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Toward A New Era of Gifted Education: Principles, Policies, and Strategies

Üstün Yetenekliler Eğitiminde Yeni Bir Döneme Doğru: İlkeler, Yasalar ve Stratejiler

David Yun Dai

Abstract

Gifted education as we know and practice is by and large the product of early 20th century. In this paper, I am arguing for a paradigm shift in gifted education to make it more responsive to the challenges of the 21st century, as well as new opportunities for optimal development of many children and adolescents, rather than exclusively focusing on the identified and selected few (often in a once-and-for-all fashion). This argument is based on the preponderance of evidence that human potential is widely distributed in a population, and highly pluralistic and dynamic, not amenable to a uniform formula that fits everyone into a Procrustean Bed of giftedness with the assumption of its homogeneity and permanence (Dai, 2016a). I elaborate on what it takes to make such a shift in terms of four W questions: What, Why, Who, and How. I argue that by envisioning a broader agenda of gifted education, gifted education can be made more equitable and productive. At the social and organizational level, with appropriate centralized control, more locally initiated education and development efforts can be harnessed to build a distributed network system of support that is more responsive to needs for advanced learning, talent development, and excellence in the 21st century.

Key Words: gifted education and talent development; paradigm shift, equity and excellence; 21st century challenges; networks and hierarchies

Öz

Üstün yeteneklilerin eğitimi bilindiği ve uygulandığı üzere 20. yüzyılın başlarında ortaya çıkmıştır. Bu makalede 21. yüzyılın zorluklarına daha duyarlı bir üstün yetenekliler eğitimi için paradigma değişiminin gerekliliği tartışılmıştır. Paradigma değişiminin yanı sıra yalnızca seçilen ve üstün yetenek tanısı alanlara odaklanılması yerine pek çok çocuk ve ergenin en uygun gelişimi için yeni fırsatlar sunulması gerekliliği irdelenmiştir. Makaledeki argümanlar, üstün yeteneğin homojenliği ve kalıcılığı varsayımıyla herkesi bir üstün yetenek kalıbına sokan ve tek tip bir formüle dayanan değil, üstün yetenek potansiyelinin çoğulcu, dinamik ve çeşitli popülasyonlarda geniş dağılım gösterdiğini ortaya koyan kanıtlara dayanmaktadır (Dai, 2016a). Böyle bir paradigma değişikliği için neyin gerekli olduğu dört N sorusu bağlamında incelenebilir: Ne, Niçin, Kim ve Nasıl. Üstün yeteneklilerin eğitimine daha geniş bir görüş açısı ile bakılırsa, üstün yetenekliler eğitimi daha eşitlikçi ve üretken yapılabilir. Sosyal ve örgütsel düzeyde, uygun bir merkezi kontrol sistemi ile 21. yüzyılın daha ileri düzeyde öğrenme, yetenek geliştirme ve mükemmellik ihtiyaçlarına duyarlı sosyal ağ destek sistemlerinin inşa edilmesine yardımcı olabilecek daha çok yerel düzeyde eğitim çalışmaları bir araya getirilebilir.

Anahtar Sözcükler: üstün yeteneklilerin eğitimi, yetenek gelişimi, paradigma değişimi, eşitlik ve mükemmellik, 21. yüzyılın zorlukları, sosyal ağlar ve hiyerarşiler

Introduction

Toward A New Era of Gifted Education: Principles, Policies, and Strategies

The gifted education movement as launched in the beginning of 20th century in the United States (Henry, 1920) is reaching its 100-year anniversary. While gifted education as a field has made many contributions to understanding and cultivating human potential, it has been marginalized in the larger scheme of education, likely because the old paradigm established a century ago may have outlived its usefulness (Borland, 2003; Dai, 2016a; Sternberg, 2017). As we enter the new techno-

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logical age and creative economy in the 21st century, gifted education should gain added importance in its emphasis on high-end learning, talent development, critical and creative thinking. However, the prevailing categorical approach to gifted education established in the early 20th century (i.e., the generic gifted vs. non-gifted bifurcation) is untenable in light of current thinking about human potential and the preponderance of research evidence (Dai, 2016b). The related identification and education practices have also proved inept in responding to the call for developing the many and varied talents needed for the 21st century. In this article, we will delineate what kinds of changes are needed to capitalize on the opportunities available and meet the challenges we face in the 21st century.

