Education of the Gifted and Talented

Sylvia B. Rimm | Del Siegle | Gary A. Davis

SEVENTH EDITION

Pearson

Seventh Edition

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To Buck, Ilonna, Joe, Miriam, Benjamin and Avi
David, Janet, Dan, and Rachel
Eric, Allison, Hannah, and Isaac, and
Sara, Alan, Sam, and Davida

To Betsy, Jessica, and Del

To Chelsea, Nathan, Tegan, and Neil

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PREFACE

To provide programs to help meet the psychological, social, educational, and career needs of gifted and talented students.

To help students become capable of intelligent choices, independent learning, problem solving, and self-initiated action.

To strengthen skills and abilities in problem solving, creative thinking, communication, independent study, and research.

To reinforce individual interests.

To bring capable and motivated students together for support and intellectual stimulation.

To maximize learning and individual development—while minimizing boredom, confusion, and frustration.

In sum, to help gifted students realize their potential and their contributions to self and society.

These are the goals of educational programs for gifted and talented students, and these are the purposes of this book. Gifted and talented students have special needs and special issues. They also have special, sometimes immense, talent to lend to society. We owe it to them to help cultivate their abilities. We owe it to society to help prepare tomorrow's leaders and professional talent. Such students are a tremendous natural resource, one that must not be squandered.

NEW TO THIS EDITION

The seventh edition of *Education of the Gifted and Talented* continues the tradition of engaging readers in the mission of educating and inspiring gifted children. However, this seventh edition has many major updates, and approximately 30% of the content is new:

- Learning outcomes have been added to set advance organizers for every chapter. These will assist students in targeting main issues for study.
- Although directions and definitions for gifted education have always been in flux, three new important directions by leaders in the field have been added to Chapter 1.
- New issues and research for identification of underserved groups are addressed in both Chapters 3 and 13.
- Many districts are leveraging Response to Intervention (RtI) to provide services for gifted students (see Chapter 6). Push-in programs are also gaining popularity. Technology is also playing a more important role in meeting the educational needs of gifted students.
- New models are surfacing to provide services to gifted students. The Advanced Academic Program Development Model focuses on a system for aligning the identification process to the academic services that gifted students need (see Chapter 7). The CLEAR Model combines elements from Tomlinson, Kaplan, Renzulli, and Reis's work to create units that allow students to explore authentic, unanswered questions in meaningful ways.
- Our understanding of creativity as big-c and little-c is expanded to include mini-c and pro-c as we examine how creativity manifests itself differently across time and within individuals' lives (see Chapter 9). Synectics methods can be used in the classroom to enhance students' creative thinking as well as to help students understand content at a deeper level.
- Gifted educators accustomed to Bloom's taxonomy will enjoy aligning their questioning and learning activities to Marzano and Kendall's new thinking taxonomy based on a hierarchy of complexity (see Chapter 10).
- Chapter 14, formerly called the "Cultural Underachievement of Gifted Females," has been the most revised chapter in every edition, and this seventh edition is no exception. Even the title has changed—to "Gifted Girls. Gifted Boys"—and the chapter now includes specific issues related to gifted boys as well as fully updated data and recommendations for gifted girls.
- The latest results of research about underserved gifted children, provided by the National Center for Research on Gifted Education (funded by the Jacob K. Javits Gifted and Talented Student Education Act [P.L. 100-297]) is included in Chapter 13.

- Important new specific communications from the National Office for Special Education provided reassuring reminders that the discrepancy concept can continue to be used for qualifying gifted students for special education programs based on learning disabilities (see Chapter 15).
- Counseling gifted children to find their passions has become an omnipresent fashion. Even the media has joined in. Chapter 17 reminds counselors to encourage interests and engagement instead of passions, which can sometimes become unrealistically high expectations for adolescents.
- Speirs, Neumeister, and Burney propose a new four-step model for conducting an internal evaluation. Their evaluation process is governed by an evaluation committee (see Chapter 18).

