Global Dimensions of Gifted and Talented Education: The Influence of National Perceptions on Policies and Practices

Brian L. Heuser
Peabody College, Vanderbilt University

Ke Wang
Peabody College, Vanderbilt University

Salman Shahid
Peabody College, Vanderbilt University

Abstract

We examine recent research across countries and cultures in regard to the issues related to the formation of gifted and talented education perspectives, policies, and practices. Many modern cultures and subcultures have developed formal and informal definitions of what it means to be gifted and talented, and when we compare the perceptions, policies, and practices across nations, we discover very different constructs of intelligence and ability. These understandings of giftedness and gifted and talented education can be grouped into four binary dimensions, scholarly versus co-curricular capabilities, aptitude versus achievement, nature versus nurture, and individualistic versus collective, that have significant implications for policy and practice. These constructs can serve as a foundation for countries that are looking to formalize or expand their gifted and talented education models or can be used to challenge the norms of established systems. We put forward recommendations to address some of the challenges in advancing gifted education cross-nationally, an area that is often assumed to introduce risks of enlarging social inequity. We also provide a cross-national matrix that captures known elements of gifted education policies and programs from over 20 subnational jurisdictions, countries, and world regions.

Keywords

Comparative education, gifted and talented education, international education policy

Introduction

Well-established gifted and talented education programs offer the possibility of cultivating a society's most intellectually promising students into a source of exceptional human capital and creative capacity. But such programs, and the protocols that undergird them, are far from universally embraced. National, regional or provincial policies and practices that target gifted students vary significantly in the degree to

Corresponding Author
Brian L. Heuser, Peabody College, Vanderbilt University,
230 Appleton Place
Nashville, TN 37203-5721
Email: brian.l.heuser@vanderbilt.edu

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which they endorse, support and maintain such programs. In countries possessing stronger national cultures of egalitarianism, education policies are often geared toward avoiding academic interventions that could be regarded as forms of *intellectual elitism*. On the basis of various philosophies and learning theories, some of these systems, often citing compelling empirical evidence for their positions, strongly reject any notions that students should be stratified by ability. There are also systems oriented toward the assumption that only students with learning difficulties require additional forms of support to develop according to their ability (Resch, 2014). Whatever the rationale, the structural outcomes of such perceptions is generally either a profound under-development or outright dearth of formal, gifted education programs.

By contrast, in cultures and systems that embrace differentiated education for gifted students, an expanded diversity of programs is offered and they are typically constructed with greater programmatic refinement and pedagogical sophistication. Such programs may differ in terms of whether they are structured as enrichment to the regular school curriculum or as a separate system that operates in tandem to mainstream schooling, but their policies and practices generally prioritize a commitment to engaging learners from all ability levels with appropriately challenging curricula and instruction. These programs will differ in the particular learning content areas they address – and in the requisite selection processes required for participation – but they tend to emphasize domain distinct, cognitive needs of individual learners, rather than the collective. While it is not our goal to reconcile these competing positions, we do hope that this global review of gifted and talented education will advance an understanding of how strongly perceptions of giftedness influence policy and program formation.

Setting aside the robust body of cognitive science associated with the study of gifted and talented youth[1], *perceptions* of giftedness are largely culturally determined, inseparable from the norms, values, beliefs, and priorities of a people, as well as from the socio-historical and socio-political realities of a country or region (Davis, Rimm, & Siegle, 2010). As such, ways of identifying and nurturing giftedness – in addition to the social and political will to do so – can be considered as primary factors in studies of gifted education policies. Notably, minority and historically underrepresented groups in many countries have often been systematically omitted from the same identification considerations as majority populations. Such dynamics make studying the experience of these populations in gifted and talented education especially difficult. When thus contextualized, examining how different national systems approach (or avoid) gifted education can provide a basis for future policy and program development, implementation and evaluation.

For more than a generation, scholars have noted the diverse definitions and perspectives of giftedness across the globe (Gardner, 1983, 1993; VanTassel-Baska, 2005), and, in this paper, we aim to account for some of the differences in the perceptions, policies, and practices regarding gifted and talented instruction. As Ieridou and Zumwalt (2013) have observed, the meanings attached to the fundamental concepts and practices of gifted education reflect a dominant Western European history, worldview, and value system, as the field has been developed mainly in the United States and Western European countries. At the same time, it has been well argued that the strongest current advancement of gifted education is presently outside of these *Western* contexts (Ibata-Arens, 2012). In this paper, we make a concerted effort to represent as many countries as possible, and we incorporate perspectives from over 20 systems of education: Austria,

Beijing, Canada, Cyprus, England, Finland, Germany, German-Speaking Europe, Hong Kong, Hungary, Ireland, Japan, Korea, Lebanon, Mexico, New Zealand, the Netherlands, Poland, Shanghai, Singapore, Switzerland, Russia, Taiwan, the United States, the United Kingdom, and Zimbabwe. We also provide a cross-national matrix of available gifted education policies, program elements, and conceptual bases in these regions (see Appendix).

