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Assessing and accessing high human potential: A brief history of giftedness and what it means to school psychologists

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Abstract

The history of giftedness pertains to historical changes regarding how giftedness is conceptualized and defined, and how it serves the practical purpose of identifying gifted children and providing them an appropriate education. The past century has witnessed debates and controversies about what constitutes this elusive human quality we deem "gifted." Overall, it has undergone significant changes from monolithic, static to more pluralistic, dynamic conceptions. The first part of this article delineates historical changes in the past 100 years in our understanding of the nature and development of giftedness, followed by the second part on the changing ways we define, assess, and identify gifted children or gifted potential for intervention purposes. The final part of this article depicts a broad trend toward expanding gifted education to a wider range of students, with the understanding that gifts and talents are widely distributed in student populations, and the deliberate cultivation of human potential should not be confined to a selected few.

KEYWORDS
conceptual foundation, gifted education, gifted identification

1 | INTRODUCTION

The history of giftedness harks back to Francis Galton (1869), who was one of the earliest persons to propose the notion of heritability of many traits, including giftedness, and went ahead to empirically test this hypothesis. However, in the United States, Terman's (1925) longitudinal studies of children with high IQs marked the beginning

of a long-lasting effort to understand what constitutes high potential, especially its cognitive, affective–conative, and social underpinnings.

History of giftedness can be understood in many ways. For example, Grinder (1985) delineates a history of giftedness as a process of demystifying a seemingly divine quality. More recently, I presented a history of giftedness as going through four phases of conceptualization: (a) conceptualizing giftedness as high IQ, (b) broadening its conception to include other personal characteristics, (c) refining the concept in terms of its contextual and temporal emergence, and (d) shifting to a new paradigm of talent development (Dai, 2018). Regardless of varied renditions of history, it is helpful to keep in mind that giftedness is an elusive, abstract term that can be easily reified, as if it were a thing in the head. This is why some scholars argue emphatically that giftedness is a social construction and there are many ways to define it. For example, Pfeiffer (2013), in his tripartite model of giftedness, identified three ways in which giftedness is conceptualized: high intelligence, outstanding achievement, and potential to excel. A more radical social constructive perspective sees gifted children as created or invented in the early 20th century when we started to identify the "gifted" as a category of children (e.g., Borland, 2003, 2005). Thus, a history of giftedness can be seen as a process of better defining this elusive quality or a set of qualities that make one "gifted" (e.g., Renzulli, 1986). The flip side of the story is a contemporary tendency toward an alternative way of defining human potential as an ecological concept (e.g., Ziegler, 2005), or even do away with this hard-to-define, often misused term for equity reasons and educational purposes (e.g., Borland, 2003, 2005; see Cross & Borland, 2013).

Despite the above differences, a useful way of delineating a history of giftedness from a school psychology point of view is to consider a gradual shift from assessing to accessing, from a focus on gifted identification as a matter of status and eligibility for education provisions, to a broader agenda for equitable access and productive participation (e.g., how education better accommodates a variety of talent trajectories and pathways; Dai, 2016). This trend coincides with the changing vision of school psychology from an almost exclusive focus on assessment to a broader agenda encompassing a wider range of services aiming to enhance student functioning and growth (Sheridan & D'Amato, 2004). In this spirit, I portray a history of giftedness as a process of conceptualization, whereby the main concern is shifted from *assessing* for to *accessing* appropriate education.

With the above purpose in mind, my exposition is divided into three parts. The first part delineates historical changes in the past 100 years in our understanding of the nature and development of giftedness. The second part focuses on the changing ways we define, assess, and identify gifted children or gifted potential for intervention purposes. By nature, how we assess and identify giftedness or gifted potential has much to do with the first part: our understanding of the nature of gifted children (and adolescents) involved. The third part depicts a broad trend toward expanding gifted education to a wider range of students, with the understanding that gifts and talents are widely distributed in student populations, and the deliberate cultivation of human potential should not be confined to a selected few.

