

In Search of an Explanation for an Approach-Avoidance Pattern in East Asia: The Role of Cultural Values in Gifted Education

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Abstract

East Asian countries are touted as exemplary for high academic achievement. They ranked among the highest on PISA performance. PISA is used to serve as an international benchmark of how a country fares in supporting high-ability students and high academic achievement (Finn & Wright, 2014), but PISA performance has been consistently found to be negatively correlated with entrepreneurship (Zhao, 2012), suggesting that a high PISA score is associated with a low intent to engage in a more adventurous endeavour towards a career. To further understand the phenomenon, we used more recent data of PISA and Global Entrepreneurship Monitor (GEM), as well as two more global indices: Global Innovation Index (GII), and Survival vs. Self Expression, a cultural value measure. The results suggest that high PISA performance indicates a solid educational foundation for an innovation-driven economy. However, a PISA result is not, in and of itself, a good indicator of how innovative a nation is. Rather, cultural values significantly regulate how intellectual capital is channelled and used. We compare East Asian Countries and the most advanced western countries on PISA and cultural values. We further identify a set of values conducive to high academic achievement reflected in high PISA performance in these countries, such as prestige of academic accomplishments, work ethic, focus, and discipline (self-control), and long-

term perspectives. However, we also identify a set of values that impede a creative spirit: **credentialism** (education as a stepping stone to social success), **achievement through conformity** (following dominant social standards of success), and a preference for institutionalised pathways to success (avoiding non-conventional, high-risk endeavours). We analyse the psychosocial underpinnings of each of the three dimensions and argue that gifted education needs to embrace value systems that are conducive to nurturing what Renzulli calls “**creative productive giftedness**” rather than merely “schoolhouse giftedness.” We conclude that a gifted education aiming to produce a new generation of discoverers, innovative problem solvers, and creative designers, entails a change of culture.

Keywords: PISA, credentialism, cultural values, intrinsic motivation, creativity, achievement

The aims in this chapter are that:

1. although high PISA performance in East Asian countries indicates a solid educational foundation for an innovation-driven economy, it is not, in and of itself, a good indicator of how innovative a nation is;
2. cultural values significantly regulate how intellectual capital is channelled and used;
3. a significant downside of East Asian values is a view of education as instrumental for social success rather than self-discovery and self-fulfilment;
4. the benefits and deficits of outstanding academic performance of East Asian students as evidenced by the international comparison data will be delineated; and
5. gifted education which seeks to produce a new generation of discoverers, innovative problem solvers, and creative designers entails a change of culture.

Introduction

The Programme for International Scholastic Assessment (PISA) is a test developed by the Organization for Economic Cooperation and Development (OECD) to assess middle school graduates’ (aged 15) academic achievement in terms of mathematic reasoning, scientific reasoning, and reading. More than 72 countries and regions participated in this test in 2015 (OECD, 2018). High performance on the PISA, by students from East Asian countries, along with other international comparison data (e.g., Trends in International Mathematics and Science Study or TIMSS; see NCES, 2015), has recently drawn a great deal of attention from policy makers and school leaders worldwide (e.g., Benavot & Meyer, 2013; Carvalho & Costa, 2015).

The fact that significantly larger portions of East Asian students excelled on these tests are touted as an education success, equivalent to what is expected of gifted education in terms of academic excellence (Finn & Wright, 2015; Phillipson, Stoeger, & Zielger, 2013). In other words, we can equate standardised achievement as a benchmark of academic excellence, equally applicable to gifted education. On the other hand, concerns have been raised as to whether such high academic achievement is reached at the cost of individuality and creativity (Zhao & Meyer, 2013).

In this context, we aim to carefully evaluate the proposition that international comparisons of academic excellence as indicated by PISA can be used to benchmark education success, and that success indicated by PISA for a nation or region is equivalent to the success of gifted education. For the purpose of this chapter, we broadly define gifted education as any school provision gearing toward high-level excellence in school, particularly in academic domains. We start with an observation of negative correlations between PISA performance variations across nations and a national index of entrepreneurship, and end with arguments that the outstanding showing of PISA by East Asian students is a mixed blessing, and that the success of gifted education should be better indexed by enhanced creative productivity and achievement with authentic tasks than standardized tests.