In an effort to put forward a more focused account of where systems currently stand in terms of their commitment to gifted education, our discussion is based on research articles published after the year 2000. In selecting our references, we gave priority to those that provide details on how giftedness is defined, identified, and developed within education systems, following what scholars in this field generally deem "a classical description of gifted education" (Gyarmathy, 2013). Most of available references in this area explore issues related to gifted education in a single country, while a select few spanned different systems or cultures. And while most of these articles used a *comparative lens*, we found little to no evidence of the utilization of rigorous, systematic, comparative methods.

Our methodology presents certain limitations. First, because priority was given to those articles that met our selection criteria, it is likely that some countries have been omitted, even though gifted education may be available in such countries. Second, as a comparative study of over 20 countries or regions, this paper cannot present all relevant observations, and, thus, we had to prioritize some of the most prevalent phenomena related to gifted education. Third, there are variations within many education systems in terms of their perceptions, policies, and practices related to gifted education as well as variations across education systems. In highlighting the latter, we were not able to address some of the more localized variations. Fourth, we prioritize the current status of gifted education over its history and development trajectory; however, in most countries, approaches to gifted education are rarely static and have experienced significant transformations over the past several decades. Despite these limitations, we hope to provide some meaningful insights into the consistencies and inconsistencies among perceptions, policies, and practices.

Four Dimensions of the Global Definitions of Giftedness

The research on gifted education provides an array of definitions of giftedness across countries and world regions, either through secondary analyses of government documents and regulations or through a review of papers based on surveys of local communities or local gifted program guidelines. The majority of the literature focuses on categorizing a culture's definition of giftedness as either cognitive excellence or exceeding in co-curricular areas, with the latter's referring to distinction in music, sports, arts, and, in some cases, soft skills, such as leadership, interpersonal communication, decision making, and even religious knowledge. Our survey of the literature will demonstrate, that, within this pool of conceptualizations of giftedness, several dimensions exist. Each dimension incorporates two somewhat contrasting concepts about what counts as giftedness. In what follows, we draw instances from specific countries and present these global dimensions of giftedness.

The first dimension, which is the most prevalent, involves defining giftedness as cognitive achievement and/or aptitude versus defining it as excellence in both academic and nonacademic areas, such as sports, music, arts, and soft skills. Most systems, whose numbers are increasing, conceptualize giftedness as exceptional acumen in multiple areas that include both academic and nonacademic subjects. Austria, Germany, Ireland, Hong

Kong, Hungary, Korea, the Netherlands, Poland, Switzerland, Taiwan and the United Kingdom have systems that conceptualize giftedness in this way (Casey & Koshy, 2013; De Boer, Minnaert, & Kamphof, 2013; Ibata-Arens, 2012; Gyarmathy, 2013; Limont, 2012; Mueller-Oppliger, 2014; O'Reilly, 2013; Resch, 2014; Tommis, 2013; Weilguny, Resch, Samhaber, & Hartel, 2013; Weyringer, 2013). Austria, for instance, embraces a multidimensional and dynamic conception of giftedness and talent. According to the Austrian government, giftedness is high performance in intellectual, emotional, social, and artistic fields as well as in sports. Being talented is viewed as a, "multidimensional and dynamic conception of giftedness and talent, encompassing a person's overall potential, which unfolds through lifelong learning and development" (Resch, 2014, p. 14). In this way, the development of giftedness is understood much more as an iterative process than static quality: it is shaped by the interactions between people's individual predispositions and the social cognitive influences embedded in nurture (Weyringer, 2013). Recently, both Hong Kong and Taiwan have moved from narrower interpretations of giftedness as superior academic excellence toward more expansive determinations that include multiple areas beyond cognitive achievement or aptitude (Chien and Hui, 2010; Ibata-Arens, K., 2012). In addition to conceptualizing giftedness as involving multiple areas of intelligence, these countries are beginning to perceive that giftedness is not necessarily equivalent to all-rounded excellence but, rather, can comprise more discrete distinction in a single area or cognitive domain. Such shifts signal that some of the perception barriers to giftedness are beginning to give way, and that policy makers are rethinking their educational strategies around talent development. The often-assumed exclusivity of gifted and talented programs may be changing accordingly, especially in those systems where people are driven by a belief that many students can excel in one single area out of the many that are incorporated into new conceptualizations of giftedness. In contrast to systems that hold a multidimensional concept, a fewer now hold the narrower definition, at least officially, that giftedness is simply exceptional academic excellence. This remains the case for Beijing and Singapore (Ibata-Arens, 2012).

A second dimension that emerges from a review of the relevant literature is that of giftedness as aptitude versus achievement. Systems that prioritize intellectual excellence as determinative of exceptional talent generally view giftedness as either a high intelligence quotient (aptitude) or as high performance on criterion based, curriculum-related standardized tests (achievement). Beijing, Hong Kong, and Taiwan rely predominantly on IQ tests to identify students with cognitive excellence (Ibata-Arens, 2012). The government of Singapore, in contrast, believes that only top achievers on curriculum-based standardized exams are eligible to be identified as gifted (Ibata-Arens, 2012). Although both kinds of tests are only proxies for students' academic talent, this difference indicates that systems vary in terms of how close their conceptualization of scholarly giftedness is to the existing curriculum used in the mainstream education system. Most systems, however, do not explicitly make a distinction between aptitude and achievement in their definitions of giftedness. According to Ngara (2006), the Shona and Ndebele cultures of Zimbabwe, for instance, regard giftedness as "an aptitude or outstanding ability" in various domains, such as leadership, spiritualism, resilience, and creativity.

