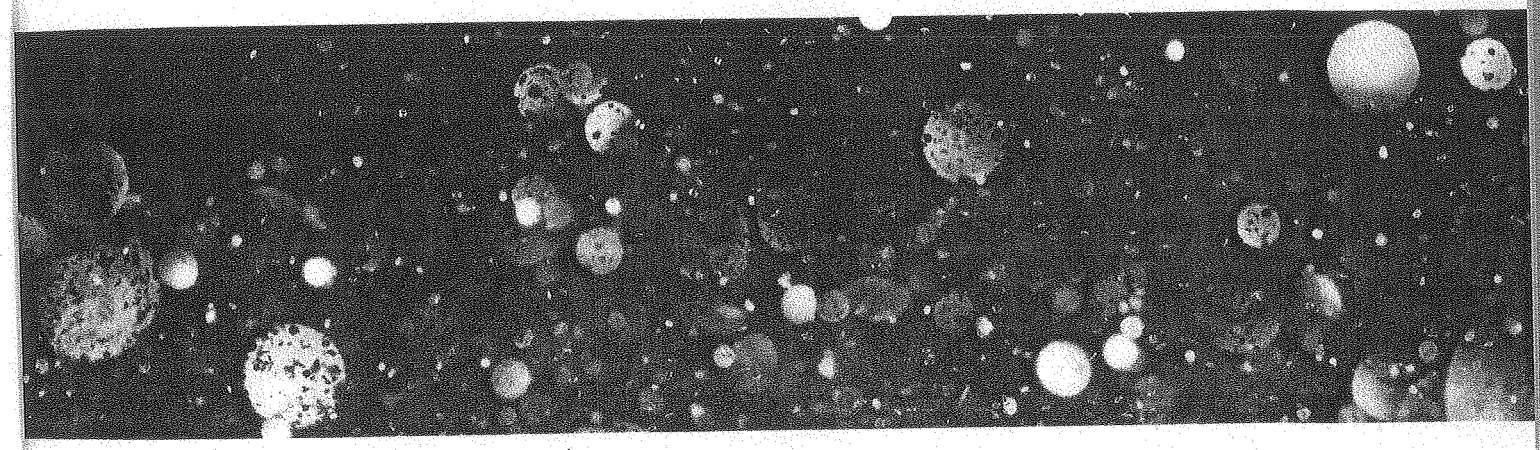
The SAGE Handbook of Gifted and Talented Education



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Gifted Education in Asia: Vision and Capacity

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INTRODUCTION

Gifted education, as an addition or supplement to regular public education, has a relatively short history in Asia (Turkey may be an exception; see Sak et al., 2016). While the momentum and achievement are palpable and measurable (Dai & Kuo, 2016; Chan, 2017), some macro-level, structural problems also reveal themselves in the critical assessment of representative countries and regions. In Asian countries as well as in Western countries, some of the major challenges gifted education faces if it is to achieve its mission are:

- how to give more educational attention to those with emergent gifts and talents who may or may not fit our standard image of gifted students and gifted criteria;
- how to make schools a place where, instead of being confined to the regimen of age-graded schooling and uniform standard curriculum, a variety of talents can be identified and cultivated;
- how to integrate resources and harness technology for the sake of fostering talent development across school, home and community;
- how to change the way schools define and assess student excellence and success so that the intrinsic value of talent and creativity, rather than extrinsic gains, is cherished.

Gifted education in Asia has, by and large, emulated its counterpart developed in the United States in terms of practical as well as theoretical traditions. For instance, the move from early IQ definition to the later adoption of a more pluralistic conception of gifted potential, such as theory of multiple intelligences (Gardner, 1983), and from early self-contained programs to later stratified efforts to reach out to more gifted and talented learners (e.g., the approaches used in Hong Kong, Singapore, and Turkey, among others; see Dai & Kuo, 2016). It is therefore helpful to look at how the United States developed a system that supports the gifted education endeavor. First, there has been a century of

interest in and research on topics of giftedness, talent, and creativity (see Dai, 2010; Shavinina, 2009), which lays a strong theoretical foundation for gifted education (albeit, in hindsight, of a debatable nature). Second, there has been a century of strong leadership on the national scene, typically provided by university-based scholars and education leaders, which provides broad vision and guidance at the theoretical, policy, and practical levels (Robinson & Jolly, 2014). Third, there is a well-developed infrastructure and grassroots initiatives supporting related endeavors, including, but not limited to: (a) organizations at local, state, and national levels that hold workshops, publish newsletters periodically, and coordinate efforts across schools; (b) academic and education journals and professional conferences that disseminate cutting-edge knowledge; (c) university-based centers (e.g., Johns Hopkins's Center for Talented Youth) that provide educational and counseling services nationwide; (d) university graduate programs specialized in gifted education that train doctoral and Masters level students; and (e) federal and state government support, such as policy documents (e.g., Marland, 1972, Ross, 1993) and state laws, as well as government funding for research (e.g. the Jacob K. Javits Gifted and Talented Students Education Program supported by the federal government; see Dai & Cai, 2013).

