Barriers to Underserved Students' Participation in Gifted Programs and Possible Solutions

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Abstract

Gifted students' learning gains result from complex, advanced, and meaningful content provided by a knowledgeable teacher through high-quality curriculum and instruction at an appropriate pace with scaffolding and feedback. These elements exert influence that increases with dosage and within structures that facilitate student engagement in rigorous experiences, including interactions with one another. Talent development is a two-part process. First, educators and parents must provide opportunities for talent to surface, and then they must recognize the talent and provide educational opportunities that engage the emerging talent and move it to exceptional levels. Unfortunately, a variety of barriers exist that limit underserved students' participation in this process. We discuss these barriers within a proposed model of talent development.

Barriers to Underserved Students' Participation in Gifted Programs and Possible Solutions

Gifted and talented programs and services aim to promote, enhance, and extend the talents and abilities of students. Prior to such interventions, students' potential talents and abilities must be recognized. However, impediments and barriers exist, impacting the overall student population, and to a greater degree, the underserved student population. Even the act of defining gifted students as a single population neglects the vast diversity among student populations. Varied perspectives, curricula, models, service delivery systems, identification structures, and needs of gifted children all should be considered. Specifically, this variety of considerations is crucial for students from underserved populations who may have had fewer opportunities to acquire the background knowledge and academic skills necessary to be recognized as gifted, including students from rural communities (Fears Floyd, McGinnis, & Grantham, 2011), Native American students (DeVries & Shires-Golon, 2011), African American students (Ford, 2007; Long-Mitchell, 2011), twice-exceptional students (Foley Nicpon, Assouline, Schuler, & Amend, 2011), some groups of Asian American and Pacific Islanders (Hune & Takeuchi, 2008; Ngo & Lee, 2007), Hispanic students (Castellano, 2011), and English language learners (Brulles, Castellano, & Laing, 2011). The persistence of barriers that limit the full participation of underserved student populations in this process is a longstanding and critical issue in gifted education today.

Siegle, McCoach, Gubbins, Callahan, and Knupp (2015) examined the extent to which traditionally underserved students are under-identified as gifted, using data from a state with a mandate to identify and serve gifted students. Prior to controlling for achievement or for any school or district differences, the researchers found White students who did not receive free/reduced price lunch and were not English learners were far more likely to be identified as

gifted than Black students, English learners (EL), and students eligible for free/reduced price lunch programs. In fact, the odds of being identified as gifted were over 3.5 times higher for these White reference students as for Black students not eligible for free/reduced price lunch programs, almost 12 times higher for these White reference students than for Black students eligible for free/reduced price lunch programs, and over 15.5 times higher for these White reference students than for Latino students who were EL and eligible for free/reduced price lunch programs. However, these findings did not control for earlier reading and math achievement, nor did they control for school or district demographics.

After controlling for students' math and reading achievement test scores and each of the student characteristics, school and district SES, and district reading and math achievement, Siegle et al. (2015) reported students were still less likely to be identified as gifted if they were Black or Latino, if they received free or reduced lunch, or if they had ever been classified as English learners. Holding school and district demographics, percentages identified of gifted students, and reading and math achievement constant at the overall mean, the odds of being identified as gifted were over 2.5 higher for White students who did not receive free/reduced price lunch and were not English learners than they were for students who are Latino, free lunch eligible, and English learners for students **with the same 3rd grade mathematics and reading scores**. These results indicate that traditionally underserved students in their sample (students who are Black and Latino, students who receive free/reduced lunch, and English learners) were less likely to be identified as gifted, even when their achievement is on par with their peers.

Research has illustrated the widening of the excellence-achievement gaps among students with varying demographic characteristics, such as racial/ethnic groups, low socio-economic status, limited English proficiency, and gender (Plucker, Burroughs, & Song, 2010).

Additionally, students with high potential from lower income families "lose more educational ground and excel less frequently than their higher-income peers" (Wyner, Bridgeland, & Diiulio, 2007, p. 4). Disparities between students from lower and higher income families are evident as of first grade due to lack of access to preschool programs and other educational resources that influence intellectual development. Moreover, students from culturally, linguistically, and economically diverse communities represent disproportionately low numbers of students scoring at the highest levels of achievement, rendering concerns that students in today's schools are potentially being "intellectually barred" from achieving their obvious, emergent, and latent talents and abilities. In fact, Plucker, Hardesty, and Burroughs (2013) concluded

> We find it difficult to escape the conclusion that America has developed a permanent talent underclass. In an age of increasing global competitiveness, it is somewhat harrowing to imagine a future in which the largest, fastest-growing segments of our K-12 student population have almost no students performing at advanced levels academically. (p. 29)

Therefore, recognizing, acknowledging, and addressing these achievement differences and barriers to excellence is imperative (Olszewski-Kubilius & Clarenbach, 2012). We discuss these barriers within the context of a proposed model of talent development to optimize underserved students' growth. Additionally, we assert that promoting research to uncover the essential program components linked to favorable academic outcomes of identified-gifted and underrepresented-gifted students is of paramount importance.

Review of Literature

Traditionally, underserved populations in gifted education include twice exceptional students, English learners, rural students, Hispanic students, Native American students, and

African American and Black students. We also include some groups of Asian American and Pacific Islanders. We acknowledge that other populations of underserved students exist, and immigrant students from many different countries may be underserved. However, we have restricted this review to the populations we listed above.

Twice-Exceptional Students

Twice-exceptional students are those who demonstrate the potential for high achievement or creative productivity in one or more domains and one or more disabilities as defined by federal or state criteria. Identification should be conducted in consultation with experts in both fields, including those knowledgeable specifically about twice exceptionality, as students' gifts and disabilities may mask each other (Reis, Baum, & Burke, 2014).

Comprehensive screening is also important to determine the services students should receive to address both their giftedness and disabilities (Foley-Nicopon, Allmon, Sieck, & Stinson, 2011; McCoach, Kehle, Bray, & Siegle, 2001; Reis et al., 2014). For example, gifted curriculum tends to be fast paced and conceptually oriented such that it fosters creativity and critical thinking, while special education curriculum is highly structured and skill-focused. Combining both gifted and exceptional programming to meet the needs of the individual student without decreasing self-efficacy can be difficult (Baum, Novak, Dann, & Prues, 2010), but there are ways to address both.