Related to the contrast between aptitude and achievement is a third dimension of giftedness as nature or as nurture. Among those systems for which information related to this distinction is available, some believe that people

are born gifted, but more believe that giftedness is a result of an individual's predispositions as well as environmental factors conducive to developing the innate ability. The Shona and Ndebele cultures of Zimbabwe (Ngara, 2006) are an example of the former, while the cultures of Austria, Germany, and the Netherlands are examples of the latter, emphasizing the importance of nurture (De Boer et al., 2013; Fischer & Müller, 2014; Weilguny et al., 2013). In Germany, giftedness is defined as an individual's potential for outstanding achievement, and non-cognitive personality characteristics (e.g., motivation, work attitude) and environmental factors are both considered important in contributing to achievement (Fischer & Müller, 2014). Similarly, the Netherlands endorses the belief that talent, as a natural ability, needs to be developed and that the development of this talent depends on a strong, supportive environment. The Netherlands also embraces a pro-equity belief that every child has talent and can be outstanding in certain areas (De Boer et al., 2013).

A fourth dimension, although not as prevalent as the above three, is giftedness as associated with individualism versus giftedness as associated with collectivism. The Maori populations of New Zealand, for instance, value the collective, or belonging to the group, as integral to intelligence; as such, an individual's acting out of the ordinary may not be consonant with their understandings of giftedness (McCann, 2005). Although most systems struggle with varied notions of, and concerns for, individualism versus collectivism, the Maori argue that, because the source of genuine wisdom is the collective, individuals are dependent on the community for their attainment of intellectual ability. That said, and as we will discuss in a moment, this fourth dimension presents itself most dominantly (though also more subtly) in countries that simply refuse to adopt formalized systems of gifted education on the basis of ensuring various conceptions of social equity.

These four dimensions certainly do not capture all interpretations or understandings of giftedness across the globe; however, developing an exhaustive model is not our goal. Instead, we have created an adaptive framework based on existing literature that fits our selection criteria, hoping that future research on this topic can contribute to validating, critiquing, or adding to this framework for gifted education. In the remainder of this paper, we will demonstrate the usefulness of this framework for analysis by applying it to a review of the policies and programs related to gifted education. First, however, we would like to highlight three important aspects that have emerged from this review of the global definitions of giftedness.

First, these four dimensions are not mutually exclusive; rather, they can be viewed as four spectra, along each of which we can position a system. In other words, these dimensions represent four characteristics, or variables, that a single system can simultaneously embody. Second, some systems are wrestling with conceptualizations that fall between the anchor points of a dimension, and the distinction between defining giftedness as academic versus co-curricular excellence, aptitude versus achievement, and nature versus nurture are not clear-cut for these systems. For instance, Mueller-Oppliger (2014) has noted that, in Switzerland, although the majority of educators, boards of education, and cantons recognize giftedness as "multiple intelligences" (Gardner, 1984, as cited in Mueller-Oppliger) some school administrators continue to view giftedness from the perspective of academic and intellectual capabilities. Third, some countries, such as Finland and Norway, do not mention gifted education in their legislation at all. For these countries, understanding how giftedness is defined relies on an analysis of the practices and

programs relevant to gifted education; thus, understanding what counts as gifted in these countries relies on their implied definitions.

Gifted Education Policies and Programs

Despite a relative absence of strong international policy studies related to gifted and talented education, we were still able to observe consistencies and inconsistencies among perceptions, policies, and practices related to gifted education. The inevitable connotation of giftedness as associated with elitism demands that the tension between equality and differentiation take the center of analyses of gifted education policies and programs, which can lead to the intentional avoidance of formally defining and providing for gifted students in some countries. Nevertheless, even countries that do define giftedness are challenged to resolve this tension, particularly as it confronts policymakers. Cyprus and Japan are examples of history and culture's calling for a more egalitarian approach in the education system, which translates into an avoidance of special policies and programming for gifted students. As Ieridou (2013) explained, with Cyprus's strategic location and history of colonization, nurturing individual gifts and talents was not and cannot be a priority. During colonization, control over the native population was achieved through transmitting approved, specific skills to prepare the native population for their expected submissive roles. The native population, with minimal resources available, assigned to education the critical role of maintaining the cultural identity of the people and unity of the community. In a country whose political and cultural existence has been traditionally under threat, preserving democracy, homogeneity, and national unity are understood as being more vital than emphasizing differentiation and diversity.

Similarly, in Japan, gifted education remains largely an anathema, due partly to the strong cultural undercurrent that dedication to hard work trumps innate ability. Further, the notion of giftedness is strongly associated with elitism, as in pre-modern Japan, only the children of the samurai class and higher had access to education (Ibata-Arens, 2012). Nevertheless, Japan presents a more ambivalent case. Despite a mainstream culture that still tends to avoid elitism, the perceived need to remain internationally competitive through continuous research and development has led to a growing emphasis on a strong STEM education. The establishment of super science high schools and the selection of students for special learning opportunities, in response to the national cabinet's call for identifying and nurturing talents in science and technology, is inconsistent with the Japanese tendency to value egalitarianism and effort over heredity (Ibata-Arens, 2012; Sumida, 2013). Such policy shifts are highly nuanced, as the underlying motivation for creating and leveraging these new opportunities seem to possess a nationalistic quality: defending Japanese relevance in a new world order that is increasingly dominated by China, India and other developing economies.