2 | FROM MONOLITHIC, STATIC TO PLURALISTIC, DYNAMIC CONCEPTIONS OF GIFTEDNESS: CHANGING ONTOLOGICAL COMMITMENTS IN HISTORY

Giftedness as conceived in the beginning of the 20st century heavily relied on psychometric intelligence theory based on the discovery of a shared component in a variety of subtests, dubbed *general intelligence* or Spearman's "g" (Spearman, 1904). However, this more technical construal of intelligence was not what Francis Galton initially had in mind. Galton (1869) had this to say:

> *By natural ability, I mean those qualities of intellect and disposition, which urge and qualify a man to perform acts leading to reputation. I do not mean capacity without zeal, not zeal without capacity, not even a combination of both of them, without an adequate power of doing a great deal of very laborious work. (p. 33)*

The notion that the making of giftedness takes capacity, passion, and the commitment to hard work has proven to be a deep insight that is still meaningful today (Lubinski, 2004). In historical hindsight, however, Galton's conception of "natural ability" falls short, as the three constituent qualities he identified are likely three separate qualities coming together in a particular context and at a particular developmental juncture (see Renzulli, 1986; Simonton, 1999 for more discussion), rather than an innate, unitary capacity or structure, as his remarks seemed to imply.

Conceptualizing giftedness as a unitary quality of mind underlying a myriad of superior performance in various contexts represents a form of *essentialism*, an ontological commitment made by many early pioneers, such as Terman (1925) and Hollingworth (1924), who viewed the gifted as a homogenous group (i.e., the homogeneity assumption) and giftedness as a static property or hardware advantage permanently possessed by a very few (i.e., the permanence assumption).

Changes occurred in 1950s when Witty and others (e.g., Passow and Talent Project at Columbia; see Borland, 2014b) launched studies of talent outside of the lens of IQ-based social stratification from which giftedness gained its prominence and prestige. However, profound shifts took place in late 20th century and early 21st century. The new trends in conceptions of giftedness can be characterized as pluralism, developmentalism, and contextualism.

The pluralistic notion of giftedness means not only that giftedness is at least in part domain-specific (VanTassel-Baska, 2005), but also that nonintellectual factors such as motivation and personality can also be constituents of giftedness (Feldhusen, 1986; Tannenbaum, 1983). In 1980s, Howard Gardner (1983) broke the hegemony of the IQ tradition by introducing his pluralistic notion of intelligence and human potential. Consequently, giftedness has been viewed as manifested in a variety of shapes and kinds (Passow, 1981). Such pluralism also led to a relativist understanding of giftedness, in that giftedness is seen as a relative state that happens to some individuals at some times in some places, rather than an "absolute concept," structurally permanent and functionally pervasive (Renzulli, 1986, p. 62). In this antiessentialist spirit, Renzulli preferred to focus on "gifted behavior" (p. 63) about which we can do something, rather than "giftedness" as an entity sitting in the head. More recently, Simonton (1999) further refined the notion of pluralism by postulating that talent is *emergenic* in the sense that it emerges from a combination of several endogenous factors vis-à-vis interaction with a particular task environment, and that these endogenous factors responsible for the same talent do not have to be the same (a developmental principle called *equifinality*; see Cicchatti & Rogosch, 1996).

Along with a pluralist view of giftedness, scholars increasingly view giftedness as a dynamic rather than static concept, developmentally shaped rather innately determined. In history, such developmentalism was revealed most prominently in Renzulli's (1978, 1986) three-ring theory, which introduced developmental timing and contextually facilitating factors in explaining how giftedness as a critical state occurs when *above average abilities*, domain-general or domain-specific, are brought to bear upon a task at hand through *task commitment*, leading to some ideas and expressions judged to be novel and valuable for their purposes (i.e., *creative*). Implications of such developmentalism are profound as it stipulates a more distinct role of promoting and nurturing, rather than merely "identifying," gifted behavior. The three-ring theory was the first developmental rendition of giftedness, and inspired a more explicit developmental conception of giftedness in Europe (Mönks & Mason, 1993). However, It deviated so much from the essentialist construal of giftedness that after many years of its publication, it remained controversial (see Renzulli, 1999). The essentialist construal of giftedness (i.e., homogeneity and permanence) dictates that giftedness should be a capacity or capacity-like, not a developmental state, and that task commitment and creativity are too contextually dependent and developmentally malleable to be qualified as constituents of giftedness.