New Thinking in Gifted Education: What, Why, Who, and How

In the two past decades or so, many scholars in the field argued that a paradigm shift is needed to move the field forward (Feldman, 2003; Subotnik, Olszewski-Kubilius, & Worrell, 2011; Treffinger & Feldhusen, 1996). It seems increasingly clear that some patchwork will not fix the problem we are facing, and systemic changes are needed. Dai and Chen (2013) defined a paradigm of gifted education in terms of the 4W framework presented in Figure 1: What, Why, Who, and hoW. The first two Ws are theoretical and foundational (educational as well as psychological), and the second two Ws can be seen as a practical follow-up and implementation of educational goals framed through the What and Why.

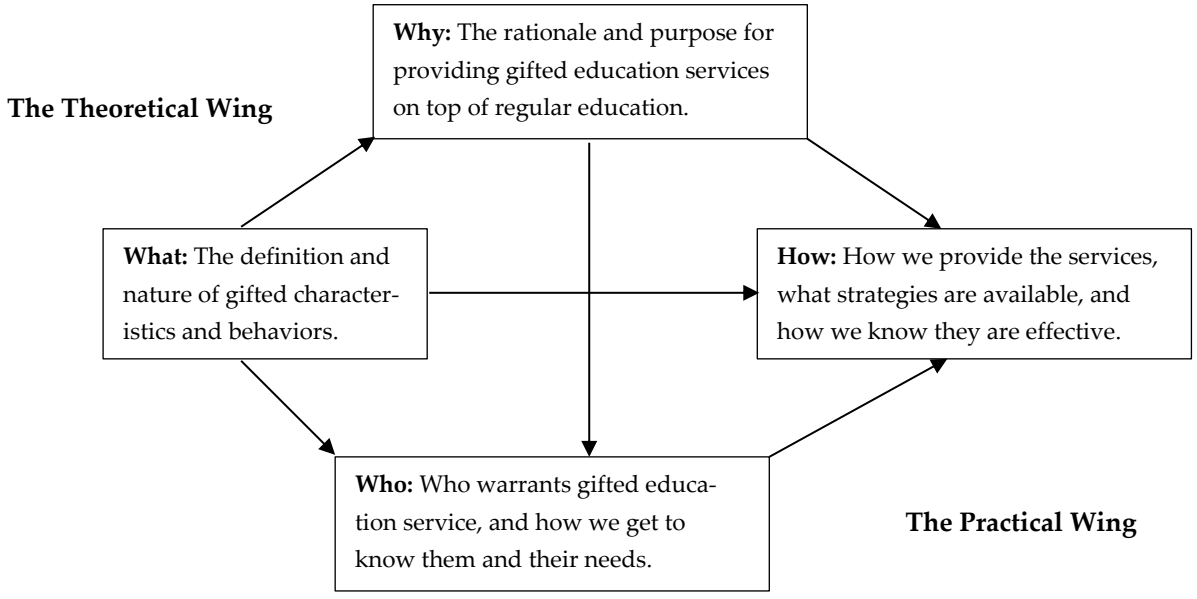

Figure 1. Components and Relationships of Paradigmatic Approach to Gifted Education

The Question of What: Redefining Gifted Potential

Regarding the nature of giftedness, the field has already moved from a static, monolithic conception of giftedness to an understanding of human competence as multi-dimensional, contextually shaped through the dynamic interplay of both endogenous and exogenous forces (Feldman, 2003; Tannenbaum, 1983; Renzulli, 1986; Witty, 1958), and increasingly differentiated and integrated through development (Dai, 2010; Subotnik, Olszewski-Kubilius, & Worrell, 2011). What it means it that one can be gifted in some situations but not in others, and one's giftedness, however defined,

is a malleable rather than fixed quality (Lohman, 2006; Sternberg, 1999). Thus gifted educators need to have a growth mindset, and gifted education policy needs to endorse a growth mindset, rather than perpetuate a fixed mindset (Dweck, 2006). If development tends to show increasing differentiation, defined as an ever refined knowledge and skill set as well as more distinct value orientations and motivation patterns (Dai, 2010), gifted educators need to follow students' developmental trajectories and paths. A developmental focus also means that, at each stage, there are qualitatively different developmental tasks the person has to engage in to progress to a higher level of competence (Subotnik et al.).

