CHAPTER 1

Gifted Education

Matching Instruction with Needs

Proper training does not consist in "pushing" the child on [too] rapidly . . . nor does it consist in "holding him back" and compelling him to become a drifter and wastrel of time. The most rational policy . . . is to provide extra work for the bright, in line with their intellectual interests. . . . A good plan is to combine this enrichment with a moderate degree of rapid progress through school.

LETA HOLLINGWORTH (1929, P. 375)

The mismatch between gifted youth and the curriculum they are forced to study most of the time is nothing short of an American tragedy. The human waste in terms of both student and faculty time is inestimable, and this waste can be found in both rich schools and poor, and even in schools that have well established programs for the gifted.

JOSEPH RENZULLI (1991, PP. 75--76)

Tens of thousands of gifted and talented children and adolescents are sitting in their classrooms—their abilities unrecognized, their needs unmet. Some are bored, patiently waiting for peers to learn skills and concepts that they had mastered one or two years earlier. Some find school intolerable, feigning illness or creating other excuses to avoid the trivia. Many develop poor study habits from the slow pace and lack of challenge. Some feel pressured to hide their keen talents and skills from uninterested and unsympathetic peers. Some give up on school entirely, dropping out as soon as they are legally able. Some educators call it a "quiet crisis" (Renzulli & Park, 2002; Ross, 1993, 1997).

Other gifted students tolerate school, but satisfy their intellectual, creative, and artistic needs outside the formal system. The lucky ones have parents who will sponsor their dance or music lessons, microscopes and telescopes, art supplies, frequent trips to the libraries and museums, and

home computers. The less fortunate ones make do as best they can, silently paying a price for a predicament they may not understand and that others choose to ignore. That price is lost academic growth; lost creative potential; and, sometimes, lost enthusiasm for educational success, eventual professional achievement, and substantial contributions to society.

Some educators—and many parents of nongifted students—are not swayed by the proposition that unrecognized and unsupported talent is wasted talent. A common reaction is, "Those kids will make it on their own," or "Give the extra help to kids who really need it!" The argument is that providing special services for highly able or talented students is "elitist"—giving to the "haves" and ignoring the "have-nots"—and, therefore, unfair and undemocratic. Other criticisms refer to the costs of additional teachers and other resources, and to the idea that pullout programs or special classes remove good role models from the regular classroom. Many teachers feel that students should adjust to the curriculum, rather than the other way around (Coleman & Cross, 2000).

Naming the problem "sounds of silence," Sternberg (1996) itemized dismal ways in which society reacts to the needs of the gifted. Specifically, federal funding is almost absent. There are no laws to protect the rights of the gifted, in contrast with many laws protecting minorities and women. As Sternberg noted, gifted programs tend to be the last installed and the first to be axed. Disgruntled parents register their gifted children in private schools. Grade inflation and pass–fail courses reward minimal work, leading gifted students to become listless and bored.

Sternberg reiterated some reasons behind the sounds of silence. Some see the programs as "welfare for the rich." Average children are the majority, and their parents prefer not to support other parents' "pointy-headed" bright children. Besides, don't gifted children possess great potential without special support? Some critics of gifted programs believe that gifted students are inherently selfish and that parents of the gifted at PTA meetings are "the loudest and least deserving."

Sternberg stressed the importance of altering our attitudes and our behavior. Gifted children are indeed our most valuable natural resource. We must recognize multiple forms of giftedness. We must recognize alternative learning styles, thinking styles, and patterns of abilities and coordinate instruction with these. Programs need to be expanded and evaluated. And to remove the sounds of silence, everyone—parents, teachers, administrators, and others—must be educated.

Currently, some criticisms of gifted education include a strong spark of conscience-rending truth. In fact, White, middle-income, and Asian students tend to be overrepresented in gifted and talented (G/T) programs, whereas African American, Hispanic, and low-income students are underrepresented. The problem is drawing strong attention to identification strategies, with a move toward multiple and culturally fair identification criteria (Chapter 3); to broadened conceptions of intelligence and giftedness (later in Chapter 1); and even to G/T program evaluation (Chapter 18) in the sense of assessing effects on students *not* in the program, other teachers, administrators, and the larger community (Borland, 2003).

Our "love–hate" relationship with gifted education has been noted by Gallagher (1997, 2003), Colangelo and Davis (2003), and others. We admire and applaud the individual who rises from a humble background to high educational and career success. At the same time, as a nation we are committed to equality.

The educational pendulum swings back and forth between strong concern for *excellence* and a zeal for *equity*; that is, between helping bright and creative students develop their capabilities and realize their potential contributions to society, and helping below-average and troubled students reach minimum academic standards (more on No Child Left Behind (NCLB) later in this chapter). Although interest in the gifted has mushroomed worldwide since the mid-1970s, the pendulum is swinging forcefully back to equity. Programs for the gifted are being terminated because they are not "politically correct," because of budget cutting, because of the lack of supportive teachers and administrators, and because gifted education is not mandated by the particular state (Purcell, 1995).

Especially, the antitracking/antiability grouping movement and the No Child Left Behind legislation have inflicted damage on G/T programs and on gifted

children themselves. On the other hand, the Science-Technology-Engineering-Mathematics (STEM) legislation, including the America Competes Act, holds hope for a small upswing of the pendulum, as do grant awards for critical foreign-language instruction. America's need to compete around the globe has sometimes fueled educational initiatives favorable to gifted education.

Of course, America and the world need both equity *and* excellence. Many students need special help. The rights of slower learners, students with physical or psychological disabilities, and students with language and cultural differences are vehemently defended, and they should be. However, a good argument can be made that gifted students also have rights and that these rights are often ignored. Just as with other exceptional students, students with gifts and talents also deserve an education commensurate with their capabilities. It is unfair to them to ignore, or worse, to prevent the development of their special skills and abilities and to depress their educational aspirations and eventual career achievements. Our democratic system promises each person—regardless of racial, cultural, or economic background and regardless of sex or condition that is disabling—the opportunity to develop as an individual as far as that person's talents and motivation will permit. This guarantee seems to promise that opportunities and training will be provided to help gifted and talented students realize their innate potential.

To those who argue that gifted students will "make it on their own," sensible replies are that (a) they should not be held back and required to succeed in spite of a frustrating educational system, and (b) some do not make it on their own. Rimm (2003b), for example, cited research showing that 10% to 20% of high school dropouts are in the tested gifted range. Almost invariably, gifted dropouts are underachievers—talented students who are unguided, uncounseled, and unchallenged (Renzulli & Park, 2002; Rimm, 2003, 2008c; Whitmore, 1980). The widely cited *A Nation at Risk* by the National Commission on Excellence in Education (1983) reported that "over half the population of gifted students do not match their tested ability with comparable achievement in school."

It is not only the gifted students themselves who benefit from specific programs that recognize and cultivate their talents, but also teachers involved with gifted students, who learn to stimulate creative, artistic, and scientific thinking and to help students understand themselves, develop good self-concepts, and value education and career accomplishments. In short, teachers of the gifted become better teachers, and their skills benefit "regular" students as well. Society also reaps a profit. It is today's gifted and talented students who will become tomorrow's political leaders, medical researchers, artists, writers, innovative engineers, and business entrepreneurs. Indeed, it is difficult to comprehend a proposal that this essential talent be left to fend for itself—if it can—instead of being valued, identified, and cultivated. U.S. schools lag far behind other nations in tests of science and math achievement (Mervis, 2007). Tomorrow's promise is in today's schools, and it must not be ignored.

HISTORY OF GIFTEDNESS AND GIFTED EDUCATION

Giftedness Over the Centuries

Whether a person is judged "gifted" depends upon the values of the culture. General academic skills or talents in more specific aesthetic, scientific, economic, or athletic areas have not always been judged as desirable "gifts."

In ancient Sparta, for example, military skills were so exclusively valued that all boys, beginning at age 7, received schooling and training in the arts of combat and warfare. Babies with physical defects, or who otherwise were of questionable value, were flung off a cliff (Meyer, 1965).

In Athens, social position and gender determined opportunities. Upper-class free Greeks sent their boys to private schools that taught reading, writing, arithmetic, history, literature, the arts, and physical fitness. Sophists were hired to teach young men mathematics, logic, rhetoric, politics, grammar, general culture, and "disputation." Apparently, only Plato's Academy charged no fees and selected both young men and women on the basis of intelligence and physical stamina, not social class.

Roman education emphasized architecture, engineering, law, and administration. Both boys and

girls attended first-level (elementary) schools, and some girls attended second-level (grammar) schools, but higher education was restricted to boys. Rome valued mother and family, however, and some gifted women emerged who greatly affected Roman society, most notably Cornelia, Roman matron and mother of statesmen Gaius and Tiberius Gracchus.

Early China, beginning with the Tang Dynasty in A.D. 618, valued gifted children and youth, sending child prodigies to the imperial court, where their gifts were both recognized and cultivated. Chinese leaders anticipated several principles of modern G/T education. They accepted a multiple-talent concept of giftedness, valuing literary ability, leadership, imagination, and originality, and such intellectual and perceptual abilities as reading speed, memory, reasoning, and perceptual sensitivity (Tsuin-chen, 1961). They also recognized (a) apparently precocious youths who grow up to be average adults, (b) seemingly average youths whose gifts emerge later, and (c) true child prodigies, whose gifts and talents are apparent throughout their lives. An important point, attributed to Confucius about 500 B.C., is that the Chinese recognized that education should be available to all children, but all children should be educated differently according to their abilities.

In Japan, birth again determined opportunities. During the Tokugawa Society period, 1604–1868 (Anderson, 1975), Samurai children received training in Confucian classics, martial arts, history, composition, calligraphy, moral values, and etiquette. Commoners, conveniently, were taught loyalty, obedience, humility, and diligence. A few scholars established private academies for intellectually gifted children, both Samurai and common.

Aesthetics influenced Renaissance Europe, which valued and produced remarkable art, architecture, and literature. Strong governments sought out and rewarded the creatively gifted—for example, Michelangelo, Da Vinci, Boccaccio, Bernini, and Dante.

Giftedness in America

In early America, concern for the education of gifted and talented children was not great. Some gifted youth were accommodated in the sense that attendance at secondary school and college was based both on academic achievement and the ability to pay the fees (Newland, 1976).

With compulsory attendance laws, schooling became available to all, but special services for gifted children were sparse (Abraham, 1976; Greenlaw & McIntosh, 1988; Heck, 1953; Witty, 1967, 1971). A few bright spots were as follows:

- In 1870 St. Louis, Missouri, initiated tracking, which allowed some students to accelerate through the first eight grades in fewer than 8 years.
- In 1884 Woburn, Massachusetts, created the "Double Tillage Plan," a form of grade-skipping in which bright children attended the first semester of first grade, then switched directly into the second semester of second grade.
- In 1886 schools in Elizabeth, New Jersey, began a multiple-tracking system that permitted gifted learners to progress at a faster pace.
- In 1891 Cambridge, Massachusetts, schools developed a "double-track" plan; also, special tutors taught students capable of even more highly accelerated work.
- Around 1900 some "rapid progress" classes appeared that telescoped three years of schoolwork into two.
- In 1901 Worcester, Massachusetts, opened the first special school for gifted children.
- In 1916 "opportunity classes" (special classes) were created for gifted children in Los Angeles, California, and Cincinnati, Ohio.
- By about 1920 approximately two-thirds of all larger cities had created some type of program for gifted students; for example, special classes were begun in 1919 in Urbana, Illinois, and in 1922 in Manhattan, New York, and Cleveland, Ohio.

In the 1920s and into the 1930s, interest in gifted education dwindled, apparently for two good reasons. Dean Worcester referred to the 1920s as "the age of the common man" and "the age of mediocrity," a time when "the idea was to have everybody just as near alike as they could be" (Getzels, 1977, pp. 263–264). Administrators had no interest in helping any student achieve beyond the standard; the focus was on *equity*. The second reason was the Great

Depression, which reduced most people's concern to mere survival. Providing special opportunities for gifted children was low on the totem pole.