To address twice-exceptional students' giftedness, teachers may engage a "reverse hierarchy" of instruction whereby learning is a top-down guided process, as "these students learn difficult, conceptually oriented information easier than rote, drill information" (Hughes, 2011, p. 156). Students may also need to be taught the larger global concept before they learn specific information or facts to have something to which they can attach the details. In complement to

gifted approaches, teachers should also employ special education support strategies, including the use of graphic organizers, checklists, instructional transparency, explicit directions, and instruction to fill gaps in student knowledge.

Using a range of carefully selected gifted and special education strategies will help to provide student support while still ensuring high level instruction as "content not directly related to their area of disability should focus less on the process of acquisition, but more on the content knowledge that can then be applied" (Hughes, 2011, p. 167).

English Learners

English Learners (ELs) are the fastest growing population of learners in the United States (National Center for Education Statistics, 2013). They are diverse by members' level of English acquisition and acculturation, immigration status, socio-economic level, prior access to education, and whether the learner is the only one who speaks that language at school or has a body of peers (Iowa Department of Education, 2008).

Characteristics of gifted English Learners (EL) are often different from the characteristics of students who were born into U.S. culture. Identification requires a holistic approach, as they may not be able to perform on English language tests yet, but may have potential for incredible gifts. Equitably identifying all learners who would benefit from gifted services requires teachers and administrators to "recognize and capitalize on how these students demonstrate their talents and strengths" (Brulles et al., 2011, p. 305).

According to Castellano (1998) and the Iowa Department of Education (2008), the process for identifying and serving needs should begin promptly, even as students begin to develop English proficiency, to prevent them from losing opportunities for growth. Unless a district conducts routine screenings for gifted potential in all students to reduce bias (Castellano,

1998), the first step in an identification process may be teacher or parent nomination. Oakland and Rossen (2005) assert that the nomination process should be one that "first informs, then educates, and then encourages" (p. 61) teachers and parents through culturally and linguistically sensitive training about the characteristics and needs of gifted ELs, along with the importance of gifted programming.

In deference to what Lewis (2001) referred to as the "hurdle of assessments that depend on language" (p. 118), researchers have explored the promise of nonverbal measures requiring little or no verbal or written communication for directions, and tasks that do not involve any reading, writing, or speaking of words (Lewis, 2001; Shaunessy, Karnes, & Cobb, 2004). However, researchers question the use of nonverbal ability tests (Lohman, Korb, & Lakin, 2008; Matthews & Kirsch, 2011). Lohman (2005) acknowledged the value of using nonverbal measures in identifying gifted EL learners but cautioned against exclusive reliance on nonverbal tests. Harris, Rapp, Martinez, and Plucker (2007) recommend using multiple criteria going beyond nonverbal tests of ability to include assessing students in their native language, observing their problem-solving skills, reviewing portfolios of their work, including teacher observations and behavioral checklists, and seeking parental input.

Honoring cultural voice is an important aspect of incorporating EL students into the gifted classroom, as they are learning a new language and possibly new culture. Integrating students' previous cultural and ethnic perspectives provides opportunities for community building and validation. Involving family and community members can be difficult due to issues of language and culture, and parents may be uncomfortable involving themselves. It is the responsibility of the school to be aware of these issues and reach out to communicate.

Once identified, gifted English learners should receive high quality curriculum with concrete examples and rich materials inclusive of students' culture and native language (deWet, 2006) and models that develop thinking and build cognitive strengths, rather than operating as a deficit model (Barkan & Bernal, 1991). Teachers should provide supports including translating assignments, adjusting the pace to allow for extra time as needed, and grouping students with similarly achievement-oriented peers or providing them with an experienced EL student mentor (Cohen, 1990; Gándara, 2005; Iowa Department of Education, 2008).

Two models seeking to incorporate supportive measures are the Sheltered Instruction Observation Protocol (SIOP) (Short & Echevarria, 1999; Short, Echevarria, & Richards-Tutor, 2011) of teaching subject area curriculum using techniques to make content accessible while students develop English skills and Response to Intervention (RTI). Short and Echevarria (1999) and Bianco and Harris' (2014) proposed use of RTI to provide scaffolding supports for EL students' English language acquisition needs, while providing culturally responsive curriculum pedagogy with increasing levels to differentiate, enrich, or accelerate for their gifted needs.

Rural Students

In the 2010-2011 school year, just over 20% of all public school students attended schools in rural areas (Johnson, Showalter, Klein, & Lester, 2014). For students in rural communities, lack of challenge and lack of teacher preparation create a difficult environment for talent to surface. Often, deficit thinking (which creates barriers that make it impossible for talent to emerge) and low expectations create self-fulfilling prophecy problems. Moreover, scarcity of resources makes offering advanced or honors-level courses difficult, if not impossible, when rural schools must focus on remediation with a scarcity of qualified personnel (Fears Floyd et al., 2011). In a survey by Gentry, Rizza, and Gable (2001), students in rural communities rated their

classrooms more enjoyable, which "may reflect the strengths of rural education with regard to small schools, nurturing environments, personal attention, and stable communities" (p. 125). However, those students also reported less challenge and interest than urban and suburban peers (Gentry et al., 2001).

"Developing personal relationships with students of poverty is of key importance to their success" (Fears Floyd et al., 2011, p. 30). Including community and parents will be of the utmost importance if rural schools are going to improve gifted programming. Capitalizing on mentorship opportunities and those who are able to provide classroom enrichment may assist in talent recognition and service. Some schools are beginning to employ models similar to more urban settings to develop gifted programming and offer space for talent to be recognized, and administration may want to look toward technology as an option for providing resources for students if geographical constraints are a concern (Fears Floyd et al., 2011).

Hispanic Students

At approximately 25% of the student population (U.S. Department of Education, Office for Civil Rights, 2014), Hispanic students represent a considerable proportion of students in the United States. Comprised of 22 cultures who identify as Hispanic (Castellano, 2011), this range presents additional challenges in identifying and meeting the needs of gifted Hispanic learners.

To support identifying Hispanic students growing up in socially, linguistically, or culturally diverse environments, Lara-Alecio and Irby (2000) suggest including a socio-linguistic-cultural dimension in defining the population to reflect these variables. Esquierdo and Arrequin-Anderson (2012) noted the need for teacher training in student characteristics as they differ from traditional gifted checklists, as well as a paradigm shift of identification measures that view Hispanic giftedness through multiple lenses.

