Traits of Giftedness as Manifested in Various Disciplines/Groups:

1) General Intellectual Ability
2) Specific Academic Field: General, Math/Science, Social Studies/Language Arts
3) Creative
4) Artistic: General, Art, Drama, Music
5) Leadership
6) Affective
7) Characteristics of the Hard-to-Find Gifted and Talented Student
8) Culturally Different
9) Lower Income
10) Disabled
11) Women

General Intellectual Ability

Those gifted and talented students with general intellectual ability tend to perform or show the potential to perform in several fields of study. Spearman (1923) defined this general ability as “g,” which is common to many tasks. Cattell (1963) further divided “g” into fluid (inherited ability) and crystallized (abilities acquired through learning). Many general intelligence tests and checklists include items that assess both fluid abilities, such as analogies, block designs, and pattern arrangements, and crystallized abilities, such as mathematics problems, vocabulary, and comprehension of reading passages.

Researchers have consistently identified these characteristics as relating to general intellectual ability (Clark, 1997; Colangelo & Davis, 1991; Coleman & Cross, 2001; Davis & Rimm, 1994; Gilliam, Carpenter, & Christensen, 1996; Khatena, 1992; Piirto, 1999; Renzulli et al., 2002; Rogers, 2001; Sternberg & Davidson, 1986; Swassing, 1985; Tannenbaum, 1983):

- Has an extensive and detailed memory, particularly in an area of interest.
- Has vocabulary advanced for age—precocious language.
- Has communication skills advanced for age and is able to express ideas and feelings.
- Asks intelligent questions.
- Is able to identify the important characteristics of new concepts, problems.
- Learns information quickly.
- Uses logic in arriving at common sense answers.
- Has a broad base of knowledge—a large quantity of information.
- Understands abstract ideas and complex concepts.
- Uses analogical thinking, problem solving, or reasoning.
- Observes relationships and sees connections.
- Finds and solves difficult and unusual problems.
- Understands principles, forms generalizations, and uses them in new situations.
- Wants to learn and is curious.
- Works conscientiously and has a high degree of concentration in areas of interest.
- Understands and uses various symbol systems.
- Is reflective about learning.

Specific Academic Field
In this area, gifted and talented students exhibit potential or demonstrated accomplishment in one specific field of study, such as language arts, mathematics, social studies, or science. Researchers have identified general and specific characteristics for these academic fields (Feldhusen, Hoover, & Sayler, 1990; Gilliam et al., 1996; Piirto, 1999; Rogers, 2001; Tannenbaum, 1983):

**General (demonstrated within field of interest)**

- Has an intense, sustained interest.
- Has hobbies/collections related to field.
- Attracted toward cognitive complexity, enjoys solving complex problems.
- Prefers classes/careers in the academic field.
- Is highly self-motivated, persistent.
- Has a broad base of knowledge.
- Reads widely in an academic field.
- Learns information quickly.
- Has an inquisitive nature, asks good questions.
- Examines and recalls details.
- Recognizes critical elements and details in learning concepts.
- Analyzes problems and considers alternatives.
- Understands abstract ideas and concepts.
- Uses vocabulary beyond grade level.
- Verbalizes complex concepts and processes.
- Visualizes images and translates into other forms—written, spoken, symbolic—music notation, numbers, letters.
- Sees connections and relationships in a field and generalizes to other situations, applications.

**Math/Science**

- Is interested in numerical analysis.
- Has a good memory for storing main features of problem and solutions.
- Appreciates parsimony, simplicity, or economy in solutions.
- Reasons effectively and efficiently.
- Solves problems intuitively using insight.
- Can reverse steps in the mental process.
- Organizes data and experiments to discover patterns or relationships.
- Improvises with science equipment and math methods.
- Is flexible in solving problems.

**Social Studies/Language Arts**

- Enjoys language/verbal communication, communication skills.
- Engages in intellectual play, enjoys puns, good sense of humor.
- Organizes ideas and sequences in preparation for speaking and writing.
- Suspends judgment, entertains alternative points of view.
- Is original and creative—has unique ideas in writing or speaking.
- Is sensitive to social, ethical, and moral issues.
- Is interested in theories of causation.
- Likes independent study and research in areas of interest.
- Uses these qualities in writing: paradox, parallel structure, rhythm, visual imagery, melodic combinations, reverse structure, unusual adjectives/adverbs, sense of humor, philosophical bent (Piirto, 1999, p. 241).
Creative Area

The key characteristic that is often associated with creativity is *divergent thinking*. As opposed to convergent thinking (arriving at a single conclusion), divergent thinking requires the gifted and talented student to produce many ideas or ideas that are different from the norm.

Coleman and Cross (2001) suggest that the comparison group, "whether to self, others, a situation, a point in time, a field of study, a cultural group, or a combination of these," determines how narrowly or broadly creativity is defined (p. 241). Psychologists tend to agree that creativity is not the same as intelligence, but that creative individuals tend to have a threshold intelligence score of about 120 (Getzels & Jackson, 1962). Psychometrically, test developers have defined creativity as fluency, flexibility, originality, and elaboration (Guilford, 1950; Torrance, 1974). Cognitive scientists have identified characteristics of creative individuals by studying the methods they use in solving complex problems (Perkins, 1981; Sternberg, 1988), while other researchers have identified characteristics by examining case studies of creators and how they generated ideas over longer periods of time (Goertzel & Goertzel, 1962; Gruber, 1982). Taking a case study approach, Gardner (1993) suggests that creative production emerges only after 10 years of concentrated study in a specific field. For this reason, teachers clearly would be observing creative potential in gifted and talented students during their school years.