Giftedness in Europe

In contrast with the United States, tracking and ability grouping (streaming) have not been as contentious in Europe (Passow, 1997). On the surface, not much was said about "the gifted." However, the structure of the European national school systems was openly geared to identifying and educating the most intellectually able. Ability grouping, particularly, has been a traditional way to identify able learners and channel their education.

In England, as distinct from the rest of Europe, the strong class consciousness that has pervaded British society, which includes resentment of inherited (unearned) wealth and titles, led to an egalitarian reluctance to spend scarce educational funds to help gifted students, who seemed already advantaged. Not until the late 1990s did gifted education gain momentum in England (Gross, 2003).

CONTEMPORARY HISTORY OF GIFTED EDUCATION

Recent history underlying today's strong interest in gifted education begins with capsule stories of the contributions of Francis Galton, Alfred Binet, Lewis Terman, and Leta Hollingworth, followed by the impact of Russia's Sputnik, a look at the gifted movement in America and worldwide, and at gifted education in the 21st century.

Hereditary Genius: Sir Francis Galton

The English scientist Sir Francis Galton (1822–1911), a younger cousin of Charles Darwin, is credited with the earliest significant research and writing devoted to intelligence testing. Galton believed that intelligence was related to the keenness of one's senses—for example, vision, audition, smell, touch, and reaction time. His efforts to measure intelligence, therefore, involved such tests as those of visual and auditory acuity, tactile sensitivity, and reaction time. Impressed by cousin Charles's *Origin of the Species,* Galton reasoned that evolution would favor persons with keen senses—persons who could more easily detect food sources or sense approaching danger. Therefore, he concluded that one's sensory ability—that is, intelligence—is due to natural selection and heredity. The hereditary basis of intelligence seemed to be confirmed by his observations—reported in his most famous book, *Hereditary Genius* (Galton, 1869)—that distinguished persons seemed to come from succeeding generations of distinguished families. Galton initially overlooked the fact that members of distinguished, aristocratic families also traditionally inherit a superior environment, wealth, privilege, and opportunity—incidentals that make it easier to become distinguished.

Galton's emphasis on the high heritability of intelligence is shared by many leading intelligence researchers (e.g., Gottfredson, 1997a, 2003; Herrnstein & Murray, 1994; Jensen, 1969; Jensen & Miele, 2002; Plomin, DeFries, McClearn, & McGuffin, 2001).

Roots of Modern Intelligence Tests: Alfred Binet

Modern intelligence tests have their roots in France in the 1890s. Alfred Binet, aided by T. Simon, was hired by government officials in Paris to devise a test to identify which (dull) children would not benefit from regular classes, and therefore, should be placed in special classes to receive special training. Even then, someone had perceptively noticed that teachers' judgments of student ability sometimes were biased by such traits as docility, neatness, and social skills. Some children were placed in schools for the mentally challenged because they were too quiet, were too aggressive, or had problems with speech, hearing, or vision. A direct test of intelligence was badly needed.

Binet tried a number of tests that failed. It seemed that normal students and dull students were not particularly different in (a) hand-squeezing strength, (b) hand speed in moving 50 cm (almost 20 inches), (c) the amount of pressure on the forehead that causes pain, (d) detecting differences in hand-held weights, or (e) reaction time to sounds or in naming colors. When he measured the ability to pay attention, memory, judgment, reasoning, and comprehension, he began to obtain results. The tests

would separate children judged by teachers to differ in intelligence (Binet & Simon, 1905a, 1905b). Binet's goal was initially to identify those with sufficient intelligence to benefit from schooling.

One of Binet's significant contributions was the notion of *mental age*—the concept that children grow in intelligence, that any given child may be at the proper stage intellectually for his or her years, or else measurably ahead or behind. A related notion is that, at any given age level, children who learn the most do so partly because of greater intelligence.

In 1890 noted American psychologist James McKeen Cattell called for the development of tests that would measure mental ability (Stanley, 1978a); his request was at least partly responsible for the immediate favorable reception to Binet's tests in America. In 1910 Goddard described the use of Binet's methods to measure the intelligence of 400 "feebleminded" New Jersey children, and in 1911 he summarized Binet's evaluation of 2,000 normal children. The transition from using the Binet tests with below-average children to employing them with normal and above-average children thus was complete and successful.

Lewis Terman: The Stanford–Binet Test, His Gifted Children Studies

Stanford psychologist Lewis Madison Terman made two historically significant contributions to gifted education that have earned him the title of father of the gifted education movement. First, Terman supervised the modification and Americanization of the Binet–Simon tests, producing in 1916 the forerunner of all American intelligence tests, the *Stanford–Binet Intelligence Scale.*

Terman's second contribution was his identification and longitudinal study of 1,528 gifted children, published in the *Genetic Studies of Genius* series (Burks, Jensen, & Terman, 1930; Terman, 1925; Terman & Oden, 1947, 1959; see Shurkin, 1992). In 1922 Terman and his colleagues identified 1,000 children with Stanford–Binet IQ scores above 135 (most were above 140), the upper 1%. By 1928 he added another 528. Of the 1,528, there were 856 boys and 672 girls. The average age was 12 years. All gifted and most comparison children were from major California cities: Los Angeles, San Francisco, Oakland, Berkeley, and Alameda. They had been initially identified by teachers as highly intelligent. Tests, questionnaires, and interviews in at least nine major contacts (field studies or mailings) in 1922, 1927–28, 1936, 1939–40, 1945, 1950, 1955, 1960, and 1972 traced their physical, psychological, social, and professional development for half a century (e.g., Oden, 1968). The earliest research involved parents, teachers, medical records, and even anthropometric (head) measurements. Terman died in 1956, but his work was continued by others, including Anne H. Barbee, Melita Oden, Pauline S. Sears, and Robert R. Sears.

Regarding his subject sample, in comparison with the general populations of the California urban centers at the time, there were twice as many children of Jewish descent than would be expected, but fewer children of African American or Hispanic American parents. Chinese American children were not sampled at all because they attended special Asian schools at the time. Note also that the effects of heredity versus environment were hopelessly tangled in Terman's subjects. Most parents of these bright children generally were better educated and had higher-status occupations, and so their children grew up in advantaged circumstances.

Terman's high-IQ children—called "Termites" in gifted-education circles—were superior in virtually every quality examined. As we will see in Chapter 2, they not only were better students, they were psychologically, socially, and even physically healthier than the average. Terman observed that the myth of brilliant students being weak, unattractive, or emotionally unstable was simply not true as a predominant trend.

Some other noteworthy conclusions related to the Terman studies are these:

- While in elementary and secondary school, those who were allowed to accelerate according to their intellectual potential were more successful. Those not permitted to accelerate developed poor work habits that sometimes wrecked their college careers.

- Differences between the most and least successful gifted men indicated that family values and parents' education were major factors. For example,

50% of the parents of Terman's "most productive" group were college graduates, but only 15% of the parents of the "least productive" group had college degrees.

- On the downside, and with the benefit of hindsight, restricting the identification of "genius" or "giftedness" to high IQ scores is severely limiting; artistic and creative genius and genius in a single area were ignored.

- As another negative, Terman's conclusions regarding the mental and social health of his bright children swayed educators for many decades to ignore the sometimes desperate counseling needs of gifted children (Chapter 17).

Leta Hollingworth: "Nurturant Mother" of Gifted Education

According to Stanley (1978a), Galton was the grandfather of the gifted-child movement, Binet the midwife, Terman the father, and Columbia University's profoundly gifted Leta Hollingworth the nurturant mother. Her pioneering efforts began in 1916, when she encountered an 8-year-old boy who tested 187 IQ on the new Stanford–Binet scale. Said Hollingworth (1942, p. xii), "I perceived the clear and flawless working of his mind against a contrasting background of thousands of dull and foolish minds. It was an unforgettable observation." Indeed, the observation changed the direction of her career and life (Delisle, 1992).

Hollingworth's efforts supporting gifted children and gifted education in the New York area included literally inventing strategies to identify, teach, and counsel gifted children. Space will not permit an adequate summary of this remarkable woman's accomplishments and contributions. See Klein (2000) for a brief, but more adequate, overview.

In 1922 at New York City Public School (P.S.) 165, with help from schoolteachers and the Columbia University Teachers College faculty and administrators, Hollingworth studied and personally taught 50 students divided into two classes, one with an average IQ of 165 and the other with an average IQ of 145. Note, in Chapter 3, that such categories of IQ scores would not be possible with the use of today's IQ tests, because deviation IQ scores are not calculated beyond the 150s for most tests (Rimm, Gilman, & Silverman, 2008). Children spent about half of their school hours working on the regular curriculum and the other half on enrichment activities. These included conversational French, history of civilization, social science, algebra, nutrition, music, dramatics, chess, writing biographies, physical education, and field trips to the Museum of Natural History and the Metropolitan Museum of Art. Classroom resources included a typewriter, a mimeograph machine, a microscope, hand lenses, a carpenter's bench, and work tables (Gray & Hollingworth, 1931; Klein, 2000). Hollingworth spent 18 years at P.S. 165.

A 1936 study took place at Speyer Elementary School (P.S. 500). The Speyer project included 225 students, 25 per class, representing 23 nationalities from all five New York City boroughs. There were 50 gifted students (two "Terman Classes") and 175 students with IQs in the 75–90 range (seven "Binet Classes"). The Terman students interacted daily with the Binet students in such activities as student council, physical education, a Girl Scout troop, a boy's basketball team, the school newspaper, field trips to factories and museums, and recess—which fostered tolerance for individual differences.

The curriculum for the high-IQ Terman students, which earned worldwide attention, included "a rich background of ideas . . . education for initiative and originality . . . [based] upon sound and exhaustive knowledge . . . [and] evolution of culture" (Hollingworth, 1938, pp. 297–298). Remarkably, homework was not required; and reading was not taught, because most students could read before they entered school.

Addressing more general issues, Hollingworth believed that the top 1% (IQs 130 to 180) are gifted; gifted children become gifted adults; early identification is essential in order to provide optimal educational experiences; and schools should use multiple identification criteria. Hollingworth's identification procedure included individual IQ tests, interviews with parents and the child, teacher and principal nominations, and a review of each child's social and emotional maturity.

Hollingworth made the important observation that children of 140 IQ waste about half their time in school, and children of 170 IQ waste practically all of

their time (Hollingworth, 1939). Few of today's gifted educators would disagree.

Hollingworth made early contributions to counseling the gifted, or as she put it, to their "emotional education." Unlike Terman's overemphasis on the mental health of bright children, Hollingworth (1942) underscored that highly intelligent children also are highly *vulnerable*. Social and emotional problems emerge because intellectual development outstrips the child's age and physical development. Especially, the child's advanced vocabulary, interests, and preferences for games with complicated rules will alienate average children. Hollingworth sought to help gifted children understand that less talented students could be friends and, in many circumstances, even mentors.

Many adults do not understand precocity, observed Hollingworth. They may tease a child about his or her knowledge, or a teacher may prevent a child from exploring advanced resources. The combination of adult ignorance with childhood knowledge causes problems for the precocious child. Many gifted children become apathetic in schools that ignore their intellectual needs and may develop negative attitudes toward authority figures.

Hollingworth's experiences with gifted children are summarized in two books: *Gifted Children: Their Nature and Nurture* (Hollingworth, 1926) and *Children Above 180 IQ Stanford-Binet: Origin and Development* (Hollingworth, 1942). One noteworthy 1931 quote is, "It is the business of education to consider all forms of giftedness in pupils in reference to how unusual individuals may be trained for their own welfare and that of society at large" (Passow, 1981, p. 6).

Hollingworth also was an early advocate for women's rights. She died in 1939.

Sputnik: The Russians Are Gaining! The Russians Are Gaining!

