting Learning for Under-Represented Students (U-STARS~PLUS), a project funded through a Javits Grant that incorporated the use of engaging learning activities in science instruction with professional development to recognize and nurture students' strengths. The Teacher's Observation of Potential in Students (TOPS) is used to identify the academic strengths of five- to nine-year-old students in by guiding teachers through the process of looking at each student in nine domains ("learns easily," "shows advanced skills," "displays curiosity and creativity," "has strong interests," "shows advanced reasoning and problem solving," "displays spatial abilities," "shows motivation," "shows social perceptiveness," and "displays leadership"), offering examples of teacher-pleasing and non-teacher-pleasing behaviors that demonstrate strength in each domain. These domains, selected by Harradine, Coleman, and Winn to represent behaviors of students with potential for giftedness

(Renzulli, Reis, & Smith, 1981; Silverman, 1994) are also representative of behaviors seen in students whose strengths might be overlooked by standardized assessments, particularly students who exhibit the "non-teacher-pleasing" behaviors (Harradine, Coleman, & Winn, 2014). Although it is well understood that leadership skills, motivation, curiosity, and social perceptiveness are several traits found in gifted youth (Harradine, Coleman, & Winn, 2014; Renzulli, Reis, & Smith, 1981), they are difficult to measure with an academic achievement or cognitive assessment.

Regarding the validity of the TOPS tool (Coleman, Shah-Coltrane, & Harrison, 2010), Harradine, Coleman, and Winn noted that the purpose of the TOPS is to help teachers "change their perceptions of students of color from a deficit-based or at-risk perspective to a strength-based or at-potential view" (2014, p. 27). The TOPS is not a tool that yields a numerical value; rather, it works more as a guide or checklist, and therefore has not been normed. The format of the survey used for teacher feedback on the use of the TOPS was a reflective response, as well, and therefore allows for subjectivity in the results presented by the authors. However, 73.7% of the 230 teachers who responded to the post-study survey indicated that by using the TOPS they were more able to recognize students with potential from underrepresented populations in their classrooms.

After using the TOPS (Coleman, Shah-Coltrane, & Harrison, 2010) to identify the academic strengths of 1,972 students, teachers collectively indicated that they would not have identified 436 of these students as having these strengths had they not been using the TOPS while observing them. Of these 436 students who would have been missed without the TOPS, 48% were from underrepresented (in this case, African American and Latino) populations. The barriers teachers listed as impacting their ability without the TOPS to recognize students'

academic strengths included behavior, demographics, existing recognition, no parent advocacy, low expectations, oral language, and prior language. Some of the information about students' demographics including "socioeconomic status, urbanicity, ELL status, free/reduced lunch eligibility, disability status, and gifted status" (Harradine, Coleman, & Winn, 2014, p. 33) was left unfinished by the teachers completing the TOPS, limiting the effectiveness of the demographic comparisons made in this study. Though teachers recorded that some of the students' demographics acted as barriers to the identification of those students as gifted prior to using the TOPS, the lack of information regarding these demographics about some of the children impacts the validity of these statements made by teachers.

Harradine, Coleman, and Winn's findings that teachers experience barriers to identifying students as gifted prior to receiving professional development regarding gifted learners are in agreement with those of Jacobs (1971), who found that kindergarteners were more likely to be identified as gifted by their teachers who had received no training in the identification of gifted leaners if they were cooperative and sought teacher approval, rather than actually exhibiting traits indicative of strengths and talents in young learners.

Considering that teachers are one of the gateways to gifted programs in districts around the country, having knowledge of the programs offered and the ability to reach out to parents to suggest their application to said programs, in addition to being used as identification resources in some circumstances, the importance of teacher training in identifying gifted learners is crucial. The following section discusses two studies relating to different types of teacher professional development in the identification of gifted learners.

Teacher professional development. The two studies discussed in this section focus on different aspects of teacher professional development and its impact on the identification of

strengths and talents in young learners (see Table 6). Project Breakthrough (Swanson, 2006) found that through the use of rigorous curriculum intended for highly capable learners, the average test scores of all students, even those whose standardized achievement test scores did not identify them as "gifted" according to their district, rose. Gear's 1978 study focused on a curriculum intended for an audience of teachers, and found that when teachers received professional development in the identification of gifted students, they were more successful at identifying students identified as gifted through traditional measures compared to teachers who received no instruction.

Project Breakthrough, funded through the Javits Gifted and Talented Education Act, trained elementary school teachers over the course of three years in issues including teaching the use of problem-based learning in classroom instruction, reaching children who live in poverty, and extending their understanding of intelligence (Swanson, 2006). Along with this training, teachers were provided a rigorous curriculum developed by the Center for Gifted Education at the College of William and Mary. All students in these teachers' mixed-ability classrooms were taught using the curriculum, challenging the idea that rigorous curricula are only appropriate for students identified as gifted.

In order to assess the impact of this teacher training and curriculum on student achievement, Swanson (2006) collected standardized achievement test scores from the Metropolitan Achievement Test-7 (MAT-7; Barlow, Farr, & Hogan, 1992), teacher observations, questionnaires, and interviews before, during, and after the curricular intervention. After one year of being taught using this rigorous curriculum, third grade students considered "low achieving" at School A improved most significantly on the MAT-7 (with "low achievers" scores having a mean difference of 27.25 on the reading battery of the MAT-7 compared to the previous

year's score, in comparison to the average group's mean difference of 5.00 and "high achieving" group's mean difference of 16.60 on the same test). The other school, School B, had no students whose scores put them into the "low achieving" group by the second year of using the curriculum. Analysis of this quantitative data indicates that teacher training and the use of this enriching curriculum over time potentially improved students' ability to achieve on standardized assessments in reading, math, and science. However, the flexibility that teachers were given in how often to present content and skills related to the William and Mary curriculum makes it difficult to argue that the changes in student assessment scores could be directly related to the introduction of this curriculum to students, particularly because the minimum usage of the curriculum was one lesson using each strategy they were asked to present to their students (Swanson, 2006). Another gap in the data was the lack of an explanation of how the "low," "average," and "high achieving" groups were determined, making the connection between these groups and their scores over time less clear. This is yet another example of the use of curriculum to impact student test scores, supporting the argument that test scores are not a measurement of a child's strengths and talents, but rather a measurement that shifts when curricular treatments are applied.

Gear (1978) conducted a comparative study between teachers who received instruction in identifying potentially gifted students and those who did not. An experimental curriculum, *Identification of the Potentially Gifted* contains scripts for the instructor to use over five sessions focused on "terminology of gifted education, definition of gifted and talented, selection criteria, role of intelligence tests in the selection process, and characteristics of gifted children" (p. 91). Comparing 24 teachers who were taught using the curriculum to an equal number of teachers who did not receive instruction, those teachers who were taught using the *Identification of the*

Potentially Gifted curriculum identified 86% of the students identified as gifted using the

Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974) in the sample

compared to 50% identified by the group of teachers who did not receive instruction, indicating

that professional development for teachers significantly increases teachers' ability to correctly

identify at least those students with a high IQ. The WISC-R was the primary measure used to

"confirm" students' gifted status, though some students whose scores were not in the desired

range were considered gifted based on "supplementary evidence of outstanding ability" (Gear,

1978, p. 93). Although this serves as one measurement of a student's abilities, it should not be

assumed that students identified by teachers using the *Identification of the Potentially Gifted*

curriculum who did not meet the criteria outlined as "gifted" did not have strengths and talents.

   Parent input. Two studies conducted (see Table 7) make comparisons between the

accuracy of teacher and parent identification of strengths and talents in learners, and parents are

consistently noted as having a higher success rate at identifying giftedness in their children

without instruction in doing so (Daglioglu & Suveren, 2013; Gross, 1999). There are multiple

suggestions for why parents are more successful, including students feeling more free to be

themselves at home rather than altering their behavior to appear more similar to their same-age

peers while at school (Gross, 1999; Sankar-DeLeeuw, 1999), and parents being present to

witness the rapid cognitive development of their children in the first few years of their lives

(Gross, 1999). Despite these findings, the stereotype of parents overrating their children's

strengths and talents persists.

