

attractive, neat, and popular, and who wear expensive clothes and speak standard English (e.g., Good & Weinstein, 1986; Keneal, 1991; LeTendre, 1991). Perhaps it is not surprising that Terman could describe his students' physical and mental health in such glowing language. His conclusions would not necessarily apply, for example, to students who are artistically or creatively gifted, who are bright underachievers, or who are intelligent, but rebellious, irritating, or otherwise undesirable.

It is significant that two Nobel Prize winners, Luis Alvarez and William B. Shockley, were excluded from the Terman study because their IQ scores were not sufficiently high (Hermann & Stanley, 1983).

TRAITS OF INTELLECTUALLY GIFTED CHILDREN

Let's examine more closely what it means to be "intellectually gifted."

Precocious Language and Thought

The overriding trait—indeed, the definition—of intellectually gifted students is that they are developmentally advanced in language and thought. VanTassel-Baska (2003) named precocity as the first of just three characteristics relevant to G/T curriculum planning (the other two characteristics were intensity and complexity). Binet similarly described intelligent students as having a higher mental age compared with their chronological age. Silverman (1993a, 1993b, 2002, 2003) and others refer to intellectual giftedness as asynchronous development characterized by advanced cognitive abilities. Simply put, gifted students' mental development outstrips their chronological (physical) development. Their intelligence-test performance, as well, and typically their school achievement, match that of older children.

Some young gifted children begin talking at 7 months. Other bright children do not begin talking early—but progress rapidly once they do begin. Some gifted children draw recognizable pictures or use elaborate language at age 2½, or begin reading by age 3 and read fluently at 4 (Jackson, 1988, 2003). You may recall that Hollingworth did not teach

reading to her gifted students, because they could read before entering school.

Here's the story of an unusual child who talked late, but was highly gifted:

Christopher didn't begin talking until age 3, at which time he used a large vocabulary and full sentences. Although he knew the letters of the alphabet, he had shown no interest in reading. One day while his mother waited in line at the bank, with Christopher sitting in his stroller, he abruptly read the poster on the wall near him and announced, "That sign says 'Interest rates haven't been so low since shag carpets were in style.'" To his entire family's shock, Christopher could read almost everything thereafter.

Not all gifted children learn to read early or quickly. Many learn in kindergarten or first grade when reading is normally taught. Some are slower still. Albert Einstein did not learn until he was 8, and one after another of Picasso's reading tutors quit in despair.

The advanced language ability of the intellectually gifted child includes superior comprehension skill. Therefore, the intellectually gifted child usually acquires a large working vocabulary and a large store of information about many topics. The child may grasp complex and abstract concepts and relationships that normally are learned at an older age.

The intellectually gifted child also may begin writing at a precocious age. This talent will result from some combination of teaching by parents, older siblings, or preschool teachers, added to the child's strong drive and mental readiness to imitate and learn.

Logical Thinking

Compared with the average child, the thinking processes of the gifted child are quick and logical, two traits that can disturb impatient parents and teachers. Combined with a natural curiosity and an urge to learn, the precocious child can be forever asking questions, wanting to know, and wanting to know "Why?" Their bear-trap logic may not accept an abrupt "Because!" or any other incomplete or illogical response. In light of their swift and logical thinking, it is

no surprise that questioning ability, a good understanding of cause-and-effect relationships, convergent problem solving, persistence, and insight frequently are cited as traits of gifted children. Recall the 3-year-old's "aha" experience and his argument with his father at the introduction to this chapter.

Early Math, Art, and Music

For many gifted children, advanced mathematical, musical, and artistic abilities also appear early—sometimes, but not always, paralleling the verbal and conceptual skills. The mathematically precocious child may be counting by 5s and 10s and adding and subtracting two-digit numbers by kindergarten. The child may explain with surprisingly good reasoning his or her own special way of deducing or calculating a mathematical solution. For example, a 5-year-old blind child visiting Rimm's clinic did long division and word problems with fractions in his head, had perfect pitch, and played Beethoven on the piano. Whereas his verbal skills were above average, they weren't yet precocious—perhaps related to his blindness or only a reflection of uneven abilities. Time would tell.

