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Academic Talent Development and the Equity Issue in Gifted Education[1]

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Abstract: The equity issue with regard to the *under*representation of socioeconomically and ethnically disadvantaged students in gifted education has its source in judgments of unfair identification practices. After describing that issue and its factual basis, I show: (a) that an often overlooked statistical phenomenon exacerbates the disproportions; (b) that similar and even much larger disproportions exist in and outside general education without any advocacy group bringing out accusations of unfair access rules; and (c) that the source of our field's equity issue resides in the fact that most current gifted programs have little to do with "real" academic talent development, inspired by a meritocratic ideology. Using basic definitions from my *Differentiated Model of Giftedness and Talent* (DMGT), as well as a detailed definition of the talent development process, I argue that if most gifted programs were reoriented to follow the DMGT's *Academic Talent Development* (ATD) model, the equity issue would lose its relevance.

Keywords:

achievement gap, equity, giftedness, talent, talent development, meritocracy, gifted programs, DMGT

The equity issue in gifted education takes its name from expressed judgments by many professionals and scholars that members of disadvantaged groups suffer from unfair selection practices, which leads to their significant underrepresentation in gifted programs. The disadvantaged concept targets mainly students from low SES strata and/or some ethnic minorities. Both groups significantly overlap. The equity issue is not specific to gifted programs in the USA. I chose to focus on its manifestation in that country because of the better availability of published data and position statements. Moreover, for that same reason, I will center my discussion on *ethnic* disproportions (*under*, as well as *over* representations) in program participation. But it should be clear that both my diagnosis and the solution I propose apply to any form of underrepresentation in talent development programs, and extends to any country where the equity issue has been brought up.

I will first briefly describe the equity issue as advocates of ethnic minorities, especially the African-American minority, portray it. I will then survey other talent development situations, within and outside general education, in most of which ethnic disproportions greatly exceed those observed in our field. I will show that none of them generate accusations of unfair access practices, thus making the equity issue a phenomenon almost endemic or circumscribed to gifted education. As the main cause for that specificity I will target the fact that most U.S. gifted programs have little to do with "real" talent development. I will define the concept of talent development within the framework of my *Differentiated Model of Giftedness and Talent* (Gagné, 2003, 2009a), then describe how it manifests itself in arts, sports, and general education. I will then argue that a reorientation of our intervention priorities toward academic talent development programs based on a meritocratic ideology would not only render the equity issue irrelevant, but would offer the best answer to the special educational needs of academically talented students.

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Gifted Education and Disadvantaged Populations

How does the equity issue manifest itself in gifted education? Let us look first at the data, then at their interpretation, and, finally, at accusations expressed by minority advocates.

Survey of SES and Ethnic Disproportions

The underrepresentation of disadvantaged students in gifted programs leaves no room for doubt. For example, using data from the *National Educational Longitudinal Study*, Borland and Wright (2000) pointed out that "almost half of the eighth grade students identified as gifted and placed in gifted programs were from families in the top SES quartile, whereas about 9% were from the bottom quartile" (p. 587). This represents a 5:1 ratio between the two extreme quartiles. Said differently, five times as many identified gifted students have parents in the top 25% of the socio-economic status (SES) scale compared with the bottom 25%. For her part, Ford (2003) cited a series of statistics on the representation of various minority groups within gifted programs covering the 1978–1992 period. Table 1 shows the 1992 data, which do not differ substantially from earlier periods.

I found Ford's computation of her U and O indices somewhat misleading; I have proposed a much simpler way to assess degrees of under and over representation (see Reference Note 2). According to that revised formula, the prevalence of Blacks and Hispanics in gifted programs reaches approximately 60% (.57 and .58) of their respective population ratios. In other words, strict proportionality would require that program coordinators identify nationally approximately *75% more* Black and Hispanic students (e.g., for Blacks: missing .43 / observed .57; .43/.57=.75). Note that one minority group, Asian students, shows an opposite effect, an *over*representation of 75% (7% vs. 4%).

A Situationally Amplified Phenomenon

The disproportions presented in Table 1 are amplified by an unavoidable statistical phenomenon that affects the selection of populations or samples from the tail end – either tail – of a normal distribution of scores. It applies equally well to the selection of intellectually deficient individuals or intellectually gifted ones, to the selection of poor families or high-income families, to the selection of very slim individuals or obese ones, and so forth. All these examples represent non-average or tail end populations. The statistical amplification phenomenon manifests itself when we compare percentages of selected individuals from two or more populations with *different means*, like Black/White IQ or academic achievement differences. As we select people farther from the mean, group disproportions in the percentage of selected individuals increase considerably; and, of course, that amplification effect grows as mean differences increase. But, even small mean differences between groups produce a very significant amplification effect. To better illustrate the situation, let us use an example.

It is a well-known fact that a moderate correlation exists between parental SES and their children's IQ. Summarizing the data, Jensen (1998) states that "the population correlations between [parental] SES and IQ for children fall in the range of .30 to .40" (p. 491). Imagine that we compare populations from three SES levels: lower, average, and higher. For the sake of the illustration, we will assume that their children have respective IQ means of 95,

Table 1. Disproportions in Ethnic Representation Within U.S. Gifted Programs (1992)

Ethnic group	% in school population (E)	% in gifted programs (O)	(0 – E) difference	Under/ Over %	Revised indices[a]
Black	21.1	12.0	-9.1	U = 43%	.57
Hispanic	13.7	7.9	-5.8	U = 42%	.58
Asian	4.0	7.0	+3.0	O = 43%	1.75
Amer. Indian	1.0	0.5	-0.5	U = 50%	.50

Note. Adapted from Table 39.1 in Ford, 2003, p. 507. [a] See Reference Note 2.

100, and 105. The three curves appear in Figure 1. Based on the fact that IQ distributions have an identical 15-point standard deviation (*SD*), the two pairs of adjacent populations differ by .33 *SD*, a modest difference if we consider that existing White/Black IQ or academic achievement differences are at least twice as large. For instance, citing Sattler's (1992) reputed *Assessment of children* handbook, Ford states: "Data indicate that Black and Hispanic students score about one [standard] deviation below White students on standardized intelligence tests" (2003, p. 511). Similarly, the signatories of the famous *Mainstream Science on Intelligence (MSOI)* document affirm: "As large national surveys continue to show, black 17-year-olds perform, on the average, more like white 13-year-olds in reading, math, and science, with Hispanics in between" (Gottfredson, 1997, p.15).

The data at the bottom of Figure 1 show percentage distributions for different IQ score ranges: 95–105, 106–115, 116–125, and >125. That tail end range, which includes approximately the top 5% of a normally distributed (*M*=100) population, could be labeled the "gifted" range.

Between-group percentage differences close to the mean (the 95–105 range) are virtually nonexistent (25%, 26%, 25%). As we move away from the mean, percentage differences increase progressively. In the 115–125 zone, just above the first *SD*, twice as many (15% vs. 7%) people are selected from the higher SES group as opposed to the lower one; it represents a .47 (7/15) underrepresentation for the lower SES students. At the "gifted" level (>125, or top 5%), the disproportion between the top and bottom curves exceeds *three times* (10% vs. 3%), which corresponds to a .30 underrepresentation of children from the lower SES group. The data are clear: the farther away from the mean we place the selection threshold (e.g. 1% instead of 5%) the larger the disproportions will be. Even between two adjacent groups with respective means only .33 *SD* apart, the underrepresentation of low SES "gifted" students would be approximately .50 (5% vs. 10%, or 3% vs. 5%), a disproportion larger than even the revised Black or Hispanic U values shown in the right-hand column of Table 1.