A significant historical event that predated the 1970s resurgence of interest in gifted education is the launching in 1957 of the Russian satellite Sputnik. To many in the United States, the launch of Sputnik was a glaring and shocking technological defeat—Russia's scientific minds had outperformed ours (Tannenbaum, 1979). Suddenly, reports criticizing American education and, particularly, its ignoring of gifted children became popular. For example, a 1950 Educational Policies Commission noted that mentally superior children were being neglected, which would produce losses in the arts, sciences, and professions. In a book entitled *Educational Wastelands*, Bestor (1953) charged that "know-nothing educationists" had created schools that provided "meager intellectual nourishment or inspiration," particularly for bored gifted students.

Tannenbaum (1979) referred to the aftermath of Sputnik as a "total talent mobilization." Gifted students were identified. Acceleration and ability grouping were installed. Academic course work was telescoped (condensed). College courses were offered in high school. Foreign languages were taught to elementary school children. New math and science curricula were developed. Funds, public and private, were earmarked for training in science and technology. In high school there was a new awareness of and concern for high scholastic standards and career mindedness. Bright and talented students were expected to take tough courses to "fulfill their potential, and submit their developed abilities for service to the nation" (Tannenbaum, 1979, p. 12).

While Sputnik itself was a great success, the keen interest in educating gifted and talented students fizzled in about 5 years. The awareness and concern were rekindled in the mid-1970s.

The Bell Curve and Other IQ Controversies

Herrnstein and Murray's (1994) *The Bell Curve* appeared, at first, to present a strong gift to gifted education. The authors support programs for the gifted because these high-IQ persons supply our professional leadership. However, Sternberg et al. (1995; see also Richert, 2003; Rogers, 1996) made these points regarding the "meanspirited and prejudiced" authors: First, Herrnstein and Murray's definition of *giftedness* (high IQ scores) ignores modern conceptions such as those of Gardner, Sternberg, Renzulli, and even the federal multiple-talent definition. Second, correlations (e.g., between IQ and life success) do not necessarily imply causation—that is, that a high IQ causes life success. Third, Herrnstein and Murray stress

group and racial differences in IQ; for example, Caucasians, Asians, and especially Jewish people, on average, produce higher IQ scores. They pay little attention to the necessity of a favorable social and physical environment. Fourth, *The Bell Curve* largely ignores the modifiability of tested IQ scores—for example, with Feuerstein's *Instrumental Enrichment* program (see Chapter 10). The central danger, conclude Sternberg et al. (1995), is that in the IQ meritocracy described in *The Bell Curve,* low performance on an IQ test shades into low valuation as a human being, a position with which thoughtful people disagree. And finally, Gould (1981) accuses Herrnstein and Murray of political motivation, rather than science, and charges that their work represents a "mismeasure of man" that invariably finds that disadvantaged groups are innately inferior and are thus deserving of their status.

It feels good to criticize a politically incorrect book for apparent racism, for "classism," for faulty logic, and for maligning traditional American values of initiative and hard work. However, intelligence researchers and scholars have presented polite in-your-face arguments—based on decades of twin and sibling studies—that essentially conclude "life is a long train of activities that constantly requires . . . learning, thinking, problem-solving, and decision making . . . in short, the exercise of *g*" (general intelligence; Gottfredson, 2003, p. 35). Further, whether we like it or not and whether it appears elitist, racist, unfair, and/or undemocratic, basic intelligence, which is best measured by IQ tests, "is the best single predictor—and a better one than social class background" (Gottfredson, p. 35) of school achievement, years of education, occupational level, performance in job training, performance on the job, social competence, child abuse, delinquency, crime, poverty, accident proneness, death from auto accidents, dropping out of school, having a child out of wedlock, smoking during pregnancy, health problems and Medicare claims, and getting a divorce within five years of marriage (Gottfredson, 1997b, 2002; Tannenbaum, 2003). The predictions are valid for all American subpopulations (Gottfredson, 2002, 2003).

While such research conclusions have indeed placed many fair-minded scholars in an uncomfortable dilemma, others remain stolid and smug in their initial pro-IQ or anti-IQ positions.

Arthur Jensen continues his research to more exactly measure the general factor of intelligence (g) by studying reaction time, in a new field known as Mental Chronometry (MC) (Jensen, 1998; Jensen & Miele, 2002). MC measures the response time (RT) taken to process information, and Jensen believes it will have great advantages over ordinary psychometric tests because of its exactness and the ability to use a ratio scale. His group is collecting elementary cognitive task (ECT) data on groups between ages 3 to 88 years (Beaujean, 2002). The RT measure is a déjà vu of the IQ tests used to measure the intelligence of immigrants arriving on Ellis Island, from which psychologist Henry Goddard concluded in 1912 that "the test results established that 83% of Jews, 80% of Hungarians, and 87% of Russians were 'feebleminded'" in the book *The Science and Politics of IQ* (Kamin, 1974, p. 16).

In contrast, Sternberg's group (Sternberg & Grigorenko, 2002) continues to espouse a much broader concept that Sternberg labels "the theory of successful intelligence." Sternberg claims that his theory provides a proven model for gifted education (Sternberg & Grigorenko, p. 265):

> Successful intelligence is the ability to succeed in life according to one's own definition of success, within one's sociocultural context, by capitalizing on one's strengths and correcting or compensating for one's weaknesses; in order to adapt to, shape, and select environments; through a combination of analytical, creative, and practical abilities.

Furthermore, from the practical perspective, Tannenbaum (2003) reminds us once again that other factors do substantially affect life outcomes—for example, favorable family circumstances, practice and experience, persistence, special talents, physical capabilities, and a winning personality.

Gifted Education in the 21st Century

The 1993 U.S. Department of Education report *National Excellence: A Case for Developing America's Talent* (Ross, 1993) was a breath of fresh air for educators of gifted students. The report, whose first chapter

is entitled "A Quiet Crisis in Educating Talented Students," flies smack in the face of the powerful and seemingly anti–gifted education reform movement aimed at abolishing tracking and grouping of students according to ability (discussed later in this chapter). Some highlights of the report are as follows:

- The United States is squandering one of its most precious resources—the gifts and talents of many of its students. These youngsters are not challenged to do their best work. They perform poorly in comparison with top students in other countries.
- America relies on its top-performing students to provide leadership in science, math, writing, politics, dance, art, business, history, health, and other human pursuits.
- Most gifted and talented students spend their school days without attention to their special learning needs; teachers make few if any provisions for gifted students.
- In elementary school, gifted students already have mastered 35% to 50% of the curriculum to be offered before they begin the school year.

Some report recommendations are as follows:

- Content standards, curriculum, and assessment practices must challenge all students, including those who are gifted and talented.
- Communities and schools must provide more and better opportunities for top students to learn advanced material and move at their own pace. Flexible learning opportunities must be available inside and outside the school building.
- Opportunities, support, and high-level learning experiences must be made available for disadvantaged and minority children with outstanding talents.
- Teachers must receive better training in how to teach high-level curricula. They need to provide instruction that sufficiently challenges all students. This will benefit children at every academic level.

There is indeed a quiet crisis in American schools.

By 1990 the U.S. government and all 50 states had enacted legislation, and many states had allocated funds. Many teachers and administrators nationwide and across Canada had become more and more committed to gifted education. Most large school systems and many small ones had initiated programs and services for gifted children. Researchers, teachers, materials writers, and others continue to write articles, books, tests, and new materials for teaching computer skills, math, art, science, communication skills, learning-how-to-learn skills, values, leadership, and creativity and other thinking skills. Counseling has become increasingly recognized as an essential program component. Enthusiasm among many educators—and certainly among parents of children who are gifted—remains high.

Gifted education continues to be variable within the United States. Gifted children will have very different opportunities, depending on the state in which they live. According to the Davidson Institute for Talent Development (2009), there are now only 6 states that mandate and fully fund gifted education. There are 12 states that neither provide a mandate nor fund gifted programs. Twenty-two states mandate gifted programming and partially fund them. Six states mandate programming, but provide absolutely no funding, whereas five have no mandate, but nevertheless provide partial funding. It's absolutely clear that gifted children do not receive equal opportunities for education in this country. Check Figure 1.1 to see where your state stands as of 2009. Also, you may contact your state's Department of Education for updated information, as mandates and funding allowances may have changed.

The gifted movement is also worldwide, although some countries are just beginning to make some sort of special provisions for their high-ability students (Persson, Joswig, & Balogh, 2000). For example, a few European countries do not allow enrichment or special classes, but they permit grade skipping—which, incidentally, requires not one whit of special facilities, funds, or teacher training. Colangelo, Assouline, and Gross (2004a; 2004b) remind us that grade skipping is not only the least expensive, but the most effective, curriculum intervention for gifted students (see Chapter 5). Some European countries offer no gifted education options whatsoever, but do sponsor competitions in math, computing, physics, and the arts (e.g., painting, writing, filmmaking); some countries provide

Mandate, Full Funding	Arizona, Georgia, Iowa, Mississippi, North Carolina, Oklahoma
Mandate, Partial Funding	Alaska, Arkansas, Colorado, Florida, Idaho, Indiana, Kansas, Kentucky, Lousiana, Maine, Minnesota, Montana, Nebraska, New Mexico, Ohio, South Carolina, Tennessee, Texas, Virginia, West Virginia, Washington, Wisconsin
Mandate, No Funding	Alabama, Hawaii, Maryland, New Jersey, Oregon, Pennsylvania
No Mandate, Funding Available	California, Michigan, Nevada, North Dakota, Utah
No Mandate, No Funding	Connecticut, Delaware, District of Columbia, Illinois, Massachusetts, Missouri, New Hampshire, New York, Rhode Island, South Dakota, Vermont, Wyoming

FIGURE 1.1 State Mandates and Funding for Gifted Education. *Source:* Copyright 2009, Davidson Institute for Talent Development. Reprinted with permission.

special schools only for music, art, or sports; some routinely assume that classroom differentiation of instruction by teachers is all that is needed for faster learners; some are just now beginning to offer special classes for high-ability learners; some are adopting Gardner's multiple-intelligences model (explained later in this chapter) to accommodate bright and talented students in the regular classroom; some leave gifted education programs to the discretion of individual schools; and worst of all, some simply count on gifted children always to be resilient—and somehow to manage, whatever their circumstances (Persson, Joswig, & Balogh, 2000).

Gifted programs of various types—and with various degrees of teacher training and commitment and support by administrators—presently are offered in Australia, Austria, Belgium, Brazil, Bulgaria, mainland China, Columbia, Croatia, the Dominican Republic, Egypt, England, Finland, France, Germany, Guam, Hong Kong, Hungary, India, Indonesia, Iraq, Israel, Japan, Korea, Latvia, Mexico, Micronesia, the Netherlands, the Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Scotland, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, the Ukraine, and Wales (Gross, 2003; Passow, 1997; Persson, Joswig, & Balogh, 2000).

NATIONAL RESEARCH CENTER ON THE GIFTED AND TALENTED

Joseph Renzulli's manifold contributions to gifted education appear in many chapters of this book. A major brainchild is his National Research Center on the Gifted and Talented (NRC/GT). The purpose of NRC/GT is to conduct "consumer-oriented" research on key problems in gifted education, and thereby to influence educational practices and policies. Currently, it is a collaborative effort among Renzulli's alma mater, the University of Virginia, and the University of Connecticut. Over its 20 year history, collaborating universities have included Yale University, the University of Georgia, Stanford University, and City University of New York, City College. Additionally, 54 state and territorial departments of education; over 260 public and private schools that represent diverse ethnic, socioeconomic, and demographic differences; 200 content area consultants; and "stakeholders" representing professional organizations, parent groups, businesses, federal agencies, and state and local legislators and boards of education are associated with the Center.