At a young age, artistically precocious children differ dramatically from other children in their seemingly instinctive art skill. Winner and Martino (2000, 2003) noted that artistically gifted children learn to draw at an earlier age than average, they learn rapidly, they have superior visual memories, they are obsessively motivated to develop their artistic ability, and they learn virtually on their own, solving problems (e.g., perspective, necessary distortions) in idiosyncratic and creative ways. They even see the world differently—less in terms of concepts than of shapes and visual surface features.

Musical giftedness may appear at age 1 or 2—earlier than in any other skill domain (Winner & Martino, 2000). One clue is that the very young child is enthralled by musical sounds. Seventy percent of great violinists were prodigies as young children. At age 4, Mozart composed a harpsichord concerto, and at age 7, Yehudi Menuhin performed with symphonies. Solo violinist Pamela Frank remembers, "I loved music. I'd get chills and tears in my eyes—even when I was 3 and 4 years old. These images have never left me" (Rimm & Rimm-Kaufman, 2001).

A core music ability is sensitivity to, and an innate understanding of, music structure—tonality, key, harmony, and rhythm—and the ability to hear expressive properties (timbre, loudness, articulation, phrasing). Such sensitivity, combined with a strong "musical memory," allows the prodigy to remember music, play it back vocally or with an instrument, and even transpose and improvise with the music.

Incidentally, a young child's slower-developing motor ability may stand in the way of some accomplishments. For example, some children may not be able to write numbers or letters, illustrate their ideas, or play a musical instrument because of immature eye-hand coordination or even small fingers.

Motivation, Persistence, Advanced Interests

One of the single most recurrent traits of productive gifted students and eminent adults is high motivation with persistence. A main reason that some of Terman's students became successful and some did not was differences in their motivation, due in large part to family values (Terman & Oden, 1959). Even with gifted nursery-school to second-grade children, Burk (1980) found that persistence was related to both achievement and personal adjustment.

The high motivation and urge to learn found in many gifted children, combined with their curiosity and their advanced comprehension and logical abilities, can lead to surprisingly advanced accomplishments. One group of gifted elementary students in Manitowish Waters, Wisconsin, conducted an environmental impact study that led the State Highway Department to move a section of a proposed freeway. These children were certainly motivated, but make no mistake about this—there are some very gifted children who are not motivated or persistent. There will be more about those in a later chapter.

AFFECTIVE CHARACTERISTICS

Social Skills, Personal Adjustment, Self-Concepts

A common comparison—indeed, a classic conflict—is the reported high mental health of Terman's subjects, as both students and adults, versus Leta

Hollingworth's forceful descriptions of troubled gifted children who are too different and too smart to fit in, and therefore are in desperate need of "emotional education" (counseling). We already noted one explanation: Perhaps biased teachers had preselected only well-adjusted children for Terman's research. Another key to the controversy is level of giftedness. Hollingworth (1942) noted that students with IQs in the 140–160 range tend to be well adjusted, to be successful, and to have friends. But above IQ 180, they are too different and social adjustment is difficult. A young woman counseled by Rimm had a ratio IQ score of 193. She finally found appropriate mental peers at a summer program at Massachusetts Institute of Technology (MIT) before her senior year in high school and anticipated a new social life as an MIT student, with great relief. She would no longer be alone. Although she might still carry the "geek" label, that label took on a very positive and different status when she attended MIT.

Unfortunately, current research on the personal adjustment of gifted students rarely includes students with IQs above 180 (Norman, Ramsay, Roberts, & Martray, 2000). Presently used IQ tests do not differentiate well beyond 145–150, and ceiling scores usually go to 155–160 (more on that issue in the next chapter) (Rimm, Gilman & Silverman, 2008). Rather, the "highly gifted" experimental samples typically are equivalent in IQ to Hollingworth's well-adjusted middle group, roughly IQ 130–150. Consequently, many studies that compare "highly gifted," "moderately gifted," and average students report good psychological and social adjustment that is unrelated to level of giftedness (see, e.g., Gallucci, Middleton, & Kline, 1999a, 1999b; Garland & Zigler, 1999; Richardson & Benbow, 1990; Saylor & Brookshire, 1996).

For example, Norman, Ramsay, Roberts, and Martray (2000) took a close look at the social status (popular, average, rejected) of "highly gifted" students (IQs over 130) and "moderately gifted" students (everybody else) in a summer program for gifted students age 12 to 16. There were no differences in average social status between the two groups, either in dormitory or classroom settings. But if gifted peers rejected a gifted student in the classroom, that student probably also was rejected in

the dorm, and vice versa. In short, factors other than giftedness—namely, disruptiveness or shyness—influenced social rejection.