Considering (a) that mean differences as small as .33 *SD* generate tail end disproportion ratios of 2:1, and (b) that White/Black-Hispanic group differences on IQ or achievement

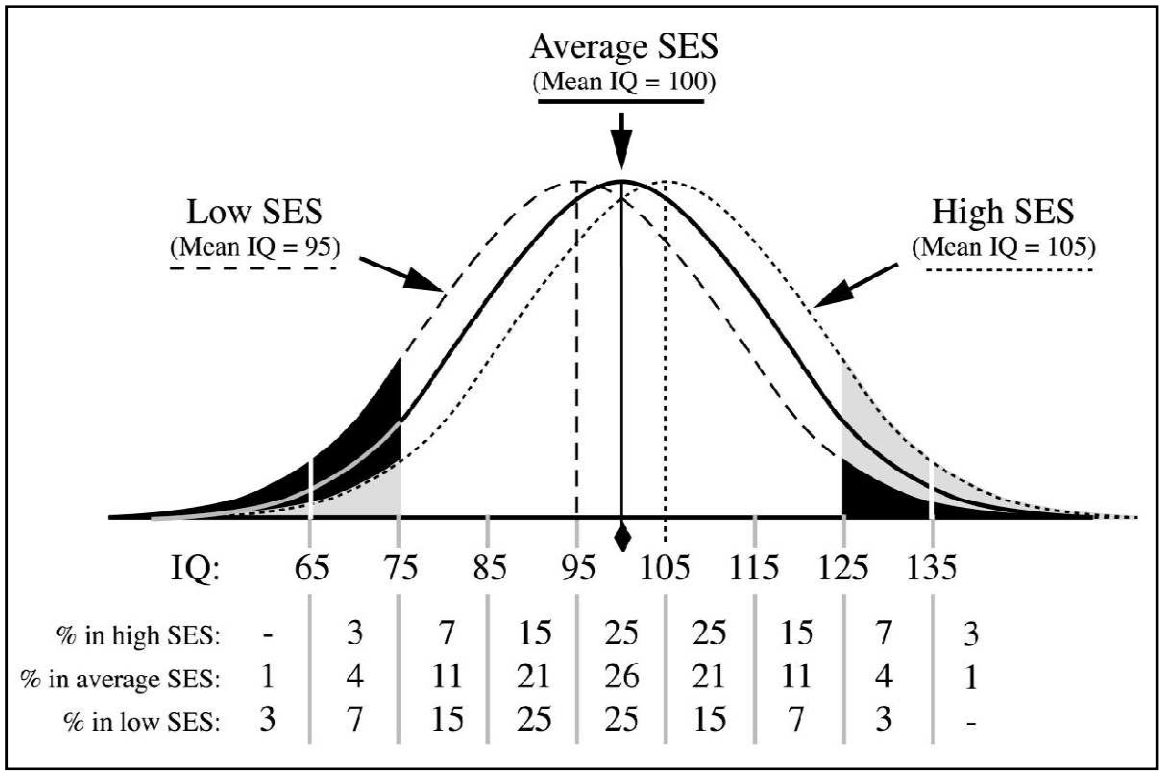

Figure 1. Tail end amplification of group average differences.

test scores – the two most common selection criteria – easily reach, and even exceed the .7 *SD* difference between the two extreme groups in Figure 1, we should observe in Table 1 much higher disproportions – both over and under – if program coordinators selected their gifted population strictly on the basis of IQ and/or achievement scores. In other words, the comparison between the Figure 1 and Table 1 data strongly suggests that many school districts are bending backwards to include as many minority students as possible without completely putting aside their most common selection instruments, namely group IQ tests and school grades. Our field cannot avoid the statistical phenomenon of tail end amplification of group disproportions; even though they diverge in many aspects, all existing definitions of giftedness or talent agree that our field's target population falls at least within the top 10% of the general population in terms of abilities.

The Equity Issue

Most scholars and professionals who talk about these disproportions consider socio-economic or ethnic underrepresentation a clear case of inequity. In their view, it goes well beyond a simple educational or social problem, becoming a real moral issue. Moral inequity is clearly implied when Ford (2003, p. 518) complains: "How many more diverse children must suffer while we debate this issue?" Borland and Wright (2000) use an equally strong language when they talk about "the serious and destructive consequences of this state of affairs" (p. 588). What seems clear to all these analysts is that equity means the *total* disappearance of any disproportionate representation between social or ethnic groups within gifted programs. When Ford asks: "Why are [culturally] diverse students underrepresented – consistently and grossly underrepresented – in gifted education?" (p. 506), she explicitly maintains that there will be no equity until it disappears. Similarly, Gentry, Hu, & Thomas (2008) note: "Broadening definitions and conceptions of giftedness and the associated identification procedures, as well as professional development, have been recommended as actions necessary to solve the problem of underrepresentation" (p. 199). The expression "solve the problem" confirms once again a common perception that there is no justification for minority underrepresentation in gifted programs.

These scholars claim that underrepresentation results in large part from improper identification practices based on mostly invalid definitions of the key concepts of giftedness and talent, but especially what Borland (1997) has labeled the "socially constructed" giftedness concept. For her part, Ford (2003) puts the blame on the educational system, more specifically (a) on "the pervasive deficit orientation that prevails in society and our schools," (b) on "low referral rates of diverse students" by teachers, (c) on an almost exclusive reliance "on tests that inadequately capture the strengths and cultural orientations of these students," and (d) on "educators" lack of understanding of cultural diversity" (p. 507). As they loudly protest over situations of underrepresentation, they remain completely silent about the overrepresentation of Asian students. Shouldn't we ask ourselves why our identification practices are judged to block Black – and Hispanic – access to gifted programs, whereas they have the opposite effect for Asian students? That eminently relevant question remains unaddressed.

I do not intend to discuss in detail the complex etiology of ethnic disproportions in educational, artistic, or athletic attainments. That complex question is totally irrelevant to the present discussion; indeed, only two facts are useful to anchor my argumentation: (a) ethnic *under*-representations exist, and (b) they give rise to strong protests, mainly with regard to the African-American situation. My more modest goals are twofold: (a) demonstrate that similar – even much larger – disproportions appear, without giving rise to any equity issue, in almost any other field associated with talent development; (b) explain why these other fields are immune to inequity accusations. I found ethnic disproportions everywhere I looked for comparative data; and everywhere I found them they were taken for granted by most people. Almost nobody ever judged them to result from unfair educational practices. Let's look at a few examples.

Other Cases of Talent-Related Ethnic Disproportions

The examples below illustrate ethnic disproportions (a) in college-level educational attainment, (b) in the University of California system, (c) among doctoral music students, and (d) in sports.

Educational Attainment

Gifted education holds a marginal position within the larger field of general education. Within that larger field, obtaining a college degree could be considered, broadly speaking, a minor form of talented achievement. Are there ethnic disproportions among college degree holders? Of course! The data in Table 2, collected for the year 2007 (U.S. Census Bureau, 2008a), show the percentage of U.S. 25-year-old + *within* a variety of ethnic groups who have completed at least four years of college. Globally, 29% of U.S. adults have done so; we can infer that almost all of them hold a bachelor's degree. We observe a general parallel with the Table 1 data, namely a significant *under*representation of Blacks and Hispanics, .64 and .44 respectively, counterbalanced by an equally large *over*representation (1.82) of Asian college graduates. Controlling for their population ratio, almost three times as many Asians as Blacks (52% vs. 18%) hold a college degree. And the Asian overrepresentation with Hispanics reaches 4:1 (52% vs. 13%). These statistics do not bring up the equity issue. Virtually no one accuses teachers or school administrators of any morally objectionable selection practices; most etiological analyses focus on long-term social and cultural influences.