Conceptions of giftedness as a trait started with Terman's (1925) longitudinal prediction study. Although long-term prediction studies yield important insights (e.g., Lubinski & Benbow, 2006) about talent trajectories and pathways, they do not afford causal inferences as well as experimental studies. Indeed, even positive results are subject to different interpretations, depending on whether you see a glass as half empty or half full, so to speak. Fortunately, what one can do here or now can be observed and documented with higher reliability and validity than predicting what one can do 20 or 30 years later, and for diagnostic and educational purposes, information of the former is more important than the latter. The implication is that policy makers and gifted educators should be less concerned with making the correct "bet" as to who is "gifted" and who is not in a categorical fashion, and more concerned with how we can better recognize individuals who demonstrate distinct strengths and interests, and take them as far as they can go along a line of talent development, and as forcefully as we can afford, regardless of what they warrant a label "gifted" or not.

Traditional trait conceptions of gifted potential tend to exclusively focus on endogenous factors; they only address the question of who is more likely to succeed with respect to particular educational goals or criteria. Curriculum and instruction are considered a separate matter. A more effective, productive education system entails a conception of human potential that goes beyond the issue of who is more likely to excel, but how to maximally developing human potential for all. New conceptions of giftedness and talent need to be conducive to curricular and instructional planning in two ways. First, how curricular and instructional strategies can optimize learning of specific individuals with a particular profile of strengths, interests, and preferences; in other words, curriculum and instruction need to be differentiated so that specific individuals' potential can be best cultivated and developed (Tomlinson, 2014). Second, in light of talent development research, how to set up curriculum and instruction in a progressively challenging manner to push the learner toward a new level of competencies, and how to provide pedagogical and technical support in a timely manner to sustain talent development to the next level of excellence. As pointed out earlier, for a new conception of human potential, determining exogenous learning resources, tools, and support is just as important as identifying or developing endogenous resources and strengths (Vialle & Ziegler, 2016). This way, identification and instructional interventions reciprocate with each other (Passow, 1981) and become one system of accommodating to a variety of developmental trajectories and pathways and proactively promote optimal individual development.

The Question of Why: Clarifying The Purpose of Gifted Education

In terms of why, the field has moved from serving exclusively "the gifted" as a category of children for their well-being and development, to providing a wide range of opportunities for advanced learning to the capable and willing, addressing their short-term and long-term education needs.

The traditional categorical approach (gifted-nongifted bifurcation) creates an entitlement rationale for gifted education. Being "gifted" automatically becomes the raison d'etre for service, with the assumption that somehow the "gifted" have some "unique" (but unspecified) education needs. In other words, it is a membership system, working like an elite club, by nature exclusive in its service. Such an approach is problematic not just for equity reason (e.g., how many "false negatives" it rejected from the services that might otherwise help them flourish); by dissociating identification from curricular provisions and interventions, what exactly educators can do with students who "make the cut" is not clear.

I advocate a system that is service-oriented, defining the goal of gifted education as serving the excellence needs of students with a diverse range of talent potential who are underserved in the existing education system. The needs so defined can be either curriculum-based or non-curriculum-based. Curriculum-based needs are defined as a mismatch or gap between what one capable of and what is offered, diagnosed in situ in the curriculum context (Borland, 2003; Matthews & Dai, 2014; Matthews & Foster, 2006). In this sense, identified students are "outliers" in terms of the level of challenges provided and standards of excellence set up for them. Non-curriculum-based needs are defined as those not under the purview of the curriculum system, such as scientific research, movie making, or robot building (Olszewski-Kubilius, 2010; Peters, Matthews, McBee, & McCoach, 2013). These two sets of education needs roughly correspond to the two programming goals Callahan and Miller (2005) identified, one for advanced academics and the other for innovative problem-solving.