In agreement with Hollingworth, Gross (1993a, 2000) showed clearly damaging effects of a too-high IQ. She studied 15 Australian children with extraordinarily high IQ scores: All scored over IQ 160, three scored over 200. Their social self-esteem scores on the Coopersmith Self-Esteem Inventory (Coopersmith, 1981) were significantly below the average for age mates. They were fully aware that peers disliked and rejected them.

Rimm (2005) found that middle-grade students who described their intelligence as far above average were more likely to indicate that they worried a lot about popularity and appearance than those who checked the above-average descriptor of intelligence (see also www.sylviarimm.com). On the other hand, fewer of the far-above-average category worried about popularity and appearance than those students who described themselves as having only average, below-average, or far-below-average intelligence. So again we find better adjustment for those who don't feel so extremely different in intelligence, but not as problematic as those who differ more extremely in the lower direction. So, perhaps all parents yearn for Garrison Keillor's world where all the children are above average (Keillor, 2007).

Colangelo and Kelly (1983) discovered that gifted students' self-concepts depend on which "self" the researcher is looking at ("academic self" or "social self"). The authors compared scores on the Tennessee Self-Concept Scale of gifted students, regular students, and students with learning problems in Grades 7, 8, and 9. For the overall scale, gifted students scored significantly higher than regular students, who in turn scored higher than students with learning problems. However, on closer examination, the gifted students scored significantly higher only on the academic-self subscale; on the social-self subscale, the gifted students scored about the same as the other students.

A study of 85 seventh- and ninth-grade students in a summer program in math, computers, business, and engineering asked students, "What's it like to be gifted?" (Kunkel, Chapa, Patterson, & Walling, 1995). Responses were classified as positive

or negative, individual or social. In the category of positive individual aspects of giftedness, the authors found intellectual superiority (e.g., good grades, competing well), skillfulness (e.g., being talented and creative), and self-satisfaction (e.g., feeling happy and proud). Negative individual qualities included estrangement (e.g., feeling different or embarrassed) and conformity (e.g., feeling bored). Some positive social benefits were social superiority (e.g., special classes, being the best in school) and respect from others (e.g., students praise me, ask for my help). Negative social aspects of giftedness included one problem: social stress (e.g., people think I'm a snob, make fun of me, make me wish I weren't smart).

One affective problem peculiar to extremely bright students is their emotional excitability and high sensitivity, which we will describe more fully in Chapter 17. For example, due to high energy, such students tend to talk rapidly and compulsively, and may become workaholics. They have sprightly imaginations and sensual experiences that are "more alive." Their emotional reactions are more intensely joyful, but also more fearful and depressed. They develop steadfast values, with strong concerns for right and wrong (Piechowski, 1997).

As a general rule, gifted students are as well or better adjusted than regular students and have better self-concepts and greater overall self-actualization (Pufal-Struzik, 1999). Giftedness clearly is an advantage, one that conveys both academic and personal benefits.

However, the tendency for healthy adjustment must not blind educators to frequent turbulent problems and strong needs for counseling. Common problems, some noted in Table 2.1, include social rejection, leading to feelings of aloneness, differentness, even "weirdness"; depression (with suicide in rare cases); boredom, apathy, and frustration toward an indifferent school; compulsive and neurotic perfectionism; feelings of stress; neurotic concern that one must be superior in all activities; sibling difficulties; and even eating disorders in adolescence (Neihart, 1999b). Hollingworth (1942) recommended that counseling be part of all gifted programs, a widely accepted idea (e.g., Colangelo, 2003; Colangelo & Assouline, 2000; Silverman, 1993a, 1993b; see Chapter 17).

Independence, Self-Confidence, Internal Control

An important set of personality characteristics of the gifted child relates to his or her typically high level of self-confidence and independence. Such an attitude is a natural outgrowth of years of favorable comparisons with less-able peers; of glowing feedback and evaluations from parents, teachers, peers, and siblings; and from the child's clear history of success in school.

The concept of high internal control describes the confident children or adolescents who feel responsible for their successes and failures and who feel in control of their destinies. The child with high internal control is likely to use errors and failures constructively; he or she learns from mistakes. It is important that the internally controlled child usually attributes failure to lack of effort, not lack of ability, and so a failure is a momentary setback that motivates the student to "try harder next time."