In comparison, for most of Asia, because of the brief history of the topic, both theoretical preparation and infrastructure building for gifted education still leave a lot to be desired. This forms the backdrop for the focus of this chapter: a critical assessment of the state of gifted education in Asia in general, and in specific Asian countries in particular, with respect to two overarching issues: vision and capacity. Such an attempt is by nature exploratory and illustrative. For one, Asian countries are by no means homogeneous economically, socially, culturally, and educationally. Therefore, making sweeping generalizations is risky when diversity always exists among Asian countries and cultures. For another, we are aiming at a moving target, so to speak. Asia is undergoing rapid economic and social changes; these changes include education systems and available resources. It is not unusual that conservative forces, institutional or cultural, are constantly on a collision course with the progressive movement and more liberal ideals. Thus, the chapter is intended to provoke thoughts rather than pass definitive judgments, highlighting major issues, hurdles, and problems we might have to deal with down the road. The assessment that follows could be biased and partial, not doing sufficient justice to some parts of Asia or not reflecting the current ongoing changes. The reader may consult Chan (2017) for a more descriptive review of gifted education in Asia. The present chapter as a critical assessment is evaluative by nature, albeit tentative and inconclusive.

A CONCEPTUAL FRAMEWORK OF IMPLEMENTATION HIERARCHY: VISION, INFRASTRUCTURE, CAPACITY, AGENCY, AND RESEARCH (VISCAR)

In order to perform such a critical assessment, Dai (2016b) developed a conceptual framework of how vision and capacity are developed for gifted education in any country or region. The framework is mainly concerned with education programming and enactment in terms of an *implementation hierarchy*, indicating how a new idea in education becomes materialized and bears fruit in a social context. For presentation clarity, five basic elements can be identified along this hierarchy: Vision, InfraStructure, Capacity, Agency, and Research (VISCAR). Figure 34.1 shows how they work together as an implementation system.

Vision

At the top of this implementation hierarchy is *Vision*. A vision of gifted education includes

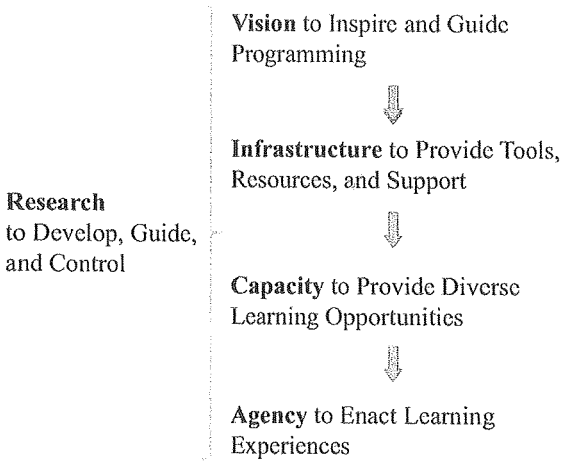

Figure 34.1 A schematic representation of implementation hierarchy

a compelling rationale for, and the purposes of, gifted education provision, 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 top-down from state leaders, but it can also arise in a bottom-up fashion (e.g., in a university professor setting up a center for talented youth, or a school principal envisioning school to be a place for talent development). At the policy level, vision often means the prominence of talent, excellence, and creativity as priorities in the education system. Socially and organizationally, vision means leadership at multiple levels (from the national government to local schools). However, unless there is some consensus in a society about a specific vision of gifted education as a worthy cause, its implementation will not be smooth, to say the least.

InfraStructure

A vision can only be realized by building an *Infrastructure* that can practically support and implement the vision. Infrastructure is a support system that provides the necessary information, expertise, tools, resources, and organizational and logistic facilities. A solid infrastructure for gifted education includes, among other factors: (a) widely distributed university–school partnerships for mentorship, curriculum development, and teacher preparation; (b) information and educational technology for expanding capacity as well as enhancing quality; (c) a social network of support that permits the sharing and coordination of information and resources; and (d) a research and development (R&D) facility.

Capacity

Capacity here refers to the capability of delivering a range of education provisions and services to gifted and advanced learners as the means of achieving the envisioned goals and missions. Capacity building in school mainly involves curriculum and pedagogical development and teacher training. As the implementation hierarchy (Figure 34.1) indicates, the stronger the infrastructure, the stronger the capacity to serve. For example, if secondary school teachers are left to their own devises, without university involvement in developing challenging curricula, without the instructional and technological support through workshops and external consultation as well as information technology, their capacity to offer advanced learning experiences to students (e.g., calculus, digital electronics, scientific research projects, or women's studies) can be very limited.

Agency

Different from the issues of capacity and infrastructure building, *Agency* refers to all the human agents directly and indirectly involved in the implementation process, who ultimately determine whether the endeavor will be vigorously pursued and come to fruition, or conversely, lose its integrity (e.g., fail to carry out the set mission) and become unsustainable. Agency involves individual or cultural beliefs, values, affects, and

motivations, implicit or explicit, which turn the vision into reality through action. Thus, agency for gifted education can come from teachers, students, parents, corporations, and other stakeholders of education. In instructional settings, the most important agency is provided by teachers working within a student–teacher partnership using appropriate pedagogies to produce student-directed experiences and outcomes.

Research

As indicated in Figure 34.1, *research apparatus*, while part of the infrastructure, is placed more prominently in the implementation hierarchy as an overarching development-guide-control mechanism. It is, as it were, the brain of the system. It supports a vision of gifted education by *developing* a solid foundation, *guiding* policy-making and programming, and *controlling* and optimizing the implementation by ensuring that capacity building is adequate to support the vision, and agency is mobilized to produce the desired outcomes.