CYCLIC NATURE OF GIFTED EDUCATION

The aftermath of the launching of the Russian satellite *Sputnik* initiated huge excitement about cultivating gifted children's minds. Although there was an amazing new interest in talent development, it was brief. That interest was rekindled in the mid-1970s, at which time enthusiasm for accommodating the education needs of gifted and talented children truly began its climb to higher levels, with greater public awareness than ever before. Federal statements, definitions, and funds appeared. States passed legislation that formalized the existence and needs of gifted students and often provided funds for state directors, teachers, and programs. Cities and districts hired gifted-program directors and teacher-coordinators who designed and implemented identification, acceleration, and enrichment plans. In many schools and classrooms where help from the outside did not appear, enthusiastic teachers planned challenging and beneficial projects and activities for gifted students in their classes.

Although progress continued in the mid-1980s, the gifted movement was pressured by society to also step backward. As we describe in Chapter 1, the problem was a reborn commitment to *equity*—helping troubled students become more average. Some school districts trashed their gifted programs along with tracking and grouping plans. Although efforts to promote equity and efforts to support high-ability students in order to encourage excellence are not necessarily incompatible, many educators perceived gifted programs as unfair to average students and consequently pitched the baby with the bathwater.

A second and smaller backward step was the cooperative learning style of teaching. Cooperative learning groups certainly supply academic and social benefits for most children, but often not for gifted ones. Whereas gifted students benefit from opportunities for collaboration, they need advanced academic work; challenging independent projects that develop creativity, thinking skills, and habits of independent work; and grouping with gifted peers to accommodate their education and social needs. They should not be required to work at a too-slow pace or to serve only as teachers to others in the group.

A third factor that always takes its toll for gifted programs is simply the economy. When the going gets tough, gifted programs—viewed by critics as elitist luxuries for "students who don't need help" or even "welfare for the rich"—are among the first to be cut.

Although damage continues, gifted education is resilient. In many schools and districts, it is healthier than ever. At least four events have aided the survival and even growth of gifted education. First, some schools and districts, for the most part, ignored the reform movement and steamed ahead with differentiated instruction for gifted students. Research shows that such resilience is most likely to exist if two disarmingly simple features are present: enthusiastic teachers and administrators and/or state legislation that requires gifted services.

Second, grouping based on ability or achievement remains alive and well at all education levels (Kulik, 2003). Special classes in high school (e.g., AP and honors classes) and grouping in the elementary school (especially for math and reading) continue in nearly every individual school. Attendance at community colleges and local universities for high school students has expanded.

Third is the move toward improving education for *all* students—including high-ability ones. This move is partly a response to the reform movement and can come under the *talent development* banner. For example, differentiated curriculum and high-level activities such as thinking skills and creativity are brought into the regular classroom, and strategies for identifying gifted students are becoming more flexible. Renzulli's Schoolwide Enrichment Model (described in Chapter 7) exemplifies this trend.

A fourth, twofold dramatic change emerged after the September 11, 2001, terrorist attacks on the World Trade Center. Although funneling money toward national defense caused funding for gifted education to be in short supply, there has been greater recognition of the need for science, technology, engineering and math (STEM) innovation to support national security since 2001. Expansion of foreign-language learning has also been prioritized in order to promote understanding of the cultures and goals of both allied nations and groups that might do us harm. The cycling continues as we experience a déjà vu of the post-*Sputnik* times mentioned earlier, but it has also moved forward. Today's education of the gifted and talented

places much greater emphasis on creativity, innovation, and the applications of significant research findings related to successful gifted education.

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BRIEF CONTENTS

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CONTENTS

CHAPTER

1 Gifted Education

Matching Instruction with Needs

LEARNING OUTCOMES

1. Summarize the evolution of giftedness and gifted education from ancient through modern times.
2. Analyze how key individuals, ideas, and events shaped the contemporary history of gifted education.
3. Assess the importance of the National Center for Research on Gifted Education.
4. Recommend a defensible definition of giftedness.
5. Compare and contrast the range of explanations and interpretations of giftedness and intelligence.

Tens of thousands of gifted and talented children and adolescents continue to sit 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 have called it a "quiet crisis" (Renzulli & Park, 2002).

Other gifted students tolerate school but satisfy their intellectual, creative, and artistic needs outside the formal system. The lucky ones have parents who sponsor their dance or music lessons, microscopes, telescopes, computers, art supplies, and frequent trips to libraries and museums. 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. Few laws protect the rights of the gifted, in contrast with many laws protecting children with special needs. Gifted programs tend to be the last

installed and the first axed. Disgruntled parents register their gifted children in private schools, but most can't afford them.

Some see gifted 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."