Nonetheless, the tide of times was changing toward developmentalism. Gruber's (1981) biographic research on Darwin, Bloom's (1985) interview studies with eminent young scholars and artists, Feldman's (1986) research on child prodigies in math, art, and chess, and other domains, Piirto's (1994) research on growth paths of many talented persons, and Csikszentmihalyi, Rathunde, and Whalen's (1993) research on talented adolescents, laid a new foundation for understanding origins of giftedness, talent, and outstanding accomplishments. Ziegler and

Heller (2000) defined giftedness as a tipping point when developmental conditions are optimal to allow some individuals to demonstrate this superior quality. Horowitz, Subotnik, and Matthews (2009) provided a life-span developmental perspective on giftedness that further elaborates on giftedness as a dynamic, developmentally changing state, with different challenges and opportunities at different points in individual development.

The developmentalist construal of giftedness is incomplete without an explication of contextual influences, because gifts and talents tend to emerge and get recognized in a social-cultural context that value and support these qualities. Compared to the zeitgeist of the beginning of the 20th century, when Charles Spearman declared in 1904 that general intelligence was once and for all "objectively determined and measured" (p. 201), the zeitgeist of the 21st century is completely different. For better or for worse, it favors social-contextual accounts and downplays individual difference accounts of giftedness, a trend reflected in popular media such as Gladwell's (2008) best-seller "Outliers," and Coyle's (2009) book titled "Talent Code."

While scholars tend to be polarized regarding the nature-nurture issue, in the new century, the pendulum is swinging to the nurture side. Ericsson's (2006) (see also Ericsson, Nandagopal, & Roring, 2005) influential research on expertise and Weisberg's (2006) research on eminent scientific creativity lend support to the idea that alleged power of natural gifts and talents for high-level accomplishments is exaggerated. Some scholars (e.g., Howe, Davidson, & Sloboda, 1998) argued that treating superior performance as largely due to natural endowment is scientifically questionable. Instead, they highlighted the role of dedicated effort and deliberate practice. A more radical view can be seen in a new wave of contextualism that stresses the nature of human intelligence and creativity as fundamentally *situated* (hence contextual), *distributed* (between the person, tools, and resources available), and *collective* (co-constructed with others), rather than reflecting individual characteristics (Sawyer, 2012).

According to a new "relational ontology" (Gresalfi, Barab, & Sommerfeld, 2012, p. 42), intelligent behaviors arise from (a) the nature of the task that frames activity, and tools and resources that support activity; (b) recognized and valued norms and rules that shape particular activities; and (c) personal history and dispositions of the learner while interacting with task and social environments. In other words, to understand outstanding performance, one has to understand the context in which the performance is structured and shaped (Barab & Plucker, 2002). This is how the focus on giftedness is shifted to from person to context (Plucker & Barab, 2005).

Ziegler's (2005) Actiotope Model of Giftedness is in spirit closest to this new wave of contextualism in its emphasis on situated action with all the supporting tools and resources, action repertoires developed through action, as well as "subjective action space," with aspirations, intentions, and goals. A major departure of this new contextualism is that it no longer treats person and environment as separate entities but see them as an indivisible functional unit. If the developmentalism discussed earlier focuses on "giftedness in the making," (Dai, 2010, p. 196), this new contextualism goes one step further and locates giftedness squarely in action and the person's functional relationship and interaction with some aspects of the world (see also Lo et al., 2019).

In sum, the history of giftedness in the past hundred years can be seen as a gradual shift from understanding giftedness as made of some capacity, or as trait-like, to a new vision of high human potential as pluralistic, dynamically shaped by the person's developmental interactions with task and social environments, showing a variety of developmental trajectories and pathways (Dai & Renzulli, 2008; Feldman, 2003).

3 | FROM IQ TESTING TO RESPONSE-TO-INTERVENTION ASSESSMENT: CHANGING EPISTEMIC STANCES

Inception of the term *gifted* or *giftedness* was associated closely with the psychometric movement in history under the assumption that this personal quality can be reliably identified through testing (Spearman, 1904; Thorndike, Bregman, Cobb, & Woodyard, 1926). Terman's (1925) longitudinal study of high-IQ children was in part an attempt to show predictive efficacy of such an identification method with respect to these children's long-term prospects of

eminent performance and productivity, which he claimed was by and large confirmed (e.g., Terman, 1954). To be sure, Terman (1954) also pointed out that sheer high IQ performance is not sufficient; for ultimate success, "non-intellective" factors such as personality and motivation also matter (see also Gagné, 2005; Tannenbaum, 1983). However, the notion of giftedness as capacity or capacity-like prevented him from embracing a more inclusive and pluralistic definition of giftedness, hence its identification.