University of California Freshmen

The second example targets the ethnic distribution of students in the State of California's public university system, the University of California (UC). The UC data presented in Table 3 accompanied a *New York Times* article on Asian overrepresentation in U.S. colleges and universities (Egan, 2007). The first column shows the ethnic distribution of the California population in 2006. The next four columns present ethnic distributions for the newly admitted undergraduates (Fall 2006) in the four largest UC campuses. The last two columns contain rough average percentages and U/O indices. Again, we observe a

Table 2. Within-Group Percentages of U.S. Adults (25+) Having Completed Four Years of College

Group	Percent	U/O indices[a]
U.S. population	28.7%	---
White	31.8%	1.11
Hispanic	12.7%	.44
Black	18.5%	.64
Asian	52.1%	1.82

Note. Adapted from U.S. Census Bureau, 2008a. [a] See Reference Note 2. U.S. population percentage used as denominator.

Table 3. Ethnic Distribution (in %) of Freshmen (Fall 2006) on the Four Largest UC Campuses

Ethnic group	State pop. ratio (%)	CA campuses				Average	U/O Indices[a]
		L. A.	Davis	Berkeley	Irvine		
White	44	31	33	29	23	29	.66
Hispanic	35	13	13	11	12	12	.34
Asian	12	43	43	46	56	47	3.90
Black	7	2	3	4	2	3	.43
Other/Unknown	2	11	8	10	7	9	---

Note: Adapted from table embedded in Egan, 2007. [a] See Reference Note 2.

similar, but much stronger pattern of ethnic underrepresentation for Blacks (.43) and Hispanics (.34). For example, the number of Hispanic Freshmen should literally *triple* (3 x .34) for their group's representation to equal their population ratio. The new element here is the significant underrepresentation (.66) of White students. All these U indices have one source: the exceptional overrepresentation of Asian students. Their number equals no less than *four times* (3.90) their ratio in the state population (47% vs. 12%). The U/O indices for gifted programs seem very modest when compared with the UC ethnic distribution of its Freshmen.

Californians apparently accept this extreme situation with equanimity. This exceptional phenomenon originated in a 1996 decision by 54% of California voters to uphold Proposition 209, which aimed to amend the state Constitution. It said in essence: "the state shall not discriminate against, or grant preferential treatment to, any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment, public education, or public contracting" (see Proposition 209 in Wikipedia). Former ethnic "targets" – the politically correct term for "quotas" – associated with affirmative action disappeared, giving rise progressively to the results shown in Table 3. Keep in mind that these disproportions are amplified by a stronger tail end selection effect than the one assumed for the Table 1 data. We face here a very high selection ratio. According to Egan (2007), only the top 10% of all candidates, no doubt already self-selected on the basis of their high-school performance, were admitted as Freshmen in 2006. The University of California gave priority to their SAT II results. Compared to its earlier version, the SAT-I, the revised admissions test gives more importance to academic knowledge than to cognitive reasoning. By and large, these extreme disproportions are judged a fair application of a strict performance-based admission policy. According to Egan (2007), Berkeley's chancellor, Robert J. Birgeneau, insisted that his university was a strict meritocracy confirmed by law. The chancellor added that if the percentage of Asians were to increase to 60%, or even 70%, there would still be no attempt to reduce their number.

Music

The third example brings us outside general education, into the well-known field of talent development in music. Each year, an organization called *Higher Education Arts Data Services* (HEADS) compiles a diversity of statistical information, using annual reports from all member institutions of the *National Association of Schools of Music* (NASM). The sample also includes a group of non-member institutions, which volunteer to participate in the data collection. Considering its size (600 + reporting institutions) and diversity of states covered, that "sample" certainly comes close to a population survey of all graduate-level music students. The dozens of tables HEADS creates from that database include distributions of doctoral music students according to specialization, year of study, gender, and ethnic group. The six major areas of specialization chosen by the 6062 doctoral students identified in the 2007–2008 database were Piano (n=870), General music education (n=571), Conducting (n=469), Composition (n=435), Other (n=366), and Musicology (n=346). The other half of the doctoral population was dispersed among thirty other specializations.

The data presented in the last three columns of Table 4 were extracted from Charts 27 & 28, which summarize information obtained from 66 music schools having reported at least one student currently enrolled or having graduated from a doctoral program in 2006–2007 (HEADS, 2008). Keep in mind that we have here an extreme case of tail end selection amplification because of the progressive weeding out of lower achieving music students through each successive selection point, from the earliest training years to the pinnacle of music education represented by a Ph.D. diploma. The first column gives population ratios for the three main racial groups in the U.S. population, based on the 2005 census (U.S. Census Bureau, 2008b). Hispanics were not considered a distinct racial or ethnic group.

Table 4. Ethnic Distribution (in %) of Doctoral-Level Music Students in the United States[a]

Ethnic group	U.S. pop. ratio	All students (*n*=6062)	Gen. music educ. (*n*=571)	Piano/violin (*n*=1117)
White + Hispanic	80.2	65.6 (.82)	66.7 (.83)	34.0 (.42)
Black	12.8	3.5 (.27)	8.8 (.69)	0.7 (.05)
Asian	4.3	16.7 (4.0)	4.4 (1.0)	43.2 (10.1)
Other/Unknown	2.7	14.2 (---)	20.1 (---)	22.1 (---)

Note. Adapted from HEADS, 2008, Charts 27 and 28. [a] U/O indices added within parentheses.

But we can assume that the White group contains very few of them. The census data reveal the presence of almost exactly three times as many Blacks (12.8%) as Asians (4.3%). The second column illustrates the ethnic distribution of the 6062 doctoral music students identified through the survey. We can observe approximately *one-fourth* (.27) as many Black students as their ratio in the population; by contrast, the percentage of Asians equals *four times* (3.98) their population ratio. Said differently, although Asians correspond to just a third of the Black population, there are approximately *five times as many* Asian doctoral music students as Black ones (16.7% vs. 3.5%). This represents a *fifteen-fold* (3.98 vs. .27) disparity in representation between the two ethnic groups.

In one area of specialization, General music education (column 3), the disproportion between Black and Asian doctoral music students significantly decreases (.69 vs. 1.02). On the other hand, in another pair of specializations, the combination of students in piano and violin (column 4), which accounts for a substantial 18% of all surveyed doctoral music students, we observe the largest disparity between Black and Asian students. Only eight (0.7%) Black students appeared in the database as opposed to 483 Asian students. Black students in that specialization represent barely $1/20^{th}$ of their 12.8% ratio in the general population, as opposed to *10 times more* Asian students than their population size (43.2 vs. 4.3). Here, the disparity between the two groups *exceeds 60 times* (0.7 vs. 43.2). It is worth noting that Asian students (*n*=483) outnumber White/Hispanic students (*n*=379), although the U. S. Asian population is almost *19 times smaller*. Are these high disproportions the source of complaints from minority group representatives? Not at all. Just as with the previous two examples, everyone accepts the fairness of the selection system and the offered curriculum.