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 characteristics in mind. Programs need to be expanded and evaluated. Everyone—parents, teachers, administrators, and others—must be educated about the needs of our gifted children.

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 this chapter); 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. Although interest in the gifted has mushroomed worldwide since the mid-1970s, the pendulum swung forcefully back to equity during the final years of the 20th century and the first years of the 21st century. Programs for the gifted were being terminated because they were not "politically correct," because of budget cutting, because of the lack of supportive teachers and administrators, and because gifted education was not mandated by the particular state. The Philanthropy Roundtable has made efforts toward attracting "Wise Givers" to contribute toward educating gifted children (Smarick, 2013), yet few funders target our most talented students.

In particular, the antitracking/antiability grouping movement, the No Child Left Behind legislation, the inconsistent funding of the Javits Act, and the recent economic struggles in education 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 and the refunding of the Javits Act. America's need to compete around the globe has sometimes in the past 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 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) every child should have the right to learn something new every day, (b) they should not be held back and required to succeed in spite of a frustrating educational system, and (c) some do not make it on their own. Rimm (2008b), 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, 2008b; 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." Percentages of underachievers vary; research on underachievement is

complex. Gifted underachievers may no longer appear to be or test as gifted.

Gifted students themselves are not the only ones who benefit from specific programs that recognize and cultivate their talents: Teachers involved with gifted students 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. Today's gifted and talented students 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). The only way our country will reach its potential is if every child, including the gifted and talented child, has an opportunity to reach his or her potential. 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 on 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 intellectual and perceptual abilities such as reading speed, memory, reasoning, and perceptual sensitivity (Tsuin-chen, 1961). They also recognized (a) apparently precocious youth who grow up to be average adults; (b) seemingly average youth 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 the United States

At first in the United States, 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 eight 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. Therefore, his efforts to measure intelligence involved tests such 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 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 traits such 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, 1927–1928, 1936, 1939–1940, 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, but they also 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 the following:

- 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 eight-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 (see 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, which 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 at Speyer Elementary School (P.S. 500) 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 activities such 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. The gifted child's advanced vocabulary, interests, and preferences for games with complicated rules 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 five 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.

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 continued his research to measure more exactly 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 the ages of 3 and 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 'feeble-minded'" 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—was high.

Gifted education continues to be variable within the United States. Gifted children have very different opportunities, depending on the state in which they live. According to both the Davidson Institute of Talent Development (2016), and the National Association of Gifted Children's *2014–2015 State of the Nation* (2015) at this time, only four states mandate and fully fund gifted education. Nine states and the District of Columbia neither provide a mandate nor fund gifted programs. Twenty-three states

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

FIGURE 1.1 State Mandates and Funding for Gifted Education.
Source: Davidson Database State Policy Map, © 2013. Used with permission of Davidson Institute for Talent Development.

mandate gifted programming and partially fund them. Eight states mandate programming but provide absolutely no funding, whereas six 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 2016. You may contact your state's Department of Education for updated information because mandates and funding allowances may have changed. Although 12 states provided no funding of the 41 states that the National Association for Gifted Children (NAGC) surveyed in 2015, 14 states increased funding, 5 maintained funding, and only 2 states reduced funding in the last two years. Funding for gifted programs has improved slightly. Parents and educators working together can continue to influence legislation to maintain and increase funding for educating gifted students.

The gifted movement is also worldwide, although some countries are just beginning to make some 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; however, some countries absolutely do not allow grade skipping. Colangelo, Assouline, and Gross (2004a; 2004b) remind us that grade skipping is not only the least expensive but also 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, video); some countries provide 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—are offered presently in Australia, Austria, Belgium, Brazil, Bulgaria, mainland China, Columbia, Croatia, Denmark, the Dominican Republic, Egypt, England, Finland, France, Germany, Great Britain, Guam, Hong Kong, Hungary, India, Indonesia, Iraq, Israel, Japan, Jordan, 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). The World Council for Gifted and Talented Children continues to foster gifted education throughout the world.

NATIONAL CENTER FOR RESEARCH ON GIFTED EDUCATION

The Jacob Javits Gifted and Talented Students Education Act (Javits) was first passed by Congress in 1988 as part of the Elementary and Secondary Education Act and was most recently reauthorized through the Every Student Succeeds Act to support the development of talent in U.S. schools. The Javits Act, which is the only federal program dedicated specifically to gifted and talented students,