   Similar to the process used by teachers to nominate students, when parent nominations

are a part of the identification process, parents are often provided with a form or questionnaire to

provide feedback on their child's capabilities. In one study conducted by Lidz and Macrine

(2001), the authors created a questionnaire for parents that "tapped important characteristics of academic giftedness, behaviors that were clearly observable to parents" (p. 80). These characteristics were selected based on Frasier, Hunsaker, Lee, Mitchell, Cramond, Krisel, and Finley's (1995, pp. 47-51) "core attributes of giftedness," which include motivation, communication skills and humor (linguistics), and inquiry, all traits that parents have opportunities to witness their children exhibiting at home. In Lidz and Macrine's study, conducted at one school in Pennsylvania, parents of 473 first through fifth grade students rated their children on a scale of 1-5 on six behaviors. Students whose ratings added up to at least 20 points were identified for the gifted programs by the parent questionnaire. Students who passed the screening criteria, including the Gifted and Talented Evaluation Scales (GATES; Gilliam, Carpenter, & Christensen, 1996), ITBS scores in Reading and Math, a peer-completed sociometric questionnaire, and a parent questionnaire in at least two areas were then assessed using the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983) and the NNAT (Naglieri, 1997), and students' previous ITBS (Hoover, Dunbar, & Frisbie, 2001, 2003) scores were used again to determine whether or not they received a final "gifted" diagnosis as a way to compare parent rankings to whether or not the children had strengths and talents befitting entrance to the gifted program. Of the parents who identified their children as gifted on the questionnaire, 50% of these parents' children were diagnosed as gifted using the criteria mentioned above. The authors claim that through their broadened screening criteria, the percentage of students in a culturally- and economically-diverse school in the district identified as gifted increased from 1% to 5%. Regarding the GATES, this is a tool normed using students already identified as gifted and talented. However, many states have policies that allow districts

to create their own identification system. Therefore, there is no standard way that these students could have been possibly identified, which may or may not affect the norming procedure.

Hanson (1984) conducted a study using the four-, five-, and six-year-old students attending Towson State University's Saturday and summer gifted programs. In order for students to qualify for this program, parents merely need to state that their children meet the requirements; no other testing or evidence is required. For parents of four- and five-year-old students, the requirement is for the children to be reading and/or have a large vocabulary, have some concept of math, and be capable of functioning in a classroom-like setting. Parents of six-year-old students need to confirm that their children read at least one year above grade level (p. 44). In an effort to gain more insight into the ability levels of these children and determine the validity of parent nominations in this context, 84 of these children were given various tests based on age and ability level. Although not all children took each test, the administered tests included the Reading, Mathematics, Fund of Knowledge, Verbal, Reasoning, and Brief Cognitive Cluster subtests of the Achievement section of the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1977). The five- and six-year-old students were given Raven's Progressive Matrices (Raven, Court, & Raven, 1996) as well, though the four-year-olds were deemed unable to understand how to complete these tests. After testing, Hanson concluded that 90% of the children given the Reading subtests scored greater than one year above grade level in reading, matching the requirements set by the program. Additionally, despite the only requirement in mathematics ability being "have some math concepts" (Hanson, 1984, p. 44), the average score on the Woodcock-Johnson Mathematics battery was one half to one year above grade level for those children tested. Parent nomination, Hanson concluded, was accurate in the

case of this program and its parents, with 90% of children nominated by their parents successfully meeting the academic achievement requirements set by the program.

McBeath, Blackshear, and Smart (1981) conducted a study that focused on factors impacting the identification of kindergarten through ninth grade students for gifted programs in Washington, D.C. This study compared a group of 205 students who were identified for the district's gifted programs to a group of the same size that did not qualify. The factors affecting a students' likelihood of qualifying for the gifted program including a creative thinking test, reading and mathematics assessments, academic grades, and nominations by peers, teachers, and parents. McBeath, Blackshear, and Smart found that the number of nominations had the highest impact on whether or not a student was ultimately identified. Interestingly, parent nominations was the second highest impacting factor in whether or not a student stayed in the program after a year when students of similar socioeconomic status were compared. Although there are multiple reasons that this may be the case, including that parents who nominated their children for a gifted program are likely to be more invested in their children's continued participation in it, these findings support the use of parent input in the selection of students with strengths and talents. Adding to this the relative success of parents identifying their children's strengths and talents without training compared to that of teachers, parent input should absolutely be a consideration when identifying students for gifted programs.

Performance-based assessments. Another approach to identifying talents and strengths in children without the use of standardized assessments includes the observation of children participating in learning activities. Also known as the use of performance-based assessments, this approach acknowledges that a keen ability to perform well on tests is not present in all children who exhibit gifted behaviors. In performance-based assessments, students are given difficult

open-ended problems and are then observed for the process they use to solve the problems and

their ability to explain the problem-solving strategies used, rather than whether or not they

quickly identify a correct response. These tasks differ significantly from those on the more

common assessments used for identifying students' strengths and talents in public school

districts, as students are able to verbalize their thought processes and in some cases are taught

information prior to the assessment to act as a baseline for all students. One study by VanTassel-

Baska, Feng, and de Brux (2007) compared populations of students identified through the use of

performance tasks and more traditional methods of identification (ability and achievement tests)

and found that while the population of students identified through performance-based

assessments included a greater percentage of underrepresented populations, the two groups

performed academically similarly within the program.

VanTassel-Baska, Feng, and de Brux (2007) conducted a study focusing on 20 school

districts in South Carolina and 30,526 students identified as gifted with the intent to compare the

efficacy of the use of performance-based assessments and standardized assessments to identify

learners who would be successful over time in gifted programs. In their study, the South Carolina

Performance Tasks (VanTassel-Baska, Johnson, & Avery, 2002) were used as the performance-

based assessments. These performance tasks, developed by the Center for Gifted Education at

the College of William and Mary, have been adopted statewide in South Carolina as a third

opportunity for students to be identified for gifted programs. The other two methods of

identification include the CogAT (Lohman & Hagen, 2002) and the Iowa Assessments (Hoover,

Dunbar, & Frisbie, 2001, 2003). In order for students to qualify for South Carolina's gifted

programs, they must qualify in two of these three assessments: ability tests, achievement tests,

and performance-based assessments. Therefore, students who were identified through the

performance-based assessments in this study also qualified based on an achievement test or ability test, as well. The students identified through the use of the performance task included a greater number of children receiving free or reduced lunch (23%) in comparison to the traditional assessment methods (18.6%), and a higher percentage of Black students (14% compared to 11%). VanTassel-Baska, Feng, and de Brux also write that they "found remarkable similarities between traditionally identified and performance task-identified students in terms of their academic performance (GPAs), work ethic, self-esteem, program impact, and creative outlets" (p. 26), indicating that despite the use of different identification methods, the students whose strengths and talents are recognized by either or both of the methods have overarching similarities leading to both groups' success within South Carolina's gifted programs. However, due to the fact that the students identified through the performance tasks also needed to meet a high score on either the achievement test or ability test in order to gain entrance to South Carolina's gifted programming options, it is less surprising that these students appear somewhat homogenous in comparison to what could be expected if students could have been identified with the performance tasks as the sole indicator of giftedness.

Discussion

The literature review included results that demonstrated there was no one perfect way to identify students equitably. There are, however, methods that have been researched and found to *improve* the equity of the identification process in studied samples of students. Among these, I argue that a multiple criteria eligibility model that is *not* reliant upon students submitting information and test scores for each category would be a step in the right direction for students of Washington State. By including opportunities for students to be identified through teacher recommendation, parent recommendation, and performance-based assessment, in addition to

academic achievement and cognitive ability, students whose skill sets do not include the typical

abilities and behaviors assessed through traditional testing methods can still be identified and

have their exceptional needs met through our public education system.

The inclusion of each of these criteria allows for students with *different* strengths and

talents to be identified and have access to programming options that can support them in their

continued growth as learners. Through the use of teacher rating scales that include non-teacher-

pleasing behaviors, students whose behaviors may not align with the typically academically high

students but are representative of gifted learners would have an opportunity to be identified and

served. By offering students the ability to be identified based on a parent rating scale, those

children who feel compelled to behave differently at school due to social pressures or whose

strengths go unnoticed by their teachers can be a part of a gifted program. With the addition of

those students who excel at performance-based assessments, gifted programs will be more likely

to include children who may struggle with standardized assessments, including those children for

whom these tests are developmentally inappropriate, but whose skills in problem solving indicate

strengths and talents that could be honed in a program for highly capable learners. Essentially,

the pool of students with the opportunity to be identified would become more diverse in

comparison to Washington State's traditionally identified gifted norm, including children with a

variety of strengths and talents that all could be cultivated through a continuum of highly capable

programming options.

Issues

While conducting this review of the literature, several issues arose that require further

analysis. These issues include the consequences related to creating additional methods for

students to gain access to gifted programs, the match between identification procedures and

program models, the improvement of student test scores after students receive enriching

curriculum, and the lack of current research regarding identification practices for the very young.

  Consequences of creating additional methods for students to gain access to gifted

programs. When students are required to meet high expectations on several different types of

assessments (the "and" rule of multiple criteria models), as is true in the school districts

mentioned in the introduction of this literature review, the population of students will have skill

sets that are more homogeneous in comparison to a model where students qualify if they meet

high expectations on *any* of a given set of standards (the "or" rule of multiple criteria models).

From a programming perspective, using the "and" rule makes perfect sense; it is much easier to

facilitate the development and implementation of a program that caters to a group of somewhat-

similar students than it is to create a program that meets the needs of creative thinkers who

struggle with writing above grade level, artistic minds that are "just" at standard in mathematics,

and strong leaders who need support in using critical thinking skills to solve problems. However,

the NAGC's Gifted Programming Standards (2010) clearly indicate that all students with gifts

and talents must receive appropriate educational services. Additionally, students in gifted

programs must have access to a "variety of evidence-based programming options that enhance

performance in cognitive and affective areas" (NAGC, 2010, p. 12). It is time to change the

model from identifying the students that districts are *prepared to serve* to preparing a continuum

of programming options to meet the needs of all students with strengths and talents.