Sports

The last set of examples comes from the most structured talent development field: sports. There we find almost endless examples of ethnic disproportions, sometimes by Caucasians (e.g., swimming, figure skating, skiing), sometimes by Asians (e.g., gymnastics, table tennis), and frequently, as we will examine in more detail, by Black athletes from the U.S. or from African countries. In a fascinating and controversial book, Entine (2000) explored in depth the genetic, physiological, cultural, historical, and economic roots of Black athletic superiority in many sports. He sets the scene with a series of impressive statistical data showing the extent of that group's domination. Here are just a few.

> Check the NBA [National Basketball Association] statistics: not one white player has finished among the top scorers or rebounders in recent years. White running backs, cornerbacks, or wide receivers in the NFL [National Football League]? Count them on one hand. Roll the calendar back decades, to the 1950s, to find the last time a white led baseball in steals … Don't expect to see a white man set a world record in a road race – any race, at any distance from 100-meters to the marathon. (p. 19)
>
> All of the thirty-two finalists in the last four Olympic men's 100-meter races are of West African descent. The likelihood of that happening based on population numbers alone – blacks with ancestral roots in that region represent 8 percent of the world's population – is 0.00000000000000000000000000000001. [Yes, 33 zeros!] (p. 34)
>
> All told, Kenya has collected thirty-eight Olympic medals since the 1964 Olympics … Based on population percentages alone, the likelihood that this Texas-sized country could turn in such a remarkable medal

> performance is *one in 1.6 billion* …. One small district, the Nandi, with only 1.8 percent of Kenya's population, has produced about half of the world-class Kalenjin athletes and 20 percent of all the winners of major international distance-running events. (pp. 39–40)

I will complete this survey with statistics from the three major spectator sports in the United States. The percentages in Table 5 were gathered during the 2006–07 season (Lapchick, 2007). The first column of data gives ethnic ratios within the U.S. population as of 2005 (U.S. Census Bureau, 2008b). Baseball remains mainly a White sport. Both Blacks and Asians are underrepresented by ratios of .66 and .56 respectively. However, Blacks dominate both the sports of football and basketball, with five to six times as many players as their ratio in the U.S. population. That implies of course a strong underrepresentation of Whites and Asians. For instance, the .30 U/O index for White basketball players indicates that they account for less than a third of their 80.2% population ratio. All involved parties fully accept these disproportions: players, managers, spectators, journalists, and analysts. That acceptation pervades both athletics and professional sports. The decades of racial athlete discrimination in sports are mostly gone, replaced by the search for the most talented athletes; and it is clear that Blacks enjoy a significant "natural" advantage for many sports. If we consider the tail end amplification effect mentioned earlier, it means that modest group advantages will create large disproportions among the best athletes.

Summary

Ethnic under/over representation appears almost everywhere in general educational attainments, in many specialized educational fields, as well as in most sports. These ethnic disproportions often exceed sometimes by a huge margin, those observed in gifted education. None of these situations of extreme disproportions give rise to accusations of biased access procedures, like the ones quoted earlier from Ford (2003) or Borland & Wright (2000). Contrary to our situation, all concerned parties accept these ethnic disproportions, whatever their direction, as fair representations of performance differences. Why is that so? I believe that Berkeley's chancellor Birgeneau gave a clear and simple answer: meritocracy. A meritocratic ideology does not address issues of etiology; it focuses on the here and now of achievement. A meritocratic ideology gives priority to performance – the main operationalization for merit – as the criterion of access to, and progress in a "real" talent development program. Observable performance creates an equitable comparison basis, thus effectively silencing inequity accusers. Unfortunately, most current gifted programs have little to do with "real" talent development. Consequently, they open the door to the equity issue. My empirical support for that strong judgment about existing gifted programs requires that I first define the concept of talent development, as well as its application to K-12 gifted programs.

The Concept of Talent Development

The proposed definition for the talent development concept derives directly from my *Differentiated Model of Giftedness and Talent* (DMGT) (Gagné, 2003, 2009a)[3], a talent development theory anchored on distinct definitions for the two key concepts of giftedness and talent. Because of their usefulness in the following discussion, I will present these two definitions, and then briefly describe their respective role within the *DMGT* framework.

Table 5. Ethnic Ratios (in %) for Three Major U.S. Professional Sports[a]

Ethnic group	U.S. pop.	Baseball	Football	Basketball
White + Hispanic	80,2	88.9 (1.11)	31.5 (.39)	24.0 (.30)
Black	12.8	8.4 (.66)	67.0 (5.23)	75.0 (5.86)
Asian	4.3	2.4 (.56)	1.5 (.35)	< 1.0 (<.20)

Note. Adapted from Lapchick, 2007, pp. 16, 26, 45. [a] U/O indices added within parentheses.

Defining Giftedness and Talent the DMGT Way

Giftedness designates the possession and use of outstanding *natural* abilities, called aptitudes, in at least one ability *domain*, to a degree that places a person at least among the top 10% of age peers.

Talent designates the outstanding mastery of *systematically developed* abilities, called competencies (knowledge and skills), in at least one *field* of human activity to a degree that places a person at least among the top 10% of age peers who are or have been active in that field.

Said differently, the concepts of giftedness and talent are somewhat synonymous with the following pairs of concepts: aptitude vs. achievement, potential vs. performance, naturally developed vs. systematically trained, or origin vs. outcome (see Gagné, 2009b, for a detailed discussion). These differentiated definitions allow us to conceive talent development as the progressive transformation of outstanding natural abilities (gifts) into outstanding knowledge and skills (talents) in a specific occupational field. Figure 2 illustrates the structure of the DMGT. Outstanding natural abilities (gifts) from one or more domains serve as raw materials for the progressive construction, through the talent development process, of the systematically acquired outstanding knowledge and skills (talent) characteristic of a particular occupational field or sub-field. Two sets of catalysts, *intrapersonal* and *environmental*, facilitate or hinder the talent development process.

Defining Talent Development

The simple definition of talent development described above says little about the concrete modalities of that transformation process. As part of the recent update of the DMGT, I proposed a much more detailed analysis of the talent development process. As shown in Figure 2, the developmental (D) component has been split into three sub-