Learning must include culturally responsive curriculum. If teachers and schools fail to provide this, they are failing to provide Hispanic students with the connections to school that will allow their gifts to surface. Given so many different cultures identifying as Hispanic, infusing culturally relevant curriculum and instruction requires a thoughtful and informed approach. Similarly, differences should be addressed through "responsive, creative, and persistent" (Ford, 2011, p. 266) efforts to involve and support families and provide counseling designed to meet students' affective, social-emotional, and psychological needs.

Native American Students

Many Native American students struggle with reading and writing, as they often operate in a mixture of a Native language and English. DeVries and Shires-Golon (2011) explain "many of these children have been identified as gifted, particularly in the area of spatial intelligence, and have obtained IQ scores in the gifted range. Many are considered underachievers" (p. 50). These students tend to show more creative talent and visual-spatial abilities. High school dropout rates are high in Native American populations, indicating that their learning needs are not being met. "Whereas traditional education program design has emphasized the assimilation of cultures, it is vital that Native American educators maintain an integrative perspective that embraces the tenets of a multicultural society in order to engage and motivate Native American students" (DeVries & Shires-Golon, 2011, p. 75). For many Native American students, this means paying special attention to oral history, language, and respect for tradition. "By incorporating color, size, and humor, as well as a variety of visuals and hands-on activities, and by using music and/or movement, teachers can enjoy greater success in reaching gifted Native American students" (DeVries & Golon, 2011, p. 58). This quote addresses the specific learning styles that are most common among Native American populations. Teachers need to be knowledgeable about tribal

tradition, history, and culture to understand the learning needs of their students. Omdal, Rude, Betts, and Toy (2011) noted:

> Native American students process information in a distinct and unique manner that is not effectively engaged in the traditional sequential and analytical learning model set forth by most schools and curriculum providers. . . . A global and relational instructional style more effectively engages Native American students with a variety of choices in individual learning, use of examples from contemporary Native American life, and real-world application of ideas and skills. (p. 76)

Also, it is important to take into account that Native American students value cooperation over competition. Including tribal elders and family members provides the collaborative environment and oral histories that stimulate Native American students and responds to cultural needs. Cultural knowledge and tradition are handed down by storytelling. Community is described as "a collective" that eschews materialism, values patience and self-control, and fosters respect of authority and elders as highly important. Communication style may include quiet, slow speech, characterized by thoughtful responses that require delay prior to answering, nonverbal communication. Displays of individual knowledge or talent are not encouraged. As a result, typical classroom learning and talent development leads to a great deal of misconceptions and isolation (Gentry, Fugate, Wu, & Castellano, 2014).

African American and Black Students

The Civil Rights Data Collection Data Snapshot on College and Career Readiness in the 2011-2012 school year (U.S. Department of Education, Office for Civil Rights, 2014) presents a troubling picture of the underrepresentation of African American and Black students in gifted and talented programs and advanced secondary-level classes. In that school year, 4% of the total

African American and Black student population was enrolled in a gifted and talented program, compared to 8% of White students. In schools with gifted education programs, African American and Black students represented 15% of the total enrollment, but only 9% of the students enrolled in the gifted programs. Unequal access to a full range of math and science courses at the secondary level is another area of concern for students with high potential, with only 57% of African American and Black students compared to 81% of White students having full access. African American and Black students comprised 16% of total enrollment in high schools, 9% of students enrolled in at least one AP course and taking at least one AP exam, and only 4% of those with a qualifying score on at least one AP exam. And, although African American and Black students made up 16% of the enrollment in Algebra II classes, closely matching their representation in overall high school enrollment, they were only 4% of the students enrolled in Calculus.

Teachers must be attuned to the historical oppression of Black students as, "children infer teachers' beliefs about why they succeed or fail from the teachers' emotional reaction to them" (Long-Mitchell, 2011, p. 102), and experience increased self-efficacy and achievement from engaging consistently with mentors. Creating a culture of connectedness to the school itself and creating opportunities for students to integrate the school into their identity increases the likelihood that they will achieve academically. Long-Mitchell (2011) stated,

> Black students are more likely to value academic achievement and educational attainment when they view education as an effective means of social and economic improvement. However, they are less likely to place value on academic achievement if they are less optimistic about the role of education for their economic mobility. (p. 102)

A positive relationship with teachers and administrators in conjunction with teachers' high expectations increases achievement and self-efficacy. Ensuring that African American and Black students have a voice in their educational experiences increases achievement in this population, as the dominant class has generally dictated how Black students will be taught.

Asian American and Pacific Islanders (AAPI)

There is some evidence that suggests Asian American and Pacific Islanders (AAPI) may be "overrepresented" in gifted education programs (Yoon & Gentry, 2009). AAPI account for a small, albeit, growing percentage of students in the United States, and they have received substantial media attention for their academic excellence and perceived occupational success. Due to the prevailing view of AAPI as a homogenous racial group, generally successful in school and career with little to no mental health problems, they have been stereotyped as *model minorities* (Chung, 2015; Lee et al., 2009; Lund, Chan, & Liang, 2014; Okubo, Yeh, Lin, Fujita, & Shea, 2007) and have received little attention in scholarly educational literature (Henfield, Woo, Lin, & Rausch, 2014; Kitano & DiJiosia, 2001; Museus & Kiang, 2009). However, the statistics used as evidence for the model minority stereotype are misleading because AAPI are often grouped together without consideration of nationality or ethnic group differences (Hune, 2002; Museus & Kiang, 2009). AAPI represented one of the fastest growing racial groups between 2000 and 2010 (U.S. Census Bureau 2010a, 2010b) and in actuality is made up of over 50 different ethnic groups (Chow, 2011) with a wide variety of languages, religions, and "significantly varied levels of success" (Yoo, Burrola, & Steger, 2010, p. 115).