An Approach-Avoidance Phenomenon in Focus

Zhao and Meyer (2013) identified negative correlations between PISA national averages and entrepreneurship indexes, namely, social values, perceived capabilities, and levels of entrepreneurial activity. As shown in the following plots, a nation scoring high on PISA tends to have lower scores on entrepreneurship as indexed by perceived competence, social value, and

early engagement in entrepreneurial activities. Although the more recent data (Figure 1, the second plot) show a weaker correlation compared to the earlier data (the first plot), the patterns are consistent over time. What do these results mean exactly? Does it indicate a distinct approach-avoidance tendency— which is a conflict that occurs when making or avoiding a decision that has either positive or negative connotations—for example, in this context a preference for high achievement in academic success as compared to an avoidance tendency when it comes to pursuits of presumably more risky entrepreneurial activities?

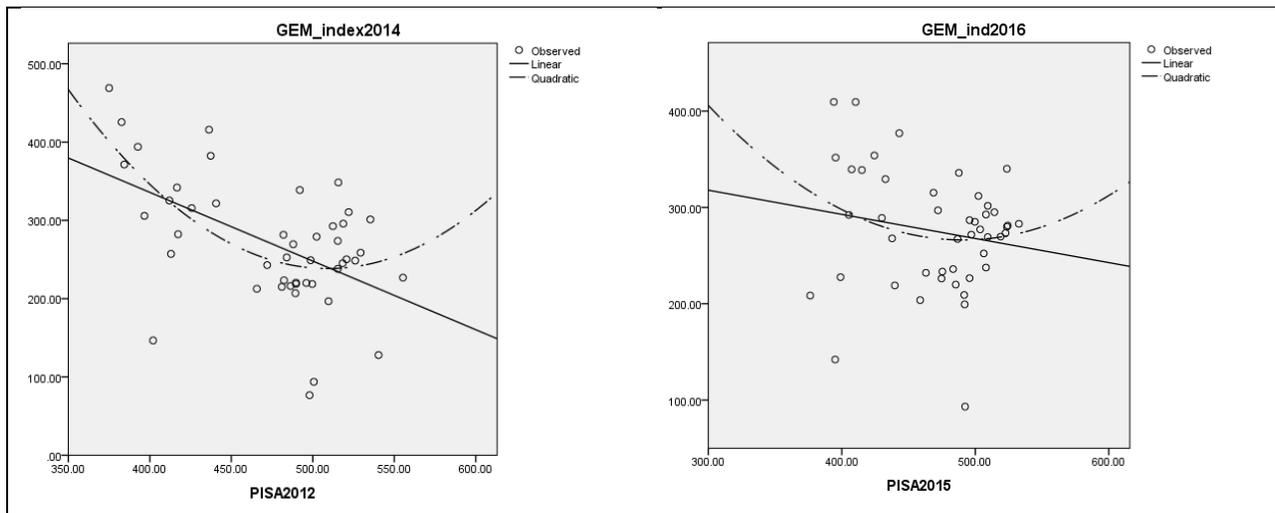


Figure 1. Regression of Global Entrepreneurship Monitor (GEM) index on the national sum of three PISA subtests, showing a consistently negative relationship.

Before we discuss the results of the findings in our research, a brief introduction to measurements we used and caveats related to these measurements are warranted. Programme for International Scholastic Assessment reports are issued every three years by the Organisation for Economic Cooperation and Development (OECD). The most recent PISA report was issued in 2016 on the 2015 assessment. In addition to math, science, and reading performance, the 2015 assessment added a new test of *Collaborative Problem Solving*, that aimed to assess students’

ability to use knowledge and skills in solving practical problems. The *Global Entrepreneurship Monitor* (GEM, 2018) report is issued annually based on survey results from more than 70 countries and regions on a wide range of issues regarding opportunities for entrepreneurship and self-perceptions of competence and values.

To further clarify the high PISA-low Entrepreneurship pattern, we expand our investigation beyond these two indices to include two more indices: The first is the Global Innovation Index (GII; Dutta, Lanvin, & Wunsch-Vincent, 2018), which provides rankings of 141 economies (as well as a wide range of innovation indicators) regarding levels of advances in an innovation-driven economy. The second is the Survival vs. Self-Expression (SSE) ratings that are issued by the World Value Survey (WVS) association (Haerpfer, 2018). The GII indicates how advanced a particular nation or region is in its technological and economic development, while the SSE indicates whether a nation (or culture) overall leans toward a “survival” orientation or “self-expression” orientation in its value systems. The survival orientation gives priorities to economic and physical security and success and shows low level of social tolerance. The self-expression orientation gives priorities to political participation, environmental protection, and shows high tolerance for diversity.