In other cultures that also wrestle with the tension between the promotion of gifted education and the perception of encouraging inequality, we observed an effort to justify differentiation through a more egalitarian approach of emphasizing individualized instruction, in general, instead of advocating for individualization for the particular group of gifted students. For instance, in Austria, despite strong reservations about applying the label *gifted*, due to the negative connotation of the term *elite* in the post-Nazi regime (Ziegler & Stoeger, 2007), a variety of supportive initiatives for gifted students have been established in recent decades. The greater effort toward differentiation, however, is driven predominantly by an egalitarian approach of

emphasizing individualized instruction for all (Weyringer, 2013).

Tirri and Kuusisto (2013) argue that the Finnish education system can be viewed as highly developed in their approach to gifted education. Although it is not referred to as *gifted education* per se, an education program of differentiation is standard from kindergarten onward. This means that all children are educated according to their individual development and learning needs, which, according to Tirri and Kuusisto, is the core principal of gifted education. In both Austria and Finland, provision for gifted learners is, to some extent, achieved through an egalitarian approach of advocating that all students, despite their specific learning needs, need to receive individualized attention and instruction tailored to their development. As a counter to Tirri and Kuusisto's argument, what is missing from these cases is evidence that the systems' approaches to differentiated education address the cognitive, domain-specific learning needs of exceptional students.

Despite the challenge of reconciling the tension between promoting gifted education and promoting equality, some efforts demonstrate that these two goals are not necessarily in conflict. In 2005, a Korean program was undertaken to identify and educate gifted children from socioeconomically underprivileged backgrounds. These students were selected through tests that assessed their critical thinking, rather than through curriculum-based, subject-oriented tests, which are often thought to have a bias toward students of higher socioeconomic status (Ibata-Arens, 2012).

We also have observed the important role that policies can play in the translation of perceptions into practices, sometimes with unintended or inverse consequences. For example, poorly aligned requirements of certain policies, created out concern for social equity, might actually create practical limitations to the provision of more inclusive programs of gifted education. In the United Kingdom, for instance, formal policy guidelines define gifted learners as those who have the ability to excel academically in one or more subjects and talented learners as having the ability to excel in practical skills, such as sport, leadership, and artistic performance. However, the policy requirement of using a percentage-based identification strategy, which requests that schools place 5% to 10% of their students on a gifted and talented student register, appears to have been taken as encouragement to utilize test-based, quantitative measurements for creating gifted and talented cohorts in schools (Casey & Koshy, 2012; Koshy & Pinheiro-Torres, 2013). As a result – and related to the first dimension of our framework – although the education system of the United Kingdom appears more aligned with the concept that giftedness incorporates both academic and nonacademic excellence, due to poor policy design, gifted and talented programs currently do not reflect what the majority of people believe is giftedness and, instead, tend to promote scholarly success only.

Another example is Mexico, where, similar to the United Kingdom, education policies define giftedness as talent in a variety of areas. Yet, although some form of differentiation for gifted students exists within the regular classroom, programming for gifted learners is achieved predominantly through private institutions, advocacy groups and various associations. In this context, Harris and Sanchez Lizardi (2012) noted that private institutions that support gifted children require these children to have an IQ of at least 120 to attend, thus promoting only a singular aspect of giftedness. In this case, because private parties are predominantly the administering agency of gifted education, as permitted by the policies, the formal definition of what constitutes giftedness is not necessarily carried over into practice.

Globally, the provision of resources from external stakeholders – often business enterprises – plays a fundamental role in funding and administering programs for gifted students. Such investments are understood as being strongly reciprocal as they enable enterprises to cultivate and eventually funnel premier talent back into their organizations. In Saudi Arabia, Samba Bank, Saudi ARAMCO, Exxon Mobil, and Microsoft are directly involved with educational institutes in terms of organizing talent summer camps in science and engineering and funding targeted university programs (Aljughaiman & Grigorenko, 2013). In Finland, Nokia funds the advanced mathematics program at a private school, and the students are supported in skill development and training by the Nokia Research Center. Consequently, nearly 10% of the students who complete the program go on to work for Nokia after their graduation from college (Tirri & Kuusisto, 2013). Given the rising international competition for premium human capital, we anticipate that there will be a proliferation of such private programs in the near future, especially in countries where public support for gifted and talented education is less developed.