This way, gifted education and general education represent a division of labor rather than two systems of education (see Reis, 2003). In one way, gifted education complements general education in picking up the slack left by the age-graded, one-size-fits-all curriculum system. In another way, gifted education enhances the mission of students' personal excellence by promoting advanced academics and a variety of talent.

The approach to gifted education I advocate is predicated on the following principles:

- A developmental emphasis on potential positive changes and personal excellence;
- Increasing domain-specific strivings as part of individual developmental agendas;
- Multiple trajectories and pathways within and across domains (including many forms of precocity and exceptionality);
- Choice and a range of options for advanced development;
- Consideration of both short-term educational needs and long-term developmental goals (i.e., curriculum-based needs and talent development needs).

Potential positive impact and benefits of this new approach include 1) a more diverse group of students served, 2) a variety of talent trajectories and pathways accommodated, 3) more connections to themes of the 21st century (creative economy, technology age, 21st century problems, new talent niches, four Cs), and 4) more connections to personal interests and aspirations. Rather than run on a membership basis, so to speak, the new approach offers a range of additional educational opportunities and challenges for the capable and willing beyond what is regularly offered in school. The main argument is that a sound and effective education system ought to value various forms of excellence in its agenda for the sake of individual self-actualization as well as social vitality.

The Question of Who: The Means and Ends of Identification

If one accept the changes in the What and Why of gifted education I stated earlier, the means and ends of identification would have to change from creating a category of the "gifted" (i.e., determining the "gifted" status by a fixed standard) to identifying educational needs based on assessment of individual strengths, interests, and inclinations. The new approach to identification is more diagnostically and educationally focused; that is, identification directly informs appropriate educational provisions and psychological guidance (Callahan, 1996). A key point regarding this change is that, in the 21st century, with abundant opportunities and choices made available through off-line and on-line learning resources, a highly centralized, rigid (or even fixed) formal classification or selection system is outdated. Instead, there are many effective ways to identify gifted and talent potentials and excellence needs on the one hand, and available educational resources on the other.

The new system involves two basic considerations: situation and assessment. Regarding various situations calling for identification, the question is when do curriculum-based needs become an issue in school and appropriate diagnosis and assessment is in order, and when non-curriculum-based needs are present give certain educational priorities. When dealing with curriculum-based needs, a consultation model of identification is viable, not unlike having stake-holders collaborate in developing an IEP in special education, given that classroom conditions for many advanced students are sub-optimal, to say the least (see Peters, Rambo-Hernandez, Makel, Matthews, Plucker, 2017). The following are some options for appropriate curricular and instructional adaptations:

- Subject-based or grade-based acceleration (Rogers, 2007)
- Curriculum compacting (Reis, Burns, & Renzulli, 1992)
- Differentiated instruction (Tomlinson, 2014)
- Diagnosis-prescription (CTY of Johns Hopkins)
- Dual enrollment and early college entrance options (for high school students)

The criteria are set on an individual-by-individual basis (see Tomlinson, 1996 for specific criteria that can be used) and the decision is made in situ through negotiation and consensus seeking (hence the consultation model). Compared to identification of curriculum-based needs, assessment of non-curriculum-based needs involves different settings, such as:

- Select individuals for various enrichment experiences and explorative activities

- Select advanced learners for specialized projects (movie making, research on World War II, writing on Shakespeare, robot building, computer programming, etc.);
- Select individuals for specialized clusters, classes, or schools;
- Identify poor or less than optimal social and educational situations for disadvantaged gifted and talented students for improvement purposes;
- Identify individual weaknesses (e.g., endogenous sources of underachievement) for intervention purposes.