A distinct advantage of selecting these measurements is that they provide a common basis or scale for comparing nations or economies. International comparison data provide a macro-level perspective that cannot be obtained otherwise. However, precisely due to the nature of such large-scale comparisons, caveats are in order that these countries or economies are by no means homogeneous. First of all, aggregating information to make an international ranking is always a simplification exercise at the cost of nuances and within-nation (i.e., within-group) variance (Carvalho & Costa, 2015). Second, context matters in determining what specific ratings

exactly mean. For example, GEM categorises all economies into three development levels: the factor-driven economy is more agriculture-based, heavily relying on natural resources for subsistence; the efficiency-driven economy features more production-based activities with increased product quality; and, as development moves to the innovation-driven phase, business becomes more knowledge-intensive, and the service sector of an economy expands greatly. Thus, given different levels of economic development, entrepreneurship may mean different undertakings under different economic and technological conditions. By the same token, comparable aggregated PISA scores at the national level may reflect different educational and social-cultural contexts.

With this caution in mind, we first present a set of correlation and regression data that show interesting patterns and regularities regarding how national (or regional) average performance on the PISA is related to economic development and value systems. We then compare East Asian countries and regions with several top-ranked innovation-driven economies on the relevant measures to highlight important differences between the two groups.

Correlation Patterns Between Each International Measure

There is a strong positive correlation ($r_s = .80-.83$; see Table 1 below) between PISA and Global Innovation Index (GII). Note that relationship may not be causal, in that a country can be strong or weak in both aspects of development; a third variable (say, national resources). It should also be noted that GII uses PISA scores as an input variable. Therefore, this correlation is partly a correlation with PISA itself. Nevertheless, it is safe to assume that a strong education foundation is important for any innovation-driven economy, which relies heavily on knowledge capital. We can further assume that national average PISA scores likely reflect a host of

economic, social, and cultural factors, such as national policy and priorities, educational resources and infrastructure, investment on the part of schools, teachers, parents, and students (see Benavot & Meyer, 2013). Beyond the normal range, extremely high PISA performance shown in some East Asian countries likely indicates a broad-based cultural phenomenon (Feniger & Lefstein, 2014). For example, Shanghai ranked first in the 2012 PISA; 55 percent of the participants belong to high-performing groups (Levels 5 and 6), compared to only 9 percent for the United States. Such great showing of academic achievement, however, does not automatically make a country more “innovative.” As the quadratic function of the relationship (see Figure 2) suggests, beyond a threshold point, the positive correlation between the national average PISA and the innovation index diminishes; high innovation economies seemed to be clustered around the PISA score of 500, but not higher. This is further confirmed by calculating combined PISA scores of the top five GII countries (see Table 2).

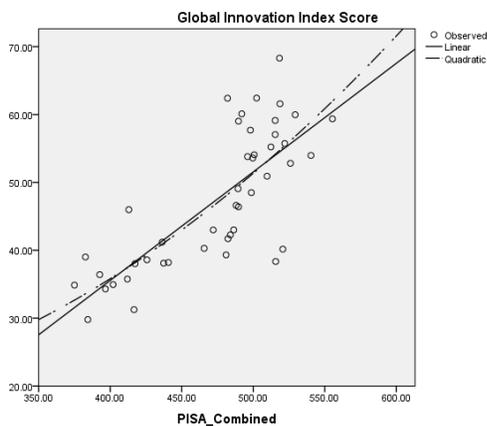


Figure 2. Regression of Global Innovation Index on PISA-Combined.

Table 1. Inter-correlations of PISA2012, PISA2015, PISA2015 Collaborative Problem Solving (CPS), Global Innovation Index (2015), and Global Entrepreneurship Indices (GEM2014, GEM2016)

Variables	1	2	3	4	5	6
1. PISA 2012	----					
2. PISA 2015	.95**	----				

3. PISA2015_CPS	.94**	.96**	----			
4. Global Innovation Index (GII)	.80**	.83**	.89**	----		
5. Survival vs. Self-Expression (SSE)	.34*	.43**	.42**	.61**	----	
6. GEM Index2014	-.53**	-.50**	-.36*	-.40**	-.14	----
7. GEM Index2016	-.26	-.18	-.13	-.13	.20	.90**

Note: Ns = 42-63. ** p. < .01, * p. < .05.