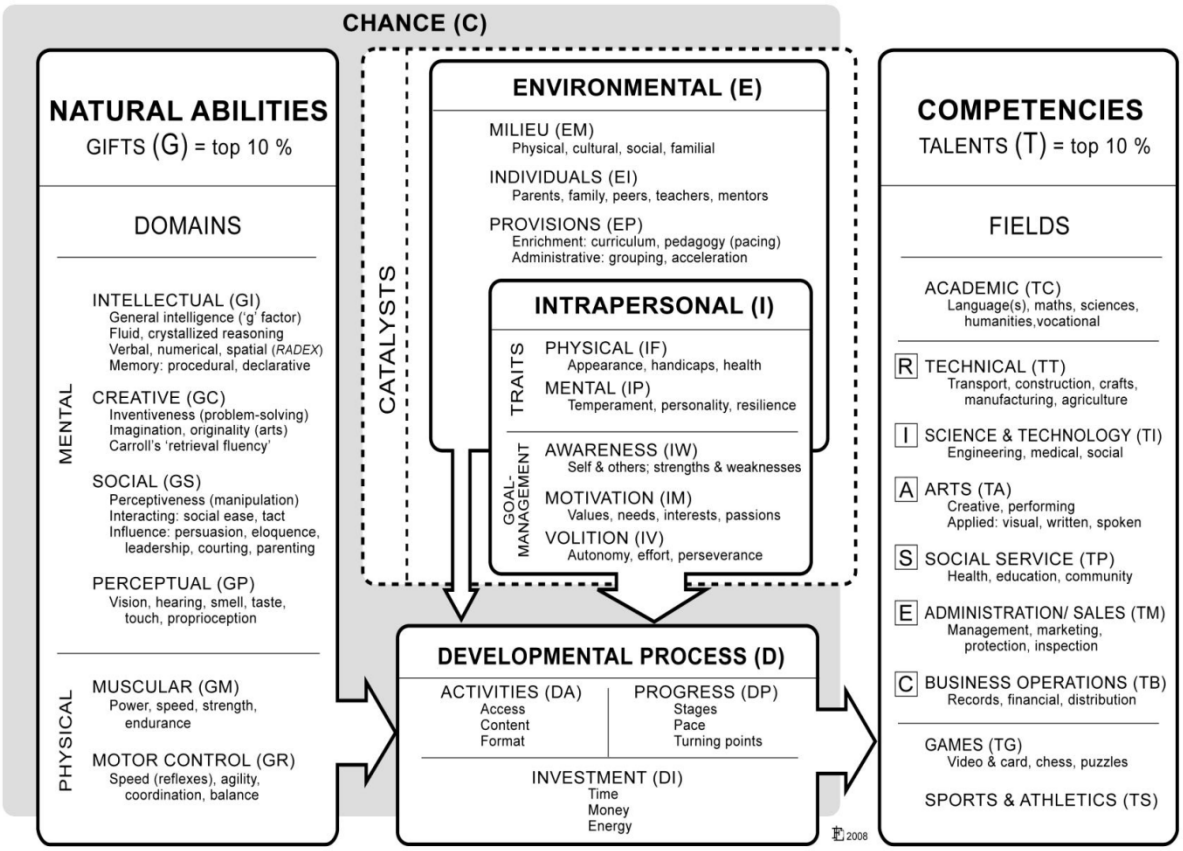

Figure 2. Gagné's Differentiated Model of Giftedness and Talent (DMGT 2.0; 2008 update)

components: Activities, Investment, and Progress. Each of them is further broken-down into more specific *facets*. That detailed analysis led to a more technical definition of that process, as follows: "*Talent development (TD)* is the systematic pursuit by talentees, over a significant period of time, of a structured program of activities aimed at a specific excellence goal" (Gagné, 2009a, p. 67). The neologism *talentee* – analogous to mentoree – describes any person actively involved in developing one or more talents, whatever the field. For the sake of the present discussion, we can extract from that definition six main constituent elements: (1) an enriched curriculum/training program; (2) a clear and challenging excellence goal; (3) selective access criteria; (4) systematic and regular practice; (5) regular and objective assessment of progress; (6) personalized – accelerated of course – pacing. Together, these six constituent elements summarize the DMGT's TD model.

The heart of a "real" talent development program consists in an enriched curriculum or training program (#1). I prefer to use the term "enriched" instead of the more common – and politically correct – term 'differentiated, for the simple reason that the concept of enrichment represents the specific form of differentiation appropriate for talented learners. The curriculum must be enriched because the pace and the difficulty level of any curriculum designed for average learners do not meet the advanced learning aptitudes of talentees. Thus, the content of any good TD program will differ significantly, both quantitatively and qualitatively, from its regular version. The excellence goal (#2) need not be an ultimate or peak achievement goal, like completing a Ph.D. or winning an Olympic medal. Talentees may choose intermediate goals, reachable within a shorter time period. But, "shorter" does not mean days or weeks; that goal must be far away enough to necessitate a substantial amount of developmental activity. It must also represent a significant challenge in terms of progress away from the baseline departure point. It is hard to quantify the meaning of "significant challenge"; for the time being, I will leave its operationalization to the judgment of program planners. This close relationship between the first two constituent elements goes even further; excellence goals will frequently take the form of a targeted mastery of a particular "big chunk" of the whole talent development content.

Because talentees embark on a developmental path more arduous than that offered to average – casual, amateur, non-competitive – learners, access (#3) will be limited to candidates who demonstrate good chances of future success. And what better proof of future performance can we find than past performance? In any occupational field it is a well-known fact that past achievement – the more recent the better – has significantly more predictive power than any measure of future potential. Since talent scouts usually identify future talentees by observing the non-competitive learning activities of a mixed group of learners (e.g., regular schooling, music lessons, playful sport participation), they will look for outstanding and precocious achievements, in other words emerging talent. Of course, because of its precocity, that talent will confirm the probable presence of outstanding potential.

On top of a required long-term investment, the DMGT's TD model asks from talentees regular learning and practice activities (#4). The term "regular" roughly corresponds to one-fifth of a normal full-time workload (7–10 hours per week); but it will increase substantially as talentees reach for higher excellence goals (Ericsson, Krampe, & Tesch-Römer, 1993). The TD model requires periodic performance assessments (#5) to establish normative progress. The term "normative" means that talentees' performances are compared to an outside norm, either a pre-determined performance (e.g., speed times in swimming, the "official" curriculum in education or music) or the progress of peer talentees. Theses assessments will serve as incentives for both the talentees and relevant individuals around them (e.g., teachers, trainers, parents). Finally, as implied in the previous item, talentees should be allowed to progress at the maximum pace (#6) they can – and want – to maintain.

The DMGT's TD Model Applied

The DMGT's TD model was created to cover talent development activities in most occupational fields. Let's look first at an example in music education. When a person, usually a child, begins learning to play a musical instrument, her teacher will introduce her through the regular music curriculum for that instrument. With average learners, that curriculum will prove to be perfectly satisfactory in pace and difficulty. But, if the teacher discovers that her student shows outstanding aptitudes for music, she will soon propose to her and her parents a transfer (#3) to a talent development program, whose main characteristic will be an accelerated or enriched curriculum (#1) As the new talentee begins her developmental process, the ultimate excellence goal (#2) is clear: high-level – national or international – expertise in playing that instrument. Of course, talentees or their teachers can split it into intermediate goals or stepping-stones. The talent development curriculum (#1) is also clear: access to a series of progressively more difficult and advanced learning and practice activities. Young talentees are expected to invest in regular practice (#4) more time than music students who follow the regular curriculum. As talentees progress, regular performance measures (#5), usually informal or formal competitions, allow them and their teachers to assess normative progress. If the pace slows, teachers might reconsider a student's talentee status. If, on the other hand, talentees progress faster, they will be allowed without hesitation to move ahead as fast as their talent and motivation allow (#6). Thus, in one year, highly talented music students will easily cover two, sometimes three years of the normal curriculum. How else can we explain the achievements of these young prodigies who reach professional performance levels well before adulthood, sometimes even before adolescence?

Sport is another large talent development field in which professionals almost automatically apply the six criteria of the DMGT's TD model. Just think of your favorite sport. (1) Does it offer a well-structured enriched program of activities? (2) Does it have clear ultimate and intermediate excellence goals? (3) Does it control access to a competitive track through measures of emerging talent? (4) Does it require regular learning and practice, even asking for increased time involvement as higher excellence goals are sought? (5) Does it perform regular progress assessments? (6) Does it allow for accelerated pacing based on individual achievements? Whichever sport you have chosen, I am convinced that you answered "Yes" to each of these six questions. Just like in arts, professional coaches have mastered long ago the strategies that ensure a proper implementation of the type of talent development program described above.