While concerns over curriculum-based needs are more "reactive" to current classroom situations, non-curriculum-based needs are more proactively identified to promote optimal development. Criteria for selection depend on the goodness of fit for a particular project or a line of talent development in question. In other words, levels of selectivity may vary greatly, depending on the nature of opportunities and tasks involved. Sometimes selectivity is necessary due to limited slots available, and other times students can self-select themselves into new opportunities to pursue challenges meaningful and valuable to them (e.g., selecting an AP course or pursuing research opportunities outside of school). The gatekeeping or quality control does not always have to be set up at the entry, but can be enforced with an exit policy.

The Question of How: Means and Ends of Gifted and Talented Provisions

If gifted education is not meant to serve "the gifted," but accommodate a variety of talent trajectories and pathways to excellence, then the main practical strategy has to change, from developing standard programs for the gifted in school to programming for a range of talent development in and outside of school, and offering a continuum of educational opportunities and services to serve excellence needs. A main consideration is the gap between what is offered in school and what is desirable for advanced learners (Olszewski-Kubilius, 2010; Reis, 2003; Tomlinson, 1996, 2014).

- *Excellence defined by school standards:* When academic excellence defined as school achievement based on existing school standards, more likely the existing resources are available, and only some administrative flexibility and facilitation is needed (e.g., differentiation, subject-based or grade-based acceleration);
- *Excellence exceeds school standards (or resources):* When academic excellence is defined by more advanced criteria (e.g., creative productivity, research competence), school curriculum structure (scope and sequence) needs to be adjusted and broadened, and additional resources and expertise developed; As the scope of academic talent agenda is broadened, many enrichment and research activities can be organized to provide appropriate challenges to students.
- *Excellence not covered by curriculum standards:* When changes in curriculum structure prove difficult to make, supplementary programs and opportunities offered outside of regular curriculum can be provided (e.g., after-school programs, summer programs, and on-line learning opportunities) to pick up the slack.

- *Excellence achieved through specialized programs and schools:* Specialized programs and schools can be created to offer authentic, advanced experiences (mentorship programs, research programs, studio art work, etc.)
- *Excellence achieved through personalized or customized education:* A distinct example is the rise of home schooling whereby learning can be fully customized and personally controlled, tailored made for optimal development.

The above educational strategy has deep ramifications in terms of policy, administrative, logistic, and technological support. At the policy level, government and educational policy makers need to redefine giftedness and gifted education in a way conducive to a more diverse, inclusive gifted education agenda (including its funding mechanisms). School boards need to develop policy that affords administrative flexibility and discretion in education placement. In terms of adding gifted education provisions, consider provisions and interventions in gifted education as a demand-supply problem. When resources are abundant in a school district, the range of services can be widened to cover a broad excellence agenda. Conversely, when resources are limited (e.g., confined to regular schooling), the range of opportunities offered will be narrowed, depending on available resources and expertise.

Implementation of the New Vision: Networks and Hierarchies

In sum, the traditional way we define and identify gifted children for educational provision works as a membership system, or simply put, like an elite club. I am advocating a gifted education that works more like an incubator, more open and accessible; individuals come and go, but it is always like a magnet, drawing the capable and willing. In this new system, the function of identification changes completely, from establishing eligibility, based on some arbitrary cut-off, to diagnosing educational mismatch and proactively promoting advanced learning, talent development, and excellence in a variety of domains (Subotnik, Olszewski-Kubilius, & Worrell, 2011; Treffinger & Feldhusen, 1996).

The way we can achieve this new vision is to build and connect various networks horizontally and develop a distributed system of services and opportunities for talented and advanced learners, rather than being content with limited (often peripheral) school provisions in a hierarchical manner (e.g., mandated by government).