PISA2012, PISA2015 combined math, science, and reading scores.

PISA2015_CPS = PISA2015 Collaborative Problem Solving.

GEM Index = Social Value + Perceived Competence + Intention/Early Engagement

Table 2. Comparison of East Asian and the most innovative countries on four Indices

Economies	GII	SSE	PISA2015	GEM2016
Singapore	59.36	N/A	555.33	230
Hong Kong	57.23	.10	532.67	283
South Korea	56.23	-.60	542.67	269
Japan	53.97	.40	528.67	190
China (BSJG)	47.47	-1.00	514.33	295
Taiwan	N/A	-.60	523.67	280
Switzerland	68.30	1.49	506.33	252
UK	62.42	1.50	499.67	285
Sweden	62.40	2.30	495.67	286
Netherlands	61.58	1.45	508.00	292
USA	60.10	1.30	487.67	335
Finland	59.97	1.40	522.67	273
Australia	55.22	1.90	502.33	311

Note: for comparison purposes, Australia is listed along with the top-ranked countries in GII.

GEM is calculated by summing up items indicating social values, perceived capabilities and intentions, and levels of engagement of entrepreneurial activity.

Figure 3 below shows a distinct positive correlation between GII and survival vs. self-expression (high innovation is related to high self-expression). It should be noted that if PISA reflects a country's overall resources and investment in education, Survival vs. Self-Expression (SSE) represents an overall value orientation. Using Maslow's (1970) hierarchy of needs, those

countries that value self-expression tend to value higher-level growth needs, whereas those leaning toward “survival” tends to gear toward lower-level “deficiency” needs and material and social success (i.e., the need to get ahead).

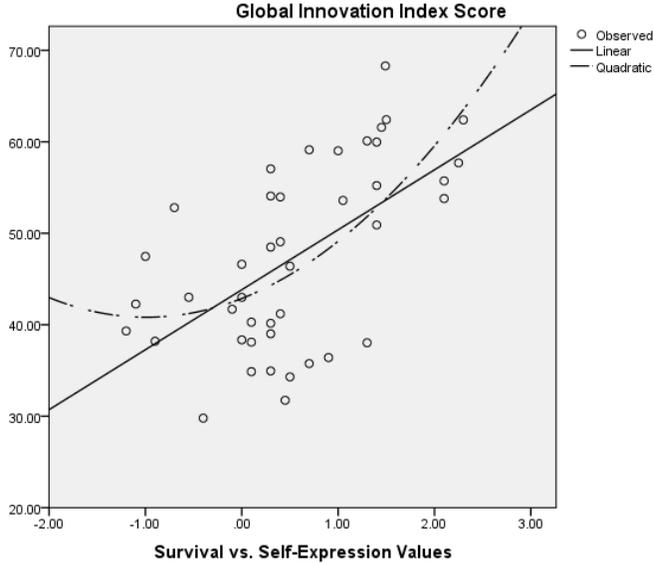


Figure 3. Regression of Global Innovation Index on Survival vs. Self-Expression

Again, we don't know whether such a correlation indicates a causal relationship between self-expression values vs. survival values, and a nation's level of innovation as indicated by GII. For example, it may be that more innovation-driven economies tend to be those countries that hold more individualist and liberal values, hence the endorsement of self-expression more than mere survival. Alternatively, it may also be due to levels of economic and social advances; thus, people in developing countries are more likely to endorse the survival value of personal endeavour and socially less tolerant, while people in developed countries are more likely to be concerned over long-term well-being, such as environmental protection. At any rate, for economic as well as cultural reasons, when people operate on a “survival” mode, they are collectively more likely concerned with efficiency than innovation. As shown in Figure 2, cases of low-to-median self-expression scores are noticeable for some East Asian countries known for

high PISA performance—for example, China, Taiwan, Hong Kong, Japan, and South Korea—further reinforcing the conjecture that low self-expression value and high survival value are behind the distinct approach-avoidance pattern found in East Asian countries discussed earlier (Figure 1). In the WVS mapping of values, many East Asian countries fall into the category of the broadly defined Confucian culture, with their value systems leaning toward survival rather than self-expression, secular rather than religious concerns. We can argue that as a country transitions from an efficiency-driven economy to an innovation-driven one, its value system also needs to change from a survival mode to a self-expression mode. However, given that any long-held cultural tradition has some inertia, a survival mode or way of life can become an obstacle to the development of an innovative spirit in its people as the approach-avoidance tendency indicated in Figure 1 seems to suggest.