Some challenges are to (1) establish fair identification instruments and practices; (2) identify effective programming practices; (3) examine giftedness in special populations; (4) examine the evaluation of gifted programs; (5) evaluate different staff development techniques; (6) study standards for teacher certification in gifted education; (7) apply theory-based approaches to identification, teaching, and program evaluation; (8) study methods and effects of *compacting*—the elimination of already mastered material; (9) describe financial, administrative, and staff training activities for schools that serve students from various ethnic, socioeconomic, handicapped, and geographic groups; and (10) disseminate information about these practices and issues to educators, policymakers, and parents.

Some products have included the *NRC/GT Newsletter,* which summarized, for example, exemplary elementary school programs (Delcourt, 1994), planning gifted programs (Gubbins, 1999), evaluating gifted programs (Gubbins, 1998), professional development in gifted education (Gubbins, 2000; Westberg et al., 1998), and free summer programs for gifted and talented teenagers (McCoach, 1999). The NRC/GT also distributes one-sheet *Practitioner's Guides* that encapsulate, for example, "What Parents [and Teachers] Need To Know About . . ." gifted young children, gifted adolescents, attention deficit hyperactivity disorder (ADHD), creativity, acceleration, early readers, television viewing, and more. Most important, the NRC/GT website www.nrcgt.org provides a huge compendium of continuous research findings.

All program developers and teachers of the gifted should become acquainted with the insights, guidelines, problem solutions, and material pioneered by the NRC/GT. NRC/GT is funded by the Jacob K. Javits Gifted and Talented Students Education Act of 1988, Office of Educational Research and Improvement, and the U.S. Department of Education (National Research Center on the Gifted and Talented; 2131 Hillside Road, Unit 3007; Storrs, CT 06269–3007; www.nrcgt.org).

ABILITY GROUPING DEBATE CONTINUES

The reform movement of the 1980s was aimed at abolishing ability grouping. The move was toward *heterogeneous* (ability) grouping and away from *homogeneous* (ability) grouping. For gifted children, the consequences were bad. The movement included eliminating separate classes for faster and slower students at both elementary and secondary levels and abolishing special classes for the gifted and, usually, gifted programs themselves.

Reis et al. (1992) referred to the trend as a national hysteria. Renzulli (1995) called grouping the single biggest issue in gifted education. Renzulli (1991) reminded us that with heterogeneous grouping, bright kids learn nothing new until January. The debate continues (see Hopkins, 2007; March, 2007; Swiatek, 2001; Talbott, 2007; and Winebrenner & Devlin, 2001).

The most common target of critics is *between-class grouping,* also called *tracking, XYZ grouping,* or *homogeneous grouping,* in which, for example, low-, average-, and high-ability students are placed in three different classes at each grade. Two other common forms of ability grouping are *cross-grade grouping* and *within-class grouping.* Cross-grade grouping, or the *Joplin Plan,* places students in the next higher grade for part of their day, usually for reading, math, or science (Kulik, 2003; Kulik & Kulik, 1997; Schatz, 1990).

Within-class grouping includes separating students in each class for small-group instruction, usually according to reading or math ability. Within-class grouping also includes cooperative learning, in which two to four students interact to master material or produce a group answer to a problem; skill groups, in which small groups work on specific skills (e.g., math or reading); groups created to complete projects of various types; and peer teaching (Schatz, 1990).

The most influential spokespersons have been Jeanie Oakes (1985; Goodlad & Oakes, 1988), author of *Keeping Track,* and Sapon-Shevin (1994). Oakes (1985) argued several core points. First, she claimed that tracking is *ineffective*—students learn less, and they lose motivation and self-esteem. Second, she alleged that the practice is *discriminatory* and racist because too many minority children are in slow tracks. Third, she asserted that tracking is *unfair in principle*; it is simply wrong to deny access to deeper academic content and opportunities on the basis of ability.

Gifted education leader James Gallagher (2000) suggested that some attacks on gifted education are made because it is so good—gifted students usually do have smaller classes, more enthusiastic teachers, more individualization, and a richer curriculum. Such features could benefit all students. Perhaps it is not surprising that the American public continues to find at least some of Oakes's arguments compelling, and the detracking, degrouping movement remains with us.

Gifted education and gifted students are in deep trouble without grouping practices, some of which have been used effectively for over a century. Most G/T program designs place capable students in part-time or full-time *special classes* for enriched or

accelerated work; in weekly or more frequent *pullout* or *resource-room* groups for independent projects or other skill-development activities; in small *cluster groups* in one classroom at each grade for advanced learning activities and projects; in *talent, interest,* or *project* groups (Schatz, 1990); in higher grades for part of the day (*cross-grade grouping*); or in *school-within-a-school* plans, in which gifted students attend academic classes with other gifted students and nonacademic classes with regular students.

What does research say about ability grouping? Kulik (1992a, 1992b, 2003; Kulik & Kulik, 1997) conducted meta-analyses on 51 controlled studies of between-class grouping. Results of meta-analyses are reported in *effect size,* which is the difference between two groups in standard deviation units. Effect sizes may be interpreted as follows (Kulik, 1992b):

.10 to .35 = small difference

.35 to .70 = moderate difference

Above .70 = large difference

For practical purposes, effect sizes larger than about .30 (a difference of approximately 3 months' achievement) indicate a practically significant difference between an experimental condition (e.g., ability grouping) versus its control (e.g., heterogeneous classes).

The Kuliks' (2003) conclusions favor grouping gifted kids, if not all kids. First of all, Kulik (1992a) reminds us of the highly successful effects of grouping mathematically talented adolescents for acceleration in summer or college programs. Such students make phenomenal gains in math achievement (e.g., Lupkowski-Shoplik, Benbow, Assouline, & Brody, 2003; Olszewski-Kubilius, 2004; Stanley, 1991a).

Kulik (1992b) reported that students grouped in lower- and middle-level tracks learn the same amount as equivalent pupils do in mixed classes. However, "students in the top classes in XYZ programs outperform equivalent pupils from mixed classes" (p. vii). Kulik (1992b) also found a worthwhile achievement advantage with two types of grouping likely to be used in gifted programs. With part-time *cross-grade grouping,* the overall achievement advantage of homogeneously grouped versus heterogeneous classes was reflected in an effect size of about 0.30. *Within-class grouping* (to teach arithmetic) produced an overall achievement advantage effect size of about 0.35; low-, medium-, and (especially) high-ability students benefited, with effect sizes of 0.20, 0.15, and 0.40, respectively. An important conclusion of the Kuliks is that the achievement of low-ability students has not been harmed by homogeneous grouping, but the even more important conclusion by Brewer, Rees, and Argys (1995, as cited in Cramond, Benson, & Martin, 2002) *is that there are, absolutely, losses in achievement test scores when gifted students are regrouped heterogeneously.*

Analyzing 17 research syntheses, including those of the Kuliks, Rogers (1991, 2002) noted that grouping for enrichment, either within the class or in a resource room (pullout program), produces substantial gains in academic achievement, creativity, and other thinking skills.

Rogers (1991, 2002) noted that the higher achievement of gifted students likely is due to a combination of higher ability, interested teachers, and "the willingness of gifted students to learn while in a classroom with other interested, high-ability learners" (1991, p. xi). Table 1.1 summarizes effect sizes across the 17 syntheses for various grouping practices currently used with gifted students. The data strongly support the practice of grouping gifted students.

But what about self-esteem? According to "stigma theory," grouping should cause slow-track students to label themselves "dummies" and lower their self-expectations (e.g., Oakes, 1985). Perhaps so, but self-concepts also are shaped by successes and failures that occur when interacting with others of higher or lower ability. In mixed-ability classes less-able students observe others learning faster and see themselves as the last to understand. Such day-after-day comparisons can devastate self-esteem (Kulik, 1992a).

Many teachers are aware of the blossoming effect that occurs for some average- and low-ability children when the gifted leave for pullout enrichment activities or are removed altogether for special classes (Feldhusen, 1989b). Said one student, "When Bill (the gifted one) went out to work with other gifted kids, the rest of us were like the moon and the stars—that's when we finally got a chance to shine" (Fiedler, Lange, & Winebrenner, 1993, 2002, p. 46).

TABLE 1.1 Academic Effect Sizes of Program Options for Gifted Students

Option	Academic Effect Size
Early Entrance to School	.39
Subject Acceleration	.49
Curriculum Compaction	.45
Grade Skipping	.78
Enrichment (pullout)	.65
Enriched Classes Ability Grouped	.33
Cross-grade Grouping (reading, math)	.45
Nongraded Classes	.38
Concurrent Enrollment	.36
Regrouping for Specific Instruction (reading, math)	.43
Advanced Placement	.29
Credit by Examination	.75
Cluster Grouping	.33
Cooperative Learning	
Johnson's "Learning togther"	0
Slavin's TGT	.38
Slavin's STL (combination)	.30
Grade Telescoping	.56
Mentorship	.42

Source: Information from Rogers, 2002.

Kulik (2003) noted that the self-concepts of low- and medium-ability students tend to be *higher* when the students are grouped by ability rather than when they are placed in heterogeneous classes. However, high-ability students, when grouped (and competing) with others of high ability, seem to be "taken down a peg"; their self-concepts are slightly lower—perhaps an appropriate dose of humility.

Rogers's (1991, 2002) and Kulik's (1992a, 1992b, 2003) conclusions regarding the detracking movement take the form of guidelines that are combined in Box 1.1.

Tieso (2003) argues that ability grouping is not just tracking anymore and that ability grouping is not only ability grouping anymore. Grouping is most effective when there are curriculum modifications (Wiggins & McTigue, 1998) and differentiation (Delisle, 1997; Kaplan, 1986; Renzulli, 1994; Rimm, 2008c; Tomlinson, 1995, 1999, 2004; VanTassel-Baska, 1986; Winebrenner, 2001; see also www.sylviarimm.com). The quality of gifted-education pedagogy within ability grouping measurably enhances the accomplishments within that grouping.

Finally, there is some optimistic news. Perhaps the damage from the detracking, degrouping, heterogeneous classes movement is not as extensive as many assume. On the basis of surveys of grouping/tracking by ability or skill at all elementary and secondary levels, Kulik (2003; see also Gamoran & Weinstein, 1998; Loveless, 1999; Rees, Argys, & Brewer, 1996) concluded that (1) almost all elementary and secondary schools in America still use ability or skill grouping for some classes, and (2) most children are grouped by ability or skill either within their class or in separate classrooms for some or all of their work. Faster and slower students are segregated most often in high school and least often in elementary school.

BOX 1.1

Guidelines About Grouping the Gifted

Based on reviews of research syntheses, Rogers (1992) and Kulik (1992) summarized their conclusions relating to ability grouping in these guidelines:

- **Schools should resist calls for the wholesale elimination of ability grouping** (Kulik; Rogers). Some grouping programs help students a great deal. Programs for gifted students are beneficial. Also, slow, average, and bright students benefit from grouping programs that adjust the curriculum to aptitude levels of the groups, specifically, cross-grade grouping and within-class grouping.
- **Benefits are slight from programs that group children by ability, but prescribe common curricular experiences for all ability groups** (Kulik). Schools should not expect student achievement to change dramatically by either eliminating or initiating such programs.
- **Students who are academically or intellectually gifted should spend the majority of their school day with others of similar ability and interests** (Rogers). Such grouping (e.g., in special classes, special schools) has produced marked academic achievement gains as well as improved attitudes.
- **When full-time gifted programs are not available, gifted students might be offered cluster-grouping or cross-grade instructional grouping according to their individual proficiencies in school subjects** (Rogers).
- **Gifted students, individually or in groups, should be offered acceleration-based options** (Kulik; Rogers). Highly talented youngsters profit greatly from work in programs of accelerated work.
- **Mixed-ability cooperative learning plans should be used sparingly for gifted students** (Rogers). Cooperative learning might be used with the gifted for developing social skills. Research thus far indicates that—for gifted students—cooperative learning seems to produce fewer academic benefits than grouping plans.

Within-class grouping (especially for reading or math) continues to be widely used in elementary schools—even in schools with highly reform-conscious administrators. See Box 1.2.