  Matching program models to identification procedures. In the school districts studied

within the greater Seattle area, the emphasis on academic achievement tests as one aspect of

identification is mirrored in the programming options made available by each district. In the

Lake Washington School District, for example, their full-time highly capable program website

emphasizes that students are "expected to perform work that exceeds grade level standards by at least one grade level" and use "advanced academic thinking skills and strategies" (Lake Washington School District, 2015). Bellevue School District's gifted programs webpage opens with the statement "The Gifted Program provides self-contained services for identified students needing academic services at an advanced level and accelerated pace due to their ability to comprehend and process information" (Bellevue School District, 2015). Referring again to Washington State's definition of giftedness, however, a problem arises: where local gifted programs are focusing on the academic acceleration of students and identifying those students for whom academic acceleration may be appropriate through the use of standardized academic assessments, Washington defines highly capable students as those who may possess the "capacity and willingness to deal with increasing levels of abstraction and complexity earlier than their chronological peers," "creative ability to make unusual connections among ideas and concepts," and "capacity for intense concentration and/or focus" in addition to academic strengths and talents (Washington Administrative Code [WAC] 392-170-036).

This issue has become larger than selecting equitable identification methods, and now involves the development of programs that are designed to meet the needs of students with a variety of strengths and talents, rather than solely academic ones. Through the use of a multiple criteria eligibility model for identification, students with strengths and talents that may include accelerated academic ability, cognitive ability, problem solving skills, and other behaviors exhibited by highly capable learners have multiple opportunities to have their abilities recognized and gain entrance to the program. Based on this literature review's findings related to the increase of underrepresented students identified when alternative methods are used by gifted programs, the creation of this continuum of services would potentially pave the way for groups

of students more representative of the total population of their districts to participate in programming options that fit their diverse needs.

In order to support the district gifted programs in the development of changes to their programs while still identifying a greater number of more diverse students whose abilities express a need for alternative programming options, I suggest that districts shift to the "or" model of the multiple criteria eligibility model (McBee, Peters, & Waterman, 2014). Rather than requiring that students meet identification requirements in each type of assessment offered as a means of identification, districts should identify students for their programs that meet any of the given criteria and create programs to meet the needs of these students based on their identification measures. For example, a self-contained gifted program may choose to identify students who meet three or four out of five of their criteria, while an enrichment program may identify students who meet one or more of these same five criteria. These programs would need to be developed with the variety of these students' strengths and talents in mind, incorporating problem solving skills, creativity, cognitive ability, and diving more deeply into academic content than is generally possible in a general education environment. Additionally, those students whose strengths warrant identification but struggle in one or more of the areas of emphasis in their program would need to have instruction that supports their development of these skills. By taking all of these identification and program development components into consideration, our gifted programs will be one step closer to the creation of a continuum of services that recognize *all* of the strengths and talents of its children, rather than those that are easiest to refine with our current school system's emphasis on academic acceleration in gifted programs.

Test score improvement after learning through engaging curriculum and assessments. A repeated finding in the studies funded through Javits Grants was that the application of enriching curriculum, instruction, and assessment correlated with an increase in students' scores on various identification measures (Harradine, Coleman, & Winn, 2014; Swanson, 2006). After students received innovative, hands-on science curriculum in the U-STARS~PLUS program (Harradine, Coleman, & Winn, 2014), teachers were better able to identify behaviors amongst their students indicating strengths and talents; these experiences and the teachers' professional development provided additional opportunities for these students to demonstrate their strengths and talents. In Project Breakthrough, Swanson (2006) found that, on average, students' test scores rose after receiving the College of William and Mary curriculum intended for gifted learners. These results imply that the assessment scores were not changed by the students' changing aptitudes, but rather their exposure to these enriching curricula and experiences.

What the Javits Grants did, with their goal of supporting programs and projects intending to identify a greater number of underrepresented populations, was create experiences that could meet this goal through engaging teaching strategies and curriculum. However, the schools and districts with vast numbers of students from these underrepresented demographics also tend to be those schools and districts with the fewest available resources (Ford, 2007). These schools also have a more difficult time attracting and retaining highly-qualified teachers (Lee & Burkam, 2002), meaning the educators in these buildings are more likely to have less experience and less education relating to best practices for students in poverty. Thus, the cycle of students of poverty and from underrepresented populations being missed by the identification practices of district gifted programs may continue. By supporting and spreading the work of these Javits funded

projects, this cycle may be interrupted, as Swanson's (2006) and Harradine, Coleman, and

Winn's (2014) findings have supported. Although the focus of this literature review was the

equity of the assessment tools and ratings scales used to identify students for gifted programs,

moving towards a public school system that can effectively utilize the best instructional practices

researched through the Javits funded projects for all students may also improve the likelihood

that students with strengths and talents from underrepresented populations have their exceptional

needs met at school.

Availability of current research regarding identification practices for young

learners. While conducting this research, the lack of studies pertaining specifically to young

learners (pre-kindergarten through third grade) was especially apparent. This was particularly

frustrating in light of the increasing achievement gaps over time found in Lakin & Lohman's

(2011) comparison of fourth grade scores to sixth grade scores for various groups of learners.

Had these tests been administered and this data been collected for first grade or younger learners,

would the gaps have been even less prevalent between socioeconomic levels, ELL status, and

race, indicating a consistently growing achievement gap? If more underrepresented learners were

identified for gifted programs earlier in their schooling, would we see these gaps continue to

grow, or is it possible that we would see them *shrink* due to more of these students being offered

services that challenge them and set high expectations for their performance? According to

Schilling and Schilling (1999), "persons with high expectations perform at a higher level than

those with low expectations, even [when] their measured abilities are equal" (p. 5), supporting

the idea that the achievement gap may begin to decrease with increasing numbers of

underrepresented students being identified for these programs. This idea is further supported by

the University of Connecticut's (2006) study on Georgia's multiple criteria eligibility model that

found that more students from underrepresented populations were staying in gifted programming options for a longer period of time, increasing the number of minority students taking Advanced Placement courses in high school.

Limitations

One significant limitation relates specifically to the fact that there is no one universal measure of "giftedness." In many of these studies that sought to compare alternative methods of assessment to traditional methods, the studies' authors selected either an achievement test or aptitude test (or a combination of both) to judge whether or not students identified using an alternative method would classify as gifted (Gear, 1978; Heath, 2002; Jacobs, 1971; Lidz & Macrine, 2001; National Association for Gifted Children, 2007; Pegnato & Birch, 1959; Swanson, 2006; University of Connecticut, 2006; VanTassel-Baska, Feng, & de Brux, 2007). Rather than being able to argue that any of these alternative assessment methods is more or less effective at identifying gifted learners, the use of the traditional methods as a comparison merely makes it possible to determine whether these alternative methods identify *the same* learners as traditional methods. Although the comparison may be useful in some circumstances, the use of traditional methods as a comparison tool does not equate to a reflection of the alternative method's accuracy in identifying strengths and talents in young learners.

Another limitation impacting this work involves a lack of studies that met the inclusion criteria. Regarding both teacher identification and parent input, the number of recent studies conducted that made comparisons between multiple identification methods and included racial and/or socioeconomic demographics of the participants was limited, in some cases retrieving only two results.

Conclusions and Future Study

Implications

This literature review is the start of a conversation about what can realistically be done to improve the likelihood that students of all ages, races, and socioeconomic statuses will be represented in Washington State's gifted programs. The following bullet points are five ways Washington State's gifted programs can assure equity of opportunity:

- *Allow for teacher subjectivities.* Allowing teachers to use their classroom based evidence to inform instruction is essential to meeting students' academic needs. Baseline assessments, formative assessments, and other forms of measuring student growth are essential in teachers' understanding of their students' current abilities how to plan for the next steps in their learning process. The teacher's role is to determine what their students can do and then create experiences to help them grow as learners, therefore their expertise should be accessed while identifying students with strengths and talents.

- *Provide professional development for educators related to gifted education.* It is unlikely that many of the teachers in today's schools have had formal training on how to work with children with advanced academic and cognitive needs (NAGC, 2013b). By providing teachers with professional development on highly capable learners, school districts can offer opportunities for their educators to become better informed in how to meet the needs of these learners within their own classrooms as well as how to help identify students whose strengths and talents indicate that they would benefit from additional services in a gifted program.