How do countries and regions reviewed in this chapter fare in light of this framework of implementation hierarchy? Although a scientific evaluation based on solid data collection awaits future research, forming an educated guess is made possible by evaluations of gifted education in specific countries and regions. We can index the five components in the following manner: (a) public policy articulation and strong leadership as indices of *Vision*; (b) university involvement and the presence of a well-coordinated social network of support as indices of *Infrastructure*; (c) the scope and quality of curriculum provisions as indices of *Capacity*; (d) levels of activity in promoting gifted education and cultural beliefs and values underlying the motivation to identify and cultivate the gifted and talented potential as indices of *Agency*; and (e) the presence (or absence) of systematic research, basic, applied, or practical, as an index of *Research*. Based on this scheme, we can roughly identify which components have enabled the successful implementation of gifted education in a particular country or region, and which components significantly constrain or even impede its development and implementation. This assessment based on the VISCAR can yield a general picture of how well a region or country is currently faring. Dai (2016b) in 'Looking back to the future: Toward a new era of gifted education' (see also Dai & Kuo, 2016) gives a critical assessment of gifted education in nine representative countries and regions in Asia: Hong Kong, India, Japan, Mainland China, Saudi Arabia, Singapore, South Korea, Taiwan, and Turkey. Admittedly they are not representative of the entirety of Asia, as East Asia is over-represented (Hong Kong, Japan, Mainland China, South Korea, and Taiwan,). It should be noted, however, that the purpose of this critical assessment is to understand those countries and regions that have developed gifted education provisions. Therefore, since the presence of gifted education is more prevalent in East Asia (presumably because of the levels of economic development achieved in this region) than other parts of Asia, it takes center stage. This said, other regions of Asia are also represented (e.g., India, Saudi Arabia, Turkey).

As indicated in Figure 34.1, the implementation hierarchy is a nested system, wherein one element can significantly constrain the effects of another. It is meaningful, therefore, to identify levers and weakest links in the implementation hierarchy. One way of using VISCAR for critical assessment of gifted education is to look at the possible discrepancies between Vision and Capacity; that is, leadership seems strong, but capacity cannot keep up. It appears, based on the critical assessment of the nine countries and regions (Dai & Kuo, 2016), that Singapore, South Korea, and Taiwan seem to have reached a more 'mature' level

of development in gifted education, with no apparently weak components in the implementation hierarchy; in other words, Vision is supported and sustained by Capacity. The other countries and regions have at least some components of the VISCAR that are relatively weak, which implicates either a lack of strong leadership or a less than ideal support system (see Table 34.1).

Leaders of some nations, such as Japan, are reluctant to advocate gifted education, even though its infrastructure is quite solid. As a result, infrastructure of gifted education is not well developed. We can see these higher-level components in the implementation hierarchy as *top-down constraints*. In contrast, leaders of other nations are pushing for gifted education quite aggressively (e.g., Singapore, Saudi Arabia or Turkey), and the research apparatus has developed quickly. However, infrastructure building and capacity development takes time, and may not be able to keep up with the national ambition and government initiatives. It appears that several Asian countries suffer from the lack of capacity and infrastructure. We may call this kind of situation *bottom-up constraints*. In the light of VISCAR, there seem to be significant hindrances to the growth of gifted education due to both top-down and *bottom-up constraints*.

A CRITICAL ASSESSMENT OF GIFTED EDUCATION IN ASIA IN THE LIGHT OF 21ST-CENTURY OPPORTUNITIES AND CHALLENGES

To be sure, assessment of gifted education purely based on such a broad-brush judgment can blind us to subtle but important differences in theoretical and practical orientations. In the following section, a more qualitative analysis is carried out, looking specifically at how these components in the implementation hierarchy function to facilitate desirable changes.

Vision Building and Theoretical Development

In terms of vision and policy, there can be variations as to the nature of 'gifts and talents', and rationale for gifted education, what Dai and Chen (2014) identified as paradigms of gifted education. Borland (1989) suggested that gifted education typically appeals to two kinds of argument: a national resource or human capital argument, and a special education argument (see also Dai, 2011; Eyre, 2009). In Asian countries, a dominant vision has to do with economic and social developments in the region. For more developed countries such as Hong Kong and

Table 34.1 A tentative assessment based on the VISCAR framework for illustration purposes*

	Vision	*Infrastructure*	*Capacity*	*Agency*	*Research*
Hong Kong	+	+	+	+	?
India	–	–	–	+	–
Japan	–	+	+	+	–
Mainland China	–	–	?	?	–
Saudi Arabia	+	–	–	+	–
Singapore	+	+	+	+	+
South Korea	+	+	+	+	+
Taiwan	+	+	+	+	+
Turkey	+	?	?	+	+

Notes: *The assessment is not based on rigorous scientific procedures, and therefore should only be interpreted as suggestive. '+' indicates presence, '–' indicates absence, and '?' indicates uncertainty about the status

Singapore, due to the lack of natural resources, the human capital argument carries the day. For many Asian countries, especially aspiring or rising regional powers, gifted education is seen as an essential contributor to the talent pool, particularly in the science and technology fields. An exception is Taiwan, which takes a different tack, resorting to the special education argument. The human capital argument stresses the role of education in serving a national strategic interest, thus favoring a collective utilitarian orientation, more likely endorsed by countries eager to boost their economic competitiveness. In contrast, the special education argument stresses unique individual education needs, thus reflecting a client-based service orientation, more likely to be adopted by economically advanced countries whose concerns are to enhance the quality of education and life for everyone. Theoretically, the human capital argument better aligns with the Talent Development Paradigm, given its emphasis on creative contributions as long-term developmental outcomes and payoffs; and the special education argument better aligns with the Gifted Child Paradigm or the Differentiation Paradigm, given their emphasis on uniqueness and the special needs of individuals. An unexpected conundrum occurs when those developing countries in Asia eager to identify and cultivate the gifted and talented as a precious national resource endorse the Gifted Child Paradigm, which is meant to serve the needs of gifted individuals rather than serving a national economic and strategic interest. The reason for this misalignment is that the main theoretical resources Asian countries and regions used to build gifted education are drawn from the United States, where the Gifted Child Paradigm has been dominant, while the Talent Development Paradigm as a viable alternative emerged in 1990s and has gained momentum only in recent years (Dai, 2017a).