The Gifted Left Behind in the Era of No Child Left Behind

The No Child Left Behind (NCLB) Act of 2001 targeted boosting the achievement of the lowest-achieving students. Its goal was to promote academic achievement to produce equity. Student achievement in reading and math has increased significantly since the enactment of NCLB. (Kober, Chudowsky, & Chudowsky, 2008). Gains are not as large at high school level as at elementary and middle school levels. Gaps have narrowed for African American and low-income students, and outcomes have changed in a largely positive direction for Hispanic students. However, the *New York Times* reported costs to high achievers (Dillon, 2008).

An analysis of National Assessment of Educational Progress (NAEP) data and results from a national teacher survey shed light on gifted student progress in this era of NCLB (Farkas & Duffett, 2008; Loveless, 2008). According to Tom Loveless of the Brookings Institution, the lowest-achieving 10% of students have made dramatic gains in reading and math: 16 points in reading tests for fourth graders and 13 points for eighth graders in math. While the gains for this lowest group should be celebrated, according to Loveless, the top pupils have languished academically with insignificant gains. The gap has indeed narrowed, but, unfortunately for gifted students, their educational opportunities have diminished and they

BOX 1.2

A Bicycle Ride: Why We Need Grouping

Rimm (1992c) assembled her thoughts on ability grouping by comparing the issue to bike riding with her husband and youngest daughter—both of whom needed a faster pace and longer ride to obtain a suitable fitness experience. Thinking analogically about children of varying abilities in the same classroom, she imagined not 3, but 23, bike riders and posed nine questions. As you read the following list, think first about your answer to each biking question; then think of the answer as though you were a student in a classroom:

1. Was the main purpose of our biking social or physical fitness? (While social fitness is important, the primary purpose of school is not social, but educational, fitness.)
2. Would it have been possible for us all to meet our social and physical fitness goals with the same activity? (We cannot meet all students' social and educational fitness needs with the same activities; they can be better met with grouping for some parts of the curriculum and not grouping for others.)
3. How would my husband and daughter have felt if I asked them to slow their pace for me or to spend most of their time teaching me to bike better? (Students who need more challenge may resent teachers and other students who slow their learning process. They feel bored in class and tend to feel superior to other kids if they spend their time teaching instead of learning.)
4. How would I feel about myself if the more able bikers were to spend most of their time teaching me or slowing down to wait for me? (Slower students hesitate to ask questions or to volunteer and discuss if they feel they are slowing other students. Believing they are slowing others is not good for self-esteem.)
5. Would the better bikers enjoy biking with persons of similar skills, strength, and endurance? (Very capable students enjoy learning with intellectual peers and often miss the stimulation when peers are unavailable.)
6. How could I feel good about my physical fitness activity even though I was slowest? (All children experience satisfaction in learning if they feel they are making progress. Setting and reaching personal goals is important for children at all levels.)
7. How would I feel if an outsider insisted that I keep up with the faster bikers? (Children feel pressured if they are rushed beyond their capacity.)
8. How would I feel if others did not see the value of my physical fitness activity for me? (Children who are not viewed as achieving by parents and teachers do not feel good about themselves. All students should experience a sense of accomplishment and "worthwhileness" of effort.)
9. How would I feel if my fitness and strength improved, but I was forced to continue to ride at my same speed and distance? (It is important to show children paths for movement between groups, particularly upward mobility through effort.)

A bike ride provides physical fitness only when all riders are encouraged to exercise to their abilities. P.S. Yes, we're still riding for physical fitness in 2009.

may legitimately feel cheated. Farkas and Duffett (2008) surveyed teachers and found that they felt pressured to focus on their lowest-achieving students to the disadvantage and neglect of achieving students. The pressure by NCLB on educators to avoid having their schools branded as failing was real. Most teachers believed they had no other choice and felt torn, although they claimed it offended their sense of fairness. Fordham President Charles E. Finn, Jr., questions whether our nation can "afford to let our strongest languish" in a time of fierce international competition and growth (Kuhner, 2008, n.p.). Joseph Renzulli's (2008) comments are perhaps even more crucial. Although he notes that proponents of prescriptive

programs and high-skills testing may boast of test-score increases, he questions whether this gain in test scores adds up to a love of learning or whether these repetitive "drill-and-kill" activities only prevent engagement and enthusiasm for life-long learning. Fortunately, U.S. Secretary of Education Arne Duncan announced that it is time to shift the emphasis away from testing students to improving the quality of learning (Mervis, 2009).

World Competition Encourages Science, Technology, Engineering, and Mathematics Education Rebound and Critical Foreign-Language Instruction

An important goal of the "America Competes Act" signed into law in August 2007 was to strengthen educational opportunities in science, technology, engineering, and mathematics throughout the school years (Inouye, 2007). Science, technology, engineering, and mathematics (STEM) education legislation does not specifically target gifted students, but unlike NCLB, which mainly aims at building basic skills, STEM education has goals that include improving higher order thinking skills, problem solving, analysis, and synthesis; and these are at least familiar terms in the curriculum of gifted youth. Fueled by concerns about competitiveness within the global economy, shrinking numbers of engineering degrees awarded by U.S. colleges, decreasing numbers of computer science majors, and underrepresentation of African Americans, Hispanics, and women, STEM opportunities may be on the rise (Brett, 2006; Mervis, 2009). Whereas the recipients of STEM funding will include universities as well as K–12 schools and should positively affect children of varying abilities, the 40 middle schoolers who arrive at MIT on the first Saturday of every month to participate in unique STEM mentoring experiences are undoubtedly identified as gifted (Salius, 2007).

Teaching foreign languages has not always been a strength for U.S. schools, but a national security language initiative will fund grant awards for teaching Arabic, Chinese, Russian, Korean, and Hindi (Bradshaw, 2008). Like STEM, foreign-language instruction is not reserved for the gifted, but the authors of this book are convinced by viewing their books translated into these languages that students must indeed be gifted to learn them. Our hope is that, as in the post-Sputnik era, the recognition of our national need to be competitive will have some positive fallout for gifted students interested in STEM or foreign-language career directions.

DEFINITIONS OF GIFTEDNESS

Defining *gifted* and *talented* is both an important and a complicated matter. First, the particular definition adopted by a school district will guide the identification process and thus determine who is selected for the special services of a gifted program. Second, there is danger that one's definition and consequent identification methods will discriminate against such special populations as poor, minority, disabled, and underachieving students. Third, one's definition of gifts and talents is also tied to programming practices; opportunities should be available for different types of gifts and talents. Fourth, the labeling effect of defining a student as "gifted" can have both positive and adverse effects—for example, raising self-esteem and self-expectations on one hand, but sometimes alienating peers, peers' parents, and siblings, or otherwise causing stress on others.

There is no one definition of "gifted," "talented," or "giftedness" that is universally accepted. Common usage of the terms even by experts is ambiguous and inconsistent. For example, it is acceptable to use the terms interchangeably, as when we describe the same person as either a "gifted artist" or a "talented artist." For convenience, the authors and others use the single word *gifted* to abbreviate *gifted and talented.*

Some writers and the general public see *talent* and *giftedness* on a continuum, with giftedness at the upper end. Noted Cox (1986), we speak of talented musicians, writers, and scientists, and the few who are truly gifted; but no one reverses this usage.

Related to this continuum definition, many programs include students who barely meet the established criteria, along with one or two others who are extraordinarily brilliant or astonishingly talented in a particular area. No accepted label distinguishes between these two visible groups, although "highly gifted," "extremely gifted," or "exceptionally gifted" are used, along with the tongue-in-cheek "severely gifted," "profoundly gifted," or "exotically gifted."

June Cox avoids the term *gifted*, preferring *able learners* (Cox, Daniel, & Boston, 1985). Renzulli (1994; Renzulli & Reis, 1997) prefers the phrase "gifted behaviors," which can be developed in certain students at certain times and in certain circumstances. They argue that the title of "gifted" should not be bestowed on children as a result of the identification process. For the same reason, many prefer the phrase "potentially gifted."

Formal Federal Definitions of Gifted and Talented

Any discussion of definitions of *gifted* and *talented* must begin with the original U.S. Office of Education (now the Department of Education) definition of *gifted* and *talented* (Marland, 1972):

> Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential in any of the following areas:

1. General intellectual ability
2. Specific academic aptitude
3. Creative or productive thinking
4. Leadership ability
5. Visual and performing arts
6. Psychomotor ability

The federal definition is thoughtful and appealing. It recognizes not only high general intelligence, but gifts in specific academic areas and in the arts. It further calls attention to creative, leadership, and psychomotor gifts and talents. It recognizes that gifted and talented students require "differentiated educational programs and services beyond those normally provided," thus justifying the development of gifted programs. It recognizes the two fundamental aims of gifted programs: to help individual gifted and talented students develop their high potential and to provide society with educated professionals who are creative leaders and problem solvers. By including "demonstrated achievement and/or potential ability," this definition takes underachieving students into consideration. As we will see in Chapter 3, many specific identification strategies are based on the categories in the federal definition.

In 1978 the U.S. Congress revised Maryland's definition to read as follows: The gifted and talented are

> children and, whenever applicable, youth who are identified at the preschool, elementary, or secondary level as possessing demonstrated or potential abilities that give evidence of high performance capability in areas such as intellectual, creative, specific academic or leadership ability or in the performing and visual arts, and who by reason thereof require services or activities not ordinarily provided by the school (U.S. Congress, Educational Amendment of 1978 [P.L. 95–561, IX (A)]).

In 1988 an even shorter version reads,

> The term "gifted and talented students" means children and youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities (P.L. 100–297, Sec. 4103. Definitions).

The 1993 "quiet crisis" report presented this definition, which in the new millennium still "reflect[s] today's knowledge and thinking" (p. 3):

> Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, possess an unusual leadership capacity, or excel in

> specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor.

The main difference between the 1972 version and the three later statements is that psychomotor ability was excluded. The reason for this change is that artistic psychomotor ability talents (for example, dancing, mime) could be included under performing arts, and athletically gifted students typically are well provided for outside of G/T programs. In fact, athletic programs may be seen as almost ideal gifted programs: Special teachers (coaches) are hired; expensive equipment and space are provided; training is partly individualized; students meet with others like themselves; they encourage and reward each other for doing their best; and students even travel to other schools to meet and compete with other talented individuals and teams. Not much was lost by dropping "psychomotor ability" from Congress's definition.

British Columbia funds 2% of its school population who are identified as gifted according to the official definition (British Columbia Ministry of Education Special Education Services, 1995). Note that this definition resembles the U.S. definitions, but acknowledges "multipotentiality" (high ability in several areas; Chapter 17), unusually intense motivation and persistence in a particular area (Chapter 2), and the possibility of also having a physical or learning disability (Chapter 15):

> A student is considered gifted when she/he possesses demonstrated or potential abilities that give evidence of exceptionally high capability with respect to intellect, creativity, or the skills associated with specific disciplines. Students who are gifted often demonstrate outstanding abilities in more than one area. They may demonstrate extraordinary intensity of focus in their particular areas of talent or interest. However, they may also have accompanying disabilities and should not be expected to have strengths in all areas of intellectual functioning.