From Perceptions and Policies to Best Practices

Where national policy agenda setting and resource allocation intersect, advancing a sense of national relevance (even urgency) around talent development has proven highly effective in some instances. The National Defense Education Act of 1958, which can be considered the start of gifted education in the United States, is widely understood to have emerged in reaction to the Sputnik program of the Russian Federation, which sparked the Cold War and the superpower race to scientific programs. The Korean program for gifted education was brought into focus in 1997, shortly after their monetary crisis with the IMF, when the government realized it needed to deepen its commitment to developing higher levels of human capital (Ibata-Arens, 2012). Singapore determined that the number of gifted children in the country was insufficient for future growth and enacted a series of policies to attract gifted individuals through scholarships and other forms of encouragement to stay (Neihart & Teo, 2013). Their "guppies to whales" program attempted to identify outstanding students from Asian countries and to provide scholarships conditioned on a three-year work bond after graduation (Ibata-Arens, 2012). In Austria, as a result of the 1962 Law of School Organization, the uniform supply of educational resources to all nationals became an important benchmark for educational success (Weyringer, 2013). It was only in 2009 that a formal law, the General Decree on the Promotion of Giftedness and Talent, explicitly provided requests and guidance (although not legally binding) related to gifted and talented education (Resch, 2014). In response to increasing demands by parents and educators, the Austrian Research and Support Centre for the Gifted and Talented (ÖZBF) came forward with a systematic approach for the continuous development of gifted education (Resch, 2014).

Countries committed to gifted and talented education often try to balance social concerns for equity and educational purposes with appropriate methods and criteria for student selection. In Austria, the achievements of gifted education are highlighted by the link between training institutes, Nobel prizes, and Olympic gold medals (Weyringer, 2013). In Russia, approaches to identifying and supporting gifted learners include the matching of students to their interests and abilities through summer camps and educational Olympiads (Pomortseva & Gabdrakhmanova, 2015). The United States administers scientifically validated educational tests, which vary from state to state, that both parents and

teachers can initiate. Taiwan, Singapore, Korea, and many other countries similarly hybridize screening processes to include a combination of standardized tests and teacher evaluations of student aptitude (Han, 2007; Ibata-Arens, 2012; Neihart and Teo, 2013). In the most developed systems, the identification of gifted talent begins early with well-established criteria and processes, while other countries, especially those that remain reticent to fully embrace gifted education, continue to be content with less-formal approaches.

As we have shown, programs of gifted education can be developed in direct relationship to policies or they can emerge more organically, as permitted by policies. In either case, the crucial responsibility of implementation rests with the professionals within educational organizations. Most formally established gifted education programs require some degree of teacher training, knowledge exchange, and continuing education for the enhancement of pedagogy and instructional skills, but these do not always ensure the viability of such programs. While teachers, trainers, and education specialists execute programs of gifted education in accordance with their own level of training, their perceptions and dispositions can serve as important catalysts or barriers. A recent survey in Finland found that teachers were concerned about the negative side effects of creating special classes and arrangements for gifted students and were reluctant to do so (Tirri & Kuusisto, 2013). Similarly, in the United Kingdom, a significant number of teachers believe that since gifted students are in the minority, any expansion of gifted education programs would represent a waste of already scarce resources that could be dedicated to common improvements (Kasey & Koshy, 2013). Such perceptions, apart from whether or not they are accurate, inevitably shape the environment of the educational system and the priorities of educational staff.

Not surprisingly, the most prevalent challenges faced by those systems of education that have committed to gifted instruction include inadequate teacher preparation and lack of resources for working with gifted learners. To implement successful models of gifted education, schools must rely on teachers who are both properly equipped and appropriately motivated to engage with gifted and talented programs. And those teachers must be provided with rigorous tools and learning environments in which they can effectively teach. Sarouphim (2015) suggests that, for Lebanon to develop a successful program of gifted education, Lebanese universities need to prioritize the training of all educators to better understand concepts of giftedness in order to identify exceptional students. This suggestion mirrors a central recommendation of Casey and Koshy (2013), that gifted education in the United Kingdom must focus more on teacher development in order to increase knowledge of the appropriateness of gifted and talented education and how best to develop gifted learners. Along similar lines, Austria and Poland provide strong evidence for what seems to be a common training deficiency in many countries: topics related to tailoring instruction to gifted students are rarely addressed in teacher pre-service training (Limont, 2012; Resch, 2014; Weyringer, 2013). Further compounding these challenges of teacher preparation is the absence of good international data, that could be used for planning related to (1) the number of potential gifted students within national or regional systems and (2) teacher qualifications across various instructional domains of gifted and talented instruction.

As countries increasingly seek to gain competitive advantage in the global knowledge economy, expansions and refinements of gifted and talented education are bound to accelerate. The rising importance of discovery in all fields of scientific inquiry also suggests that national

priorities in emerging countries/economies will shift (or *continue* to shift) from the delivery of rote education in STEM fields to cultivating greater numbers of innovative and entrepreneurial minds. The likely accompanying drive to identify and train greater numbers of gifted students could prove to either advance gifted and talented education or dilute its relevance. On the one hand, the more resources countries invest in such programs, the more formalized, appropriate and sophisticated they could become. On the other hand, if education systems expand their practices and programs around overly broad gifted and talented criteria (beyond what cognitive science has determined as legitimately gifted), then there is a real risk that more focused and rigorous approaches to gifted education will be diminished. Genuine progress in advancing gifted education, then, seems to necessitate the incorporation of definitions of giftedness into education policies that are both scientifically accurate and socially responsive to varied national contexts. Doing so will also require consistent alignments between the formation of gifted education policies and the implementation of programs that respond directly to the pedagogical needs of gifted learners.

Notes

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About the Author(s)

Brian L. Heuser, EdD, MTS, is currently an Assistant Professor of the Practice of International Education Policy at Peabody College of Education and Human Development of Vanderbilt University. Professor Heuser is a former US Embassy Policy Specialist in the Republic of Georgia and currently teaches and researches in the fields of international education and human development, global health, and education policy.