A Performance-Based Ideology

Inspired by talent development in arts, sports, and technology, the DMGT's TD model fully espouses their defining characteristics, among them the meritocratic ideology mentioned earlier. Its key component is a strict reliance on achievement as the criterion of access to and progress within a talent development program. Merit literally means talent, in other words "*demonstrated* high aptitudes" in a given occupational field; past achievements prove that candidates or talentees possess not only the raw high potential or giftedness to face a high level challenge, but also the personal qualities, especially perseverance (Gagné & St. Pierre, 2002), that contribute significantly to success. The DMGT framework makes it easy to understand the superior predictive power of *existing* talent, whether emerging or full-fledged, with regard to *future* talent. As proposed in the DMGT (see 2009a, and Reference Note 3), talent results from the progressive transformation of natural abilities (G) through a long developmental process (D), and with the catalytic help of personal characteristics (I) and environmental influences (E). Consequently, measures of talent incorporate the combined action of all these distinct causal sources (G, I, D, E).

So, from one perspective we can rightly affirm that talent is usually very easy to measure; it is nothing but outstanding (top 10%) performance. Yet, from another perspective we can argue with equal validity that talented performances have very complex roots. They have

roots in the genetics of high natural abilities, roots in passion and interest for a field's knowledge and skills base, roots in unfailing perseverance and will power, roots in parental and teacher support, and, let's not forget it, roots in lots of chance, for instance the good luck of a favorable genotype, or a supportive family environment, or of auspicious turning points. In other words, talent combines in a complex series of interactions outstanding natural abilities, outstanding intrapersonal catalysts, outstanding environmental support, and months or years of systematic developmental activities.

This focus on performance as the main entry requirement to a talent development program offers the best guarantee of equity and objectivity. Any other criterion will introduce unavoidably less relevant information, information whose predictive power will be lower than that of any good talent measure. This measurement "noise" includes not only any form of ethnic or gender quotas, but also multi-domain checklists and IQ scores that are not supported by clear proof of their transformation into academic talent. It is this respect for demonstrated high abilities – a.k.a. talent – that made the disproportions described in the initial section immune to accusations of inequity. Program administrators adopted that objective criterion because they judged it to be the most *relevant* predictor of future achievement in their excellence-oriented talent development program. Note that the predictive power of talent measures rests on the first two criteria of a good talent development program, namely a clear and challenging program of activities paired with an equally challenging excellence goal.

Now that we have described the DMGT's TD model in its most general form, let's look at its application to gifted education, the DMGT's *Academic* Talent Development (ATD) model.

Academic Talent Development: Theory and Practice

What are the main characteristics of this educational version? Which current gifted programs represent satisfactory applications of the ATD model? To what extent do most common forms of gifted programs differ from that desirable intervention model? These are the questions I will address here.

Academic Talent Development (ATD)

As was the case with the more general TD model, an ATD program will be defined first and foremost by its content, an enriched content of course. In my view, obtaining high marks within the regular classroom has nothing to do with academic talent development; most intellectually bright students can reach that goal much too easily. Within an *enriched* pathway, academic talentees face constant intellectual challenges. *Enrichment in density*, also called condensation or curriculum compacting (Reis, Burns, & Renzulli, 1992), serves as the pedagogical core of that special curriculum. Talent development specialists should prioritize it over other forms of enrichment because it offers the most relevant response to giftedness' trademarks, namely ease and speed in learning. Moreover, the school time retrieved through faster mastery of curriculum units creates learning space for additional enrichment. As I said in my sixth commandment (Gagné, 2007, p. 103): "Thou shalt condense … foremostly". Beyond adjusting the pacing through condensation, there are many more ways to enrich the K-12 curriculum, both qualitatively and quantitatively. Charles Murray, in a recent seminal book (2008), proposed a special curriculum for academically gifted (I would say "talented"!) high school students. It targets process abilities, more so than specific contents, for instance rigor in verbal expression, in forming judgments, as well as in thinking about virtue and the good. This enriched curriculum opens the door to specific excellence goals, well beyond those available through the regular curriculum. And recall that these goals will be placed far away enough to necessitate substantial talentee investment.

The first two defining elements lead directly to the third one: limited access. Academic talent development requires outstanding learning abilities, and, as argued above, these high natural abilities need to have manifested themselves through outstanding academic

achievements, except of course in the case of early entrance to school. This requirement poses few practical problems. Various surveys of the identification practices implemented by gifted program coordinators (e.g., Cox, Daniel, & Boston, 1985) have shown that two identification instruments outrank by far any others in terms of their prevalence: (a) IQ scores from group-administered cognitive abilities tests, and (b) scores from standardized achievement tests. Indeed, the domination of that pair of measures has led me to propose the acronym IGAT – Intellectually Gifted and Academically Talented – to describe the prototypical population in U.S. gifted programs. In other words, being bright is rarely sufficient to deserve the commonly used "gifted" label; students must also show high academic performance. The IGAT acronym conveys that idea of "bright achievers." Because of what I said above about the predictive relevance of talent measures, if forced to choose between IG and AT measures, I would not hesitate to prioritize indices of academic talent.

The fourth element, regular learning and practice, reminds us that an enriched curriculum must propose real intellectual challenges on a *daily basis*. I do say "on a daily basis" because schooling, as opposed to arts or sports, is a full-time activity. Accordingly, only full-time grouping of talentees with similar levels of content mastery will ensure proper implementation of the goal-oriented enriched curriculum. One does not answer full-time educational needs with part-time solutions. Consequently, this fourth constituent element excludes from the ATD model popular activities like summer camps, once a week pull-out classes, or weekend enrichment activities. This statement should not be taken as a critique of their potential usefulness; as confirmed by their popularity, they could play an interesting complementary role within a well-structured ATD program. But they lack too many of the defining ATD characteristics to constitute intrinsically adequate prototypes of academic talent development. In no way can they substitute for a "real" ATD program.

As part of these developmental activities, regular formative and normative academic assessment (#5) will allow talentees and their teachers to ascertain adequate progress toward the pre-defined academic excellence goal(s). Talentees should know regularly if their pace matches, falls behind, or exceeds expectations, theirs and those of significant people around them. Finally, considering the large observed individual differences within academic talentee populations (Gagné, 2005), those who progress significantly faster than their peer talentees should be allowed to accelerate (#6); this accelerated pace aims to minimize slack periods and useless waiting time. This final element directly questions the grade/age lockstep – one academic year per chronological year – which educational systems around the world usually impose on their students.

Prototypical ATD programs need not include all six components for the label to be applied. Of course, the more of them a given prototype implements, the more it will approximate the above definition. I consider that three of the six defining elements are essential: (a) an enriched curriculum (#1), (b) a clear and challenging academic excellence goal (#2), and (c) regular practice (#4).

ATD Applied

The North-American schooling system does not offer a clearly enriched educational path allowing talented young students to pursue challenging excellence goals from their very first years of schooling and consistently afterwards. For almost every one of them, the school system has planned a single path: the age-grade lockstep that covers the thirteen years extending from kindergarten to 12th grade. And that sad judgment of academic monotony extends to most other countries. If ATD prototypes are virtually non-existent in primary schools, I do acknowledge that some limited possibilities of consistent enrichment appear at the high school level. The best example, in my view, of a DMGT-inspired academic talent development program resides in "selective" high schools, a term borrowed from the well-developed New South Wales network of such schools (see Wikipedia). Disseminated here and there, mostly in large cities across the United States,

they offer a truly enriched curriculum to highly selected students. New York City has seven of them (Hernandez, 2008), including the well-known trio of Stuyvesant, Bronx Science, and Brooklyn Tech. The International Baccalaureate curriculum represents another option that covers the whole high school level. Finally, although they only target the last two years, residential high schools (Kolloff, 2003) clearly belong to this enriched high school curriculum prototype.