A 2008–2009 NAGC survey showed that most states had adopted an exact or modified version of a federal definition, usually the well-known 1972 one (Cassidy & Hossler, 1992), and only 5 states had no definitions. Figure 1.2 shows the areas of giftedness

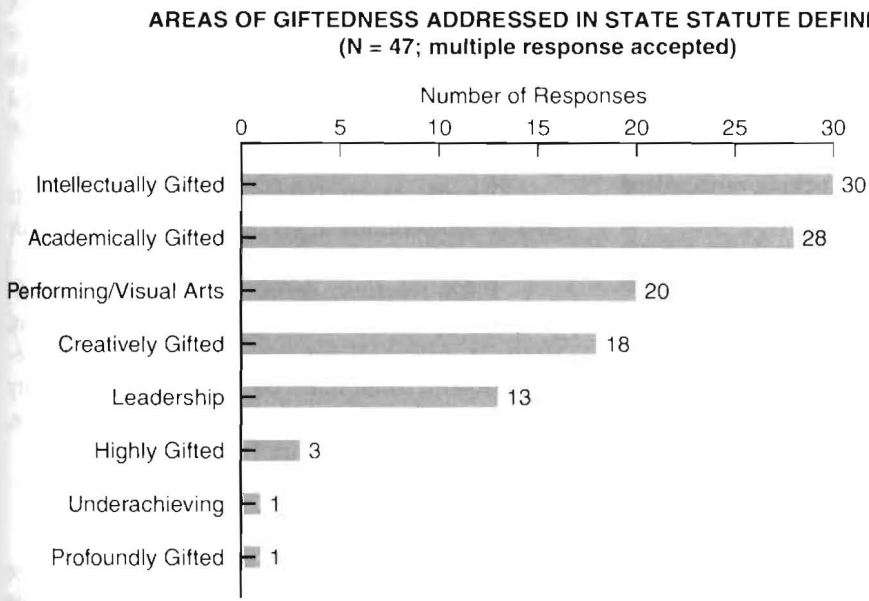

FIGURE 1.2 Areas of Giftedness in State Definitions of Gifted and Talented.

included in state statute definitions. Ten states include culturally diverse groups in their definition (CA, OH). Most states include either intellectually or academically gifted individuals, but only 25 include those gifted in the performing or visual arts, 26 include creatively gifted youths, 17 those with leadership abilities, 4 the highly or profoundly gifted, and only 3 specifically include underachieving gifted students.

The NAGC State of the States Report (2009) estimates that there are 3 million academically gifted students in pre-K through Grade 12 classrooms, but asserts that their special education is mandated in only 32 states and funding these programs is mandated in only 6 states. Thirteen states require school districts to have a district coordinator for gifted education, and only 10 states have policies permitting early entrance to kindergarten, despite significant research supporting early entrance (Brody, Muratori, & Stanley, 2004; Colangelo, Assouline, & Gross, 2004a, 2004b; McCluskey, Massey, & Baker, 1997). At the pre-K through Grade 8 level, states reported that the regular classroom and resource rooms were the most frequent delivery methods for gifted education. At the high school level, Advanced Placement courses and dual enrollment in college were most typically used for gifted students. Perhaps the saddest data reported in the State of the States report shows the dismal preparation in gifted education of most classroom teachers. Only 5 states require some training at the preservice level and require course work—exactly one semester credit hour. Only 20 states required professionals working with gifted students to have certification or credentialing (more about this later in the chapter in the discussion of standards).

On the bright side, new opportunities spring up. At least 14 states now have statewide gifted schools for math and science, 7 have them for the fine and performing arts, and 2 have them for the humanities. In addition, 11 states have virtual high schools and 16 states have summer programs often called "Governor's Schools." On the even brighter side, gifted education is copiously described in Wikipedia with many references taken from this specific textbook. Good job, Wikipedia!

EXPLANATIONS AND INTERPRETATIONS OF GIFTEDNESS AND INTELLIGENCE

Apart from the formal federal definitions, there are many other conceptions, explanations, interpretations, and definitions of *giftedness* and *intelligence.*

Five Categories of Definitions

Stankowski (1978) outlined five categories of definitions of *gifts* and *talents.* All but the first category continue to guide the identification process.

First, *after-the-fact* definitions emphasize prominence in one of the professions—consistent and outstanding achievements in a valuable area.

Second, *IQ* definitions set a point on the IQ scale, and persons scoring above that point are classed as *gifted.* Terman's Stanford–Binet cutoff of 135 is a classic example. The practice remains popular despite its glaring shortcomings of (1) ignoring creative and artistic gifts, (2) ignoring gifts in particular areas, (3) discriminating against disadvantaged students, and (4) branding motivated and creative students who score 1 point below the cutoff as "not gifted."

Third, *percentage* definitions set a fixed proportion of the school (or district) as "gifted," based on ability scores or grades. The percentage may be a restrictive 1% to 5% or a generous 15% to 20%. A misguided assumption is that "five percent of our children are gifted!" Nature is not so helpful. Like most human characteristics, abilities are distributed according to a bell-shaped curve, and any cutoff point is arbitrary.

Fourth, *talent* definitions focus on students who are outstanding in art, music, math, science, or other specific aesthetic or academic areas.

Fifth, *creativity* definitions stress the significance of superior creative abilities. It is curious that, although every G/T program seeks to increase creative growth, some states do not consider creativity to be an acceptable selection criteria (Torrance, 1984). Look again at Figure 1.2.

Renzulli's Three-Ring Model

On the basis of descriptions of creatively productive persons, primarily adults who have made valuable

contributions to society, Renzulli (1986; Renzulli & Reis, 2003) argues that

> Gifted behavior . . . reflects an interaction among three basic clusters of human traits—these clusters being above average (but not necessarily high) general and/or specific ability, high levels of task commitment (motivation), and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance (Renzulli & Reis, 2003, p. 75).

The combination of the three is brought to bear on general and specific performance areas, resulting in gifted behaviors (see Figure 1.3).

Some gifted program coordinators or teachers mistakenly use Renzulli's three-ring model as a guide for selecting only children who are high in all three characteristics. As we will see in Chapter 3 on identification, Renzulli outlines a reasonable identification plan that is not tied strictly to possessing a strong combination of all three traits. For example, a teacher may nominate a student on the basis of a high IQ score, despite the student's record of unmotivated underachievement; or a teacher may nominate a student on the basis of observed creativity or strong motivation, but without IQ information.

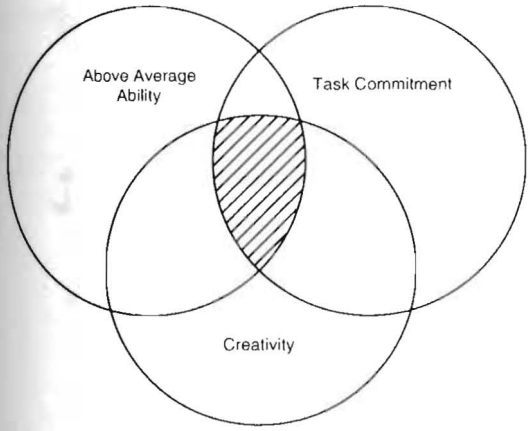

FIGURE 1.3 Renzulli's three-ring model.
Source: Reprinted by permission of the author.

General Gifts and Specific Talents: Gagné's DMTG Model

Gagné's (2000, 2003) Differentiated Model of Giftedness and Talent (DMGT) makes a definite distinction between *gifts* and *talents*. Here, gifts (general aptitudes) are untrained natural abilities. Talents (specific skills) are learned capabilities. Four types of innate gifts are intellectual (e.g., reasoning, judgment), creative (e.g., inventiveness, imagination), socioaffective (e.g., perceptiveness, empathy, tact), and sensorimotor (e.g., auditory, coordination). He also identifies seven categories (fields) of talents: academics, arts, business, leisure (e.g., games), social action (e.g., public office), sports, and technology. Personal factors that influence talent development are physical characteristics, motivation (e.g., needs, values), volition (e.g., willpower, effort), self-management (e.g., work habits), and personality (e.g., temperament, adaptability). Environment influences include one's milieu (e.g., physical, cultural), persons (teachers, parents, peers), provisions (e.g., services, activities), and events (encounters, awards). Talent development also is affected by chance factors, such as one's family environment, a school gifted program, or a bad athletic accident.

Tannenbaum's Who, What, and How of Giftedness

Tannenbaum (2003) addressed the problem of defining *giftedness* with a taxonomy that answers *who, what,* and *how* questions. One can be a producer of thoughts creatively or proficiently; a producer of tangibles creatively or proficiently; a performer of staged artistry creatively or proficiently; or a performer of human services creatively or proficiently. Table 1.2 summarizes his model with examples of each category. Tannenbaum noted that gifted and talented students will show advanced learning and creativity—that is, *promise*—but high-level creativity and productivity are almost always adult phenomena. He lists five interweaving factors that contribute to eventual demonstrated giftedness: (1) a superior general intellect, (2) strong special aptitudes, (3) supportive nonintellective (e.g., personality) traits, (4) a challenging and supportive environment, and, like Gagné, (5) chance, "the smile of good fortune at critical periods of life."

TABLE 1.2 Examples of Tannenbaum's Eight Categories of Gifted Persons

Category	Examples
Producers of thoughts creatively	Novelists, artists, composers
Producers of thoughts proficiently	Mathematicians, computer programmers, editors
Producers of tangibles creatively	Inventors, architects, design engineers
Producers of tangibles proficiently	Diamond cutters, machinists, art forgers
Performers of staged artistry creatively	Musicians, conductors, dancers, poetry readers, and actors, who interpret and "breathe life" into others' works
Performers of staged artistry proficiently	Musicians, conductors, dancers, and the like, who faithfully translate and reproduce the works of others
Performers of human services creatively	Innovative teachers, political leaders, and researchers in medicine, education, and the social sciences
Performers of human services proficiently	Successful teachers, physicians, and administrators who follow guidelines and procedures faithfully and successfully

Taylor's Multiple-Talent Totem Poles

Calvin Taylor's (1978, 1986, 1988; Schlichter, 2009) *multiple-talent totem pole* concept does not define *gifts* and *talents*. Rather, it raises our awareness that the majority of students will possess special skills or talents of some type. Taylor's (1978) original six talents (academic, creative, planning, communicating, forecasting, and decision making) were expanded into the nine talents in Figure 1.4. The second through sixth talents (productive thinking, communicating, forecasting, decision making, and planning) were called "thinking talents" that contribute to creativity

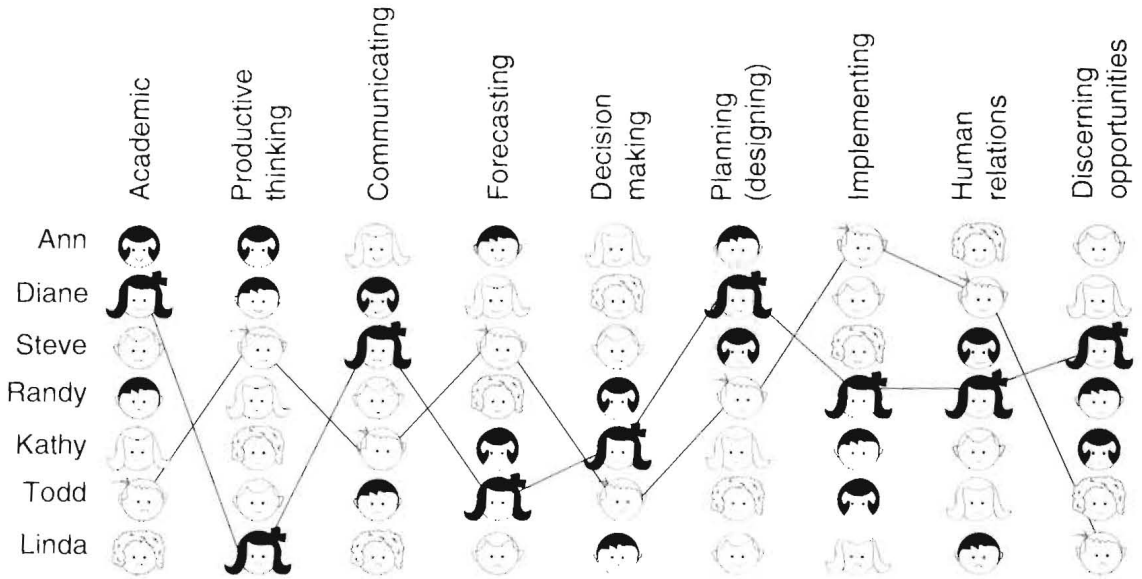

FIGURE 1.4 Taylor's multiple-talent totem poles, extended version. *Source:* Copyright © 1984, Calvin W. Taylor. Reprinted by permission.

and problem solving. The final three (implementing, human relations, and discerning opportunities) are essential for getting ideas into action.