Ke Wang, MEd, is a Research Associate with the American Institutes for Research in Washington, DC. She is a recent graduate of Peabody College of Education and Human Development with a masters degree in International Education Policy & Management.

Salman Shahid, MEd, is a graduate student in the Department of Leadership, Policy and Organizations at Peabody College of Education and Human Development. He is currently a masters candidate in the International Education Policy & Management Program.

Appendix

Cross-National Perception/Policy/Program Matrix for Gifted Education

Country/ Region	Definition/ Conceptualization	Administering Agencies	Programming for Gifted Students				Sources of Information
			Identification Mechanism	Tracking and Differentiation (by school, by class, in class)	Acceleration Allowed	Enrichment (in school or out of school/after school)Miller	
Austria	A multidimensional and dynamic conception of giftedness and talent: high performance in intellectual, emotional, social, and artistic fields as well as in sports; giftedness and talent are processes that result from the interaction between individuals' predispositions, their ability to shape their own development, and the influences of nurture.	Federal Ministry for Education, Art, and Culture; Federal Ministry of Science and Research; the Austrian Research and Support Centre for the Gifted and Talented (founded in 1999).	Yes. Most common is the nomination by a teacher or self-nomination with evidence of above-average school performance or high scores in psychometric tests.	Yes. Individualized instruction is generally emphasized. Recent decades have seen greater efforts to differentiate gifted from regular performing students.	Yes. Grade skipping; secondary school students are allowed to take university courses.	Yes. Schools are encouraged to provide special courses for gifted students, summer camps for gifted students, or Olympiads for math and science students.	European Commission (2006); Resch (2014); Weilguny, Resch, Samhaber, and Hartel (2013); Weyringer (2013)
Beijing	IQ 130+	Chinese Academy of Science.	Yes.	Yes. Gifted schools, clustering by class (the establishment of a "Shaonian" class), and in-class differentiation.	Yes. Most common is grade skipping and enrollment in universities at a much younger age compared to peers.	Yes.	Ibata-Arens (2012)
Canada	Definition is unclear from the source. According to the authors, where it has existed, Canadian policy in gifted education has been permissive, enabling decision makers at the school district or school level to determine who, how, and when special programming, including accelerative options, is offered.				Yes. Shown through policy analysis of all Canadian provinces and territories.	Yes.	Kanevsky and Clelland (2013)
Cyprus	No formal definition in the policies; but, culturally, the idea of celebrating difference in unity with the social group has been emphasized. It is also believed that each child has his or her unique talent.	None; silence and inaction among the Ministry officials.	NA.	No. Recent reform reinforces inclusive orientation, but there is currently no official acknowledgement of students with special gifts. Teachers are expected to use the single official textbook for each subject to teach the prescribed curriculum to their students. The given content that needs to be taught within a specific time frame and the high student-teacher ratio, with a single teacher as responsible for all students, make the situation more difficult and leave little room for differentiation.			Ieridou (2013)

England	Gifted describes learners who have the ability to excel academically in one or more subjects, such as English, drama, or technology. Talented describes learners who have the ability to excel in practical skills, such as sports, leadership, or artistic performance, or in an applied skill.	Frequent changes in policies and administering agencies.	Yes. Government's requirement of using a percentage-based identification strategy was taken to encourage use of test-based, quantitative measurements for creating gifted and talented cohorts in schools.	NA.	NA.	Enrichment outside the classroom (in school) was the predominant way of addressing provisions for gifted and talented pupils.	Koshy and Pinheiro-Torres (2013)
Finland	Finnish legislation does not explicitly mention gifted individuals, but it can be inferred from practices that the Finnish follow a multi-dimensional definition for giftedness: giftedness is excellence in academic and/or co-curricular areas.	Ministry of Education	Yes.	Yes. By school: special, highly selective upper secondary schools in Finland that feature art, sports, science, language, and IB, e.g., Päivölä boarding school for students talented in math and science.	Yes. Allowed by the Basic Education Act 1998. Children can enter schools earlier; upgraded schools allow pupils to advance in their studies within a flexible schedule.	Yes Out of school: classes and summer camps offered by university; students are allowed to earn university credits; the Millennium Youth Camp.	Tirri and Kuusisto (2013)
Germany	An individual's potential for outstanding achievement. Non-cognitive personality characteristics (e.g., motivation, work attitude) and environmental factors are both important contributors to achievement.	Non-governmental associations; nearly all German states explicitly include gifted education in their education acts.	NA.	Yes. Some states have special schools for gifted students.	Yes. Enrollment in university courses; early entry; grade skipping.	Yes In-school and out-of-school: competitions, academies, and summer camps; a network of schools offer additional classes for their gifted students.	Fischer and Müller (2014)
German-speaking Europe (Austria, Germany, Liechten-stein, Luxem-bourg, South Tirol, and Switzer-land)		An increasing number of governments have incorporated guidelines for educating the gifted into their laws and regulations.	NA.	Yes. For example, special schools in Germany	Yes. Early school entry; skipping grades; programs that allow groups of pupils to advance more quickly through selected subjects or to engage with university coursework.	Yes. Diverse in-school and out-of-school enrichment programs for gifted students.	Ziegler, Stoeger, Harder, and Balestrini (2013)