A general observation in Asia is that sometimes strong leadership and advocacy for gifted education, often in a top-down fashion, is not matched well with the theoretical groundwork that supports such an endeavor. For example, when the Chinese government launched a new national initiative on 'cultivating creative talent', many local school principals scratched their heads, trying to get a conceptual handle on who are the 'creative talent': how can we identify them, and how can we go about cultivating this talent? (Dai, Steenbergen-Hu, & Yang, 2016). As another example, the Hong Kong government developed a three-tier system, with the top 2 percent eligible for city-wide services, and a further two tiers receiving school-based enrichment services. The system is meant to broaden its service base, covering roughly the top 10 percent of students under the gifted education mandate (Tommis, 2016). However, such a stratified approach, though practically convenient, is not as defensible from a theoretical point view, since the system adheres to a static model of classifying students into the three tiers of giftedness. In comparison, although a similar three-tier service model, the Response-to-Intervention approach (Coleman & Hughes, 2009) reflects a more diagnostic approach, whereby if class-based interventions prove inadequate, then the resource room intervention is called into service. Although gifted education in Hong Kong is one of the best in Asia in terms of its organizational structure, the system appeals to a variety of sources of theoretical support, including multiple intelligence theories and the more traditional IQ-based exceptionality argument (Tommis, 2016). The compatibility of these theoretical arguments might send confusing messages to practitioners and parents alike.

Current theoretical thinking supports a conception of the nature and development of human potential that is not only more pluralistic but also more dynamic and contextual, which means that educational practice should be more flexible and responsive to emergent gifted and talented manifestations (Dai, 2010). A contextual understanding of human potential and an emphasis on

nurture are deeply rooted in Asian cultures. However, these cultural beliefs and values are not reflected in conceptions of giftedness.

In the global context of changes in the vision of gifted education, the traditional mode of gifted identification, classifying a group of individuals as 'gifted' by a fixed standard, often in a once-and-for-all fashion, is giving way to a more inclusive and flexible approach, with the recognition of the multi-faceted and evolving nature of human potential (Treffinger & Feldhusen, 1996). This approach sees human exceptional competence as contextually and dynamically shaped and manifested through interactions with the environment, and as becoming increasingly differentiated and integrated over time through development and education (Dai & Renzulli, 2008). The purpose of identification in the light of this new understanding is not to create a gold standard of 'giftedness' and find a litmus test that can distinguish the 'truly gifted' from the non-gifted. Instead, identification is a practical diagnostic decision as to whether an individual is ready to pursue a particular academic challenge or suitable for a particular line of talent development. In many situations, identification-related decision-making is made on an individual-by-individual basis (e.g., subject- or grade-based acceleration, taking an Advanced Placement calculus course in high school, or pursuing independent study); no formal selection is needed when decisions can be made through self-selection and consultation. In the future, we shall see the function of a national policy as only providing general guidelines for identification (e.g., person-domain fit, and the identification-programming match); implementation details will be left to the discretion of local governments or school districts. Priorities in expenditure will be shifted from identification of 'the gifted' to developing the school's capacity to provide a range of advanced learning opportunities for differentiated and advanced learning experiences (Peters et al., 2013)

It is unfortunate that gifted education becomes marginalized in the education reform discourse (e.g., in Taiwan, see Wu & Kuo, 2016), mainly because it is seen as irrelevant to school reform in general. However, when gifted education is envisioned in the way described above, as more accessible, it will become a force for education reform, moving the school out of its comfort zone, breaking the one-size-fits-all factory model of education, and making schools more responsive to 21st-century opportunities and challenges and more mindful of optimal individual development. Singapore seems to be moving in this direction, and we shall see more countries taking this path. By making gifted education open and accessible, this will avoid the nagging problem of being seen as privileging the already privileged (Margolin, 1994).

Infrastructural Building and Social Capital

Not surprisingly, many Asian countries face the issue of not having sufficient resources, despite strong advocacy for gifted education. Financial resources being available for adding gifted education to the school's agenda is one thing, but the lack of necessary curricular, pedagogical, and logistical support is a less tangible but nonetheless important constraint. In many ways, an old system simply cannot adequately handle a new mandate such as gifted education. Most of the time, simply treating gifted education as an added-on component is not effective; a new system of support is needed. In this sense, infrastructure building, including mobilizing expertise in higher education, organizing social support groups, and developing and harnessing innovative information technology, has added importance. Social capital, commonly defined as networks of relationships among persons and institutions in a society that allows that society to function effectively, is necessary for running an effective gifted education provision.