Profiles of East Asian and the Most Advanced Countries in Innovation

As shown in Table 2, East Asian countries and regions ranked lower in Innovation (GII) compared to the most advanced countries, and their rankings on GII are comparable to that for Australia. Together, they can be seen as second-tier, innovation-driven economies.

In addition, ratings of East Asian countries and regions on the value dimension of Survival vs. Self-Expression (SSE) are consistently lower (i.e., less self-expressive and more survival-oriented). Corresponding to the data in Table 2, in the upper-right quadrant of Figure 3, all top innovation-driven economies have GII values above 1, effectively excluding all East Asian countries and regions in Table 2, although their PISA performance is consistently higher than those for those western countries that ranked top on the GII. This contrast is paradoxical, given that both PISA and SSE are highly correlated with GII. This apparently bewildering pattern of results becomes more understandable when we consider distinct East-West differences

in value orientations (see Table 2). A closer investigation of the PISA-GEM patterns indicates a sharp contrast between East Asian cultures (high PISA and low GEM) and Latin American cultures (low PISA and high GEM). While PISA clearly indicates a level of educational preparedness for an innovation-driven economy, it is the value of individualism (and consequently creativity) that provides an innovative edge to an economy (Runco, 2010). The value differences also partly explain, for instance, why Singapore and Japan ranked quite high on PISA, but scored quite low on GEM (see Table 2), a distinct example of the approach-avoidance pattern, which is of central interest to this chapter.

Summary. To sum up the findings of national indices of academic performance, value orientation, and economic status, it seems that academic achievement is clearly important as part of the intellectual capital for an innovation-driven economy. However, the findings also suggest that valuing self-expression and willingness to take risks for that purpose can also be a very important underlying cultural value that helps sustain innovative endeavour. Although the pattern of intercorrelations of these national indices is complex, the data point to the importance of creating a culture of innovation conducive to the viability and sustainability of an innovation-driven economy. In the following section, we provide a more in-depth analysis of the underlying impetus for the East Asian countries' phenomenal PISA performance, and explain why it does not provide a viable model of gifted education for other countries to follow. Our main argument is that gifted education should be concerned with values as they determine what are deemed as desirable goals and outcomes.

Asian Values Reflected in Educational Preferences

To fully unpack the complexities of the results presented in the previous section, it is necessary to dig deeper into a set of “Asian values” behind the high PISA performance of East Asian students. What makes East Asian students so successful? A common explanation for the academic success of East Asian countries and regions is that these cultures show a strong preference on academic achievement as a pathway to social success (Cheng, 2011; Schleicher, 2018; Zhao, 2014; Zhao & Wang, 2018). Confucianism is clearly part of influences given its time-honoured tradition of encouraging the intellectually able to pursue careers in civil office (學而優則仕: “Academic excellence is an essential credential for civil office”), which has been seen as the most honourable and prestigious occupation (Zhao, 2014, 2016). Another explanation is that Asian cultures value *long-term orientation*, defined as the tendency toward setting long-term goals, persistence, and personal stability (see Minkov & Hofstede, 2012). However, a broader cultural perspective suggests that gravitating toward academic excellence as a pathway to social and personal success involves deeper value commitments reflected in the dimension of pursuing self-expression and self-cultivation (individualism) vs. securing social success as defined by societal norms (collectivism) (Zhao, 2014).