How do we define gifted and talented? Who should be selected to participate in a gifted education program? Different children would be chosen depending upon which talent is emphasized.

Gardner's Theory of Multiple Intelligences

"Intelligence is too important to be left to the intelligence testers," said Gardner (1999, p. 3), criticizing the severe limitation of single IQ scores. In his original theory of multiple intelligences (MI theory; Gardner, 1983, 1993, 1999), Gardner described seven types of intelligence, and he more recently added an eighth. (See Box 1.3 for Gardner's criteria for independent intelligences.) A central point is that academics traditionally recognize only linguistic and logical-mathematical types of intelligence—as represented in IQ scores—and educators undervalue or ignore students with strengths in Gardner's other forms of intelligence. His intelligences may be viewed as intellectual gifts "with only loose and nonpredictable relations with one another" (1999, p. 32). A person thus may be gifted in one or several of the intelligence areas, but not in others.

Like Gardner, we can ignore his students' tongue-in-cheek recommendations for cooking intelligence, humor intelligence, and sexual intelligence. As a brief overview, the original seven, plus his eighth, intelligences are as follows:

1. *Linguistic* (verbal) intelligence, which includes verbal comprehension, syntax, semantics, and written and oral expression. A novelist or lawyer requires linguistic intelligence.

2. *Logical–mathematical* intelligence, which includes inductive and deductive reasoning and computing, as required by a mathematician or physicist.

Note that linguistic and logical–mathematical intelligence are the two fundamental competencies measured by traditional intelligence tests and are most valued in school settings (von Károlyi, Ramos-Ford, & Gardner, 2003).

BOX 1.3

What Qualifies as an Intelligence in MI Theory?

Gardner's rationale for the existence of his eight intelligences includes eight sources of scientific or rational evidence. "I consider the establishment of these criteria to be one of the enduring contributions of multiple intelligences theory" (Gardner, 1999, p. 41).

- **Brain injury** often disrupts functioning in one area of intelligence, but not in others.
- **Evolutionary history** suggests that to survive, *Homo sapiens* had to move about effectively (spatial intelligence), discern the motives of others (interpersonal intelligence), and classify animals and vegetation (naturalist intelligence).
- **Each intelligence possesses a unique set of core operations**—for example, those in language, mathematics, music, biological taxonomies, and body movement.
- Each intelligence can be encoded in a *separate symbol system*—for example, linguistic, mathematical, musical, pictorial.
- Each intelligence has a *unique developmental history*—unique experience that leads to expertise.
- *Idiot savants and prodigies* have demonstrated phenomenal strengths in one area of intelligence usually, math, music, or art—while being severely deficient in the others.
- The intelligences *tend not to interfere with one another* if performed simultaneously.
- Research shows *low intercorrelations* among many of the intelligences.

3. *Spatial* intelligence, the capacity to represent and manipulate three-dimensional configurations, as needed by an architect, engineer, interior decorator, sculptor, or chess player.

4. *Musical* intelligence, which includes such abilities as pitch discrimination; sensitivity to rhythm, texture, and timbre; the ability to hear and perform themes in music; and in its most integrated form, music composition.

5. *Bodily-kinesthetic* intelligence, the ability to use all or part of one's body to perform a task or fashion a product. It would be present to a high degree in a dancer, athlete, or mime.

6. *Interpersonal* intelligence, including the ability to understand the actions and motivations of others and to act sensibly and productively based on that knowledge. Counselors, teachers, politicians, and evangelists need this ability.

7. *Intrapersonal* intelligence, which is a person's understanding of one's own cognitive strengths and weaknesses, thinking styles, feelings, emotions—and intelligences. As one of Ramos-Ford and Gardner's (1997) examples, a child exemplifying high intrapersonal intelligence might remark, "Drawing is my favorite activity, even though I don't draw as well as I want to" (p. 57).

8. Gardner (1999) considered the possibility of a spiritual, moral, existential, and naturalist intelligence. Of these, only *naturalist* intelligence met most of his eight criteria (Box 1.3). A person strong in naturalist intelligence possesses extensive knowledge of the living world and its taxonomies and is highly capable in recognizing and classifying plants and animals.

While Gardner (1999) felt that *existential intelligence*—the capacity to deal with such cosmic concerns as the significance of life, the meaning of death, the ultimate fate of physical and psychological worlds, love of another person, total immersion in a work of art—"may well be admissible" (p. 64) and is "attractive" (p. 66), he decided not to add existential intelligence to his list. It is curious that, on later reflection, he resolved the matter by pronouncing existential intelligence to be one-half of an intelligence (Gardner, 2000). The Dalai Lama and Gandhi would score high.

MI theory is attractive to teachers, especially teachers of the gifted. It has strong intuitive appeal, it is uncomplicated, and it definitely alters how students are perceived and taught. One straightforward approach is to look for strengths in each area, then plan activities to help develop those abilities. Lazear (1991), for example, outlined activities to strengthen each of the original seven intelligences (see Table 1.3).

The catchphrase "MI classrooms" includes even more involved efforts to incorporate MI theory (Callahan et al., 1995b; Fasko, 2001; Krechevsky & Seidel, 1998; Maker, Nielson, & Rogers, 1994; Reid & Romanoff, 1997; Willard-Holt & Holt, 1997). Following are some examples:

- Creating a classroom environment that values all MI intelligences
- Teaching skills and information aimed at different intelligences and using multiple-symbol systems

TABLE 1.3 Ways to Strengthen Multiple Intelligences

Type of Intelligence	Teaching Suggestion
Linguistic	General learning and vocabulary
Logical-Mathematical	Inductive, deductive, scientific reasoning
Spatial	Forming and manipulating mental images, conducting spatial relationships exercises
Musical	Raising awareness of sounds, tone qualities, musical structures
Bodily-Kinesthetic	Movement control exercises
Interpersonal	Working in groups, raising awareness of nonverbal communication
Intrapersonal	Raising awareness of feelings, metacognition (thinking about thinking)

Source: Information adapted from Lazear (1991).

- Flexibly teaching subject matter in several different ways, including working with students' individual MI strengths
- Using process activities that integrate multiple intelligences with thinking skills
- Using interest centers to illustrate multiple intelligences and help students explore their own strengths
- Helping students develop projects based on interests and different intelligences
- Using a variety of content that is abstract and broad to stimulate students' intelligences
- Infusing arts into the curriculum
- Allowing students to express their learning with creative and personal products

What are the effects of MI classrooms on teaching G/T students? Of course, Gardner's eye-opening model draws attention to individual differences in the creative domains of musical, spatial, and bodily kinesthetic intelligence, as well as social/interpersonal and intrapersonal (self-understanding) intelligence. Callahan and colleagues (1995) found that teachers were enthusiastic in their MI-based Project START. Also, students' self-concepts improved—they liked school, they felt they were good at school, and attendance increased. Language skills and standardized test scores also improved.

With any major innovation, criticisms are quick and sometimes accurate. Several authors have noted the "fadlike" nature of MI theory (e.g., Callahan et al., 1995b). Some see an appealing egalitarian flavor—all kids may be gifted (e.g., Delisle, 1996)—although Gardner (1997) does not agree. Callahan et al. (1995b) found no benefit to gifted students in an MI classroom. White and Breen (1998)—labeling MI theory "edutainment"—wondered if the "intelligences" are intelligences or abilities, and if the intelligences remain constant throughout one's life span. Gottfredson (2003) noted that Gardner's interpersonal and intrapersonal "intelligence" may be personality factors, not abilities. Finally, some have criticized Gardner for his mostly intuitive—not psychometric and experimental—identification of his intelligences.

Emotional Intelligence?

Gardner (1999) rejected the idea of an *emotional intelligence* (ED), considering it a "separate sphere of values and social policy" (p. 69). He also decided that emotional intelligence is simply a special combination of interpersonal and intrapersonal intelligences. However, many others accept emotional intelligence as real and extremely important, although they seem not to agree on exactly what it is.

Silverman (1983a) described an emotionally gifted student as being unusually concerned with, for example, the meaning of existence and of being human, and with having more loving and caring relationships. In large agreement, Piechowski (1997, 2003) related emotional intelligence—whose high end is *emotional giftedness*—to high empathy, a strong sense of moral justice (ideals, beliefs), a lively imagination, overexcitability, high sensuality, and intensely positive and negative emotional feelings. "To be emotionally gifted is to *dare* to act on one's awareness of what is happening with others by alleviating lack and emotional distress, opposing unfairness, and fighting injustice" (Piechowski, 2003, p. 405).

According to *Emotional Intelligence* author Goleman (1995), emotional intelligence is the capability to control emotional impulse, to understand another person's feelings, and to handle relationships well. Goleman emphasized that good emotional balance and management will influence how sensibly we behave and how successful we become.

Mayer, Perkins, Caruso, and Salovey (2001; Salovey & Sluyter, 1997) argue that high emotional intelligence helps people make better social and life choices—and therefore is worth teaching. Their version of emotional intelligence includes the abilities to (1) perceive emotions, (2) use emotions to assist thought, (3) understand emotions and emotional knowledge, and (4) regulate emotions to promote emotional and intellectual growth. Mayer and colleagues created two tests, the Multifactor Emotional Intelligence Scale (MEIS) and the adolescent counterpart MEIS-A, to measure these abilities.

At present, although emotional intelligence seems important and overlaps considerably with attitudes and character education considerations (Chapter 11), it keeps a low profile.

Sternberg's Triarchic Theory

Sternberg (1997a, 2003) agrees that intellectual giftedness cannot be represented by a single IQ number, and he identified three main kinds of intelligence. *Analytic giftedness* is the academic talent measured by typical intelligence tests, particularly analytical reasoning and reading comprehension. Sternberg's example is Alice, who scored high on intelligence tests, earned high grades, and was known by her teachers as smart. However, she was not good at producing innovative ideas of her own. *Synthetic giftedness* refers to creativity, insightfulness, intuition, or the ability to cope with novelty. Such persons may not earn the highest IQ scores, but ultimately may make the greatest contributions to society. Sternberg's Barbara was not as strong as Alice in analytic thinking, but was enormously creative in finding innovative ideas. *Practical giftedness* involves applying analytic and/or synthetic abilities successfully to everyday, pragmatic situations. Celia, for example, could enter a new environment, figure out what one must do to succeed, and then do it.

Most people possess some blend of the three skills. Further, the blend can change over time as intelligence is developed in various directions. Said Sternberg (2003), a central part of giftedness is coordinating the three abilities and knowing when to use each one. Giftedness is viewed as a well-managed balance of the three abilities, and a gifted person is thus a good "mental self-manager."

In 2000 Sternberg modified his triarchic theory to include *wisdom* as a subtype of practical intelligence. Wisdom centers on concern for the needs and welfare of others. High wisdom usually takes the form of good advice to others and to oneself. Sternberg used Gandhi, Mother Theresa, Martin Luther King, Jr., and Nelson Mandela as examples of persons high in practical wisdom. While all four would score high in practical "getting the job done" intelligence, so would Osama bin Laden and other successful terrorists and tyrants, who are devoid of Sternberg's empathic and humanistic wisdom.

Regarding developing student wisdom, Sternberg made these recommendations:

1. Give students problems requiring wise thinking, such as ethical and moral dilemmas.
2. Help students think in terms of a "common good" when solving these problems.
3. Help students balance their own interests with the interests of others when solving these problems.
4. Provide examples of wise thinking from the past.
5. Model wisdom by using good and bad examples of your own past decisions and behavior, and show students you value wise thinking.
6. Encourage students to think wisely—for the common good—outside the classroom.