Historically, university professors and researchers, from Terman and Hollingworth to Stanley and Renzulli, were instrumental in creating education provision and psychological support to gifted and talented students (see Dai, 2017b). They represent an investment of intellectual capital (as part of cultural capital) essential for the sustainability of gifted education. American experiences show that universities can perform the following five functions for gifted education:

- Conducting research and developing and refining theoretical frameworks, and identifying alternative educational strategies;
- Providing national leadership through advocacy, policy deliberation, and knowledge dissemination;
- Acting as both a direct service provider (delivering courses and programs) and a consultant, as in the case of many university-based centers on gifted education and talent development in the United States;
- Developing new curriculum materials especially geared toward frontiers of knowledge and tailored to the need for more depth and complexity in education by advanced learners through university–school partnerships;
- Facilitating teacher training and education, particularly in-service learning and development, making teachers better equipped to identify the educational needs of advanced students and explore new possibilities for promoting excellence.

The Asian experiences represented by the nine countries and regions show the same principle regarding these functions. For example, Taiwan, Singapore, and South Korea, which have the highest ratings in the implementation hierarchy (Table 34.1), are also ahead of others in extensive university involvement and leadership in the five areas mentioned above (see Wu & Kuo, 2016; Neihart & Tan, 2016; Cho & Lee, 2016). In places where university involvement is weak, gifted education can hardly survive, mainly because gifted education involves a set of advanced learning tasks, pedagogical tools, and technological support more challenging than basic education provides.

In addition to intellectual capital, infrastructure building for gifted education and talent development also involves significant support from various non-government organizations and social networks consisting of parents and other stakeholders. For example, the National Consortium for STEM Secondary Schools (NCSSS) in the United States integrates resources and expertise provided by universities, industry, teachers, and parents in providing advanced learning and mentorship experiences in STEM fields. Without such an organization, the provision of many out-of-school learning opportunities (e.g., taking university courses, working in prestigious science labs, and having mentorship experiences with university professors) is virtually impossible. By the same token, the widely distributed Talent Support networks in Europe (Csermely, 2015) involve not only the leadership of the European Council for High Ability (ECHA), but are predicated on educational resources being available outside of school. In many Asian countries, gifted education relies on government initiatives and funding. When the government shifts its priorities, social capital is lacking to provide a solid support system. The issue is particularly acute when countries such as Mainland China, India, and Saudi Arabia lack the kind of forceful grassroots initiatives needed to build a solid infrastructure.

In addition to intellectual and social capital, the use of information technology can significantly enhance the accessibility of gifted education as well as transform the way we identify and cultivate gifts and talents (Chen, Dai, & Zhou, 2013). In this regard, South Korea is ahead of most countries in Asia (probably in the whole world as well) in building its technology-based information-sharing and service coordination mechanisms, a nationwide, government-funded *Gifted Education Database* (GED; see Cho & Lee, 2016). The system collects and provides timely information about relevant demands, and supplies these to policymakers, educators, students, and parents. The

homogeneity of the country apparently facilitates such an effort. In contrast, India (Roy & Kurup, 2016) and Mainland China (Dai et al., 2016), due to their population size as well as uneven economic and social development at provincial and local levels, may find such an undertaking too daunting to initiate.

CAPACITY BUILDING AND TEACHER DEVELOPMENT

The success of gifted education depends on the quality of the programs and services educators provide that generate the desired learning experiences for advanced learners. Some measures are administrative in nature, such as various acceleration options involving education placement, and various kinds of online and off-line options facilitated by administrative functions. In a more strict sense, the issue of capacity goes beyond administrative or logistic facility; it involves two main factors: the designing of appropriate learning activities, and teachers who carry out these activities. In other words, capacity is more than merely how many students the system serves, with what delivery mode; it is mainly concerned with curriculum and pedagogy, and the agent that implements them: the teacher.

Curricular and Instructional Adaptations

Chan (2017) identified a variety of programs and services provided in various Asian countries. Acceleration and enrichment are still the two main strategies. Beyond middle school, special schools for the gifted and talented are quite common (e.g., Japan, Mainland China, South Korea, Turkey; see Cho & Lee, 2016; Dai, et al., 2016; Matsumura, 2016; Sak et al., 2016 for respective countries). It can be argued that merely making some students proceed faster or earlier through the regular school curriculum or placing them in special schools should not be automatically taken for granted as an adequate and appropriate curricular and instructional adaptation. What kinds of learning opportunities are offered and what exactly transpires in terms of the individual's learning gains and growth ultimately determine the effectiveness of gifted education. The same can be said about enrichment experiences, which can also vary greatly, depending on how thoughtfully they are designed, and how well they are implemented. As the VISCAR framework indicates, on the one hand, capacity relies on infrastructure building, especially regarding the investment of intellectual capital; for example, who designs and orchestrates these activities, and who enacts and supervises them. On the other hand, capacity also relies on the general existing education infrastructure. A comparison of different countries in Asia can be instructive. In Saudi Arabia, the government adopted a pull-out, enrichment model, the Oasis Enrichment Model (OEM) as the main mode of gifted education. Heavily relying on such programs often means discrepancies between what identified gifted students receive in the pull-out programs and what they receive in the regular classroom. Since teachers in regular classrooms rarely differentiate their curriculum and instruction for gifted students, either because of other priorities and the lack of expertise in differentiation, or because of logistic and other practical constraints, there will be a lack of continuity in student learning and growth. In addition, it is also a big ask for the OEM teacher training program to turn teachers into highly competent gifted educators with a relatively short training program (Aljugharman, Nofal, & Hein, 2016). In contrast, Mainland China and Japan do not have specialized gifted education teacher training programs. However, the education infrastructure in these two countries is relatively strong as both countries have well developed teacher education systems. Training some teachers to teach more advanced students thus becomes much easier.