Dissatisfied with the rigidity of IQ-based definition of giftedness and the essentialist construal of giftedness, Witty (1958) argued for a more inclusive definition of giftedness:

> *There are children whose outstanding potentialities in art, in writing, or in social leadership can be recognized largely by their performance. Hence, we have recommended that the definition of giftedness be expanded and that we consider any child gifted whose performance, in a potentially valuable line of human activity, is consistently remarkable. (p. 62)*

In this new definition, not only were domains broadened to include artistic and social endeavors, but criteria for determining giftedness were also shifted from test performance to authentic task performance (see also DeHaan, & Havighurst, 1957). More important, however, is the logic underlying this new definition. Witty felt that, in conceptualizing giftedness, the importance of "capacity" was overemphasized and "zeal" (or drive) underestimated, to use Galton's terms (see Jolly & Robins, 2014). More is more, an emphasis on "performance" rather than "capacity" reveals Witty's practical wisdom of not making a sharp, unwarranted distinction between what is "capacity" or "aptitude" and what is "achievement," a wise strategic move in historical hindsight (see Lubinski, 2004). By emphasizing authentic performance rather than trite test performance, the evidential basis for giftedness changed, as authentic performance is always a whole package involving *co-cognitive* factors such as intrinsic interest and task commitment (Renzulli, 1986).

The first "official" definition issued by the Office of Education in the United States (Marland, 1972) bears a resemblance to Witty's (1958) definition. In the Marland Report,

> *Gifted and talented children are those… who by virtue of outstanding abilities are capable of high performance…Children capable of high performance include those who have demonstrated any of the following abilities or aptitudes, singly or in combination: 1) general intellectual ability, 2) specific academic aptitude, 3) creative or productive thinking, 4) leadership ability, 5) visual and performing arts aptitude, 6) psychomotor ability. (p. ix)*

This definition, in hindsight, creates unexpected problems. It is a convenient taxonomy, and the listed categories are not mutually exclusive, nor, indeed, rigorously and consensually defined. For example, leadership has a social as well as expertise/creativity dimension and can manifest itself across domains; creative (or productive) thinking is not a domain of its own but a process that can be manifested in all domains of human activity. Such a convenient list could mislead educators into believing that it represents a scientifically justified typology of giftedness, which it is not. Nevertheless, the Marland definition, like Witty's, broadened the construct of giftedness, and made identification more inclusive.

Renzulli (1978, 1986) built on Witty's (1958) definition in further spelling out the ramifications of a definition for identification purposes. He identified two dimensions as underlying all definitions of giftedness and consequent identification criteria: inclusiveness and subjectivity. A definition can be highly exclusive to a point of rejecting many candidates who can otherwise benefit from gifted education provisions; for example, a highly conservative cutoff can lead to too many "false negatives" (i.e., committing Type II error). In contrast, a definition can be highly inclusive to a point of accepting many candidates who cannot measure up to the challenges offered by gifted education provisions (i.e., too many "false positives"; committing Type I error; see Dai & Chen, 2014, Chapter 4; Renzulli & Dai, 2003).

The other dimension is subjectivity. Traditional identification methods rely heavily on standardized testing. However, dynamic qualities such as task commitment and creative ideation as formulated in Renzulli's (1986) three-ring theory cannot be subjected to such "objective" testing but have to be observed in situ. Thus when objective testing is appropriate and when subjective assessment based on teacher observation is more viable, it becomes an important consideration for the validity of identification (see Borland, 2014a for more discussion). More broadly, if giftedness is not as a static quality in the head (i.e., capacity), but a result of the confluence of several forces, endogenous and exogenous, coming together in the right place at the right time, then assessment strategies have to change, from that of a judge whose task is to simply determine who is gifted and who is not, to that of an intervention-minded educator whose task is to determine who stands to benefit from certain educational opportunities. The Response-to-Intervention (RtI) approach gains currency in this sense.