The low educational achievement, degree attainment, and income levels of Southeast Asian Americans with their history as refugees and Pacific Islanders with their history of colonization reveal stark contrasts when compared to these markers of success for East and

South Asian Americans. Many Southeast Asian Americans emigrated from the countries of Vietnam, Laos, and Cambodia as refugees. Their children often grow up in high-poverty, single parent homes where English is not the first language (Hune & Takeuchi, 2008). Disaggregated statistics show some of the lowest rates of high school and bachelor degree attainment for Southeast Asian Americans compared to the overall U.S. population (Chan, 1991; Hune & Takeuchi, 2008; Ngo & Lee, 2007; Teranishi, 2010; Yoo et al., 2010) and the lowest per capita income of any racial group (Ngo & Lee, 2007). Native Hawaiian and other Pacific Islanders include any person from the indigenous groups of Hawaii, Guam, Samoa, or other Pacific Islands (U.S. Census, 2010b). They also have high poverty rates (18%) compared to the U.S. average (12%) and similar low degree achievement rates as Southeast Asian Americans (Takeuchi & Hune, 2008; WHIAAPI, n.d.). The model minority stereotype and grouping of AAPI into one homogenized racial group may mask the low educational attainment of AAPI subgroups and their underrepresentation in gifted programming (Kitano & DiJiosia, 2001). Furthermore, teachers have been found to overlook struggling Asian American students unless challenging behaviors arose (Hui-Michael & Garcia, 2009). The model minority stereotype may appear positive on the surface but rather than helping "tends to silence and render invisible the complexity of the AAPI community" (p. 40) and disregard the educational potential of certain AAPI subgroups (Chow, 2011).

Barriers to Identification

Ford, Grantham, and Whiting (2008), like Donovan and Cross (2002), noted the continuing underrepresentation of Black and Hispanic students who do not have access to curricula, programs, or services in gifted and talented programs. Ford (2010) attributed this

disproportionality of culturally, linguistically, and economically diverse students in gifted and talented programs to four categorical roadblocks:

(a) lack of teacher referral, (b) students' differential performance on traditional intelligence and/or achievement tests, (c) stagnant and outdated policies and procedures for labeling and placement, and (d) social-emotional concerns and eventual decisions of their Black and Hispanic students and their primary caregivers about gifted education participation. (p. 32)

Ford (2010) contended that these roadblocks are embedded in larger societal problems, which harkens back to Frasier's Four A's (1997): Attitude—hold a proficiency view of students with the perspective that gifts and talents can emerge; Access—opportunities are essential for the development of gifts and talents; Assessment—existence of equitable identification systems; and Accommodations—identifying academic needs for further enhancement and development. Ford views the roadblocks as situated in deficit thinking—"culturally different students are genetically and culturally inferior to White students" (p. 32), which impacts all components of program design to development; colorblindness (or culture-blindness)—"the importance of and role of culture in learning curriculum, instruction, assessment, and expectations" (p. 32) is suppressed; and White privilege—"social and cultural capital (e.g., language, values, customs, traditions) of White Americans is valued and held as normal, normative, or the standard" (p. 33).

Callahan, Moon, and Oh (2013a) explored the representation of minority and economically disadvantaged students in elementary gifted and talented programs by asking district coordinators to select the range of percentages that matched their student demographics. Exact alignment meant that the district coordinator chose the same ranges for the district

population and the subpopulation; adjacent alignment meant that the range of percentages differed by no more than one category.

a. More than 80% of the district coordinators indicated exact (50.4%) or adjacent (33.6%) alignment between the percentage of Black students in the district and in the gifted program. District coordinators (16.0%) reported underrepresentation of Black students in gifted program.

b. A similar pattern of representation emerged for Hispanic students with 85.2% of the district coordinators reporting exact (54.5%) or adjacent (30.8%) alignment, while 14.8% indicated that the percentage of Hispanic students in the gifted program was lower than the percentage in the general population.

c. The researchers noted a discrepancy between the representations of students in the district versus the gifted program when free or reduced lunch program status was evaluated. Only 42.3% of the district coordinators indicated exact or adjacent alignment between students in the district's free and reduced lunch program and the percentage in the gifted and talented program.

d. Similar patterns of representation of Black and Hispanic students in gifted programs were evident for middle schools (Callahan, Moon, & Oh, 2013b). At the middle school level, exact (34.4%) or adjacent (45.6%) alignment was reported between the percentage of Black students in the district and in the gifted program. A similar pattern was indicated for Hispanic students with more than 80% reporting exact (37.1%) or adjacent alignment (46.9%).

e. Similar to the elementary school data, a discrepancy existed between students of poverty in the district and in the middle school gifted program as only 45.2% of the district coordinators reported exact or adjacent alignment.

Status of Effective Programs

It is critical to seek ways to find "overlooked" students who may be our low income, high potential learners from culturally and linguistically diverse communities (Ford, 2007; VanTassel-Baska & Stambaugh, 2007). Olszewski-Kubilius (2007) offered insights to engaging promising students from poverty-stricken communities in opportunities to develop their gifts: "Interventions need to recognize, affirm, acknowledge, and take advantage of strengths, and identify, understand, and compensate for weaknesses" (p. 45).

A strength-based approach to finding and serving students with gifts and talents (Renzulli & Reis, 2014) is warranted. To provoke this perspective, professional development and identification protocols must "emphasize reformulation of teacher thinking from nomination of gifted students to finding talents in specific areas" (Callahan, 2007, p. 55). Adams and Chandler (2014) highlighted programs that promoted achievement of students at risk and at promise. They identified eight successful programs with high potential, low-income students. Four models were implemented in elementary or middle schools, and one model began in grade 3 and extended to grade 9.

- Gavin (2014) described Project M³: Mentoring Mathematical Minds, funded by the Jacob K. Javits Gifted and Talented Students Education Act, with a major goal of engaging mathematically promising students in complex mathematics. Findings from two cohorts of students progressing from grades 3-5 illustrated the growth of mathematical concepts on the Iowa Tests of Basic Skills and above grade level items from Trends in

International Mathematics and Science Study (TIMSS) and National Assessment of Educational Progress (NAEP) (Gavin et al., 2007).

- Cockrell (2014) provided details on Project EXCITE, which is a collaborative project with Northwestern University and Evanston Township High School District. Grade 3 students participate in a 6-year program involving after school, weekend, and summer enrichment classes; tutoring; and educational guidance and counseling. The program goal is to close the achievement gap between minority and majority students, and the students make academic gains throughout their program involvement. By grade 8, African American and Latino students scored at similar levels to White students on the Illinois Standard Achievement Test.