The Challenge of Changing Pedagogy

A prevalent challenge for teachers in Asian cultures (and probably in all cultures!) is how to meet the new demands of teaching for skills important for living an effective life in the 21st century (e.g., critical thinking, creativity, communication, and collaboration, or the 4Cs; Partnership for 21st Century Skills, 2008). An emphasis on these skills coincides with the advocacy of a 'gifted' pedagogy (Reis, McCoach, Little, Muller, & Kaniskan, 2011), which features more prominently in a variety of inquiry-based instructional strategies, such as the use of project-based learning in student research work, independent as well as collaborative (Aulls & Shore, 2008; Dai, 2016). Teachers in Asian cultures are known to prefer a more didactic teaching style. Although the perception that this type of teaching encourages rote learning is to some extent discredited (see Wu & Kuo, 2016), it is safe to say that too much reliance on teacher-centered pedagogy with the teacher always acting as an authority figure regarding knowledge can relegate the student's role to that of passively absorbing established knowledge, rather than actively inquiring into meaning and truth, and pursuing innovations that can make a difference in the world. Just as in the case of the United States, the heavy reliance on standardized testing for identification as well as academic achievement measured by standardized tests, further reinforces the didactic teaching style well entrenched in the Asian education systems (Neihart & Tan, 2016). If a central concern of gifted education is how to develop the *modus operandi* of a field of human endeavor, for example, facilitate an appreciation and understanding of how to feel, think, and act as scientists, mathematicians, historians, creative writers, artists, or film makers, then deep pedagogical change is needed (Dai, 2016b; Gee, 2007). It takes a significant amount of teacher education and teacher development to elevate such pedagogy to state of art. In this regard, Asian countries, as well as countries all over the world, have a long way to go.

AGENCY AND BUILDING A CULTURE OF INNOVATION

Ultimately, how people involved with and working for the gifted, including all stakeholders, implement and enact gifted education, ultimately determines how successful it can be. As pointed out earlier, in many Asian countries, as well as other places, gifted education is promoted and implemented in a top-down fashion. Such an approach can meet with obstacles when a vision of gifted education is not supported by local cultures in terms of values and priorities. For example, Asian countries are well known for their high academic achievement. Indeed, some even used the test results of the Programme for International Scholarly Assessment (PISA) as a benchmark for academic achievement (Finn & Wright, 2014). This kind of 'schoolhouse giftedness', as Renzulli (1986) named it, is of course important. However, the other kind of giftedness, 'creative productive giftedness', is equally or even more important. Zhao and Meyer (2014), using the PISA 2012 data and measures of entrepreneurialism (in terms of intent, self-efficacy, and action) obtained by the Global Entrepreneurship Monitor (GEM; website: http://gemconsortium.org/), found that the national average of PISA total scores is negatively correlated with various indices of entrepreneurship. I replicated this finding with the PISA 2015 data (PISA reports available at the OECD website: http://www.oecd.org/pisa/keyfindings/pisa-2012-results.htm) and the more recent 2015–2016 GEM indexes. Negative correlations are consistent across indices, ranging from –.52 to –.73. Figure 34.2 shows the two results.

To be sure, this finding should be interpreted with caution, as no causal inference can

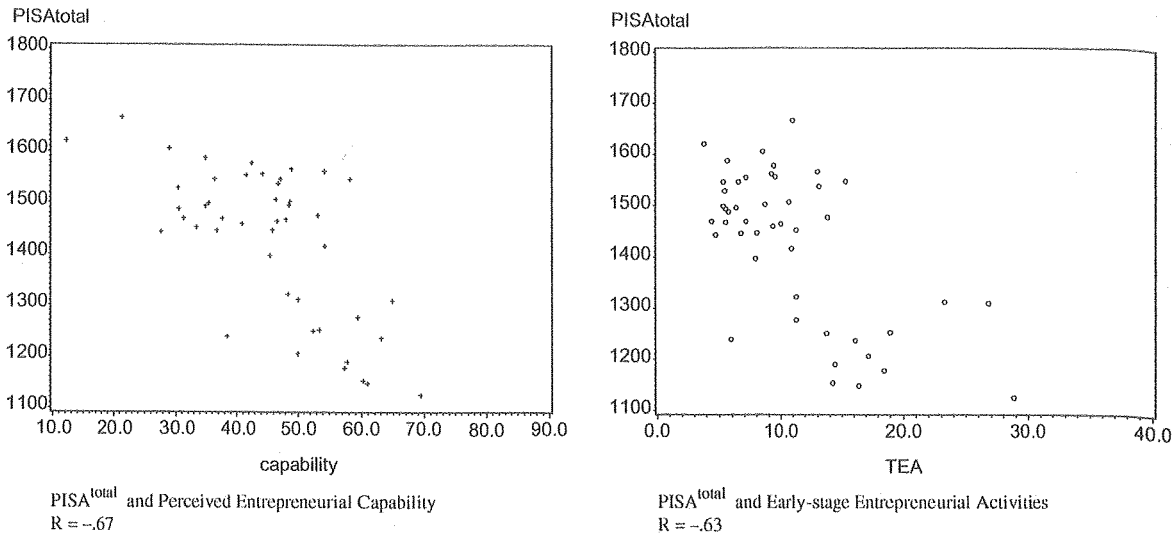

Figure 34.2 Correlations between national average of PISA (measured at the age of 15) and national average indices of entrepreneurialism obtained from samples of working-age adults

Note: Both measures are national averages.

be made. On a positive note, the high PISA performance characteristic of many East Asian countries means a firm commitment to education and academic success. Indeed, the collective agency can be considered strong in Asia in terms of highly motivated parents, teachers, and students. They represent a dominant cultural norm for academic excellence, which is highly conducive to a fruitful gifted education (Phillipson, 2013; Phillipson & Phillipson, 2016). However, the pattern is symptomatic of an issue prevalent in many Asian countries: academic success in school is seen as a stepping stone to social success in adulthood rather than a result of self-cultivation and self-actualization. In other words, the flip side of this collective agency is a utilitarian or extrinsic orientation, which deviates from the true spirit of education in general and gifted education in particular. The negative correlations suggest at least three tendencies not conducive to the goals of gifted education, particularly with respect to the development of creativity.