The network approach to education implies the integration of multiple resources and expertise in and outside of school. Therefore, a widely distributed social infrastructure needs to be developed to provide a range of advanced learning opportunities and resources as well as technical support. One distinct example is National Consortium for Secondary STEM Schools (NCSSS) in the United States. The Consortium is a coalition of more than one hundred secondary schools specialized mathematics, science, technology, and engineering (see www.ncsss.org). It mobilizes high tech industries, universities, community resources to form a high-end learning community (on-line as well as off-line) and an information- and resource-sharing platform (pedagogical tools, assessment systems, communication channels, etc.). It should be noted that student research is required in all

NCSSS-affiliated schools, and it is made possible by commitments from many universities, research institutions and high-tech incubators, which make their resources and expertise available and accessible. As shown in Figure 2, school principles collectively serve the role of leadership in consultation with the Consortium's board of directors with major stakeholders actively participating in the process.

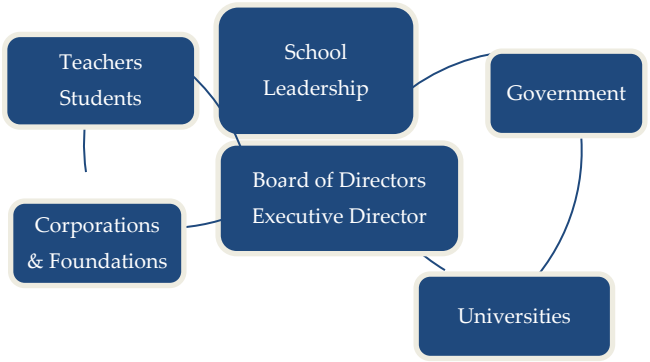

Figure 2. NCSSS: An Infrastructure of STEM Talent Education as a Networked System

Another example is the rapidly developed Talent Support Networks in Europe (Csermely, 2015). It is a network of widely distributed talent support centers designed to provide a variety of educational and counseling services aiming to promote talent development in various culturally valued domains (see Figure 3). They are community-based rather than school-based, often supported by university faculty and staff. Inevitably, university as a knowledge hub (with its resources and expertise) plays a major role in organizing such a network of talent support centers. Its functions range from leading curriculum development, as in the case of Parallel Curriculum or Project Lead the Way in the United States, to formulating assessment systems to measure valued educational outcomes, as in the case of Aurora Project at Yale. Taken together, the 21st century gifted education will stand at the frontier of education, breaking the boundaries of school, family, community, and internet to be an incubator of talent and creativity.

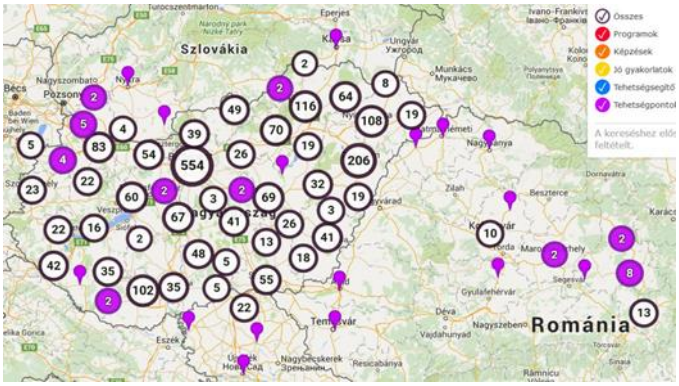

Figure 3. A Talent Support Network in Europe (Csermely, 2015)

A Comparison of Hierarchical and Network Approaches to Gifted and Talented Education