Theoretically, the tensions involved in identification derive from two different ways of assessing human potential. One is called *nomothetic*, which assumes that all human characteristics, including human potential or aptitude, can be seen as normally distributed and thus subject to objective measurement. The other is called *idiographic*, an approach that starts with particulars under the assumption that no *a priori* assumption can be made about human potential, and one has to start with specific instances of giftedness in their own right. As a consequence, the nomothetic view takes a variable-centered approach by specifying a set of variables crucial for identification, whereas the idiographic view takes a person-centered approach that take into account the functionality of the whole person vis-à-vis specific contexts. The RtI model as used with gifted identification (Coleman & Hughes, 2009; Robertson & Pfeiffer, 2016) apparently uses this approach. This changing conception and practice of identification leads to a closer connection between assessment/identification and intervention: identification becomes that of finding out curriculum match or mismatch (Matthews & Foster, 2006), and differentiated educational needs of specific students rather than who is gifted (Borland, 2005; Tomlinson, 2014).

In sum, a history of giftedness is that of finding the best way to identify the most promising children and adolescents for their more advanced education and development. The American history of gifted identification can be characterized as a gradual shift, from various attempts to find a litmus test to establish one's gifted status or membership for selection or placement purposes, to a new focus on more adequately identifying one's functional state vis-a-vis specific educational opportunities and challenges for intervention purposes. In other words, identification is no longer used to determine one's gifted (or non-gifted) status; rather, it is used diagnostically for education and intervention purposes (Treffinger & Feldhusen, 1996).

4 | FROM SERVING "THE GIFTED" TO PROVIDING A WIDE RANGE OF OPPORTUNITIES FOR ADVANCED LEARNERS: CHANGING NORMATIVE PRACTICE

In the previous sections, I discuss the history of how giftedness is conceptualized and how gifted children are identified, which has deep implications as to what we can do about children so identified. If giftedness is about the person, the focus will naturally be on identification and targeted interventions. But if giftedness involves development and context, and if qualities we deem "gifted" can be promoted, then practical strategies would be completely different. In addition, when it comes to the issue of gifted education, the question goes beyond the nature of giftedness (the question of what); the purpose of gifted education has to be confronted head-on (the question of why). Together, the issue of "what" and "why" helps define the normative aspect of gifted education; that is, what is considered a desired state of affairs in education (Dai & Chen, 2013).

Social stratification based on IQ in the early 20th century led to a social efficiency model of education, such that qualities of leadership and creativity were preserved for the gifted. As the society became more progressive and egalitarian, such practice increasingly faces criticism; indeed, gifted education has been criticized as "elitist," violating the principle of democracy (e.g., Berliner & Biddle, 1995; Margolin, 1994; Sapon-Shevin, 1994; see Dai,

2013 for a critique). In response to the outside challenges, as well as the inside pressure for change discussed in the previous sections, there have been signs of a paradigm shift in gifted and talented education (Dai, 2011; Dai & Chen, 2013). Dai and Chen (2013, 2014) defined a paradigm or paradigmatic approach to gifted education in terms of how gifted programming addresses the questions of What, Why, Who, and How, pertaining to both theoretical foundations and practical approaches. Each paradigm is distinct regarding (a) *What* is the nature of giftedness, (b) *Why* do we need gifted education, (c) *Who* are gifted and how do we get to identify them, and (d) *How* do we educate them, and what strategies and methods are viable and effective? Based on an extensive review of the history of gifted education, I proposed a three-paradigm framework (Dai, 2011; Dai & Chen, 2013, 2014; see Table 1).

For most part of history of gifted education, the mainstay has been the Gifted Child Paradigm with its essentialist assumption; some might argue it still is. However, in terms of the question of why, early pioneers of gifted education had different orientations. Borland (1989) identified in history two *raisons d'etre* of gifted education: one is that gifted children are precious national resources that need to be protected and cultivated for the common good (the human capital argument); the other argument is that gifted children are qualitatively different from the rest of the population, and as such should be educated accordingly as part of special education (the special needs argument). Terman clearly held a national-resource or human capital orientation for gifted education (see Terman, 1954), whereas Hollingworth (1924) placed a premium on special needs of these children. Both have had a following in history. Some aligned themselves more with Terman (e.g., Gagné, 1999; Tannenbaum, 1983) and others with Hollingworth (e.g, Roeper, 2006; Silverman, 1997). The recently emerging paradigms, the Talent Development Paradigm and the Differentiation Paradigm (Dai & Chen, 2013), inherited these two orientations respectively, even though the way advocates of these two paradigms conceptualize the nature of giftedness (What), the way they identify gifted children (Who), and the way they fashion their practical strategies (How) are quite different.