First, the utilitarian academic orientation tends to focus on short-term gains, such as test scores, and may not produce long-term benefits such as developing personal interests and the love of learning for its own sake. When a utilitarian orientation is prevalent, gifted education will lose an intrinsic education value other than providing a ticket to more prestigious schools or colleges. This is why, when reviewing gifted education in Taiwan, Wu and Kuo (2016) warn educators in Taiwan not to be trapped by *credentialism*: reducing the goal of gifted education to gaining credentials instead of focusing on intrinsic gains.

Second, because of this outcome-driven mentality as well as loyalty to time-honored conventional school learning, particularly taking conventional tests, students and teachers alike learn to prefer highly structured learning environments where instructional guidance can be highly explicit and successful learning can be micro-managed. Ill-defined and controversial real-world problems with no 'correct answers' will be avoided. Over time, students will favor the safe route to success and avert risk taking and possible setbacks. Apparently, in Asian cultures, academic work is a safe route to success, and engaging in entrepreneurship is full of uncertainties and risks. However, this preference can significantly hinder personal creativity

(Zhao & Meyer, 2014). Academic tasks, with well-structured problems and learnable pathways to solutions are a good fit for Asian students at the cost of learning to deal with the uncertainties of real-world problems. Asian educators might eventually find that they are doing so well in putting kids 'in the box', so to speak, that once students are asked to think 'outside the box', they will be lost. In other words, knowledge becomes the prison of the mind, not power and freedom. Indeed, that Bill Gates dropped out of Harvard to venture into some risky business would be seen as insane by many Asian parents.

Third, when academic strivings become a means to social success, it is logical to achieve through conforming to established standards rather than through independence, even fighting against the 'crowd'. However, a system of conformity tends to produce what can be called 'excellent sheep', not free thinkers, critical thinkers, and creators. Self-direction is discouraged when financial security and social prestige overshadow the intrinsic excitement of exploring the unknown and personal dreams.

Taken together, I argue that these three tendencies hinder effective gifted education because this is not about financial success and social prestige; it is about bringing excitement and dreams to students' life, to help students see new possibilities, not just for themselves, but for the human race. It is the core value of gifted education to push learners to be trail-blazers rather than merely followers or good lesson learners, to take risks and capitalize on uncertainties rather than play safe, to encourage learners to find their passion rather than following the conventional pathways to success.

As a relevant anecdote, I had the opportunity to visit a selective science high school in New York City. Over 70 percent of the students were Asian American, who had obviously been admitted to the school through highly competitive scores on a city-wide admission test involving mathematical and verbal skills. The principal of the school, a Chinese American, candidly told me that she was concerned that many Asian students (mostly second-generation immigrants) were too narrowly focused on academic study, too 'obedient' (e.g., afraid of asking questions, even voicing different perspectives), and lacking in personal initiative to pursue their own passions.

Understandably, many countries, like China and India, straddle the industrial and post-industrial ages, and parents likely feel torn between treating the education of their children as a means to getting ahead and moving up, or finding meaning and happiness from what they learn and what they can be. The competition for limited educational resources and for getting ahead is more prominent in Asia than in European and North American countries (see Neihart & Tan, 2016). Cultural traditions in Asia further fuel such competition (consider the 'Tiger Mom Syndrome', characterized by the psychological control parents use to push their children; see Ng, Pomerantz, & Deng, 2014).

To be sure, this kind of shifting focus from developing desirable personal qualities to treating education as a means of financial security and success is not confined to Asian countries and cultures. In the United States, such a trend also exists. Yang (2014) lamented the tendency in the United States to treat education as a pathway to quick money and financial success rather than to having a spirit of entrepreneurship and a vision of how to make a difference in the world. Yang called for restoring a culture of innovation, a tradition that helped produce Bill Gates, Steve Jobs, and Elon Musk, among many others.

We should also point out that on a positive note, the zeitgeist in Asia is changing in favor of building a culture of innovation. Economically it is happening in India, Mainland China, and many other countries. Based on the 2016 Global Innovation Index (website: https://www.globalinnovationindex.org/), Switzerland, the UK, Sweden, the Netherlands, USA, and Finland ranked numbers 1–6, and several

Asian countries (Singapore No. 7, Hong Kong No. 11, South Korea, No. 14, Japan No. 19, and Mainland China No. 29) are among the second-tier economies in innovation. E-business, spearheaded by Alibaba, epitomizes the change. A change of culture is slowly but surely trickling down to education. In the global scene of education, Asian students undoubtedly shine, particularly in science and technology. A case in point is the *Intel Science Talent Search*, held annually in the United States. Each year, about 1700 high school students enter the competition for 18 categories of science by submitting their scientific papers (empirical or theoretical), 300 semi-finalists are selected for interview, and 40 finalists are selected to enter the final round of the competition for more than one million dollars of college scholarship. These finalists are labeled 'the innovators of the future'. In my count of the finalists in the last three years (2014–2016), 59 percent of the finalists are of Asian descent (most of whom are of Chinese and Indian origin), compared to a population base of only 5 percent in the US population (data source: https://student.societyforscience.org/intel-sts-2016-finalists). A majority of these Asian students are second-generation immigrants. An educated guess is that they bring together the best of two cultures.