In contrast, the externally controlled child is more likely to attribute success or failure to luck, chance, the ease or difficulty of tasks, whether a teacher is generous or unfair, lack of sleep, a sick cat, and so on. The "external" child also is less likely to try harder after failure—because he or she does not accept responsibility for the outcome in the first place. More is written on these problems in Chapter 12 about underachieving gifted students.

Their generally higher levels of internal control and personal responsibility often lead gifted students to set high goals for themselves. When these goals are not met, the natural outcome is disappointment, frustration, and feelings of incompetence, ineptness, or stupidity. Parents and teachers are frequently mystified by displays of frustration and self-criticism by students who are obviously extraordinarily capable and talented. The frustration occurs not because the students are comparing their own performances with those of others, but with their own high expectations and perfectionism.

Preferred Styles of Learning, Instruction, Thinking, and Expression

Learning styles refers to students' preferred physical and socio-psychological conditions and preferred

teaching/learning methods (Dunn & Griggs, 1988; Griggs & Dunn, 1984). The overlapping concept of instructional styles also refers to teaching/learning methods (Renzulli & Reis, 1997). Thinking styles refers to how one intellectually responds to situations and problems (Dai & Feldhusen, 1999; Sternberg & Grigorenko, 1993). Expression style is one's preferred mode of response.

A classic instrument for assessing learning styles is the Dunn, Dunn, and Price (1981) Learning Styles Inventory (LSI). The LSI assesses learning preferences in these areas: environmental (light, sound, temperature, design), emotional (motivation, persistence, responsibility, need for structure or options), sociological (self, peer, team, adult, varied), physical (time of day, need for intake, mobility), and psychological (global/analytical, left/right, impulsive/reflective). Rayneri and Gerber (2004) urged use of the LSI and the Student Perception Inventory (SPI) to provide information on students' learning style in order to improve student achievement and prevent underachievement.

It is not surprising that gifted students' preferred learning styles match their frequent characteristics of high motivation, persistence, self-confidence, independence, and high internal control. Griggs and Dunn (1984; Griggs, 1984) concluded that gifted students tend to be independent, self-motivated learners more than teacher-motivated. They need and enjoy learning tasks that are unstructured and flexible, rather than the highly structured tasks needed by less-able students. They prefer active-participant approaches to learning rather than spectator approaches. They can learn through varied sensory channels, including visual, auditory, tactile, and kinesthetic. They generally are more responsible, prefer a quieter learning environment, and prefer to learn alone or with other gifted students.

Renzulli and Reis (1997) took a broad view of style preferences that included four subcategories: instructional style preferences, learning environment preferences, thinking styles preferences, and expression style preferences. In increasing order, they reported gifted students' instructional style preferences as lecture (tied with drill and recitation, or "drill-and-kill," according to Renzulli, 1995), discussion, demonstration, small group discussion, peer tutor-

ing, cooperative learning, field trips, learning centers, learning games, electronic learning, simulations/role playing, projects, mentorships (internships, apprenticeships), and independent study.

Renzulli and Reis (1997) noted that gifted students differ in learning environment preferences, and the teacher should ask, "Which does the young person prefer?" (p. 81). They acknowledged variations among gifted students in preferred interpersonal combinations (self-, peer-, adult-oriented, or combined) and physical combinations (e.g., sound, heat, light, room design, mobility, time of day, food intake, seating) of learning environments. Expression style preferences includes written, oral, manipulative, discussion, display, dramatization, artistic, graphic, commercial, or service types of demonstrations of learning.

Thinking styles preferences include Sternberg's (e.g., 2003) triarchic categories of analytic, synthetic, and practical giftedness (Chapter 1), along with Sternberg's (1997b; Grigorenko & Sternberg, 1997; Sternberg & Grigorenko, 1993) legislative (e.g., creates own rules, does things in own way), executive (e.g., carries out plans, follows rules), and judicial (e.g., compares and evaluates ideas, rules, procedures).