For illustration purposes, it is instructive to compare the United States and China with respect to how they develop top athletes. The United States has highly advanced network systems in every conceivable way, epitomized by its ground-up grassroots organizations, associations, and special interest groups, and China has the most developed hierarchically planned infrastructure, epitomized by its nationwide high-speed train system and telecommunication system. But more instructive in terms of talent development is how the two countries prepare their top athletes for the Olympic Games. In the United States, top athletes are not identified and trained in a centrally controlled manner; rather, athletes develop and demonstrate their strengths and interests in specific sports in local clubs and then high school and college varsity teams. Top athletes will be summoned up for major state, national, and international games. In contrast, China has highly centralized hierarchical system of developing athletes, typically starting in elementary school years, with special schools accommodating their athletic training and academic needs. In comparison, a distributed network system of talent development tend to have a larger base or talent pool to choose from (think of soccer in Brazil), and talent development becomes more sustainable when the selection process is kept open, and top athletes are the "survivors" or "winners" on an increasingly competitive ladder, rather than pre-selected or "preordained". In the Chinese system, intensive training starts much earlier, and the bets are placed very early, so to speak, and heavily on those early identified "hopefuls." The US system is more likely to be inclusive (hence avoiding false negatives) and allow "natural selection" to take place over the course of talent development (thus avoiding the mistake of rejecting false negatives and keeping false positives). In contrast, the Chinese system is more likely to reject many false negatives because of premature closure to some developmental opportunities, and retain more false positives because there is no exit or opt-out mechanism for those who, for a variety of reasons, cannot keep up with the increasing levels of challenge. Although athletes in both countries do well in Olympics, ultimately, network systems are more sustainable than centralized, hierarchical systems in producing top talents. This principle holds for other fields such as science and arts. Such a ground-up approach is even more important when the focus is on creative productivity in technical and academic and art domains, rather than high-level expert performance such as sports and performing arts.

In sum, advantages of hierarchical organization of gifted education and talent development may include more targeted pipelines of talent, and an accelerated rate of talent output. Hierarchically arranged gifted provisions can be effective when resources are scarce, and when the infrastructure of support networks is not well developed in many developing and underdeveloped countries. In Asia, the hierarchical organization of gifted education seem to work in small countries such as Singapore, and in countries wherein the central government possesses most resources, such as Saudi Arabia (see Dai & Kuo, 2016). Disadvantages could be that the system becomes too exclusive and rigid, and bureaucracy hinders the optimal distribution of educational resources, not unlike a planned economy, whereby supply or the allocation of resources is not sensitive or responsive to the demand in market.

In comparison, a distributed network system of gifted education has advantages of providing equitable access, and ensuring that diverse needs of advanced learning and talent development are

accommodated. Ground-up networks also tend to be more sensitive and responsive to local needs, since they are less affected by top-down bureaucratic control. Indeed, many "reverse innovations" (i.e., locally initiated innovations) can provide new impetus for infrastructure and capacity building, rather than relying on government initiatives and top-down changes. In short, the distributed network systems approach has the following advantages:

- More equitable access and maximal participation
- More flexible and responsive to local and current needs and demands
- More synergistic play of multiple stakeholders and resources
- More compatible with the information age.

While I advocate a distributed network approach (with many local initiatives) rather than centralized hierarchical system of gifted education for reasons listed above, two caveats are in order. The first caveat is that such effectiveness of such a network system of gifted education is predicated on a highly developed social infrastructure of support. The United States is so successful in sports internationally not because there is a strong government advocacy for sports but because it is part of American culture and national identity, supported by many grassroots initiatives (indeed, sports is heavily commercialized in the United Stated as a money-making enterprise). Thus advanced talent development in sports in the US is not unlike proliferation of talent in visual arts in the Renaissance Period characterized by a strong presence of support networks for art.

The second caveat is that relying exclusively on distributed network systems in education without any centralized hierarchical control can also be problematic, just as exclusive market economy without some checks and balances (i.e., sufficient regulation) can lead to crisis and even disasters, as we witnessed in the worldwide 2008 financial crisis originated in Wall Street in the US. Therefore, the issue is when hierarchy or centralized control is still needed in education in general and gifted education in particular. In short, the network approach might have the following weaknesses:

- Lack of standards and leadership
- Lack of efficiency and reproducibility
- Lack of stability and sustainability

Again, a case in point is China. Gifted programs in China have experiences of waxes and wanes over the last decades partly because of changes in educational priorities, but more importantly, because of the lack of a well articulated gifted education policy. Without such a policy, no tax money can be allocated, no university faculty can be hired, and no teacher training programs can be developed for the purpose, let alone systemic research effort (see Dai, Steenbergen-Hu, & Yang, 2016). In this regard, Turkey is doing much better (Sak et al., 2016). Therefore, the presence of a centralized mechanism can be essential for implementing gifted education effectively and making it more sustainable. I suggest an implementation hierarchy, called VISCAR (Figure 4), as a guidance-enactment-control mechanism to solve this problem (Dai, 2016b).