- ***Incorporate performance-based assessment into classroom practice.*** Teachers should create opportunities to focus on understanding the processes their learners use to solve problems through ongoing, formative assessment. Bransford, Brown, and Cocking (1999) state, "Effective teachers continually attempt to learn about their students' thinking and understanding" (p. 128). Cauley and McMillan (2010) write that emphasizing formative assessment encourages high engagement, motivation, and achievement. By digging into these problem-solving processes with students rather than focusing on the end result, teachers are better able to understand what next steps each child needs to take in order to grow as a learner. Challenging open-ended problems should be incorporated as a part of ongoing classroom assessment, affording teachers a greater number of opportunities to identify students' areas of strength and struggle and alter their instruction accordingly. An emphasis on performance-based assessments also allows for teachers to see the creative methods some students take to solve challenging problems, giving teachers a new perspective on whether or not their students are demonstrating characteristics common in highly capable learners. Performance-based assessments have been found to increase the number of underrepresent students whose strengths and talents are identified (VanTassel-Baska, Feng, & de Brux, 2007), and the inclusion of these tasks in regular classroom practice provides additional opportunities for teachers to develop an understanding of all of their students' needs and capabilities.

- ***Use an "or" model of the multiple criteria eligibility model to identify students for gifted programs.*** Although Washington State claims to use a multiple eligibility criteria model to identify students for its gifted programs, the majority of local

districts adhere to the "and" model, requiring that students meet requirements in each of the criteria listed. With the emphasis of local programs being on academic acceleration, these programs are identifying students that fit their programs, rather than any students whose strengths and talents warrant inclusion in a program that can support their needs. Instead, I urge districts to use criteria to identify specific learning needs and then design programs to meet those needs. This allows more students to gain entrance to programming options that will not only meet their exceptional needs, but also, based on the assessments used and identification criteria met and missed, provide feedback to instructors within these programs for areas where they can focus instruction in order to help these students excel in each of the identification criteria.

- ***Incorporate questions about behaviors found in young gifted children in kindergarten parent and preschool questionnaires.*** Districts in Washington State are now required to identify and begin providing services for highly capable learners during their kindergarten year. By including questions regarding student behaviors typically found in young gifted learners on the parent questionnaire (and reaching out to public preschools with these questionnaires, as well), schools and districts will not only be receiving preliminary information about the capabilities of their youngest students, but they also will be providing an avenue for parents and preschool educators to provide information about these children in this identification process. Parents are a valuable and accurate (Hanson, 1984) source of information regarding their children, and a resource that should be utilized in the identification of young gifted learners. If these students attended preschool, their former educators' information regarding these children should also be taken into consideration.

Questions for Future Research

      In addition to identification procedures, other factors that may impact the demographics of children enrolled in gifted programs. These factors may include school districts' use of outreach and advertisement for their program, the perspective of the program held by members of different populations, and the teacher training programs' dedication to training educators in the needs of highly capable learners. Each of these topics poses its own set of questions to be answered through future research, potentially to the benefit of our underrepresented populations.

References

Barlow, I. H., Farr, R. C., & Hogan, T. P. (1992). *Metropolitan Achievement Test 7*. San

Antonio, TX: The Psychological Corporation.

Bellevue School District. (2015). *Gifted Programs*. Retrieved from

https://www.bsd405.org/programs/gifted/

Bracken, B. A., & McCallum, R. S. (1998). *Universal Nonverbal Intelligence Test – UNIT*.

Itasca, IL: Riverside.

Bracken, B. A., VanTassel-Baska, J., Brown, E. F., & Feng, A. (2007). Project Athena: A tale of

two studies. *Overlooked Gems: A National Perspective on Low-Income Promising*

Learners, 63-67.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind,*

experience, and school. Washington, D.C.: National Academy Press.

Carman, C. A., & Taylor, D. K. (2010). Socioeconomic status effects on using the Naglieri

Nonverbal Ability Test (NNAT) to identify the gifted/talented. *Gifted Child Quarterly,*

54(2), 75-84. doi: 10.1177/0016986209355976

Cattell, R. B., & Cattell, K. S. (1965). *Manual for the Culture-Fair Intelligence Test*.

Champaign, IL: Institute for Personality and Ability Testing.

Cauley, K. M., & McMillan, J. H. (2010). Formative assessment techniques to support student

motivation and achievement. *The Clearing House: A Journal of Educational Strategies,*

Issues and Ideas, 83(1), 1-6.

Coleman, M. R. (2003). *The identification of students who are gifted.* (ERIC Digest No. E644).

Retrieved from ERIC database. (ED480431)

Coleman, M. R., Shah-Coltrane, S., & Harrison, A. (2010). *A guide to TOPS.* Arlington, VA: Council for Exceptional Children.

Daglioglu, H. E., & Suveren, S. (2013). The role of teacher and family opinions in identifying gifted kindergarten children and the consistence of these views with children's actual performance. *Educational Sciences: Theory & Practice, 13*(1), 444-453.

Dickson, K. (2012, December). *Overcoming underrepresentation in gifted programs among culturally, linguistically, ethnically diverse, and diverse social and economic gifted learners: A parent and school engagement perspective, part I.* Retrieved from http://sengifted.org/archives/articles/overcoming-underrepresentation-in-gifted-programs-part

Ford, D. Y. (2007). Diamonds in the rough: Recognizing and meeting the needs of gifted children from low SES backgrounds. *Overlooked Gems: A National Perspective on Low-Income Promising Learners,* 37 – 41.

Frasier, M. M., Hunsaker, S. L., Lee, J., Mitchell, S., Cramond, B., Krisel, S., … Finley, V. S. (1995). Core attributes of giftedness: A foundation for recognizing the gifted potential of minority and economically disadvantaged students (RM-95210). Athens, Georgia: The National Research Center on the Gifted and Talented.

Gagne, F. (1994). Are teachers really poor talent detectors? Comments on Pegnato and Birch's (1959) study of the effectiveness and efficiency of various identification techniques. *Gifted Child Quarterly, 38*(3), 124-126.

Gear, G. H. (1978). Effects of training on teachers' accuracy in the identification of gifted children. *Gifted Child Quarterly, 22*(1), 90-97.

Giessman, J. A., Gambrell, J. L., & Stebbins, M. S. (2013). Minority performance on the

Naglieri Nonverbal Ability Test, Second Edition, versus the Cognitive Abilities Test,

Form 6: One gifted program's experience. *Gifted Child Quarterly, 57*(2), 101-109. doi:

10.1177/0016986213477190

Gilliam, J. E., Carpenter, B. O., & Christensen, J. R. (1996). *Gifted and Talented Evaluation*

Scales. Waco, TX: Prufrock Press.

Gross, M. M. (1999). Small poppies: Highly gifted children in the early years. *Roeper Review,*

21(3), 207-214.

Hanson, I. (1984). A comparison between parent identification of young bright children and

subsequent testing. *Roeper Review, 7*(1), 44-45.

Harradine, C. C., Coleman, M. B., & Winn, D. C. (2014). Recognizing academic potential in

students of color: Findings of U-STARS~PLUS. *Gifted Child Quarterly, 58*(1), 24-34.

doi: 10.1177/0016986213506040

Heath, W. M. (2002). *Results of the implementation of Georgia's multiple-criteria rule on*

minority representation in programs for the gifted and talented (Doctoral dissertation).

Retrieved from ProQuest. (UMI No. 3046264)

Hoeksema, F. M. (1982). *Identifying intellectual advancement in preschoolers* (Doctoral

dissertation). Retreived from ProQuest. (UMI No. 1318930)

Holliday, A. A. (2013, November 6). *Highly Capable Collaboration Meeting.* Lake Washington

School District, Redmond, WA.

Hoover, H. D., Dunbar, S. B., & Frisbie, D. A. (2001). *Iowa Test of Basic Skills: Form A.* Itasca,

IL: Riverside.

Hoover, H. D., Dunbar, S. B., & Frisbie, D. A. (2003). *Iowa Test of Basic Skills: Form B.* Itasca,

IL: Riverside.

Iowa Assessments. (2012). *Iowa Test of Basic Skills Research Guide.* Retrieved from

https://itp.education.uiowa.edu/ia/documents/ITBS-Research-Guide.pdf

Iowa Department of Education. (2011). *Achievement gaps in Iowa.* Retrieved from

https://www.educateiowa.gov/sites/files/ed/documents/Achievement%20Gaps%20in%20

Iowa.pdf

Iowa Testing Programs. (2015). *Iowa assessments.* Retrieved from

https://itp.education.uiowa.edu/ia/AboutIowaAssessments.aspx

Jacobs, J. C. (1971). Effectiveness of teacher and parent identification of gifted children as a

function of school level. *Psychology in the Schools, 8*(2), 140-142.

Kaufman, A. S., & Kaufman, N. L. (1983). *Kaufman Assessment Battery for Children.* Circle

Pines, MN: American Guidance Service.

Kuo, C., Maker, J., Su, F., & Hu, C. (2010). Identifying young gifted children and cultivating

problem solving abilities and multiple intelligences. *Learning and Individual Differences,

20,* 365-379.

Lake Washington School District. (2015). *Elementary Quest Highly Capable Program services.*

Retrieved from http://www.lwsd.org/Parents/Accelerated-

Programs/Quest/Pages/default.aspx

Lakin, J. M., & Lohman, D. F. (2011). The predictive accuracy of verbal, quantitative, and

nonverbal reasoning tests: Consequences for talent identification and program diversity.