In regard to thinking styles, or "how individuals apply [intellectual abilities] in adapting to the demands of the environment" (Dai & Feldhusen, 1999, p. 302), probably all thinking styles are tied closely to personality traits. Also, as with their learning styles, gifted students can be most successful if their thinking styles are coordinated with their learning tasks (Sternberg, 1997b; Sternberg & Grigorenko, 1993). Dai and Feldhusen noted that gifted adolescent students are diverse in thinking styles, despite similar profiles of abilities and academic achievement. Interestingly, teachers tend to favorably evaluate students whose thinking styles match their own (Grigorenko & Sternberg, 1997).

Dai and Feldhusen (1999) and Sternberg and Grigorenko (1993) mentioned several familiar two-part thinking styles—for example, liberal and conservative, and preferring to work alone versus work with others. Perhaps the best-known two-part thinking style is creative thinking versus convergent thinking. Sternberg's (1997b) legislative function (creating ideas and rules) versus executive/judicial

functions (following rules, evaluating ideas) reflects this distinction. Kirton (1976) used the phrases *innovative thinking* versus *adaptive thinking*. As to personality correlations, according to Kirton, innovators may seem undisciplined, impractical, and able to do routine work for only short bursts. In contrast, adaptors tend to be precise, efficient, conforming, and highly accurate in long spells of work; may show self-doubt; and rarely challenge authority. Simonton (1996) used the terms *creative expertise* versus *received expertise*.

In a comparison study of gifted students versus regular students that used the Myers-Briggs Type Indicator (MBTI; Myers, 1962), more gifted students had greater orientation toward I, N, P, and T. The I refers to introversion, or a more internal orientation; N to the intuitiveness, where students prefer dealing with abstraction and hidden meanings; and P to perceiving, the category described as more flexible, curious, open-minded, and spontaneous (Cross, Speirs-Neumeister, & Cassady, 2007). Finally, T refers to thinking types who are logical, objective, and organized. The authors strongly recommend factoring psychological types into curriculum planning for their gifted students.

Superior Humor

The superior sense of humor of most gifted children would seem to follow quite naturally from their abilities to think quickly and to see relationships, and from their general confidence and social adeptness. The humor will appear in art, creative writing, and other areas, as well as in social interaction.

Gross (2000) recounted a preschool teacher who asked young Steven to assist in picking up empty fruit-juice cups: "Can you pass that cup, please?" Steven placed the cup on the floor and solemnly paced back and forth in front of it. His IQ tested at 158, and he adored puns and wordplay—in this case, alternative definitions of "pass." Another true story describes a young gifted child who locked his mother out of the house. When she yelled at him, "Open the door!" he walked into the kitchen with a grin and opened the refrigerator. It takes a very patient mother to appreciate such humor.

High Moral Thinking and Empathy

As a general trend, gifted students are more sensitive to values and moral issues, and they intuitively understand why certain behavior is "good" and other behavior is "bad." Piaget and Inhelder (1969) explain that developmentally advanced children are less egocentric; that is, they are able to view a situation from another person's point of view. Therefore, gifted students are more likely to acknowledge the rights and feelings of others.

Gifted children and youth are likely to develop, refine, and internalize a system of values and a keen sense of fair play and justice at a relatively early age. Not only is the child likely to be more fair, empathic, and honest, but he or she will evaluate others according to the same standards. It follows that gifted students are less likely to show antisocial or other behavior problems in school.

Gifted students, especially the brightest ones, may develop an interest in social issues, particularly those for which their sense of reason and justice seems to be violated. Teachers or parents may find themselves embroiled in serious discussions with gifted children about why adults litter streets and highways with beer cans and burger wrappers, why politicians cut benefits and programs for the elderly and poor, and why parents voted against enlarging the crowded school building. Hollingworth (1942, p. 281) described a 6-year-old boy of 187 IQ who "wept bitterly after reading how the North taxed the South after the Civil War."

Hollingworth also described one not-so-moral tendency. She noted that most of her very bright students engaged in "benign chicanery." That is, the children used their intelligence to get their own way with less-intelligent peers or to avoid disagreeable academic or other tasks. Because such talent could be helpful in the adult world, Hollingworth helped them to be aware of when they were taking advantage of their ability (Delisle, 1992).

In the Gross (1993a) study of very-high-IQ Australian children mentioned earlier, eight children ages 10 to 13 took a test of moral judgment. Their moral and ethical sense resembled that of high school or college students.