TABLE 1 Major points of differences between and among the three paradigms

Dimension	Paradigm		
	Gifted child	Talent development	Differentiation
Assumption "What"	Essentialism; exclusive categorical assumption; status definition; permanent, context-free exceptionality with regard to general ability assumed	Developmentalism; talent diversity assumption; malleable status; increasingly differentiated aptitudes for a particular domain; exceptionality not assumed	Individuality assumption; emergent needs for differentiation; context-dependency of exceptionality
Purpose "Why"	Serving the gifted; thinking and leadership qualities as the goal	Supporting domain excellence and innovation; modeling after authentic professions and creativity	Diagnostic focus; responding/serving manifested individual needs within the confines of schooling (e.g., main school subjects)
Targeted students "Who"	Classification based on psychometric measures of superior mental qualities	Selection/placement based on aptitudes for a particular domain	Diagnosis of strengths and needs for educational purposes in a particular educational context
Strategy "How"	Programs assumed to be uniquely suited for the gifted; pull-out and self-contained programs as service models	Various enrichments, authentic learning, and mentorship across school, home, college, and community as service models	Appropriate pacing of learning progression, school-based curricular and instructional adaptations and other interventions as service models

Note: Originally published in Dai and Chen (2013).

Leaders of gifted education that led the innovation in gifted education in 1970s included Julian Stanley and Joseph Renzulli, among others. Both were active on practical fronts from 1970s onward, and both developed practical ideas to combat the rigid practices of traditional age-graded schooling (Stanley, 1996) as well as the rigid IQ-based categorical approach to gifted education. However, they differed in terms of leaning toward enrichment or acceleration. A focus on enrichment is predicated on the perceived need to expand school curriculum beyond "schoolhouse giftedness" to embrace a broader agenda of cultivating talent and creativity in a variety of domains, often beyond the boundary of school education (Renzulli, 1986; see also Subotnik & Olszewski-Kubilius, 1998). A focus on acceleration derived from a basic understanding that gifted children typically learn fast and deeper and the curriculum has to adapt to their pace of learning and development (Stanley, 1996). Although enrichment and acceleration are by no means antithetic to each other, the differing emphases have led to two distinct programming strategies, the Talent Development Paradigm and the Differentiation Paradigm (Dai, 2011; Dai & Chen, 2013).

The Talent Development Paradigm emerged in the late 20th century and has been gaining momentum to become a major force in gifted education in the new century (Gagné, 2005; Piirto, 1994; Subotnik, Olszewski-Kubilius, & Worrell, 2011; Tannenbaum, 1983). The main impetus of this movement is to create domain-specific experiences (e.g., through authentic inquiry and mentorship), cultivate talent and creativity in school, and optimize one's learning experiences in forming more distinct trajectories toward a productive and fulfilling career.

Although explicit paradigmatic prescriptions about strength-based differentiation did not emerge until recently, the notion of differentiation has been around for decades. Questioning the effectiveness of pull-out gifted programs that patched up upon the regular curriculum without any systematic design, Ward (1961) argued that the regular curriculum within schools should be adapted to provide for a full-day learning environment that meets the needs of advanced learners. Robinson and Robinson (1982) advocated the optimal match of educational settings for the highly able learners through providing some learning progression flexibility instead of the rigid age-graded academic placement. However, it is in the context of the full inclusion movement that the Differentiation Paradigm emerged as an important guiding framework in gifted education, as the heterogeneity of class composition makes curricular and instructional differentiation even more imperative (Coleman & Hughes, 2009; Tomlinson, 2014; Tomlinson et al., 2003). Regarding the nature of giftedness, this paradigm assumes that educational needs of advanced students only become manifest in the context of a particular juncture of development on a particular school subject, and can be best met with the right diagnosis of discrepancies between a mastery level the student demonstrates and the curricular offered (Matthews & Foster, 2006). In its more radical form, it advocates a kind of "gifted education without gifted children" (Borland, 2005, p. 1) in the sense that instructional adaptation can be made on an individual-by-individual basis without the need to label a few students as "gifted" for special service (i.e., establishing the "gifted" status) and by default designate the rest as "non-gifted." Peters, Matthews, McBee and McCoach (2013) proposed a similar approach called *advanced academics*, aiming to provide more advanced learning experiences that match student needs without the need to label students "gifted."