Journal for the Education of the Gifted, 34(4), 595-623.

Lee County School District (2012). *Gifted Program Administrative Procedures Manual.*

    Retrieved from http://www.lee.k12.ga.us/pdf/Final%20Gifted%20Manual.pdf

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background*

    differences in achievement as children begin school. Washington, DC: Economic Policy

    Institute.

Lewis, J. D. (2001). *Language isn't needed: Nonverbal assessments and gifted learners.* Paper

    presented at Growing Partnerships for Rural Special Education, San Diego, CA (118-

    121). Manhattan, KS: American Council on Rural Special Education.

Lidz, C. S., & Macrine, S. L. (2001). An alternative approach to the identification of gifted

    culturally and linguistically diverse learners: The contribution of dynamic assessment.

    School Psychology International, 22(1), 74-96.

Lohman, D. F. (2007). Including nonverbal tests when identifying students for acceleration.

    Cognitively Speaking, 5. Retrieved from

    http://www.riverpub.com/products/group/cogat6/pdfs/newsletters/CS_vol5_winter07.pdf

Lohman, D. F., & Hagen, E. P. (2002). *Cognitive Abilities Test (Form 6): Research handbook.*

    Itasca, IL: Riverside.

McBeath, M., Blackshear, P. B., & Smart, L. (1981). *Identifying low income, minority, gifted and*

    talented youngsters. Paper presented at the meeting of the American Psychological

    Association, Los Angeles, CA.

McBee, M. T., Peters, S. J., Waterman, C. (2014). Combining scores in multiple-criteria

    assessment systems: The impact of combination rule. *Gifted Child Quarterly, 58*(1), 69-

    89.

McCall, R. B., Appelbaum, M. I., & Hogarty, P.S. (1973). *Developmental changes in mental performance.* Chicago: Published by the University of Chicago Press for the Society for Research in Child Development.

Naglieri, J. A. (1997). *Naglieri Nonverbal Ability Test.* San Antonio, TX: Psychological Corporation.

Naglieri, J. A. (2008). *Naglieri Nonverbal Ability Test* (2nd ed.). San Antonio, TX: NCS Pearson.

Naglieri, J. A., & Ronning, M. E. (2000). Comparison of White, African American, Hispanic, and Asian children on the Naglieri Nonverbal Ability Test. *Psychological Assessment, 12*(3), 328-334.

National Association for Gifted Children. (2007). *Javits program supports high-ability learners from under-represented populations*. Retrieved from http://ektron.nagc.org/index.aspx?id=572

National Association for Gifted Children. (2010). *NAGC Pre-K-Grade 12 Gifted Programming Standards.* Retrieved from http://www.nagc.org/sites/default/files/standards/K-12%20standards%20booklet.pdf

National Association for Gifted Children. (2013a). *Gifted by state.* Retrieved from http://www.nagc.org/resources-publications/gifted-state

National Association for Gifted Children. (2013b) *2012-2013 State of the states in gifted education: National policy and practice data.* Washington, D.C.: National Association for Gifted Children.

National Association for Gifted Children. (2014). *Why are gifted programs needed?* Retrieved from http://www.nagc.org/resources-publications/gifted-education-practices/why-are-gifted-programs-needed

National Center for Education Statistics. (2008). *Percentage of gifted and talented students in*

public elementary and secondary schools, by sex, race/ethnicity, and state: 2004 and

2006 [Data file]. Retrieved from

https://nces.ed.gov/programs/digest/d10/tables/dt10_049.asp

Pauley, G., & Hess, J. (2010). *Highly capable program: Technical working group*

recommendations. Retrieved from

http://www.k12.wa.us/legisgov/2010documents/highlycapableworkgrouplegislativereport

dec2010.pdf

Pegnato, C. W., & Birch, J. W. (1959). Locating gifted children in junior high school: A

comparison of methods. *Exceptional Children, 25*(7), 300-304.

Peters, S. J., & Gentry, M. (2012). Group-specific norms and teacher-rating scales: Implications

for underrepresentation. *Journal of Advanced Academics, 23*(2), 125-144, doi:

10.1177/1932202X12438717

Pfeiffer, S. I., & Jarosewich, T. (2003). *Gifted Rating Scales.* San Antonio, TX: Harcourt

Assessment.

Raven, J. C., Court, J. H., & Raven, J. (1996). *Manual for Raven's Progressive Matrices and*

Vocabulary Scales. Oxford, UK: Oxford Psychologists' Press.

Reavis, P. R. (2007). An analysis of racial/ethnic representation in gifted education in a large

school district in the southeast: A study comparing test instrumentation results as part of a

multidimensional identification process (Doctoral dissertation). Retrieved from ProQuest.

(UMI No. 3296681)

Reis, S. M. (2001). *Major turning points in gifted education in the 20th century.* Retrieved from

http://www.gifted.uconn.edu/general/faculty/reis/Major_Turning_Points.html

Renzulli, J. S. (1990). A practical system for identifying gifted and talented students. *Early Childhood Development and Care, 63,* 9-18.

Renzulli, J. S., Reis, S. M., & Smith, L. H. (1981). The revolving-door model: A new way of identifying the gifted. *The Phi Delta Kappan, 62*(9), 648-649.

Renzulli, J. S., Siegle, D., Reis, S. M., Gavin, M. K., & Sytsma Reed, R. E. (2009). An investigation of the reliability and factor structure of four new scales for rating the behavioral characteristics of superior students. *Journal of Advanced Academics, 21*(1), 84-108.

Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., Hartman, R. K., & Westberg, K. L. (2002). *Scales for Rating the Behavior Characteristics of Superior Students: Revised edition.* Mansfield Center, CT: Creative Learning Press.

Riverside Publishing Company. (2013). *Cognitive Abilities Test Form 7 Score Interpretation Guide* (Version 2). Rolling Meadows, IL: Houghton Mifflin Harcourt.

Rubenzer, R. (1979). Identification and evaluation procedures for gifted and talented programs. *Gifted Child Quarterly, 23*(2), 304-316.

Sable, J., & Garofano, A. (2007). *Public elementary and secondary school student enrollment, high school completions, and staff from the Common Core of data: School year 2005-2006* (NCES 2007-352). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubs2007/2007352.pdf

Sankar-DeLeeuw, N. (1999). Gifted preschoolers: Parent and teacher views on identification, early admission, and programming. *Roeper Review, 21*(3), 174-179.

Schilling, K. M., & Schilling, K. L. (1999). Increasing expectations for student effort. *About Campus, 4*(2), 4-10.

Silverman, L. K. (1994). The moral sensitivity of gifted children and the evolution of society.

Roeper Review, 17(2), 110-116.

Speirs Neumeister, K. L., Adams, C. M., Pierce, R. L., Cassady, J. C., & Dixon, F. A. (2007).

Fourth-grade teachers' perceptions of giftedness: Implications for identifying and serving

diverse gifted students. *Journal for the Education of the Gifted, 30*(4), 479-499.

Stephens, K., Kiger, L., Karnes, F. A., & Whorton, J. E. (1999). Use of nonverbal measures of

intelligence in identification of culturally diverse gifted students in rural areas.

Perceptual and Motor Skills, 88(3), 793-796.

Swanson, J. D. (2006). Breaking through assumptions about low-income, minority gifted

students. *Gifted Child Quarterly, 50*(1), 11-25.

Torrance, E. P. (1984). *The Torrance Tests of Creative Thinking streamlined (revised) manual

Figural A and B.* Bensenville, IL: Scholastic Testing Service.

Underrepresent. (2014). In *New Oxford American Dictionary.* Retrieved from

http://www.oxforddictionaries.com/us/definition/american_english/underrepresent

United States Department of Education. (2015). *Jacob K. Javits Gifted and Talented Students

Education Program.* Retrieved from http://www2.ed.gov/programs/javits/index.html

University of Connecticut. (2006). *The Georgia story: One state's approach to the

underrepresentation issue.* Retrieved from

http://www.gifted.uconn.edu/sem/The_Georgia_Story.html

VanTassel-Baska, J., Feng, A. X., & de Brux, E. (2007). A study of identification and

achievement profiles of performance task-identified gifted students over 6 years. *Journal

for the Education of the Gifted, 31*(1), 7-34. Retrieved from:

http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ777789

VanTassel-Baska, J., Johnson, D., & Avery, L. D. (2002). Using performance tasks in the

identification of economically disadvantaged and minority gifted learners: Findings from

Project STAR. *Gifted Child Quarterly, 46*(2), 110-123.

Washington Administrative Code 392-170-035

Washington Administrative Code 392-170-036

Washington Administrative Code 392-170-042

Washington Administrative Code 392-170-045

Washington Administrative Code 392-170-055

Wechsler, D. (1974). *Wechsler Intelligence Scale for Children – Revised.* New York:

Psychological Corporation.

Woodcock, R. W., & Johnson, M. B. (1977). *Woodcock-Johnson Psycho-Educational Battery*.

Allen, TX: DLM.