Rimm (2003a) uses the typical high moral thinking as a motivation factor in reversing student

underachievement, particularly among teens. Encouraging youth toward altruism adds relevance to their lives and often encourages them to achieve more in school. For example, a college student who was about to drop out was motivated to continue to graduation when Rimm convinced her she could contribute more toward helping disadvantaged people if she completed her degree.

Be cautioned: Despite high mental ability and high capacity for moral thought, “benign chicanery” may progress to delinquency, drugs, and crime, where the talents of bright and clever students are quickly rewarded (money, status) by misconduct-oriented peers.

CHARACTERISTICS OF THE CREATIVELY GIFTED

Creativity and Intelligence: The Threshold Concept

The student who is highly intelligent may or may not be creatively gifted as well. Getzels and Jackson (1962) and Wallach and Kogan (1965) contrasted highly intelligent versus highly creative students, confirming that the two traits are indeed not the same. Of interest to teachers, Getzels and Jackson reported that highly creative and highly intelligent students did equally well in course work—but teachers preferred the highly intelligent students!

On the other hand, there is good evidence that creativity and intelligence are related. The resolution of this apparent inconsistency—whether creativity is or is not related to intelligence—lies in the threshold concept: A base level of intelligence usually is essential for creative productivity; above that threshold (about IQ 120) there is virtually no relationship between measured intelligence and creativity (MacKinnon, 1978). For example, Walberg, Williams, and Zeiser (2003) noted that high intelligence is less important to adult creative eminence than other psychological traits and conditions (e.g., perseverance, stimulating social environments, and luck). Particularly, as we will see, creative persons must be independent and confident; must be motivated and energetic; and must dare to make changes, challenge traditions, make waves, bend rules, and get

out of the box—and they sometimes fail in the process.

An important implication of distinguishing between intellectual and creative giftedness is that if students are selected for a gifted program upon the basis of scores in the top 1% to 5% in intelligence, the majority of creative students will be missed. Another implication is that when asked to identify “gifted” students, as we noted earlier in this chapter, many teachers will quickly nominate the well-behaved, conforming, neat, and dutiful “teacher pleasers,” rather than less conforming students who are highly creative and more unconventional. Also, in many classes (for example, math or science in the middle school) the special talents of the creatively gifted may not be required. Creative students, therefore, will be less visible and less likely to be nominated as “gifted” than highly intelligent students.

Ultimately, the achievements and contributions to society of many highly creative students will surpass those of brighter, conforming grade-getters.

Personality and Cognitive Characteristics

There is a recurrent group of personality and cognitive traits that appear again and again in descriptions of the creative person (e.g., Barron, 1969, 1988; Costa, 2003; Csikszentmihalyi & Wolfe, 2000; MacKinnon, 1962, 1978; Simonton, 1988, 2003; Tardif & Sternberg, 1988; Torrance, 1981a, 1984, 1988; Walberg, Williams, & Zeiser, 2003). Again, not all characteristics will apply to all creative people. However, most traits square well with our intuitive understanding of a creative person. Recurrent traits are listed in the left column of Table 2.2. Some common near-synonyms are listed in the right column.

Two personality characteristics are especially worth emphasizing. First, every creatively productive person of any age shows high energy and motivation. Such persons have been described as impulsive, overactive (even hyperactive), enthusiastic, excitable, spontaneous, persistent, persevering, adventurous, willing to work beyond assigned tasks, and having high drive for accomplishment and recognition (Davis, 1999).

TABLE 2.2 Characteristics Related to Creativity

Positive Traits	Approximate Synonyms
Original	Imaginative, resourceful, flexible, unconventional, thinks metaphorically, challenges assumptions, asks "What if?" irritated and bored by the obvious, avoids perceptual set
Aware of creativeness	Creativity conscious, values originality, values own creativity
Independent	Self-confident, individualistic, nonconforming, sets own rules, unconcerned with impressing others, resists societal demands
Risk-taking	Not afraid to be different or try something new, willing to cope with hostility, willing to cope with failure
Motivated	Energetic, adventurous, sensation seeking, enthusiastic, excitable, spontaneous, impulsive, intrinsically motivated, perseveres, works beyond assigned tasks
Curious	Questions norms and assumptions, experiments, inquisitive, wide interests, asks "Why?" is a problem-finder
Sense of humor	Playful, plays with ideas, childlike freshness in thinking
Attracted to complexity	Attracted to novelty, asymmetry, the mysterious, theoretical and abstract problems; is a complex person; tolerant of ambiguity, disorder, incongruity
Artistic	Artistic and aesthetic interests, attracted to beauty and order
Open-minded	Receptive to new ideas, other viewpoints, new experiences, and growth; liberal, altruistic
Needs alone time	Reflective, introspective, internally preoccupied, sensitive, may be withdrawn, likes to work alone
Intuitive	Perceptive, sees relationships, finds order in chaos, uses all senses in observing
Intelligent	Verbally fluent, articulate, logical, good decision maker, detects gaps in knowledge, visualizes