Yu (1996) identified two contrasting patterns of achievement motivation, Social-Oriented Achievement Motivation (SOAM) and Individual-Oriented Achievement Motivation (IOAM); he characterised the former as a tendency to “reach an externally determined goal or standard of excellence in a socially approved way”, reflecting “strong social instrumentality and weak functional autonomy” (pp. 234–235). The two motivation patterns differ on goals, behavioural patterns, outcome evaluation, consequentiality, and overall characteristics. Yu considered SOAM to be more dominant in Eastern cultures, and IOAM as reflecting a Western individualistic orientation. This way of framing the East-West differences in achievement

motivation slightly varies from the survival vs. self-expression contrast, but consistent with the latter is its emphasis on whether the ultimate concerns are competition and social success or personally defined excellence and personal concerns that go beyond self-interest.

For the purpose of elucidating educational implications from the differences in achievement motivation patterns, we identify three distinct characteristics of East Asian values, that are: credentialism (Wu & Kuo, 2016), achievement through conformance rather than personal excellence (Yu, 1996; Zhao & Meyer, 2014), and non-risk taking preference for institutionalised education.

The first characteristic is the enormous energy and time invested in building academic and other credentials to ensure social success, that is called credentialism (Wu & Kuo, 2016). Education itself does not mean much beyond a stepping-stone to social and material success. The frenzy of academic competition in East Asia not only leads to academic burn-out for many students, but also does so at the cost of the individuals' interest development and internal drive and desire for personal excellence (Cheng, 2011; Zhao, 2014, 2018).

The second characteristic is relying on prevailing social norms and standards in defining excellence and success, namely, achievement through conformance rather than pursuits of personal goals that help achieve personal excellence and autonomy, a point emphasised by Yu (1996) and Zhao and Meyer (2014). It is not that these norms and standards are wrong, rather, when they become fads, so to speak, individual interests and goals that do not align well with them are suppressed, to say the least. Moreover, education becomes a race against these norms and standards rather than engaging and inspiring students personally.

The third, and last characteristic is a preference for institutionalised training and education, rather than ill-structured, uncertain, "risky" tasks for which no clear path to success

can be well defined nor secured. A distinct example besides academic pursuits is music training and education. Careers in classical music are vigorously pursued by East Asian parents, not because it is easy (think of the extremely competitive nature of places such as the Julliard School or Ivy League universities), but because it is highly institutionalised, with a finite repertoire and well-charted pathways to success, despite the entailment of enormous dedication and personal and family sacrifice (Sue & Okazaki, 1990).

These values reinforce and are reinforced by the educational institutions and practices in East Asian countries. Systems of high stakes exams, for example, are the hallmark of East Asian education, dating back to Ancient times but still alive and well (Zhong & Wu, 2007). These systems exist because they are deemed necessary for granting credentials, sorting individual students according to predetermined norms, and ensuring compliance. These exams function as a gateway to progression in the education system and thus are closely aligned with centralised and uniform definition of success codified in national curriculum and standards. The exam systems have been credited as a major contributor to the high academic performance of East Asian students (Schleicher, 2018; Tucker, 2011). But at the same time, they reinforce the idea that education is to help individuals achieve success as defined by external agencies, rather than the individual (Zhao, 2018).

Zhao and Meyer (2014) explored the approach-avoidance pattern of academic vs. entrepreneurial achievement motivation and concluded that the spirit of entrepreneurship will suffer under the collectivist pressure for conformity. We further argue that the above characteristics of achievement orientations undermine intrinsic motivation, personal creativity, and individual development, which would otherwise lead to a more personally gratifying career. This is what Zhao (2018) calls the side effects of education. That is, education values, practices,

institutions, and policies—like medical products—can be effective in resulting in both beneficial and harmful outcomes.

Why Values Matter for Gifted Education

In light of the potential side effects of education (Zhao, 2018), we need to consider the role of the East Asian values for gifted education. It seems apparent that East Asian education is capable of producing academic excellence, at least as measured by international assessments such as PISA and TIMSS (e.g., Phillipson, Stoeger, & Zielger, 2013). It is equally apparent that East Asian education under the influence of these values can potentially suppress qualities essential for entrepreneurship and innovation at the same time (side effects discussed earlier; see Zhao). If this holds true, policy makers and practitioners need to ask the tough question: is the academic excellence worth the cost of entrepreneurship and innovation?