Appendix A

Table 1

Percentage Comparison: Public versus Gifted Population Enrolled in Public School

Ethnicity	Washington State		United States	
	Percent of Total Public School Population (2008-2009)	Percent of Identified Gifted Population (2008-2009)	Percent of Total Public School Population (2005-2006)	Percent of Identified Gifted Population (2005-2006)
White	64.8%	74.5%	57.1%	68.3%
Asian	7.9%	14.0%	4.6%	9.0%
Hispanic	15.3%	7.2%	19.8%	12.5%
Black	5.5%	2.8%	17.2%	9.3%
American Indian/Alaska Native	2.6%	1.3%	1.2%	1.0%

Appendix B

Table 2

Database Searches and Results

Date	Database	Search Terms	Results
01/10/15	ERIC EBSCO	"identification of children AND highly capable AND study"	0
01/10/15	ERIC EBSCO	"identification of children AND gifted AND study"	2
01/10/15	ERIC EBSCO	"identification AND highly capable"	3
01/10/15	ERIC EBSCO	"identification of children AND gifted"	19
01/10/15	ERIC EBSCO	"highly capable OR gifted AND minority"	976
01/10/15	ERIC EBSCO	"identification AND gifted"	3087
01/10/15	ERIC EBSCO	"identification AND gifted AND minority"	378
02/22/15	ERIC EBSCO	"Javits grant AND gifted"	20
02/22/15	ERIC EBSCO	"Javits grant AND gifted AND identification"	15
02/22/15	ERIC EBSCO	"identification AND underrepresented AND gifted"	59
03/07/15	ERIC EBSCO	"gifted AND identification AND standardized"	158
03/07/15	ERIC EBSCO	"gifted AND identification AND nonverbal"	53
04/19/15	ERIC EBSCO	"multiple criteria eligibility model"	0
04/19/15	ERIC EBSCO	"multiple criteria AND identification AND gifted"	32
05/09/15	ERIC EBSCO	"teacher identification" AND "gifted"	14
05/11/15	ERIC EBSCO	"multiple criteria AND eligibility"	9
05/11/15	ERIC EBSCO	"teacher AND gifted AND preschool AND identification"	92
05/16/15	ERIC EBSCO	"traits of gifted children"	3
05/16/15	ERIC EBSCO	"behaviors of gifted children"	7
06/07/15	ERIC EBSCO	"parent nomination AND gifted AND identification"	2
06/13/15	ERIC EBSCO	"parent identification AND gifted"	6
07/04/15	ERIC EBSCO	"CogAT AND race"	2
07/04/15	ERIC EBSCO	"CogAT AND Black AND White"	3
07/04/15	ProQuest	"CogAT AND race"	34

Appendix C

Table 3

Identification Methods in the Greater Seattle Area, 2013-2014 School Year

District	Identification Practice
Bellevue School District	• Cognitive Abilities Test (CogAT) • Iowa Test of Basic Skills (ITBS)
Issaquah School District	• CogAT • Stanford 10 • Structure of Intellect
Kent School District	• CogAT • Gifted Rating Scale
Lake Washington School District	• CogAT • ITBS
Mercer Island School District	• CogAT • ITBS
Northshore School District	• CogAT • ITBS
Shoreline School District	• CogAT • ITBS

Note: Table adapted from *Highly Capable Collaboration Meeting* by A. A. Holliday, 2013.

Appendix D

Table 4

Literature Review Matrix: Identification Methods, Subjects, and Findings

Cognitive Assessments

Source	Tests	Subjects	Years	Findings
Bracken, B. A., VanTassel-Baska, J., Brown, E. F., & Feng, A. (2007). Project Athena: A tale of two studies. *Overlooked Gems: A National Perspective on Low-Income Promising Learners,* 63-67.	CogAT (verbal and nonverbal, no quantitative) ● Levels B (3rd grade), C (4th grade), and D (5th grade) of CogAT Form 6. UNIT (two-subtest abbreviated battery)	1500 low-SES learners in grades 3-5 Title I classrooms		"By using two nonverbal measures of intelligence, Project Athena identified nearly twice as many Title I students as gifted compared to the school district's identification procedures" p. 64). "Of 253 students identified as intellectually gifted with an IQ > 120, 94 had been identified by the school districts and 159 were identified by the Project Athena assessments" (p. 64). "For those students with IQs at 120 or above, 17.9% were African American on the UNIT test, and 11.9% were African American when the CogAT Nonverbal was used" (p. 64). "A total of 10.1% of the sample were African American at the 120 IQ level when the CogAT Verbal scale was used" (p. 64).
Carman, C. A. & Taylor, D. K. (2010). Socioeconomic status effects on using the Naglieri Nonverbal Ability Test (NNAT) to identify the gifted/talented. *Gifted Child Quarterly, 54*(2), 75-84. doi: 10.1177/00169862 09355976	Naglieri Nonverbal Ability Test	2,072 kindergarten students (5-6 years old) in public school district in the South		Correlation between ethnicity and NNAT and SES and NNAT were found to be statistically significant (p=0.20 and 0.22 respectively) (p. 79).
Giessman, J. A., Gambrell, J. L., & Stebbins, M. S. (2013). Minority performance on the Naglieri Nonverbal Ability Test, Second Edition, versus the Cognitive Abilities	Naglieri Nonverbal Ability Test, Second Edition (NNAT2, Nonverbal) Cognitive Abilities Test, Form 6 (CogAT6, Nonverbal, Verbal, and Quantitative)	5833 second graders (CogAT6) 4038 K-2 (NNAT2)	2005 - 2011	"Slightly larger gaps [between minorities and Whites] on the CogAT6 Composite for Hispanics and English-Language Learners but the same gap for Black students" (p. 101). "The Nonverbal battery of CogAT6 produced smaller gaps than the NNAT2 for Blacks, Hispanics, Asians, and ELL students" (p. 101). "No significant differences between

Test, Form 6: One gifted program's experience. *Gifted Child Quarterly, 57*(2), 101-109. doi: 10.1177/00169862 13477190				the CogAT6 Composite and the NNAT2 in subgroup identification rates at hypothetical cuts for gifted education (top 20%, 10% or 5%), except for Asian and ELL students" (p. 101). *"The CogAT6 Nonverbal score appeared to identify as many or more high-ability students from underrepresented groups as the NNAT2" (p. 101).*
Lakin, J. M. & Lohman, D. F. (2011). The predictive accuracy of verbal, quantitative, and nonverbal reasoning tests: Consequences for talent identification and program diversity. *Journal for the Education of the Gifted 34*(4), 595-623.	CogAT form 5 (Verbal, Quantitative, and Nonverbal)\n\nITBS form K (reading, language, mathematics, science, and social studies: Level 9 – 4th grade, Level 11 – 6th grade)	8000 students over their 4th-6th grade years (6th grade test scores compared to their 4th grade scores)\n\n6591 students were there for 4th and 6th grade	1994 - 2001	"On all tests, scores for ELL students were substantially lower than those for non-ELL students. The differences were 1.2 to 1.3 *SD* on the reading and verbal reasoning tests, 1.0 *SD* on the mathematics and quantitative reasoning tests, and .9 *SD* on the nonverbal reasoning test" (p. 608). "Surprisingly, we found that the nonverbal test did not increase the percentage of minority students who were selected" (p. 612).
Lewis, J. D. (2001). *Language isn't needed: Nonverbal assessments and gifted learners.* Paper presented at Growing Partnerships for Rural Special Education, San Diego, CA (118-121). Manhattan, KS: American Council on Rural Special Education.	CFIT (Culture Fair Intelligence Tests, scale based on age)\n\nNNAT (Naglieri Nonverbal Ability Test)\n\nRaven's Standard Progressive Matrices	Study 1: 189 students, low income, rural school in South, 91% African American.\n\nStudy 2: 270 students in grades 3-8, location unknown, 59.3% white, 36.6% Hispanic, 4.1% other.	Study 1: 1999\n\nStudy 2: 2000	"More students were identified using the Raven's; however, each test identified some unique individuals" (p. 119).\n\n"The Raven's and CFIT found nearly the same number of students, more than twice as many students as the NNAT. Only 11 students were identified with all three instruments" (p. 119).\n\n"Each test described here has its advantages and may work better for some populations than others" (p. 121).
Naglieri, J. A. & Ronning, M. E. (2000). Comparison of White, African American, Hispanic, and Asian children on the Naglieri Nonverbal Ability Test. *Psychological Assessment, 12*(3), 328-334.	Naglieri Nonverbal Ability Test	Three matched samples of: White and African American (2,306 students of each group); White and Hispanic (1,176 students of each group); and White and Asian (466 students of each group)	Fall 1995	"The matched samples generally performed similarly. The *d* ratios ranged from 0.02 to 0.41, which are all considered small." (p. 331).