The other noteworthy and related trait is risk-taking, sometimes described as not being afraid to try something new, not minding the consequences of being different, having courage, exposing oneself to hostility, rejecting limits imposed by others, gambling on failure, and being willing to make a fool of oneself. Failing and looking like an idiot are not particularly appealing. Indeed, fear of failure and fear of rejection are emotional barriers to creative thinking (Davis, 1999). If one tries new ideas, one will often fail. As IBM founder Thomas J. Watson once said, "The way to succeed is to double your failure rate" (von Oech, 1983, p. 93).

But creative people are complex. Depending on their phase of thinking or other circumstances, they may be gregarious or hermit-like, extroverted or introverted, arrogant or humble, masculine or feminine, or warm and sensitive or cold and aloof (Csikszentmihalyi & Wolfe, 2000).

Other Traits and Some Negative Traits

Torrance (1981b) itemized additional traits that might help the teacher or parent recognize and understand creative students. Specifically, the creative student

- likes to work by himself or herself;
- is a "what if?" person;
- sees relationships;
- is full of ideas;
- possesses high verbal, conversational fluency;
- constructs, builds, rebuilds;
- copes with several ideas at once;
- is irritated and bored by the routine and obvious;
- goes beyond assigned tasks;
- enjoys telling about his or her discoveries or inventions;

TABLE 2.3 Negative Traits of Some Creative Persons

Overactive physically and mentally
Temperamental, emotional
Indifferent to conventions and courtesies
Questions rules, laws, and authority
Stubborn
Resists domination
Egocentric, intolerant, tactless
Rebellious, uncooperative
Capricious, careless, disorderly
Arrogant, cynical, sarcastic
Impatient, demanding
Absent-minded, forgetful, mind wanders
Argumentative, argues that everyone else is wrong
Sloppy and disorganized with details and unimportant matters

Sources: Primarily from Smith (1966), Tardif and Sternberg (1988), and Torrance (1962).

- find ways of doing things differently from standard procedures;
- is not afraid to try something new; and
- does not mind consequences of appearing different.

So far, the creative personality looks pretty good. However, creative children, adolescents, and adults may show habits and dispositions that will upset normal parents, teachers, or administrators, as well as other students. Some “negative” traits are itemized in Table 2.3. Such characteristics may stem from a creative student’s confidence, independence, persistence, curiosity, unconventionality, interest in novelty, and humor.

When stubborn Sammy or independent Elissa shows some of these upsetting characteristics, the teacher or parent might consider the possibility that the symptoms are part of a larger picture of original, energetic creativeness that may need rechanneling into constructive outlets.

True creativity is the product not only of personality traits that predispose a person to think creatively, but of a constellation of creative abilities as well. Important creative abilities and ideas for strengthening them will be described in Chapters 8 and 9.

How Stereotypical Characteristics Can Ensnare Teachers and Parents

The very broad list of typical characteristics of gifted children can confuse teachers and parents, and can cause some special pitfalls for children. Although we’ve cautioned readers not to assume that all gifted or creative students have all the characteristics described, sometimes teachers make the mistake of assuming that gifted children who are not self-directed, persevering, and motivated should not be considered gifted. Thus, underachieving or troublesome gifted students are too easily eliminated from gifted programming.

Parents more typically err in an opposite direction. If their gifted children talk too much or are strong willed, impatient, argumentative, arrogant, or rebellious, they assume that they must accept these characteristics because the undesirable characteristics come with the territory of giftedness.

Many gifted children are self-motivated, but those who are less self-directed and underachieve are more likely to thrive in gifted programs and should not be excluded. As to those gifted children who display disrespectful or antisocial behaviors, learning appropriate behaviors will not interfere with their