Why didn't I include among ATD prototypes the College Board's Advanced Placement (AP) program? Available in approximately 15,000 high schools in the U.S. (Hertberg-Davis & Callahan, 2008), it offers to high achieving and motivated Junior and Senior high school students, within the walls of their high school, a diversity of college-level courses. AP courses apply some of the defining characteristics of the ATD model: a high-level excellence goal, a challenging curriculum, and regular learning activities added to the high school curriculum. Even though no entrance exam controls access to AP courses, students self-select themselves rigorously because they know the level of challenge offered by these courses. AP courses belong to the comprehensive group of accelerative measures (see Colangelo, Assouline, & Gross, 2004), in so far as students who successfully complete one or more of them can "cash in" their accumulated credits when they enter college. In some cases, these accumulated credits might add up to a full semester. I decided to exclude them because of one major drawback: they exist *beside* – not within – the regular high school curriculum. Students who register for these courses maintain their daily regimen of the slow-paced regular curriculum.

Why didn't I also label as ATD prototypes the large variety of accelerative options found here and there in some school districts? Apart from the AP already mentioned, they include early entrance to school, grade skipping, combined classes in which students cover in one school year two years' worth of the regular curriculum (or three years of the regular curriculum in two years), early entrance to college, and some other less common options (Colangelo et al., 2004). Don't they offer a high-level excellence goal, as well as a real academic challenge to students? Don't they require careful selection of candidates? Don't they allow students to progress at their own faster pace? Again, their main drawback resides in their marginal status, in their non-inclusion within a *systemic* academically enriched pathway covering at least a few school grades. For instance, most children who benefit from early entrance to kindergarten or first grade will probably find the beginning of their first school year somewhat challenging because of that accelerative measure. But, they will soon face the daily humdrum of the regular slow-paced curriculum. So, as desirable as they would be within a global ATD program, *when used alone* accelerative enrichment provisions remain stopgap measures, a temporary respite from the daily boredom of the age-grade lockstep.

If the above examples represent a small minority of available special educational services for our IGAT bright achievers, what is the majority of so-called gifted programs made of?

Current Gifted Programs

Trying to paint a reliable picture of the nature and prevalence of current gifted programs is not an easy task. The most recent national data, based on the famous Richardson Foundation study (Cox, Daniel, & Boston, 1985), are almost three decades old. The authors of that comprehensive survey closely examined sixteen (16) different prototypical services (e.g., regular classroom enrichment, special pull-out classes, mentorships), half of them having an accelerative component (e.g., early entrance, non-graded schools, dual enrollment). They invited all U.S. school districts, 16,000 in all, to participate. Only 1,172 did so, just 8% of the total, which says a lot about the perceived importance of gifted programs in the educational system! One can entertain reasonable doubts about the quality – even the existence – of the gifted programs available in the non-participating 15,000 school districts. About a decade later, another national survey explored the more specific phenomenon of regular classroom enrichment (Archambault et al., 1993). These

two surveys indicate that two prototypical services, pull-out classes and regular classroom enrichment, cover a majority of existing special provisions for IGAT students in U.S. elementary and middle schools. Let us examine each of them more closely.

Pull-Out Classes. According to the Richardson survey, 72% of the 1,172 participating school districts mentioned pull-out classes as one of the provisions available to their IGAT students. This percentage placed it first among the sixteen prototypes. The survey organizers had prepared for each of them a series of subsidiary questions designed to assess the quality of their implementation in each school district. Using what they themselves labeled "minimal" (p. 34) criteria of substantial implementation, the researchers determined that 65% of the school districts mentioning that enrichment option were applying it "substantially". Thus, pull-out classes kept their first rank when the authors excluded non-substantial programs. Pull-out classes typically offer non-curricular enrichment activities, often favoring enrichment in depth – Renzulli's Type 3 activities (Renzulli, 1994) – over enrichment in difficulty or enrichment in diversity (see Gagné, 2007, sixth commandment).

Their outside status with regard to the K-12 curriculum excludes pull-out classes from membership in the ATD model defined above. That type of enrichment opens the door to criticism about their specificity for IGAT students; in theory, *all* students could benefit from the semester-long exploration projects common in such classes. Only enrichment in density (compacting) or in difficulty *specifically* answers the educational needs of IGAT students. The authors of the Richardson study (Cox, Daniel, & Boston, 1985) criticized rather strongly the pull-out model, mentioning that "its weaknesses were a cause for concern" (p. 43). They presented it as "a part-time solution to a full-time problem" (p. 43), describing its content as "divorced from what happens in the child's regular class" (p. 43). They noted that the costs, namely adding the salary of a full-time special teacher to a school's operating budget, were often higher than those of a full-time program. They finally worried that this model would give school districts "a false sense of accomplishment," leading them "to stay with that limited approach" (p. 44).

Regular Classroom Enrichment. Regular classroom enrichment came second in the Richardson national survey; 63% of the 1,172 school districts mentioned offering it. But, through their subsidiary questions, the survey organizers determined that only 25% of the school districts were applying that service option substantially. Because of that low percentage, it moved from second to ninth rank when non-substantial services were excluded. Think about it. Out of 16,000 U.S. school districts, about 750, or less than 5%, mentioned offering regular classroom enrichment to their IGAT students. Yet, less than 200, just about 1% of all U.S. school districts, were judged to implement that option at a minimally substantial level. And recall that the researchers mentioned having set very generous substantiality criteria. Even if we assumed that three or four times as many school districts as those participating in the survey were effectively offering "substantial" regular classroom enrichment, their number would not exceed 5% of the total school district population.

Another large-scale study confirmed a few years later the disheartening Richardson results. In the early 1990s, the National Research Center of the Gifted and Talented (NRCGT) conducted a national survey of ongoing enrichment practices in U.S. school districts (Archambault et al., 1993). A representative U.S. sample of over 7000 3rd and 4th grade teachers received a detailed questionnaire "designed to determine the extent to which gifted and talented students are receiving differential education in the regular classroom setting" (p. 2). Again, the results were, to put it mildly, disquieting; they revealed that enrichment activities were offered no more than two or three times a month. Moreover, these activities usually targeted the whole class, leaving little specific enrichment for IGAT students. The authors concluded: "The results of this survey paint a disturbing picture of the types of instructional services gifted students receive in regular classrooms across the United States. It is clear from the results that teachers in regular third and fourth grade classrooms make only minor modifications in the curriculum and

their instruction to meet the needs of gifted students" (p. 5). This overview brings to mind the term "busywork", a label Julian Stanley (1979) used with disdain to describe most of what passes for regular classroom enrichment.

Summary

The above discussion shows that the DMGT's talent development model can be applied to the field of gifted education. Its main manifestation in the form of selective – residential or not – high schools, as well as honors classes, clearly illustrates how to implement an academically challenging talent development pathway. The saddest observation was a failure to find any systematic application of that model in elementary or middle schools. The most common gifted programs, namely pull-out classes and regular classroom enrichment, coexist with the mainstream K-12 curriculum as a parallel outside track; they have literally no impact on the delivery of that curriculum. In other words, the vast majority of IGAT students in U.S. elementary and middle schools rarely have access to even the most basic forms of enrichment, let alone any consistent ATD services as defined above.