Pierce, R. L., Adams, C. M., Neumeister, K. L. S., Cassady, J. C., Dixon, F. A., & Cross, T. L. (2006). Development of an identification procedure for a large urban school corporation: Identifying culturally diverse and academically gifted elementary students. *Roeper Review, 29*(2), 113-118.	Students qualified in 1 of 3 ways:
	1. TerraNova Comprehensive Test of Basic Skills - 90th percentile on TOTAL battery
	2. TerraNova Comprehensive Test of Basic Skills - 90th percentile on any two of following subtests (reading comprehension, math problem solving, or science)
	3. Ravens Colored Progressive Matrices (CPM-C), nonverbal - 90th percentile
		Indianapolis Public Schools:
		● 37 elementary sites
		● 48 second grade students
			Test: Spring 2002	First testing (Spring 2002):
				• 42% of students qualified by Criterion 1 or 2 (TerraNova assessment), another 29% qualified by criterion 3 ONLY
				  o Of those qualifying via criterion 3 only: 64% minority, 57% female, 64% free textbooks and lunch
				  o Of those qualifying via criterion 1 or 2: 55% minority, 45% female, 70% free textbooks and lunch
				Year One Data:
				• Hispanic and ESL student representation in gifted program increased.
				Further changes:
				• Teachers disagreed with identifying students based on one area of strength; changed identification to 90% in one area and at least 75% in another

Reavis, P. R. (2007). An analysis of racial/ethnic representation in gifted education in a large school district in the southeast: A study comparing test instrumentation results as part of a multidimensional identification process (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3296681)	CogAT (composite) ITBS (reading and math) MAP (reading and math) PACT (reading and math) PTT	5,000 2nd-3rd grade students (same kids, assessed over time), large school district in South Carolina	2004-2006	"As seen in Table 13, the proportions of gifted students [identified only by the CogAT] who were white, black, Asian, Hispanic, or other races were 5%, 0%, 7%, 0%, and 1%, respectively" (p. 114). "The proportions of students classified as gifted [identified by CogAT and ITBS] who were white, black, Asian, Hispanic, or other races were 11%, 1%, 24%, 1% and 4%, respectively" (p. 118).

Table 5

Literature Review Matrix: Identification Methods, Subjects, and Findings

Multiple-Criteria Eligibility Models

Source	Tests	Subjects	Years	Findings
Heath, W. M. (2002). *Results of the implementation of Georgia's multiple-criteria rule on minority representation in programs for the gifted and talented* (Doctoral dissertation). Retrieved from WorldCat. (3046264)	Multiple Criteria Eligibility Model	439 elementary students in a diverse Atlanta school system (1 high school, 1 middle school, 6 elementary schools). "31.5% White, 48% African American, 14.6% Hispanic, 2% Asian, .1% American Indian/Alaska Native, 3.7% Multiracial" (p. 28)	1998 - 2000	"Although African Americans continue to be significantly underrepresented in the MILE program, the 2000 data reveals a 10% growth toward the district representation" (p. 35). "There were no statistically significant differences in the proportions of students determined eligible when the Hispanic, Multiracial, and Other groups were compared" (p. 37). "For African Americans, there is a significant increase in the probability of being identified as gifted via the Multiple-Criteria pathway" (p. 38). "Multiple-criteria identification appears beneficial for Hispanic students" (p. 38).
McBee, M. T., Shaunessy, E., & Matthews, M. S. (2012). Policy matters: An analysis of district-level efforts to increase the identification of underrepresented learners. *Journal of Advanced Academics, 23*(4), 326-344. doi: 10.1177/1932202X 12463511	Unknown, called "Plan B" identification criteria, varied among districts.	PreK-12 students in Florida 67 districts	2005 - 2006	"If a randomly selected school were to adopt Plan B, the identification probability for FRL (free and reduced lunch) students would be expected to double" (p. 337). "An approximate two thirds increase in the probability of identification for Black students in school districts with Plan B policies" (p. 337).
National Association for Gifted Children (2007). *Javits program supports high-ability learners from under-represented populations.* Retrieved from http://ektron.nagc.org/index.aspx?id=572	Project Athena: "Test instrument" sensitive to low-SES students. CHAMPS: Teacher training focused on "dispelling myths" about gifted students Georgia State: "Multiple-criteria eligibility model"	Project Athena: ▪ 1500 low-SES learners in grades 3-5 Title I classrooms CHAMPS: ▪ 23 poorest school districts in Mississippi Georgia State: ▪ All Georgia		Project Athena: ▪ Higher frequency of identifying low-SES learners as gifted compared to school district's regular assessment tools. CHAMPS: ▪ Number of students identified as gifted increased from 4 to 26 over three years. Georgia State: ▪ 206% increase in identification of African-American children ▪ 570% increase in number of

	Project *La Jornada*: DISCOVER assessment to identify underserved minority and low-income students	public school districts. Project *La Jornada*: ▪ Region of New Mexico		Hispanic gifted children in programs. Project *La Jornada*: ▪ Roswell school district increased percentage of Hispanic students ID'd as gifted from 23.6% to 36%.
University of Connecticut. (2006). *The Georgia story: One state's approach to the underrepresentation issue.* Retrieved from http://www.gifted.uconn.edu/sem/The_Georgia_Story.html	(Not a study, just data on changes in Georgia's gifted programs since multiple-criteria eligibility model)	All of Georgia's public elementary school students	1996 – 2005 comparison	Population of white students in Georgia's gifted programs grew by 65% from 1996 to 2005, with the Black population growing by 206%, Asian population growing by 227%, Hispanic population growing by 570%, Native American population growing by 129%, and Multi-Racial population growing by 600%.

Table 6

Literature Review Matrix: Identification Methods, Subjects, and Findings

Teacher Identification and Professional Development

Source	Tests	Subjects	Years	Findings
Gear, G. H. (1978). Effects of training on teachers' accuracy in the identification of gifted children. *Gifted Child Quarterly, 22*(1), 90-97.	Teacher training program: *Identification of the Potentially Gifted* Questionnaire: *Attitude Toward Culturally and Economically Disadvantaged Children and Youth* To determine "gifted": "Gifted children were defined as those who were selected by the planning and placement team" (p. 93). "Data collected on the students included group achievement and intelligence test scores" (p. 93) • Wechsler Intelligence Scale for Children-Revised • Educational Development Series	48 randomly selected 3rd-6th grade teachers (24 with training, 24 without) at 21 schools in two high-poverty counties of West Virginia		"The difference between treatment groups was not statistically significant. Therefore, it was concluded that the IPG training program did not affect teachers' attitude toward disadvantaged children" (p. 94). "Mean effectiveness [in identifying gifted students] for the teachers in the experimental group was 85.5 percent. In contrast, the control group achieved a mean effectiveness of 40.3 percent. Thus, teachers who were untrained in the identification skills nominated less than half of the confirmed gifted attending their classes. Their trained counterparts identified, on the average, more than 8 of every 10 of the confirmed gifted" (p. 94).
Harradine, C. C., Coleman, M. B., & Winn, D. C. (2014). Recognizing academic potential in students of color: Findings of U-STARS~PLUS.	The Teacher's Observation of Potential in Students (TOPS)	100 schools in 4 states (NC, CO, LA, OH) by over 1,100 teachers of 5- to 9-year-old students. Many schools Title I. 1,972 students surveyed with	2003 - 2008	"Three fourths of teachers stated that using the TOPS helped them notice strengths in children of color, of poverty, and of linguistic diversity" (p. 32). "In all, 31% of the 436 students who 'would have been missed' were boys of color, 26% of them African American and 5% Latino. Nearly half

Gifted Child Quarterly, 58(1), 24-34. doi: 10.1177/ 0016986213506040		TOPS during project.		(48%) of all 436 students that teachers would have missed without the TOPS were children of color (135 boys and 74 girls)" (p. 29). "Teachers reported more barriers to noticing strengths for African American boys than for any other group, and most of these barriers occurred two to three times more often for these children" (p. 32).
Jacobs, J. C. (1971). Effectiveness of teacher and parent identification of gifted children as a function of school level. *Psychology in the Schools, 8*(2), 140-142.	Teacher Identification Parent Identification	654 kindergarten students in one school district 21 identified as gifted through Weschler Preschool and Primary Scale of Intelligence (WPPSI)		"The parents nominated a total of 26 (16 gifted and 10 non-gifted) children as possibly gifted. They correctly nominated 16 of the total of 21 for an effectiveness of nomination of 76%" (p. 141). "The kindergarten teachers nominated a total of 46 (2 gifted and 44 non-gifted) children as possibly gifted. Only 4.3% of the children identified as gifted were judged so by their teachers. Teachers did not nominate 19 of the total 21 gifted for an effectiveness of nomination of 9.5%" (p. 141). "In observation of the kindergarten classes, the 44 average-ability students who were thought by their teachers to be gifted appeared to be verbally adept children who were very cooperative and appeared to elicit teacher approval by their actions" (p. 141).
Pegnato, C. W. & Birch, J. W. (1959). Locating gifted children in junior high school: A comparison of methods. *Exceptional Children, 25*(7), 300-304.	Teacher Judgment Honor Roll Creative Ability in Art or Music Student Council Membership Superiority in Mathematics Group Intelligence Test Results (Otis Quick-Scoring Mental Ability Test, Beta Form) Group Achievement Test Results (Metropolitan Achievement Tests)	Junior high school in Pittsburgh, PA 1400 students grades 7-9 "The school chosen was not only a large one, but it was situated in and drew upon a very favored group of neighborhoods from a socio-economic standpoint" (p. 301).		"More than half of the total population of the junior high school grades (1400) had been recommended, by one or more screening method, for referral for individual examination to determine if they were actually mentally gifted" (p. 302). "Teachers do not locate gifted children effectively or efficiently enough to place much reliance on them for screening" (p. 303). "Only 45.1 percent of the gifted children actually present were included in the teachers' lists. Not only were more than half of the gifted missed, but a breakdown of those children referred as gifted by the teachers revealed that almost a third (31.4 percent) of those chosen by the teachers were *not in the gifted*