In sum, the Differentiation Paradigm inherits Hollingworth's (1924) legacy of the Gifted Child Paradigm in its emphasis on optimal match, but with more detailed understandings of how to adapt curriculum and instruction to suit education-relevant individual characteristics and developmental changes. In comparison, the Talent Development Paradigm inherits Terman's (1925) legacy of the Gifted Child Paradigm in its emphasis on developing future leaders and major creative contributors on various fronts of human endeavor, but with a more pluralistic, dynamic, and developmental outlook regarding the nature of human potential and consequently the role of environment and motivation. What constitutes a departure for the two late comers from the Gifted Child Paradigm is making gifted education more flexible, responsive, adaptive, and accessible to accommodate a variety of education needs of advanced learners, rather than adhering to the rigid doctrine of giftedness.

Despite continuities with the traditional Gifted Child Paradigm, theoretical ("What" and "Why") and practical ("Who" and "How") differences between the two late comers and their predecessor are distinct. While the two new approaches are not incompatible with each other, the Differentiation Paradigm is more circumscribed, present-focused, classroom-based, practice-driven, whereas the Talent Development Paradigm is more ambitious (i.e., not

confined to school structures and provisions), broader in agenda, future-oriented, heavily relying on knowledge of long-term human development, and has been implemented in many ways in and outside of school (Subotnik et al., 2011).

In sum, normative changes in gifted education practice in history can be characterized as a shift from gifted identification to a more service orientation of accommodating a variety of immediate education needs as well as long-term talent trajectories and pathways. To be sure, assessment still serves an important function of gatekeeping and quality control. But it is done more proactively to facilitate *access*, that is, making gifted education scientifically more compelling, socially more equitable, and educationally more productive (Dai, 2016).

5 | IMPLICATIONS FOR SCHOOL PSYCHOLOGISTS: FROM ASSESSING TO ACCESSING

So far I have drawn in a nutshell a history of giftedness in terms of (a) ontological commitments to specific ways of thinking about the nature and development of giftedness, (b) epistemic or cognitive stances with which one empirically go about capturing qualities considered relevant to gifted and talented children and adolescents, and (c) normative practices of gifted education. I try to identify an internal logic or coherence in this century-long history as well as societal changes over time that prompted changes or shifts in focus. In this concluding section, I will derive from this history a set of principles useful for school psychologists as they are dealing with immediately relevant issues such as referral cases as well as more general issues such as how to promote advanced learning and optimal talent development for those most promising students in school. The major thread we can draw from the history of giftedness as I portray earlier is that of assessing and accessing.

5.1 | Assessing

Although there are still educators and scholars who believe that giftedness should be defined psychometrically with standardized tests, even a firm cutoff (Valler, Burko, Pfeiffer, & Branagan, 2016), the times when IQ or any other tests were treated as a litmus test of giftedness are gone. If the history of searching for the Holy Grail of giftedness teaches us anything, it is that giftedness is not a thing residing in mind to be found, but a form of excellence evidenced in many ways in a variety of domains and contexts. Giftedness is also value-laden in the sense that a certain form or way of excellence (e.g., high IQ) is always more valued and enjoying more cultural distinction than others in a society.

Given that giftedness is socially constructed for some practical purposes (Borland, 2005), *context is important*; the history of giftedness I delineated above is that of gradually appreciating various contexts, tasks-related, developmental, and social-cultural, in which gifts and talents are manifested. Contextualizing gifted and talented manifestations means that school psychologists need to place all information gathered in the context of the child's personal history, considering experiential basis of the child as well as the social context in which the child has been raised. Lohman (2009) advocates using local norms rather than national norms precisely because local norms are more sensitive to environmental conditions, thus enhancing the validity of score interpretations and eventual decision-making. Developmental context also constitutes an important consideration; if children are in their formative years or if maturation is not yet completed, judgment has to be suspended since a person's potential has yet to unfold or manifest itself. A dynamic view of human potential stipulates that identification not be done in a once-for-all fashion.