RESEARCH AND VISION OF GIFTED EDUCATION

In the VISCAR Model, the component of Research, broadly defined, occupies a unique place. In a sense it is part of the education infrastructure because it relies on institutional support from universities, government, and funding agencies. However, as the 'brain' of the system, it serves an overarching role of orchestrating the endeavor of gifted education. Then, to what extent does research in Asian countries serve to develop, guide, and control the quality of gifted education in Asia? We can ask two questions regarding research: how much is the investment of social capital in an economy, and how much is the investment of intellectual capital?

Social Capital

Government priorities in education can change, and funding for research on gifted education is typically most vulnerable to economic downturns. For example, the federal government of the United States stopped funding Javits programs during the last world-wide economic downturn. In Mainland China, government funding for gifted education research and development (R&D) initiatives is more sporadic. The condition is better for other countries in which gifted education has legal status (e.g., Singapore, Turkey). In the United States, research on gifted education remains active not because the funding is sufficient (the opposite is the case) but because of the organizations and networks of university professors, various gifted education centers, and support from private foundations. The gifted education research community and apparatus could hardly hold without the organizational leadership provided by the National Association for Gifted Education (NAGC), with its social networks and journals and conferences, and to a lesser extent, by the American Psychological Association (APA).

Intellectual Vision

As I alluded to earlier, the key role of a university in gifted education is not merely providing practical services but also intellectual vision along with its expertise. Money is an issue when conducting extensive research, but often more crucial is the lack of intellectual capital investment (including the belief that research and theory do not matter). Comparing Turkey and Mainland China illustrates the difference. Turkey has a

distinct national policy on gifted education. Furthermore, gifted education as a distinct field of research has to date featured in 17 university departments nationwide, resulting in a total of 134 Masters theses, 47 journal articles, and more than 300 conference presentations. In comparison, in China, intellectual capital investment is fundamentally hindered for institutional reasons. There is no single graduate program in gifted education among more than three thousand universities and colleges; there is no single academic journal in gifted education, and very few professors specialized in gifted education. The reason is simple: gifted education is not recognized in the university system as a legitimate, interdisciplinary field of scholarship and research.

In addition, educational research has a short history in many Asian countries. The research apparatus in general is weak (e.g., in Mainland China; see Zhao, Beckett, & Wang, 2017). As a result, Asian countries tend to follow in the footsteps of Western traditions without doing strong groundwork of their own. With the momentum built up in Asia, we should anticipate developments of gifted education in Asia as a fertile ground for new theoretical insights, with conceptualization and methodology more suited to capturing the nature and development of gifts and talents. For example, Phillipson, Ziegler, and Stoeger (2013) used the Actiotope Model of giftedness to explain Asian experiences in gifted education. It is hoped that in the field of education in general, and gifted education in particular, East will meet West to create a synergistic power and complementary perspectives (Freeman, 2016; Phillipson & Phillipson, 2016), so that the East will make its share of theoretical and research contributions to gifted education. A precondition, of course, is that gifted education needs to take strong foothold in academia. Ultimately, to be viable, each country or region has to adopt a policy that reflects its educational priorities, and the need for research in this special area.

CONCLUSION

The rise of Asia as an economic powerhouse is an undeniable reality. Can Asia also lead the way in education with respect to developing extraordinary human capital by nurturing talent and fostering creativity? The answer is that it has to if it aspires to developing a knowledge and creative economy, and not just working hard, for which Asia is known to the world, but 'working smart'. Is Asia ready for the challenge? To be sure, the uneven economic and social developments both between and within Asian countries need to be reckoned with, and the implications for education policy understood. Specifically, for countries like China and India, the need for making education accessible to all and for making education instrumental in their economic and social development will coexist for a long time. For more developed economies, such as Japan, Singapore, Taiwan, and South Korea, the quality of education provided to each individual student will increasingly be a priority. It makes sense for more developed countries to adopt the 'Differentiation Paradigm' (e.g., Japan; see Matsumura, 2016) and for developing countries to adopt the 'Talent Development Paradigm' that better suits their needs (e.g., India; see Roy & Kurup, 2016). Both situations bode well for gifted education.

For the past century, the Western world has led the way in almost every regard, from the invention of automobiles, computers, and the internet to the cutting-edge of science, legal systems, and popular culture, and along the way produced numerous top scientists, scholars, artists, and entrepreneurs. Can Asia also rise to the occasion to become a hub for scientific breakthroughs, technological innovation, and creative problem-solving? We see both the assets and the liabilities of Asian cultures in this regard. We also witness that in some aspects some Asian countries are starting to lead the pack (e.g., arguably South

Korea), while others are still struggling to balance economic and educational priorities. Asian peoples are quite capable of hard work and producing stellar academic performance, as indicated by their performance on PISA and TIMMS. I argue that the creativity economy of the 21st century demands a cultural transformation of education worldwide (the way we think about the means and ends of education), and gifted education should be a force to promote such a change. A long-term vision is needed by the educational leadership at multiple levels to make committed efforts to nurture talent and encourage personal creativity, and to engage in sustained infrastructure and capacity building for that purpose. Whether the 21st century will be truly a Century of Asia is contingent on this endeavor.

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