- Horn (2014) highlighted the Young Scholars Model, which "supports the notion of providing equity of opportunity to all students so that any child who has an exceptional ability to think, reason, and problem solve will be able to participate in classes for gifted and talented students" (pp. 45-46). Therefore, students are engaged in complex subject matter to help them prepare for increasingly challenging classes as they advance in school. Data on program participation in full-time classes for identified gifted and talented students and advanced academic courses, honors, Advanced Placement, and International Baccalaureate classes supports the importance of developing academic strengths.

- VanTassel-Baska (2014a) summarized the impact of the Javits project entitled Project Athena, which used research-based language arts curriculum to promote reading comprehension, literary analysis, and persuasive writing. The 3-year longitudinal study with gifted and promising learners in grades 3, 4, or 5 indicated that the experimental

group students made significant gains in critical thinking and experimental and control group students made significant gains in reading comprehension on the Iowa Tests of Basic Skills.

- VanTassel-Baska (2014b) highlighted the impact of Project Clarion, which was a Javits project focusing on challenging inquiry-based science curricula (Pre-K-grade 3). The academic goals of Project Clarion included enhancing conceptual understanding in science, developing scientific reasoning, and exposing students to interest-based science topics. Results for all Title I students showed significant and important gains.

Three of these effective programs focusing on meeting the academic needs of high potential, low-income students represent a small portion of all Javits grants funded over 20 years. Unfortunately, data from the last group of Javits grants are not available due to federal cuts in 2011 in mid-cycle. Recent refunding of Javits grants has resulted in new research being conducted in these areas.

Other researchers designed programs and organizational approaches to promote the talents and abilities of students whose achievement potentials were not realized fully. Gentry and Owen (1999) employed causal-comparative and longitudinal research designs to examine the impact of cluster grouping with elementary students over 4 years in a rural district. The researchers concluded that teachers' perceptions of student achievement changed as "more students were identified as *high achieving* each successive year, while fewer students were identified as *low achieving*" (p. 228). They found that

Even though students in the treatment schools began with lower reading scores than did students in the comparison school, after three years in a flexible cluster grouping program, the treatment school students outperformed or equaled their comparison and

school counterparts. Additionally, the growth in reading achievement had both practical

and statistical significance for the treatment school students. (p. 232)

Cluster grouping and differentiating the curriculum promotes the perspective that

reducing the range of academic variability in classrooms allows teachers to accommodate

students' learning needs.

Olszewski-Kubilius and Clarenbach (2012) identified successful practices associated with

effective programs:

- create gateway programs to prepare students for challenging courses;

- design program selection criteria based on current levels of talent;

- develop high-powered, enriched curriculum with appropriate scaffolding to develop

  advanced thinking and questioning skills;

- extend learning time through classes other than academic opportunities beyond the school

  day;

- offer supplemental program components to equalize opportunities; and

- promote student support networks within learning communities of bright, talented

  students who view high academic achievement as an important goal.

Proposed Talent Development Model

Talent development is a two-part process. First, opportunities must be provided for talent

to surface. Second, the talent must be recognized and educational opportunities provided that

engage and enhance the emerging talent to exceptional levels (Siegle, 2008; Subotnik,

Olszewski-Kubilius, & Worrell, 2011). It is imperative that a model for talent development for

underserved students include experiences for students that prepare them for the formal

identification process. It should also include culturally relevant learning experiences that students find meaningful and relevant.

Perspectives on giftedness may be applied in myriad ways, as there is no federal mandate for identifying or serving gifted and talented students. Therefore, states and districts may choose to design programs with varying goals and objectives. Student growth is maximized by meaningful instruction, learning, and engagement with peers. Effective programs based on the model we suggest can assure policymakers, educators, and parents that our nation's gifted and talented students, across all groups, receive instruction that is sufficiently challenging, allowing these students to reach their full potential.

As noted, one hindrance to identifying students from underserved populations is that their talents may not have surfaced for a variety of reasons. Gifted students from underserved populations may have experienced fewer opportunities to acquire the background knowledge and academic skills necessary to be recognized as gifted. They may also be demonstrating their giftedness in ways that are fundamentally different from stereotypical gifted characteristics. Gifted students from underserved populations may also choose not to reveal their giftedness.

Therefore, our model begins with a pre-identification process of identifying students who would benefit from an emergent talent experience that reveals their high potential. These pre-identified students should then participate in a preparation program that provides opportunities for talents to emerge. Some districts can provide emergent talent experiences for all students, while others may use a pre-identification process. It is essential that preparation programs provide students and their families with a rationale to participate, support systems for students to attend, and resources for participation. As a result of the talent emergent experiences in preparation programs, a wider range of students, including greater numbers of underserved