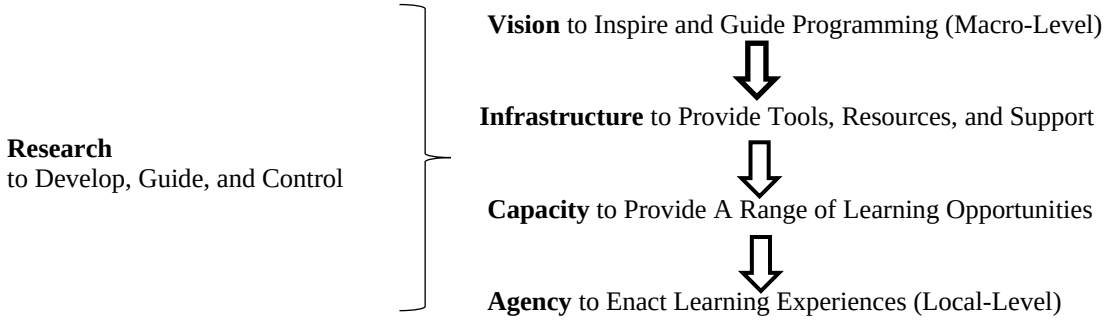

Figure 4. VISCAR: An Implementation Hierarchy (originally in Dai, 2016b)

As shown in Figure 4, on the top of this implementation hierarchy is Vision. A vision of gifted education includes compelling rationale for, and purposes of, gifted education provisions, as well as an understanding of its theoretical and practical ramifications, such as how to make it scientifically compelling, socially equitable, and educationally productive (Dai, 2016a). The vision can come from the state leaders, but it can also arise in a bottom-up fashion (e.g., how Julian Stanley set up the Center for Talented Youth at Johns Hopkins, or how a school principal envisions school to be a place for talent development). The vision leads to infrastructure and capacity building (e.g., the European Talent Support networks), and gather people (agency) around a worthy cause.

In addition to such an implementation hierarchy, another area that needs centralized control is standards. It should be pointed out that while social organization of talent development favors distributed systems, standards and criteria imposed on selection of top athletes, artists, engineers, scientists, etc., are always hierarchical. This is true for both network systems and hierarchical systems, To make the point clear, even though US and China differ in social organization of talent cultivation, they have convergent practices regarding selection: that is, different levels and degrees of excellence in a domain can be more or less objectively determined and socially recognized. There are regional-level, national-level, and international-level players, literally and figuratively, in every domain. Therefore, I suggest a standards hierarchy as a quality control mechanism. There are two kinds of standards in gifted education and talent development. One is standards for selection or nomination for more advanced development. The other kind is standards for gifted education practice, including curriculum standards and teacher standards. Together, these two hierarchies serve as centralized control to ensure that grassroots, ground-up movements of infrastructure and capacity building and education provisions can be orderly, systematic, and sustainable.

Conclusion

We are living in an exciting time of the 21st -century technology, with many possibilities opened up by abundant education resources and fast information flow. However, gifted education by and large is still conceptualized and operated in the way it was a century ago (e.g., Henry, 1920). I am arguing for a paradigm shift in gifted education to make it more responsive to the challenges of the 21st century, as well as new opportunities for optimal development of many children and adolescents, rather than exclusively focusing on the identified and selected few (often in a once-and-for-all fashion). This argument is based on the preponderance of evidence that human potential is

widely distributed in a population, and highly pluralistic and dynamic, not amenable to a uniform formula that fits everyone into a Procrustean Bed of giftedness with the assumption of its homogeneity and permanence (Dai, 2016a). By envisioning a broader agenda of gifted education, gifted education can be made more equitable and productive. At the social and organizational level, with appropriate centralized control, more locally initiated education and development efforts can be harnessed to build a distributed network system of support that is more responsive to needs for advanced learning, talent development, and excellence in the 21st century. As such a new era of gifted education will be born.

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