Conclusion: Looking Ahead

Almost two decades ago, Renzulli & Reis closed their critical review of an ongoing educational reform by stating: "Talent development is the "business" of our field, and we must never lose sight of this goal, regardless of the direction that reform efforts might take" (1991, p. 34). I would slightly modify that statement by describing our "business" as *academic* talent development. It does not deny openness to other forms of talent development (e.g., in arts or sports), but it identifies academic pursuits as the core mission of schools, and academic talent development (ATD) as the school system's *specific* mission with regard to its academically talented students. Indeed, much more than our current label of "gifted education", the revised label of "academic talent development" would perfectly reflect the "business" of our field.

As we have seen in the last section, academic talent development remains largely unimplemented in North American schools, especially at the elementary and middle school levels. How would that implementation look like?

Implementing the ATD Model

A real ATD program would begin as early as kindergarten or first grade, thanks to an early entrance provision that would allow intellectually gifted children to begin their schooling even if their birthday fell a few days or weeks after the "official" cutoff date. As I said in my fifth commandment: "Thou shalt intervene … earliestly" (Gagné, 2007). Such a measure faces no insurmountable implementation hurdles. As a case in point, the province of Quebec began offering twenty years ago early entrance to kindergarten or first grade. To my knowledge, nowhere else in the world do we find such a widespread system. Each year, approximately 60% of the 2000 or so eligible children take advantage of that provision. The selection process, done by professional psychologists in private practice, includes careful assessment of three dimensions: intellectual precocity, socio-affective maturity, and fine psychomotor development (in that order). School principals will almost automatically endorse a positive recommendation. The vast majority of these young accelerated students adapt successfully to their accelerated insertion in the school system (Gagné & Gagnier, 2004). It is a sad state of affairs that such a system, which I consider to be the cornerstone of a complete K-12 ATD program, remains unavailable to the vast majority of intellectually precocious children.

Beyond that initial entrance component, a real ATD program would offer a parallel, enriched pathway to the regular K-12 curriculum. That pathway would be available to all children manifesting emerging talent; it would begin in first grade, in direct continuity with the early entrance cornerstone. It would propose challenging academic excellence

goals, coupled with the challenging means to reach them; and it would give priority, of course, to achievement measures, both for program access and for progress within it. Finally, implementing a "real" ATD program would mean adopting full-time grouping of talentees as the most appropriate delivery format. Ability grouping would not necessarily mean enforcing an "enriched" age-grade lockstep; educators would still occasionally allow further acceleration because of remaining large individual differences in ease and speed of learning *within* the talentee population.

That meritocratic focus would bring about a substitution of the inappropriate label "gifted children" for those of "(academic) talentee", "talented", or "IGAT" as more appropriate descriptors of students actively involved in an ATD program. This substitution does not mean that the gifted label would disappear. Within this revised orientation, the label would maintain a much needed, but reduced role; educators would use it to point at expressions of natural abilities, exactly as proposed within the DMGT framework. But talent would become the more common expression, if only because it would clearly specify the major criterion deciding access and progress within ADT programs. Teachers endorsed with the responsibility of guiding talentees through the program would, of course, be called "ATD teachers" instead of "gifted teachers" – awful! – or "gifted ed" teachers. Our professional association (NAGC) could even rename itself *National Association for the Development of Academic Talent* (NADAT), or something along these lines!

Impact on Equity

As we have seen earlier, this new focus on the development of academic excellence throughout the K-12 schooling process would render the equity issue obsolete. No better way exists to give access to a clearly defined talent development pathway than to measure preexisting or emerging talent. Even if these measures lead to disproportions as extreme as those observed at the University of California (see Table 3) or in graduate music programs (see Table 4), only ideologically biased observers will continue to protest. The vast majority of educators and concerned citizens would acknowledge the objectivity and transparency of our goal-related identification procedures. If there is any need for additional proof, it already exists in our own field. Here is an example.

In theory, everyone has access to Advanced Placement courses. Yet, both Blacks and Hispanics remain significantly underrepresented in spite of recent efforts by minority advocates and the College Board to increase their participation. No one thinks of blaming the schools, or the College Board, for these disproportions. Even more telling, no one would think of complaining that minority students are treated unfairly in AP courses. Yet, in 2004, only 32% of Black students received a grade of 3 or more (on a 5-point scale) as opposed to 96% of White students (Hertberg-Davis & Callahan, 2008, p. 39). In other words, 17 *times as many* (68% vs. 4%) Black as White students failed to reach what is considered a "creditable" grade on these courses.

Similarly, Hernandez (2008) discussed admissions to eight highly selective New York high schools, pointing at strong ethnic underrepresentation: "Among the 21,490 public school students who last year took the exam, the single gateway to eight high schools, 6 percent of blacks and 7 percent of Hispanics were offered admission, compared with 35 percent of Asians and 31 percent of white students." Even more telling, Hernandez mentioned a similar ethnic underrepresentation among *candidates* to the stringent admission exam. Of course, some minority advocates express complaints about the validity of the selection procedure; but, because of its focus on mastered academic knowledge, it has resisted these attacks. In fact, as mentioned in the article, analysts place more emphasis on a lack of preparation and motivation among minority students. These data suggest that the dissemination of ATD programs would not reduce ethnic disproportions. In fact, a strong focus on achievement measures would possibly increase them, just as we observed in the various examples presented earlier. It is a well-documented fact that ethnic gaps in academic achievement are as large as those on cognitive ability measures: recall the

MSOI quote presented earlier about ethnic differences in academic achievement. I doubt that the gap has changed substantially over the past decade, or that it will change substantially in the near future. We also have to keep in mind the impact of such average differences when selecting tail-end subpopulations.

Finale

The small number of existing programs that espouse the ATD model, and especially their almost total absence in elementary and middle schools, suggest that extensive dissemination lies far in the future. The specter of elitism hangs constantly over our heads; the low priority of IGAT educational needs remains a serious obstacle to increased public investment; the ambivalent attitudes of many teachers and administrators have deep roots; resistance towards the two main administrative provisions needed to fully implement the ATD model, namely full-time grouping and acceleration, will not disappear easily. Changes in terminology will also happen very slowly; the "gifted" label is too deeply embedded in our language to expect a rapid increase in the use of the terms talented or talentee. Thus, just as students do with regard to their educational goals, we should split our ultimate trajectory into a coordinated series of more modest intermediate goals. Yet, that step-by-step approach to change should not keep us from maintaining constant pressure on educational authorities and the school community. As stated in my 11th commandment (Gagné, 2006): "Thou shalt advocate … unremittingly!"

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Reference Notes

[1] This text is based on a keynote address at an International Symposium on "Public policies for disadvantaged students in gifted education", held in Seoul, South Korea, November 19–20, 2008.

[2] Ford computed her *over*representation indices with the following formula: (O – E) / O, where O represents the *observed* percentage, and E the *expected* percentage, or *population ratio*. We should use E instead of O as the denominator. In the case of *under*representation (U) indices, Ford switched from O to E as her denominator: [(O – E) / E]. Again, I disagree; the appropriate baseline, or denominator, for the phenomenon of underrepresentation should be the observed percentage [(O – E) / O]. But, there is a user-friendly solution to this problem. It consists in using a simple Observed/Expected ratio for both types of disproportions. A perfect representation will be represented by 1.0, *under*representation by smaller values (e.g., .75, .50, .25), and *over*representation by larger values (e.g., 1.5, 2.0, 3.0). This is the solution I decided to adopt in tables 1 to 5.

[3] Readers unfamiliar with the DMGT will find on the web an 8-page description of the updated version; search for "DMGT 2.0 Overview." That overview is also available in four other languages – French, Spanish, Portuguese, German – from the author.

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