Renzulli (1986, 2005) distinguished between schoolhouse giftedness and creative productive giftedness; the former refers to excellence demonstrated in academic studies and basic skill development, and the latter refers to excellence demonstrated in creative problem finding and solving in authentic contexts. We can argue that gifted education involves developing both aspects of giftedness. Indeed, in a way the high correlation between the PISA and the Global Innovation index at the national level (see Figure 2) alludes to connections between the two, as we mentioned earlier. However, we argue that creative productive giftedness, in the form of generating new and useful ideas and products that can potentially make a social impact, is more essential to gifted education in that one of the purposes of gifted education is to prepare youth for solving pressing problems in the world (Renzulli, 2005).

In light of the vision of gifted education proposed above, we argue that the East Asian values articulated in the previous section is not compatible with the spirit of gifted education. For one, evoking interest and passion should be part of the focus of gifted education; however, credentialism is the core value that downplays the importance of intrinsic motivation and makes education only the means to an extrinsic end, and thus less personally meaningful (Yu, 1996). For another, gifted education is expected to encourage critical and creative thinking, and cultivate one's distinct strengths and interests (VanTassel-Baska & Brown, 2007); however, going after common norms and standards of social success makes one's individuality secondary (e.g., preferring survival over self-expression values), even undesirable. Finally, gifted education that is meant to promote creativity should encourage non-conventional careers and more adventurous endeavours, such as entrepreneurial activities, whereas East Asian values prefer convention to innovation (Yu, 1996). Studies (Yue & Rudowicz, 2002; Yue, Bender, & Cheung, 2011) show that college students in China are more likely than their German counterparts to name people in power as "creative" and less likely to identify personal characteristics, such as artistic sensitivity and a sense of humour as associated with creativity. Such implicit conceptions of creativity further reveal the salience of a utilitarian orientation of Chinese culture (i.e., social status is more important than internal qualities) rather than an ultimate concern over self-actualisation (i.e., a mode of self-cultivation and expression of individuality).

It should be pointed out, while we view some East Asian values as impeding the cultivation of personal creativity, we by no means imply that they are unique to Asia or East Asia. For example, Young (2006) laments the fact that many college graduates in the United States aspire to finance, consulting, law, or medical careers out of a desire for financial gains,

social status, and prestige, rather than from a genuine passion or fit for a particular domain. He points out the necessity of restoring a culture of achievement through cultivation of a personal interest in innovation rather than conventional financial and material success. We argue that the general trend toward pursuing lucrative careers is even more acute for developing countries, where people are working hard to overcome the hurdle of the “middle income trap.” Ironically, while a critical transition from an efficiency-driven economy to an innovation-driven one (GEM, 2018) entails gifted education gearing toward developing creative potential, the deeply entrenched values permeating their educational traditions tend to stand in the way of such a transition, as our data indicate. Therefore, taken altogether, education is more about survival, status, and prestige, and less about personal passion and aspirations (Zhong & Wu, 2007).

In addition to values that underlie an innovative spirit in gifted education, there is another reason for cautioning against the overemphasis on schoolhouse giftedness or standardised tests such as PISA as an international benchmark for academic achievement and excellence. In an increasingly innovation-driven world, mastering the past does not necessarily translate readily to creating the future. What we consider talent in the past may not be as important today; what we consider precious talent may be replaced easily by artificial intelligence in the foreseeable future (Zhao, 2012). Gifted education has to be more mindful of preparing young generations of leaders and innovators, who are adaptive and life-long learners, capable of dealing with an ever-changing world with many degrees of uncertainty, and who are maintaining an innovative spirit (Jeff Bezos or Sheryl Sandberg come to mind).

More specific to gifted education, we may think of two alternative prototypes of talent development: maker space and classical music training. Which one is a better model of gifted education for the future: *maker space*, that is, creating the unknown; or *classical training*, that is,

mastering the well-known? Our response is that *maker space* represents a better way of thinking about a future-oriented gifted education in that the focus of our education is not just to master the things we already know (e.g., a classic repertoire researched for centuries), but explore things we don't know or have not yet mastered (Dai, 2016). We want to prepare the younger generations of individuals who know how to create a better future through innovation as well as preserve the precious past in this fast-changing world. Anecdotally, Asian students should not be merely “good students,” capable of absorbing lots of academic knowledge, but falling short of personal initiatives and pursuits of personal interests. Indeed, concerns about Asian students being “passive” in school were expressed by the former Principal of a famous science high school in New York City (personal communication). This school has a glorious history of having many alumni who became eminent leaders and innovators in scientific and technological fields (including several Nobel Laureates). Now that 70% of students in this school are Asian, can they still carry the legacy of creative edge if they are content with “schoolhouse giftedness”?