	Giftedness defined by: Stanford-Binet Intelligence Quotient of 136+			
Peters, S. J., & Gentry, M. (2012). Group-specific norms and teacher-rating scales: Implications for underrepresentatio n. *Journal of Advanced Academics, 23*(2), 125-144, doi: 10.1177/1932202X 12438717	HOPE Scale (teacher-rating instrument, 11 questions, 6-point frequency scale) Midwest State Achievement Test (MSAT) Aligned with SAT10 (reading and math every year, starting at grade 3, science in grades 4 and 7)	1 K-8 school in a large urban city in the Midwest 43% students eligible for FRL, matching that of the US (42.9%) for the 2007-2008 school year. 539 students, K-8	2008 - 2009	"Combining the two measures (achievement tests and teacher-rating scores) accomplished two things. First, it broke down the students scoring in the top 10% into those who received high teacher ratings and those who did not" (p. 137). "The second benefit of using the two measures is that the teacher-rating scale can help find individuals who might be missed by relying on test scores alone, but who received high ratings by a teacher familiar with their classroom performance" (pp. 137-138).
Peters, S. J., & Gentry, M. (submitted). Evaluation of differential item and test functioning of the HOPE Teacher Rating Scale.				"Differential item functioning was not found with regard to ethnic/racial group membership, but was found when gender groups were compared" (p. 1). "The HOPE Scale is not affected by differential item functioning with regard to income groups. However, despite this finding, students from low-income families did receive lower mean subscale scores than those students not from low-income families" (pp. 3-4). "When invariance was tested across gender groups there was a significant increase in chi-square value, indicating non-invariance at the intercepts of the individual items. Because of this finding, further interpretation of the gender invariance results was not possible at the tests of equal latent means and variances would be at least due to item-level non-invariance" (p. 7).
Swanson, J. D. (2006). Breaking through assumptions about low-income, minority gifted students. *Gifted Child Quarterly, 50*(1), 11-25, doi: 10.1177/00169862 0605000103	Teacher professional development: with ALL students: use of science/LA curric. created specifically for gifted students (W&M) Standardized Achievement Test (pre/post instruction):	Three Title One elementary schools in South Carolina, comprised of 1089 Pre-K-5 students, 938 low income, 894 African American students.	1999 - 2001	Over three years, additional students identified as gifted. Achievement increased, though gains were not consistent over time, school, and grade level. Teacher attitudinal shifts. Richer content in classrooms. "While one project school reported a threefold increase in identified gifted students, that school of over 550 students still had only six students

	MAT-7: Reading Comp, Math Concepts & Problem Solving, Science subtests			(about 1%) identified as gifted" (p. 23).

Table 7

Literature Review Matrix: Identification Methods, Subjects, and Findings

Parent Input

Source	Tests	Subjects	Years	Findings
Daglioglu, H. E. & Suveren, S. (2013). The role of teacher and family opinions in identifying gifted kindergarten children and the consistence of these views with children's actual performance. *Educational Sciences: Theory & Practice, 13*(1), 444-453.	Parent Observation Form (POF) Teacher Observation Form (TOF) Primary Mental Abilities Test 5-7 (PMA 5-7) Goodenough-Harris Draw-a-Person Test for children	Out of 600 kindergarteners in Duzce, Turkey. 113 identified as gifted by teachers and/or parents.		"The research indicated that teacher and parent opinions had a 44.3% success rate in determining gifted children" (p. 444). Families were more successful than teachers in identifying gifted children (p. 444). "The studies carried out by Torrance and Caropresso (1998) and Powell and Siegle (2000) revealed that the use of Teacher Observation Forms to identify gifted children did not have a high level of effectiveness" (p. 448). "Other studies have found that it is more difficult to identify giftedness in preschool children than in older children (Coleman, 1985)" (p. 448). "Many studies suggest that when families and teachers are informed/trained about gifted children, knowledge levels rise meaningfully (Gokdere & Ayvaci, 2004; Hemphill, 2009; Johnson, Vickers & Price, 1995; Kontas, 2009; Robinson, 1985)" (p. 449).
Hanson, I. (1984). A comparison between parent identification of young bright children and subsequent testing. *Roeper Review, 7*(1), 44-45.	Woodcock-Johnson Psycho-Educational Battery Raven's Progressive Matrices Parent recommendation Informal reading inventory Jastak Wide Range Achievement Test	84 4-, 5-, and 6-year-olds in Towson State University's Saturday and Summer Gifted program.	1982-1984	All students in program were recommended by parents. "90% of the 61 children who were given the Reading subtests scored over 1 year above level in reading" (p. 45) "All 5- and 6-year-olds tested had high scores on the Fund of Knowledge subtests" (p. 45). All but 6 students were at the 75th percentile and above on the Raven's Progressive Matrices (p. 45). "Mathematics scores averaged ½ to 1 year above" (p. 45)
Lidz, C. S., & Macrine, S. L. (2001). An alternative approach to the	Screening procedures: • Gifted and Talented Evaluation	473 students in 1st-5th grades, majority culturally diverse (largest	1998	"The hit rate for these parents in correctly identifying their children as gifted was 50 percent; therefore, the false negative rate was 50 percent, distorted somewhat by the imperfect

	Scales (GATES) completed by teachers • ITBS (reading and math) • Sociometric Questionnaire (peers) • Parent Questionnaire • Group Dynamic Assessment Procedure Individual assessment: • Kaufman Assessment Battery for Children (K-ABC, mentally processing composite) • Naglieri Nonverbal Ability Test	percentage in district), one Pennsylvania school.		return rate" (p. 84). "Previous attempts to identify children in this school as eligible for gifted programming resulted in identification of fewer than one percent of the students as gifted. The proportion of students identified by this study matches the proportion of students in the entire district who have been identified as gifted" (p. 89). "Two screening measures showed significant relationships with final determination of giftedness. These were the GATES, completed by the teachers, and the ITBS Math achievement test scores" (p. 90).
identification of gifted culturally and linguistically diverse learners: The contribution of dynamic assessment. *School Psychology International, 22*(1), 74-96.				
McBeath, M., Blackshear, P. B., & Smart, L. (1981). *Identifying low income, minority, gifted and talented youngsters.* Paper presented at the meeting of the American Psychological Association, Los Angeles, CA.	Baldwin Identification Matrix • Informal creative thinking test • Reading test • Math test • Grades • Nominations	2700 students screened in a school in the District of Columbia, K-3	1978-1979 school year	"As may be seen in Table 3 the highest contributor to the function [whether or not a student is in the program] is total nominations" (p. 9). "The analysis comparing students who stayed in the program with those who did not, showed that the category, total nominations, still was the predictor variable contributing most to the function" (p. 17). "Nominations by peers, parents and teachers have a large effect on discriminating between students who are selected to participate in the gifted/talented program and those who are not" (p. 18).

Table 8

Literature Review Matrix: Identification Methods, Subjects, and Findings

Performance-Based Assessments

Source	Tests	Subjects	Years	Findings
VanTassel-Baska, J., Feng, A. X., & de Brux, E. (2007). A study of identification and achievement profiles of performance task-identified gifted students over 6 years. *Journal for the Education of the Gifted, 31*(1), 7-34. Retrieved from: http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ777789	Performance-Based Assessments: • Verbal: verbal reasoning tasks, written responses or correct manip. of words • Nonverbal: math/spatial	20 school districts in South Carolina • 30,526 gifted students	2000 - 2005	Performance-based protocols more consistent in locating higher percentage of low-income and minority students, females, for gifted programs. Problem remains: gifted programs do not necessarily meet the needs of these learners identified through performance-based assessments (rather than achievement tests).
VanTassel-Baska, J. & Stambaugh, T. (2006). Project Athena: A pathway to advanced literacy development for children of poverty. *Gifted Child Today, 29*(2), 58-63.	CogAT (verbal and nonverbal, no quantitative) • Levels B (3rd grade), C (4th grade), and D (5th grade) of CogAT Form 6. UNIT (two-subtest abbreviated battery	1500 low-SES learners in grades 3-5 Title I classrooms		"Experimental students did significantly better than control students in both critical thinking and comprehension" (p. 63) "All ability groups and ethnic groups registered significant growth gains from using the curriculum" (p. 63).