Hong Kong	Giftedness is multiple intelligence rather than academic excellence alone (Education Commission, 1990). Creativity is also recognized as a core virtue and a generic skill to be developed in the key learning areas of the curriculum, but there is little guidance as to how it should be implemented.	Hong Kong Academy for Gifted Education; reliance on provision from NGOs, tertiary institutions, social services organizations, private training agencies, overseas consultants, and education advocacy groups.	Yes.	Yes. Clustering by class; sorted into gifted schools; in-class differentiation (in-class differentiation is particularly emphasized).	Yes.	Yes.	Chien and Hui (2010); Ibata-Arens (2012); Tommis (2013)
Hungary	The official Hungarian concept of giftedness involves the interaction of important groups of properties: above-average general abilities, above-average special abilities, creativity, and commitment to the task or motivation. The National Council of Support for the Gifted adopted the following simplified definition in 2007: "Thus, individuals can be regarded as gifted if their excellent abilities—as a combination of the above four components—enable them to be capable of high-level achievement in some area of life".	Government—National Talent Council. Gifted education is a designated activity in the public education act; the government designated high priority areas in the 2-year action program for 2011–2012.	NA.	NA.	NA.	NA.	Gyarmathy (2013)
Ireland	Excellence in general ability, academic ability, creative thinking, leadership, visual and performance art, psychomotor ability, and/or mechanical ingenuity (Special Education Review Committee, 1993).	No legislation recognizes giftedness as a special education need.	Yes. Talent Search—inviting students to take above-level SAT.	NA.	NA.	No direct funding for schools to accommodate the development of gifted students; programs for gifted students are predominantly out-of-school.	O'Reilly (2013)
Japan	No official definition. The equivalent of the word *gifted* in Japanese, *sainou*, is associated with the belief that talent can be acquired through education and	Ministry of Education, Culture, Sports, Science and Technology (MEXT); Japan's cabinet has thus far approved	Yes. For the science high school.	Super science high school (a small number of students affected); no other formal tracking.	NA.	Out-of-school programs for students talented in science; Juku (private tutoring that offers students	Ibata-Arens (2012); Maksic and Iwasaki (2009); Sumida (2013)

	nurture. Other Japanese equivalents for the word *gifted*, however, imply that giftedness is what someone is equipped with at birth (Sumida, 2013). Giftedness is also often associated with *perfectionism*.	four Science and Technology Basic Policies. The third (2006–2010) and the fourth (2011–2015) were proposed to develop the individuality and abilities of gifted children.				advanced and/or accelerated learning opportunities in the form of early education, arts and sports education, and other forms of special instruction).	
Korea	Excellence in both academic and co-curricular areas.	National Research Center for Gifted and Talented Education, Ministry of Science and Technology, Ministry of Education; a total of 25 science-gifted education centers affiliated with universities have been established since the Law of Advancement of Gifted Education was enacted in 2000.	Yes. Teacher recommendations, aptitude tests, tests of creative problem-solving abilities in math and science, interviews, and scientific experiments. Of the school population, 4% are being served under the gifted education system.	Gifted high schools.	Yes. Special admission to universities for prizewinners from international science and math Olympiads.	Gifted classes as a pull-out program in regular schools; gifted education centers for primary and middle school students operated by universities and school boards.	Han (2007); Ibata-Arens (2012)
Lebanon	NA; a lack of a fundamental understanding of the construct of giftedness.	No. No mention of the education of gifted students in the law.	The country lacks measures and assessment procedures for identification purposes. Programs for the gifted are essentially nonexistent in the country. In Beirut, the capital, a few private schools that cater to students from high socioeconomic backgrounds offer some enrichment programs to high-achieving students. However, these programs are limited in content and scope.				Sarouphim (2015)
Netherlands	Cognitive talent as well as talent in music, dance, sports, arts, language, poetry, and so on. Talent as a natural ability that needs to be developed; the development of this talent depends on a strong, supportive environment. Every child has talent and can be outstanding in certain areas.	Department of Education, Culture, and Science.	NA.	Programming (differentiation within the classroom and by class within the school) for gifted students is a choice of the individual school.	Yes.	"Science focal points"—cooperation between universities and at least 20 primary schools, since 2010, to bring scientific research into the daily practice of the school; enrichment programs in school; pull-out classes; pre-university enrichment program.	De Boer, Minnaert, and Kamphof (2013)