To be sure, many East Asian American students actively participate in research and creative work, as evidenced by the results of Intel Science Talent Search (ISTS, now taken over by Regeneron) in the United States. In the past several years, a disproportionately large group of Asian students have been semi-finalists or finalists for this academic competition (<https://student.societyforscience.org/regeneron-sts>). These achievements are not confined to the United States, or to competitions, but have extended to special classes for the gifted, and special schools for the gifted (e.g., Dai & Sternbergen-Hu, 2015). The question remains, however, as to whether they can have an equally good showing in technological innovation and entrepreneurship. Whatever the case, we argue that it takes a change of culture or values, not only in East Asia, but also across the world, to make gifted education more responsive to the

increasingly innovation-driven world. In this regard, the approach-avoidance pattern that starts this conversation is only a tip of the iceberg that warrants further investigation, clarification, and understanding both in the research and in practice (see Dai & Kuo, 2015 for a broader assessment of gifted education in Asia).

Implications and Conclusion

In this chapter, we discussed the benefits and costs of outstanding academic performance of East Asian students as evidenced by the international comparison data. Our main argument is that the high academic scores should not be taken as equivalent to achievement due to gifted education, as it indicates a value and motivation orientation, that is inconsistent with the spirit of nurturing individuality, independent thinking, and personal creativity. There are many implications for gifted education practitioners in terms of how educators and administrators can develop and manage their programs and services with this caution in mind:

- As we discussed earlier, treating education as the means to an end of social success is often at the cost of appreciating the intrinsic value of education for self-actualization. Gifted education in Asian and other countries runs the same risk, particularly when gaining a gifted status is like membership in an elite club coveted by many parents. We suggest that gifted education should take a more inclusive approach to involve those students who demonstrate their talent and the will to pursue their interests and cultivate their strengths. In other words, gifted education should operate like a talent incubator (inclusive and accessible), rather than an elite club (exclusive and confined to a few). The gifted-non-gifted bifurcation or categorical approach becomes problematic, as access is perceived as securing a ticket to social success rather than an opportunity to cultivate oneself.

- Historically, gifted education is characterised by two programming orientations: acceleration and enrichment. In the context of credentialism we discussed earlier, acceleration is clearly more appealing to Asian parents and students as faster always means better; the value of enrichment can be dubious from a utilitarian point of view, as exploratory activities often do not yield tangible advances and rewards as acceleration does, and even look like a waste of time. Indeed, acceleration of curriculum is often initiated by East Asian parents so that their children can gain a competitive advantage over and get ahead of their peers. Although acceleration is still a viable option (see Dai & Steenbergen-Hu, 2015), gifted education in East Asia will be better off without such an “ulterior” motivation for acceleration.
- When adopting a talent development approach (Dai, 2015), educators and parents should stress not just the instrumental utility value of specific education endeavours, but their potential for self-exploration and self-expression. This is particularly relevant when we try to raise career awareness to gifted students. Instead of following conventional pathways to success, non-conventional talent development should also be encouraged.
- In the spirit of creativity and innovation, gifted education should provide choices for students to explore their interests and individuality rather than dictate what they do. Students should be encouraged to take sensible risks and learn to deal with uncertainties and novelties as part of their endeavour, be it a scientific exploration or entrepreneurial venture. Choice often means self-initiative and self-direction, necessary qualities for sustained development of talent and creativity.

We live in a fast-changing world. How to educate our bright and talented minds to be more adaptive and innovative is the main challenge facing educators for the 21st century.

However, credentialism, conformity to societal norms of success, and a preference for

conventional or institutionalized pathways to success, which we identify in East Asian cultures, tends to hinder such development. We should be, therefore, fully aware of the role of cultural values, for better or for worse, in shaping one's motivation and life trajectory. These values may not be evident when international comparisons of academic performances are made, as in the case of PISA or TIMMS, nonetheless, they are important in gifted education. Although our argument is subject to further discussion and debate, we hope it serves as a cautionary note for equating standardised achievement as a benchmark of academic excellence, particularly for gifted education.

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INDEX:

PISA, entrepreneurship, innovation, cultural value, academic achievement, credentialism, achievement through conformity, and productive creative giftedness.