Despite various efforts to conceptualize important dimensions and standardize various measures for identification purposes, the whole person is always much richer than test scores indicate. *Individuality is important*. The history of gifted identification is that of balancing the nomothetic (normative) value of test information with a

more up-close look at personal data, what Binet called "idiographic complexity" (see Brody, 2000, p. 19). When it comes to assessment for identification purposes, gifted and talented individuals have shared and nonshared characteristics. Attention to individuality means school psychologists should focus on not merely the presence of alleged giftedness, however defined, but on specific manners in which excellence is demonstrated. In other words, giftedness is not based on some arbitrary cutoffs of psychometrically defined individual differences, but on distinct ways the person interacts with his or her task and social environments.

In addition to context and individuality, *pragmatism is important*. The history of giftedness is that of gradually rejecting positivism (e.g., finding a litmus test) and accepting the notion that theories and conceptions are tools we use to solve practical problems, not objective realities with the kind of certainty that physical science enjoys. In this sense, identification is fundamentally a practical decision, a decision that has to be made under uncertainties, not only regarding Type 1 error (false positive) or Type Error (false negative), but also many intervening factors and "noises" that affect effectiveness of our decision. For that matter, beneficence is always a priority given available resources. Sometimes cutoffs still have to be used for selection purposes, but it should be done with an awareness that such practice is out of practical expediency, not psychological necessity. Just as diluting resources to maximize participation can be problematic, using too stringent criteria (very few eligible for service) can also risk putting all eggs (resources) in one basket, so to speak.

5.2 | Accessing

Although there are still educators and scholars who believe gifted children and adolescents are a homogeneous group, and gifted programs should be uniquely suited to these students but not others, the times are gone when gifted education is operated as if there is a single formula of gifted programming for the generic "gifted." Rather, from a contextual, dynamic, emergent view of giftedness in the making (Dai, 2010), assessment for gifted identification cannot be effective without accessing appropriate learning and developmental opportunities. Therefore, it is important for school psychologists to go beyond the static notion of identification to consider the access to learning experiences and developmental trajectories and outcomes as part of assessment. In other words, both exogenous and endogenous learning resources or capital should be taken into account (Vladut, Liu, Leana-Tascila, Vialle, & Ziegler, 2013). The following are some considerations school psychologists should be aware of:

The first is proactive versus reactive form of formulating a plan of intervention. While referral is traditionally a typical situation that calls into service the function of school psychologists, the more or less reactive diagnosis-treatment approach should not be the only option in one's toolbox. For example, school psychologists would be better off knowing what kind of talent is lacking in society, and how to promote talent development in specific areas, or how prevalent the mismatch between what the curriculum offers and what a student can do for a particular school subject. Such a proactive approach becomes even more important when talent by nature is culturally cultivated rather naturally emergent.

The second aspect of access is reaching out to a diverse range of students to find out and encourage their ways of expressing their giftedness and talent, rather than using a monolithic standard of giftedness for identification. For example, using IQ as a gatekeeper is likely the main reason for underrepresentation of certain minority groups. It can be viable to use alternative or multiple criteria to facilitate access and participation. Also, some cultures value certain characteristics or domains more than others. School psychologists should also consider how to make gifted education more adaptive to their needs.

The third issue of access is assessing local needs for gifted education, as specific needs and priorities are the driver for identification and intervention. Despite general advocacy for gifted education, school administrators have to set their priorities and deal with local constraints (e.g., available resources). School psychologists have their own role to play in helping school administrators to understand current practices of gifted education and pragmatic issues involved, and make decision accordingly.

In sum, there is a more active role for school psychologists to play than merely sitting there using the cookie-cutter approach to gifted identification and intervention. Rather, school psychologists will be better off to know how the field of gifted and talented education has evolved, and what it means to their own practice in relevant situations. In other words, their mode of functioning has to be that of a reflective practitioner (Schön, 1983). The complexities and uncertainties of identifying and serving our most promising youths make such a mode of functioning even more imperative.

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