populations, should be identified who would benefit from gifted education services as an intervention with attendant outcomes.
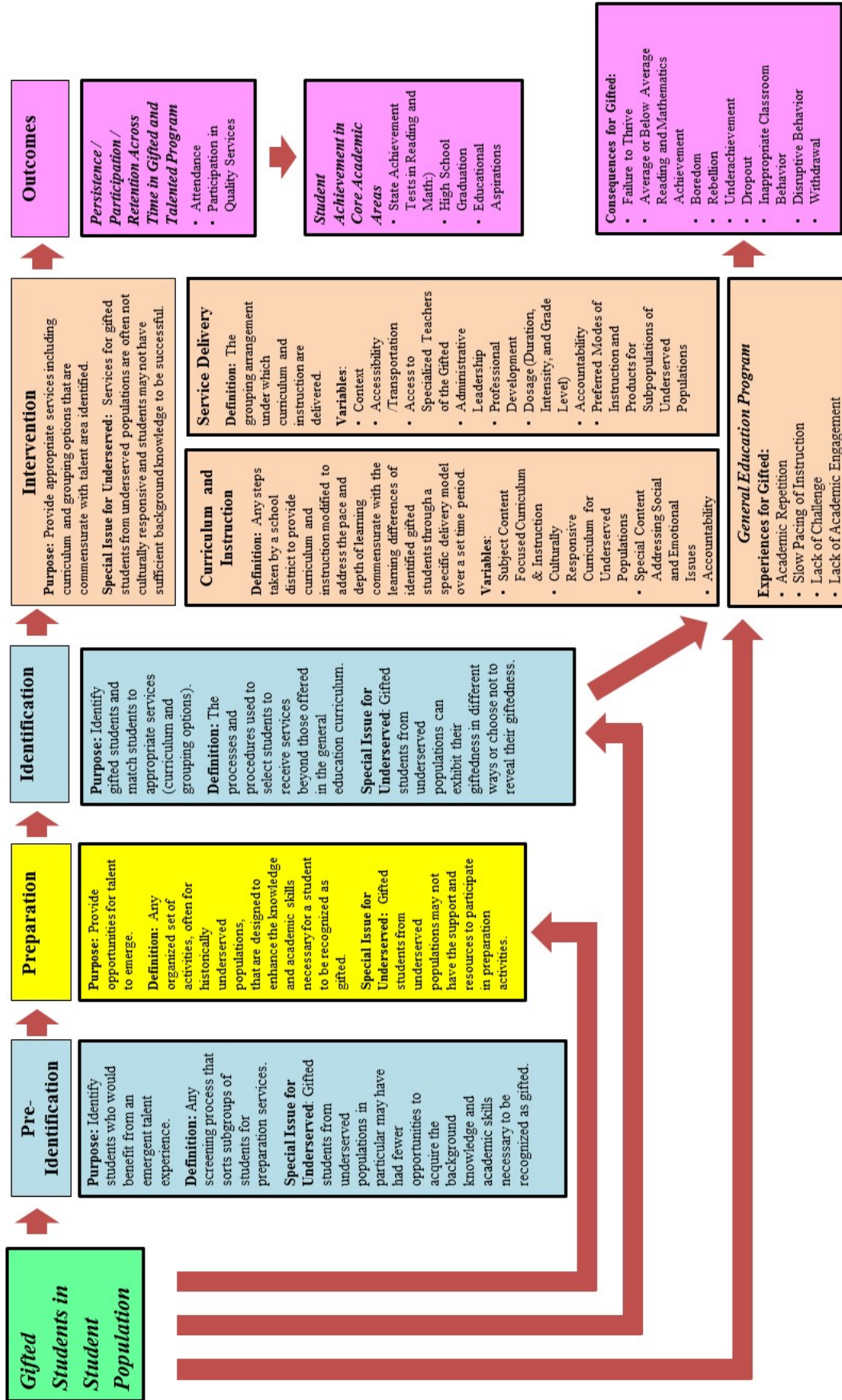
We propose a model for talent development based on the aforementioned practices that proactively addresses recognizing and nurturing students' talents and gifts. The model (see Figure 1) includes five major components (i.e., Pre-Identification, Preparation, Identification, Intervention, and Outcomes).

Pre-Identification

Pre-identification, the process of identifying students who would benefit from an emergent talent experience, includes screening measures that sort subgroups of students for preparation services. Successful pre-identification requires teachers to be "talent scouts" (Brulles et al., 2011, p. 306) who are not only aware of the characteristics of gifted learners, but also how giftedness may be masked in underserved populations (Gentry, Hu, & Thomas, 2008). The purpose of the pre-identification process is to identify those students whose previous experiences and resources were insufficient to develop their talents and abilities to levels where they can be recognized. It should also involve recognizing students who may not be willing to reveal their talents and abilities.

Preparation

Pre-identified students would then participate in preparation, which includes activities designed to enhance the knowledge and academic skills necessary to develop their talents and strengths (Brulles et al., 2011). In other words, preparation provides learning experiences for talents to emerge. This also includes building trusting relationships where students feel comfortable demonstrating their talents and abilities. As a result of these activities, talents and abilities can be recognized during the identification process.

Gifted Students in Student Population

Pre-Identification

Purpose: Identify students who would benefit from an emergent talent experience.

Definition: Any screening process that sorts subgroups of students for preparation services.

Special Issue for Underserved: Gifted students from underserved populations in particular may have had fewer opportunities to acquire the background knowledge and academic skills necessary to be recognized as gifted.

Preparation

Purpose: Provide opportunities for talent to emerge.

Definition: Any organized set of activities, often for historically underserved populations, that are designed to enhance the knowledge and academic skills necessary for a student to be recognized as gifted.

Special Issue for Underserved: Gifted students from underserved populations may not have the support and resources to participate in preparation activities.

Identification

Purpose: Identify gifted students and match students to appropriate services (curriculum and grouping options).

Definition: The processes and procedures used to select students to receive services beyond those offered in the general education curriculum.

Special Issue for Underserved: Gifted students from underserved populations can exhibit their giftedness in different ways or choose not to reveal their giftedness.

Intervention

Purpose: Provide appropriate services including curriculum and grouping options that are commensurate with talent area identified.

Special Issue for Underserved: Services for gifted students from underserved populations are often not culturally responsive and students may not have sufficient background knowledge to be successful.

Curriculum and Instruction

Definition: Any steps taken by a school district to provide curriculum and instruction modified to address the pace and depth of learning commensurate with the learning differences of identified gifted students through a specific delivery model over a set time period.

Variables:
- Subject Content Focused Curriculum & Instruction
- Culturally Responsive Curriculum for Underserved Populations
- Special Content Addressing Social and Emotional Issues
- Accountability

Service Delivery

Definition: The grouping arrangement under which curriculum and instruction are delivered.

Variables:
- Context
- Accessibility /Transportation
- Access to Specialized Teachers of the Gifted
- Administrative Leadership
- Professional Development
- Dosage (Duration, Intensity, and Grade Level)
- Accountability
- Preferred Modes of Instruction and Products for Subpopulations of Underserved Populations

General Education Program

Experiences for Gifted:
- Academic Repetition
- Slow Pacing of Instruction
- Lack of Challenge
- Lack of Academic Engagement

Outcomes

Persistence / Participation / Retention Across Time in Gifted and Talented Program
- Attendance
- Participation in Quality Services

Student Achievement in Core Academic Areas
- State Achievement Tests in Reading and Math)
- High School Graduation
- Educational Aspirations

Consequences for Gifted:
- Failure to Thrive
- Average or Below Average Reading and Mathematics Achievement
- Boredom
- Rebellion
- Underachievement
- Dropout
- Inappropriate Classroom Behavior
- Disruptive Behavior
- Withdrawal

The preparation program itself ensures that lessons are culturally, ethnically, and linguistically sensitive. The lessons also include flexible grouping, vertically aligned acceleration teaching, and real world problem solving. This is intended to foster thinking and learning habits that will ultimately allow the students to participate fully and successfully in gifted programming in the future.