Poland	Government and the public: The characteristics of a highly gifted pupil include a high intelligence level, creativity, and a strong motivation for learning. The pupil can display various abilities, such as linguistic, logical and mathematical, visual and spatial, kinaesthetic, musical, interpersonal, intrapersonal, scientific, existential, and spiritual.	Polish Ministry of National Education; Ministry of Science and Higher Education; Ministry of Culture with the support of subordinate institutions for artistic schools; universities.	Yes (before enrollment in specialized schools). Yes (the Academic Secondary School of Nicolaus Copernicus University has a multistage recruitment process that involves tests and analysis of previous achievement).	Yes. Mostly by school: specialized schools (music, visual arts, dance, or sports); the Academic Secondary School of Nicolaus Copernicus University (for academically gifted students—offers enrichment, ability grouping, mentoring, pro-social activities, and opportunities related to university-level coursework, seminars, and so forth).	Yes. Supported by education laws in Poland.	Yes. At the secondary level: interest clubs and additional classes; out-of-school enrichment programs; Olympiads, tournaments, and contests. At the tertiary level: individualized learning plans within the interdepartmental studies program.	Limont (2012)
Russia	Best and the brightest for the advancement of research in mathematics and physics.	Boarding schools that are independently managed in affiliation with universities of Moscow, Leningrad, Novosibirsk, and Kiev.	Yes. Applicants for the school first demonstrate competence by their performance in the mathematics and physics Olympiads. Most successful students are invited to a summer program at the school, followed by a final selection of students.	Yes. Tracking by school/specialized boarding schools.	NA.	Yes. Early enrollment in university classes, participation in mathematics clubs and problem-solving competitions, and active participation in regional and national Olympiad contests.	Evered and Nayer (2000)
Singapore	Exceptional giftedness is identified through four sources of information—a psychological report, achievement test scores, work sample, and teachers' recommendation.	Ministry of Education, Gifted Education Branch	Yes. Top 10% on achievement exams are eligible to take additional testing.	Yes. Sorted into special schools for domain-specific talents; clustering by class (school-based gifted program in which students follow a special curriculum and proceed directly to	Yes. Subject acceleration—student is placed at a higher grade level in a specific subject while remaining with his or her age cohort for other subjects; early primary	Yes. Camps, carnivals, field trips, and competitions in virtually all domains, with the goal to provide mentoring opportunities for students.	Ibata-Arens (2012); Neihart and Teo (2013)

				the university-qualifying exams or the IB Diploma); in-class differentiation.	school admission; grade skipping.		
Switzerland	The majority of educators, boards of education, and cantons recognize giftedness as "multiple intelligences": Musical, artistic, sports, and social abilities are promoted as well as academic abilities. Very few school administrations continue to view gifted education from the one-sided perspective of academic and intellectual capabilities.	Absence of a national strategy on gifted education, but all 26 cantons have developed their own policies for identifying and cultivating giftedness; most cantons also request each individual school to indicate its gifted education policy.	Yes. Thinking and learning styles as well as aspects of student motivation and self-concept are criteria for the selection. Screening is typically implemented in third grade classes and conducted by qualified experts.	Yes. In-class differentiation; ability grouping.	Yes. Early enrollment in university courses; curriculum compacting.	Yes. Pull-out programs, special resource rooms, and participation in competitions.	Mueller-Oppliger (2014)
Taiwan	Initially IQ 130+; Definition has broadened to include general intelligence, academic character, art, creative ability, leadership skills, and other specialties over time. In Taiwan, creativity is a national goal of education policy.	Chinese Association of Gifted Education.	Yes.	Yes. Clustering by class (based on intelligence, artistic talent, or athletic talent).	Yes.	Yes. Teachers put emphasis on curriculum design and teaching methodology but do not feel that they are in an environment that facilitates creative teaching.	Chien and Hui (2010); Ibata-Arens (2012)
United Kingdom	Policies encourage schools to consider the variety of gifts and talents demonstrated by pupils, including academic, sport, leadership, artistic performance, or in an applied skill. Some teachers had decided to ignore the policy requirement of making a percentage list of gifted and talented pupils and opted to use a strategy that focused on recording individual pupils' specific abilities and interests in different areas.	Gifted and talented coordinators at local and school levels are responsible for implementing the requirements of national gifted education policies; termination of national policy in 2011.	Yes. Prior to 2011, the policy stipulated that 5% to 10% of each cohort are to be placed on a gifted and talented register at the school; thus, educators predominantly used national or school test results.	Yes. Ability grouping in both primary and secondary schools for core subject areas; in-class differentiation is not emphasized as much as are pull-out programs.	Yes. In practice, some schools offer acceleration—mostly in the form of providing accelerated content.	Yes. Summer schools, subject workshops, online activities, and pull-out programs are how most schools provide gifted education.	Casey and Koshy (2012)
Zimbabwe	Shona and Ndebele cultures,	NA.	NA.				Ngara (2006)

(Indigenous Population)	according to survey data, endorse the belief that giftedness is inborn, is an aptitude or outstanding ability relative to the average person, has a spiritual element, and involves expertise in various domains (including leadership).	There is little evidence of gifted programming.	The author (Ngara) advocates for a selection mechanism through which outstanding ability, creativity, expertise, consistency of behavior, spiritualism, inspiration, and achieving success against odds and adversity are all tenets of giftedness.				
Mexico	Those who stand out in the social and educational environment in one or more of the following areas: science, social-humanistic, artistic, and physical ability.	Private institutions, advocacy groups, and associations.	Yes. After a psycho-educational evaluation, students are permanently identified as gifted; some private institutions use IQ tests.	Yes. Differentiated learning within the regular classroom	NA.	Yes.	Harris and Sanchez Lizardi (2012)
New Zealand (the Maori)	The collective, belonging to the group, as integral to intelligence. Good memory, good communication skills, skills in the performing arts, good knowledge of the Bible, and carefully reasoned understanding of right and wrong.	NA					McCann (2005); Miller (2005)