Beyond the previously mentioned formal or explicit theories of giftedness, Sternberg (1995) described an *implicit* theory that summarizes "what we mean by *giftedness* . . . people's conception of giftedness" (pp. 88–89). The theory specifies five necessary and sufficient conditions that gifted persons have in common:

1. ***Excellence.*** A gifted person must be extremely good at something.
2. ***Rarity.*** He or she must possess a high level of an attribute that is uncommon relative to peers.
3. ***Productivity.*** The superior trait must (potentially) lead to productivity.
4. ***Demonstrability.*** The trait also must be demonstrable through one or more valid tests.
5. ***Value.*** The superior performance must be in an area that is valued by society.

Such implicit theories, noted Sternberg, are relative to the culture because they are based on the values of that culture. It is important for such values, and implicit theories, to guide the identification of gifted persons as well as to suggest content for gifted educational programs.

A Hierarchy of Intelligence Abilities

Carroll (1993; Gottfredson, 2003) described a three-level pyramid-shaped model of intelligence (see Table 1.4). At the top (I) is basic intelligence, or *g*, by itself. The middle level (II) consists of broad, general abilities, all of which are related to and statistically correlated with *g*. The bottom tier includes myriads of specific abilities, many unidentified, that are

TABLE 1.4 The Three-Level Hierarchy of Intelligence

I. Top Level: (General Ability)	*g*
II. Middle Level: (Broad Factors)	Verbal Spatial Memory Other
III. Bottom Level: (Specific Abilities)	Reading decoding, listening ability, language comprehension, visualization, visual memory, memory span, associative memory, maintaining rhythm, quantitative reasoning, expressional fluency, and others

Source: Information from Carroll (1993). See also Gottfredson (2003).

related to one or more intermediate, more general types of intelligence. Gottfredson reasoned that Gardner's eight intelligences and Sternberg's triarchic categorization would fall in the middle level of this pyramid, indicating that all are related to basic intelligence.

Thinking Dispositions

As we know, strong intellectual abilities do not guarantee high achievement or life success. Ritchart (2001) proposed that we look at *thinking dispositions* that comprise *intellectual character.* His dispositions are "characteristics that animate, motivate, and direct abilities toward . . . better and more powerful thinking" (pp. 146–147). After reviewing numerous lists, Ritchart decided upon three core categories: *Creative thinking* dispositions include imaginativeness, openness to new ideas, adventurousness, curiosity, inquisitiveness, and others; *reflective thinking* dispositions include awareness of one's beliefs, metacognition (awareness of one's own thinking), being well informed, seeking truth, seeking alternatives, and others; and *critical thinking* dispositions include planning, thinking strategically, being skeptical, having intellectual integrity, seeking reasons and alternatives, and others.

Intelligence and intelligent behavior are indeed more complicated than a high IQ score.

Summarizing the Research That Supports the Need for and Benefits of Gifted Education

If gifted education is to continue in public schools, research must be accountable and prove its benefits to children and to society. As Legislative Chair for the National Association for Gifted Children, Sally Reis (2009) reviewed separate studies conducted from the 1990s through 2007 and reported the following crucial summary:

1. The needs of gifted students are generally not met in American classrooms where the focus is most often on struggling learners and where most classroom teachers have not had the training necessary to meet the needs of gifted students (Archambault, Westberg, Brown, Hallmark, Emmons, & Zhang, 1993; Moon, Tomlinson, & Callahan, 1995; Reis, Gubbins, Briggs, Schreiber, Richards, & Jacobs, 2004; Reis & Purcell, 1993; Westberg, Archambault, Dobyns, & Salvin, 1993).

2. Grouping gifted students together for instruction increases achievement for gifted students and, in some cases, also for students who are achieving at average and below-average levels (Gentry & Owen, 1999; Kulik, 1992; Rogers, 1991; Tieso, 2002).

3. The use of acceleration results in higher achievement for gifted and talented learners (Colangelo, Assouline, & Gross, 2004b; Kulik, 1992; Rogers, 1991).

4. The use of enrichment and curriculum enhancement results in higher achievement for gifted and talented learners as well as other students (Field, n.d.; Gavin, Casa, Adelson, Carroll, Sheffield, & Spinelli, 2007; Gentry & Owen, 1999; Gubbins, Housand, Oliver, Schader, & De Wet, 2007; Kulik, 1992; Reis, McCoach, Coyne, Schreiber, Eckert, & Gubbins, 2007; Rogers, 1991; Tieso, 2002).

5. Classroom teachers can learn to differentiate curriculum and instruction in their regular classroom situations and to extend gifted education strategies and pedagogy to all contact areas (Baum, 1998; Colangelo, Assouline, & Gross, 2004b; Field,

n.d.; Gavin, et al., 2007; Gentry & Owen, 1999; Little, Feng, VanTassel-Baska, Rogers, & Avery, 2007; Reis, Gentry, & Maxfield, 1998; Reis, et al., 2007; Tieso, 2002; Reis, Westberg, Kulikowich, & Purcell, 1998).

6. Gifted education programs and strategies are effective at serving gifted and high-ability students in a variety of educational settings and from diverse ethnic and socioeconomic populations. Gifted education pedagogy can also reverse underachievement in these students (Baum, 1998; Baum, Hébert, & Renzulli, 1999; Colangelo, Assouline, & Gross, 2004b; Gavin, et al., 2007; Hébert & Reis, 1999; Little, et al., 2007; Reis & Diaz, 1999; Reis, et al., 2007).

7. The curriculum and pedagogy of gifted programs can be extended to a variety of content areas, resulting in higher achievement for both gifted and average students; and some enrichment pedagogy can benefit struggling and special-needs students when implemented in a wide variety of settings (Baum, 1988; Field, n.d.; Gentry, 1999; Gavin, et al., 2007; Kulik, 1992; Little, et al., 2007; Reis, et al., 2003; Reis, et al., 2007; VanTassel-Baska, Zuo, Avery, & Little, 2002).

8. Some gifted students with learning disabilities who are not identified experience emotional difficulties and seek counseling. High percentages of gifted students do underachieve, but this underachievement can be reversed. Some gifted students do drop out of high school. (Baum, 1988; Baum, Hébert, & Renzulli, 1999; Hébert & Reis, 1999; Reis, Neu, & McGuire, 1997; Renzulli & Park, 2000).

9. Gifted education programs and strategies benefit gifted and talented students longitudinally, helping students increase aspirations for college and careers, determine post-secondary and career plans, develop creativity and motivation that is applied to later work, and achieve more advanced degrees (Colangelo, Assouline, & Gross, 2004; Delcourt, 1993; Hébert, 1993; Lubinski, Webb, Morelock, & Benbow, 2001; Taylor, 1992).

Gifted Education? Talent Development? Looking to the Future

Some leaders in gifted education have recommended that the term *gifted education* be replaced by *talent development* (e.g., Renzulli & Reis, 1997; Treffinger, 1995b; Treffinger & Feldhusen, 1996). In a sense, the talent development focus is a response to the detracking movement, with its stress on heterogeneous classes and quality education for all. Talent development emphasizes, first, that the focus be on developing the talents and capabilities of all students—including "high-end learners"—for example, in academic, artistic, vocational, and personal–social areas (Feldhusen, 1992). Second, talent identification must be broader than using IQ and achievement scores; Treffinger (1995b) suggested profiling students' talents. Third, programming must become more varied to accommodate individual characteristics and needs. A final benefit is that the talent development orientation eliminates the awkwardness of the words "gifted" and, by exclusion, "not gifted."

Looking toward the future at either giftedness or talent development, depending on one's preference for terminology, the National Association for Gifted Children's (NAGC) 2006 president, Joyce VanTassel-Baska, outlined 10 steps for administrators at the school level and teachers at the classroom level (Van Tassel-Baska, 2007). These steps present, at least, an important education agenda for the future of gifted education:

1. Know how students learn.
2. Know best practice research for gifted programming and services.
3. Differentiate the curriculum content for gifted learners.
4. Develop service options specific to promising students of poverty.
5. Teach students to ask the right questions.
6. Incorporate the arts.
7. Prepare students for a global and multicultural world.
8. Prepare educators to provide quality instruction.
9. Create and institutionalize systems for identifying and serving gifted students, K–12.
10. Collaborate with other stakeholders within and outside the field of gifted education to promote student learning communities.

Summary

Despite increased public awareness of gifted education, many gifted students remain ignored in school. Critics claim that gifted programs are elitist—welfare for the rich. Sternberg's "sounds of silence" include little federal funding and no laws to protect the rights of the gifted.

We admire gifted people, but we also are committed to equality—a love–hate relationship. The pendulum swings back and forth—the public alternates between an interest in excellence and the desire for equity.

Gifted students, like students with disabilities, deserve an education consistent with their needs and abilities. Society benefits from helping gifted students become tomorrow's leaders.

Ancient Sparta defined giftedness in military terms. Athenian boys attended private schools and were taught by sophists. In Rome, boys and girls attended first-level schools, but higher education was for boys only.

China's seventh-century Tang dynasty brought child prodigies to the imperial court. They accepted a multiple-talent conception of giftedness, recognized that talents must be nurtured, and believed children should be educated according to their abilities.

Into the late 1800s, Japan provided high-level education only for Samurai children. A few private academies accepted gifted children regardless of birth.

Renaissance Europe rewarded its gifted artists, architects, and writers with wealth and honor.

In early America, children needed ability and wealth to attend secondary school and college. From about 1870 to the Depression years, some schools, especially in large cities, initiated tracking, grade-skipping, telescoping, and special classes. "Age of mediocrity" thinking emphasized equity (1920s, 1930s).

The educational systems of England and Europe have long used tracking, which is less contentious there than in North America. In England, education for gifted students has been slowed by resentment of traditional unearned privilege.

Sir Francis Galton produced the first significant research and writing on intelligence. He believed that intelligence was related to keen senses, and so his "intelligence tests" evaluated sensory acuity and reaction time. His book *Hereditary Genius* argued for a hereditary basis of intelligence.

Alfred Binet in Paris developed the first successful intelligence test. He created the concept of *mental age.*

Lewis M. Terman Americanized the Binet tests, creating in 1916 the Stanford–Binet Intelligence Scale. In the 1920s he identified over 1,500 high-intelligence children, who were tracked and studied into the 1980s. Contradicting then-popular conceptions, the "Termites" were psychologically, socially, and physically healthier than average persons. Terman noted that acceleration is valuable and that family values are crucial to adult success.

Leta Hollingworth emphasized that bright students waste much time in regular classes. In the 1920s and 1930s she developed gifted counseling programs and an imaginative gifted curriculum. She taught gifted and below-average students, the former identified with multiple criteria, and authored two significant books on gifted children.

The launching of Sputnik in 1957 triggered an American effort to improve education, particularly in science and for gifted students. Enthusiasm faded after about 5 years.

In the mid-1970s a new and continuing national and worldwide gifted education movement began, one that in the United States includes federal and state legislation, special funds, and high commitment by many educators.

Herrnstein and Murray's *The Bell Curve* is criticized for ignoring modern conceptions of intellectual giftedness, for assuming causation from IQ-success correlations, for seemingly equating IQ with personal value, and for racist conclusions. However, some intelligence researchers recently concede that, like it or not, tested IQ relates to many important life outcomes, such as education, career level, and crime. Other factors, such as favorable family circumstances and persistence, also influence success.

The 1993 National Excellence report drew strong attention to the plight of America's ignored gifted students—future leaders—especially with its catchy and accurate "quiet crisis" phrase, and it contributed to preparing gifted education for the 21st century.

Renzulli's National Research Center on the Gifted and Talented is a nationwide "consumer-oriented" effort to clarify key problems and practices—for example, identification, programming, and special populations. One study concluded that little is being done for gifted students in most classrooms. The NRC/GT website provides a huge compendium of continuous research findings.

The ability-grouping debate continues. The anti-tracking movement assumes that ability-grouping practices are ineffective, unfair, and discriminatory. Not only fast-track classes, but also some gifted programs are being abandoned. Research indicates that achievement of slow- and middle-track students is no different in heterogeneous classes compared with ability-grouped classes; part-time