Identification

Students who live in challenging learning communities may not have the same opportunities as those from advantaged communities regarding the development of language, vocabulary, and mathematics knowledge and concepts. These students need educational interventions to ensure their readiness to learn at a high level and to support the nurturance of their latent or emergent academic skills. The National Association for Gifted Children (2010) noted in its white page on identification the following:

> Some gifted individuals with exceptional aptitude may not demonstrate outstanding levels of achievement due to environmental circumstances such as limited opportunities to learn as a result of poverty, discrimination, or cultural barriers; due to physical or learning disabilities; or due to motivational or emotional problems. Identification of these students will need to emphasize aptitude rather than relying only on demonstrated achievement. Such students will need challenging programs and additional support services if they are to develop their abilities and realize optimal levels of performance. (par. 4)

Though pre-identification and preparation have traditionally been overlooked for underserved populations, Horn (2014) created "The Younger Scholars Model." The model is

meant to nurture potential giftedness in historically underrepresented populations as it focuses on "high expectations, powerful learning, and deep understandings" (p. 45). She explained,

> The two-pronged primary goal of the Young Scholars model is (a) to identify giftedness in children from diverse cultural, ethnic, and linguistic backgrounds as early as possible; and (b) to nurture, guide, and support the development of their exceptional potential so that these students will be prepared for increasingly higher levels of challenge as they progress in grade levels. (p. 46)

Horn advocates for the employment of learning characteristics as identification models rather than behavioral characteristics that teachers often use to nominate students for identification testing. Teachers must also receive extensive training in identifying culturally diverse and underrepresented populations. She also supports the use of a nonverbal ability test as one part of the identification process such that native language is not a concern related to identification. Teachers must also employ multiple assessments and types of data to identify those students who should be involved in preparation programs.

Worrell (2014) noted that, ". . . ethnically diverse students continue to be underrepresented in GATE programs" (p. 244). Traditional screening tools and methods often fail to identify students from diverse ethnic backgrounds for gifted programming, particularly when gifted programs rely solely on a single intelligence test (Gentry et al., 2008). Alternately, Gentry et al. found promising results from studies using multiple assessments and alternative pathways including dynamic assessment, portfolio assessment, teacher and peer nomination, and whole class tryout procedures. They also included a cognitive battery and verbal responses to identify primary-aged students. Matthews and Kirsch (2011) noted that reliance on nonverbal measures may not be necessary, as composite scores from traditional aptitude tests now reflect

figural reasoning or other nonverbal content. Conversely, Lohman (2005) cautioned that reliance on nonverbal tests could exclude the most academically talented students of all ethnicities, as the tasks still incorporate linguistic and cultural symbol systems.

Competence and achievement are culturally determined factors (Alexander & Schnik, 2008; Gentry et al., 2008) that complicate the identification of students' potentials across different populations and contribute to underrepresentation. McCoach and Siegle (2008) cited several identification barriers for minority students including unintentional bias and definitions of achievement that are different from expectations of administrators and teachers in the dominant culture. Similarly, for twice-exceptional students, Kalbfleisch and Iguchi (2008) noted "a student's giftedness may mask major areas of weakness and vice versa" (p. 713). Comprehensive, inclusive identification for gifted students in all populations requires a holistic approach of broadened identification (Kalbfleisch & Iguchi, 2008; McCoach & Siegle, 2008).

Parental and community communication and interactions with schools differ significantly among various cultures and ethnicities (Alexander & Schnik, 2008; Gentry, et al., 2008). Additionally, families for whom English is a second language may find communication with schools and teachers difficult. Underserved populations may differ from each other by parents' achievement orientation, beliefs, and behaviors (Schader, 2008). Gentry et al. (2008) found that students' own achievement ideology and perceptions of parental achievement orientation were the "strongest predictors for discriminating among gifted, potentially gifted, average achievers, and underachievers [of] students' attitudes toward reading, math, and science" (p. 203). Long-Mitchell (2011) found a positive relationship between staff and parents, in conjunction with teachers' high expectations, increased student achievement and self-efficacy. This indicates a need to inform parents, guardians, and caretakers in ways that respect their beliefs, while

fostering understanding of the nature of giftedness, what these opportunities mean, and how they might support their child.

Therefore, the manner in which parents are approached about including their children in gifted programs must be considered. Moore, Ford and Milner (2005) suggested parents of underserved students may be concerned about a curriculum that is not relevant, instructional practices that are based on competition or on methods of instruction that are culturally mismatched to the learning practices of the students' community, isolation from being one of a very few from a subpopulations with inattention to social relationship building, and emotional distress that may come from feelings of responsibility or the stress of representing a particular group.

Intervention

Curricular and instructional goals. Gifted programs and services operate under various curricular and instructional goals. Program goals may be established by linking them with well-known systems and models in gifted education (Renzulli, Gubbins, McMillen, Eckert, & Little, 2009) or adopting or adapting them to local identified needs. Callahan (2009) reviewed goals of selected systems and models (e.g., Betts, 1986; Kaplan, 1986; Renzulli, 1978; Renzulli & Reis, 1985, 1997, 2014) and noted that they may focus on advanced content, methodologies, and products; productive, complex, abstract or higher level thinking skills; dynamics of group process; or the application of knowledge and skills to interest-based problems to be resolved.

Callahan et al. (2013a) analyzed survey data about the overarching goals of elementary gifted programs. Of the 327 respondents, almost 60% focused on student learning opportunities related to differentiation, enrichment, and/or acceleration. Fewer respondents listed student skills

as the program goals: critical/creative-thinking skills (16.5%), problem solving skills (7.3%), leadership skills (2.1%); 21st century skills (0.9%), and research skills (0.6%) (p. 32).

Curriculum and instruction must be modified to include a multicultural community in classrooms. Many students who are members of underserved populations express difficulty with assimilation into the White cultural norms of the classroom. For example, "some cultures place primary emphasis upon the individual and the self, while others consider the group the central focus of society . . . . Members of collectivist cultures are noted for their willingness to sacrifice their own personal gains for the good of the group" (Wintergerst, DeCapua, & Verna, 2003, p. 98). Differences in valuing the group versus the individual influence the extent to which students prefer/perform certain tasks such as working in groups rather than alone.

Service Delivery Models. Gifted students' learning gains result from complex, advanced, and meaningful content provided by a knowledgeable teacher through high-quality curriculum and instruction at an appropriate pace with scaffolding and feedback (Little, 2012; Tomlinson, 2001, 2003, 2012; VanTassel-Baska, 2012). Tomlinson (1997) explains that this content should respect student differences and provide both structure and choice. Considering the ongoing underrepresentation of culturally and linguistically diverse (CLD) students in gifted programming (Donovan & Cross, 2002), many students are at greater risk of feeling alienated and, as a result, are more likely to underachieve. Accordingly, it is crucial to create relevant and culturally legitimate learning experiences for CLD students. Fostering opportunities that nurture appropriate content and structure choices must be ethnically, culturally, linguistically, and socially inclusive by design, such that CLD students feel safe to explore abstract and challenging tasks as part of the talent-development process.

Talents develop to exceptional levels when students receive focused feedback (Ericsson, Krampe, & Tesch-Römer, 1993; Hattie, 2009) while they are involved in meaningful learning activities (Betts & Kercher, 2009; McCoach & Siegle, 1999, 2003; Renzulli, 1982) that are slightly above their current level of mastery (Vygotsky, 1978). These meaningful activities (Castellano, 2011) and the way in which students' talents are revealed will vary for different subpopulations of students (Gentry et al., 2014).

Underserved populations require additional or different programming plans to meet the needs of these specific, unique learners. As a result, identifying these differences and their attendant educational needs allows for revision of current programming models that tend to be "one-size-fits-most." Administrators and educators must consider the population to be served and tailor programming to meet its students' academic, social, and emotional needs, including the dual social pressures these students often face (Schroth, 2008) and a safe environment for strategic risk taking (Subotnik, Robinson, Callahan, & Gubbins, 2012).

Although Worrell (2012) established the importance of a sense of belonging for students that they typically find in an ethnic or language minority group, he determined that they may find a similar sense of belonging when grouped with academic peers. Schroth (2008), however, cautioned that these students "may relish the intellectual compatibility, but have difficulty with racial isolation" (p. 325). Moreover, students may struggle with stereotype threat, deficit thinking, and low expectations from others, all of which may inhibit talent emergence. Aronson and Juarez (2012) assert that developing a growth mindset can counteract the fixed mindset that "gives stereotype threat much of its power" (p. 24). Accordingly, at-risk students require instruction that supports learning and performance in emotional self-regulation (Worrell, 2012).

Additionally, student perceptions of social and teacher beliefs as well as issues with isolation and self-concept may sabotage academic achievement (Siegle, 2013). Accordingly, it is important for educators to encourage and include quiet reflection time for verbal and mathematical strengths, appreciate visual-spatial activities, promote creative problem solving, establish a classroom community, provide space for oral history, and include community participation. It is also important to establish flexible achievement groups and offer students choices to work alone or in groups, and choose their products, materials, and audiences (Gentry & Gable, 2001) to promote challenging learning environments.

Outcomes

Unfortunately, a consensus on the desired academic outcomes for gifted and talented students in general, and underserved gifted and talented students in particular, does not exist. Dai (2010) noted that educators hold multiple views of what gifted education should be or could be. With disparate views of giftedness and program goals, it is difficult to make emphatic statements about academic outcomes of gifted and talented students. It is also acknowledged that when research-based outcomes are documented, the representation of gifted and talented students from culturally, linguistically, and economically diverse communities may or may not be explicitly stated unless the specifications of the sample characteristics are delineated. Therefore, it may be difficult to tease out differences between achievement and developmental trajectories of students from culturally, linguistically, and economically diverse communities and those from advantaged communities who have benefited from early educational and economic opportunities.

Peters, Matthews, McBee, and McCoach (2014) noted:

Even under state mandates, there remains flexibility in the range of domains that can be addressed by gifted education, and this is even more true within the broader category . . .

[of] advanced academics. Schools should be encouraged to reach out into these areas that might be unique to their students in any way they see fit, provided that identification systems proposed to locate students in need are well-designed and are closely connected to the program. (p. 182)

All students respond to interventions that increase communication and multicultural acceptance, such as questioning skills. Inquiry skills supported by interventions impact students with low socioeconomic status (SES), and English as a Second Language (ESL) students more than their counterparts (intervention included working with other students, didactic teaching, and practice). Overall, the main and often reoccurring theme of classroom intervention and underrepresentation is that culturally positive classroom communities improve all students' communication skills and performance. Working with others seems to increase the impact and the meaningfulness of learning activities of minority and underserved students (Cuevas, Lee, Hart, & Deaktor, 2005).

In addition to students' success in core academic areas, which can translate into higher achievement test scores, improved graduation rates, and higher educational aspirations, the effectiveness of a gifted program results in other outcomes for underserved students. These outcomes include persistence, participation, and retention across time in the program. Attendance improves as students embrace meaningful and culturally relevant learning experience. Students' confidence increases and their attitudes toward school and learning improve (Siegle, 2013). Students believe they can achieve, and they persist in their studies, more actively participate in learning activities, and remain in the program and school.

Conclusion

A comprehensive, inclusive system for identifying gifted students from all populations

requires a holistic approach of broadened identification. In addition to using multiple criteria, considerations should be made for students with high potential who may not have the necessary background knowledge to be immediately successful with gifted services, but who can flourish if provided sufficient scaffolding. In addition to providing supports for academic success and meaningful learning experiences, effective interventions are culturally responsive and address the unique learning needs of different populations of students. This involves addressing students' academic, social, and emotional needs. It also includes providing a safe environment for strategic risk taking and support for the dual social pressures students often face. Exposure to meaningful, advanced content is essential for maximum growth. Through this approach, students will be ready for gifted service interventions and benefit from the advanced content and instructional delivery of programs with these features, stay in the programs, persist, and embrace learning opportunities across time. This will provide the foundation for greater numbers of students from underrepresented groups to excel academically, graduate from high school, and have high educational and career aspirations.

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