Researchers have identified some of these common characteristics (Clark, 1997; Coleman & Cross, 2001; Gardner, 1993; Gilliam et al., 1996; Goertzel & Goertzel, 1962; Gruber, 1982; Guilford, 1950; Khatena, 1992; Perkins, 1981; Piirto, 1999; Renzulli et al., 2002; Sternberg, 1988; Tannenbaum, 1983; Torrance, 1974):

- Has in-depth foundational knowledge.
- Prefers complexity and open-endedness.
- Contributes new concepts, methods, products, or performances.
- Has extreme fluency of thoughts and a large number of ideas.
- Is observant and pays attention to detail.
- Uses unique solutions to problems, improvises.
- Challenges existing ideas and products.
- Connects disparate ideas.
- Is constantly asking questions.
- Criticizes constructively.
- Is a risk taker, confident.
- Is attracted to the novel, complex, and mysterious.
- Is a nonconformist, uninhibited in expression, adventurous, able to resist group pressure.
- Accepts disorder.
- Tolerates ambiguity; delays closure.
- Is persistent and task committed in area of interest.
- Has a sense of humor.
- Is intellectually playful.
- Is aware of own creativity.
- Is emotionally sensitive; sensitive to beauty.
- Is intuitive.
- Enjoys alone time.
- Is reflective about personal creative process.

Artistic Area

In this area, gifted and talented students exhibit potential or demonstrated accomplishment in one or more artistic fields, such as art, drama, or music. Khatena (1992) suggested that "talented individuals in
the performing and visual arts are bright, that creativity is a significant energizing factor in talent, and that specific to each art form exists highly specialized abilities that require the language and skills peculiar to that art form for their expression” (p. 147).

Researchers have identified general and specific characteristics for these artistic fields (Clark & Zimmerman, 1984; Gilliam et al., 1996; Piirto, 1999; Renzulli, Smith, White, Callahan, & Hartman, 1976; Khatena, 1988; 1992; Seashore, Leavis, & Saetveit, 1960):

**General (demonstrated within artistic area)**

- Chooses artistic activity for projects or during free time.
- Studies or practices artistic talent without being told.
- Strives to improve artistic skills.
- Demonstrates talent for an extended period of time.
- Concentrates for long periods of time on artistic projects.
- Seeks to pick up skills in the arts with little or no instruction.
- Possesses high sensory sensitivity.
- Observes and shows interest in others who are proficient in the artistic skill.
- Uses the artistic area to communicate.
- Experiments in the artistic medium.
- Sets high standards in the artistic area.
- Demonstrates confidence in the artistic area.

**Art**

- Scribbles earlier than most.
- Initiates drawing.
- Incorporates large number of elements into artwork.
- Provides balance and order in artwork.
- Elaborates on ideas from other people as a starting point.
- Observes details in environment, artistic area.
- Has unique, unusual solutions to artistic problems.
- Uses unusual and interesting visual imagery.
- Is innovative in selecting and using art materials.
- Has a highly developed sense of movement and rhythm in drawings.
- Has a great feel for color.
- Varies organization of elements to suit different situations.
- Uses content that is interesting, tells a story, or expresses feelings.
- Produces many drawings.

**Drama**

- Is innovative and creative in performing.
- Easily tells a story or gives an account of some experience.
- Uses gestures or facial expressions to communicate feelings.
- Is adept at role-playing, improvising, acting out situations.
- Identifies with moods and motivations of characters.
- Handles body with ease and poise.
- Creates original plays or makes up plays from stories.
- Commands and holds the attention of a group when speaking.
- Evokes emotional responses from listeners.
- Communicates feelings through nonverbal means.
• Imitates others, uses voice to reflect changes of idea and mood.

Music

• Discriminates fine differences in tone, relative, or absolute pitch.
• Identifies a variety of sounds (background noise, singers, orchestral instruments).
• Varies loudness and softness.
• Remembers melodies and can produce them accurately.
• Plays an instrument or indicates a strong desire.
• Is sensitive to rhythm, changes body movements to tempo.
• Dances to tunes with different rhythms.
• Can complete a melody.
• Creates own melodies.
• Likes listening to music.
• Likes producing music with others.

Leadership

Leadership is the result of an interaction between a number of variables: the personality, status, achievement, and intelligence of the leader; the characteristics of the followers; and the situation (Stogdill, 1974). Since leadership may emerge in various types of situations and is dependent upon a number of variables being present, professionals may find it difficult to identify potential leaders.

Knowing that the situation will influence leadership, researchers have identified these general personal characteristics (Davis & Rimm, 1994; Karnes, 1991; Khatena, 1992; Renzulli et al., 1976)

• Is well-organized.
• Can do backward planning.
• Is visionary, has a holistic view.
• Is a problem finder.
• Is able to see problems from multiple perspectives.
• Is adaptable to new situations.
• Can manipulate systems.
• Is highly responsible; can be counted on.
• Maintains on-task focus.
• Is self-confident.
• Is a persuasive communicator.
• Has a cooperative attitude; works well in groups.
• Participates in most social activities, enjoys being around other people.
• Influences the behavior of others; recognized as a leader by peers.
• Is respected, liked, or both by others.
• Is aware of verbal and nonverbal cues; sophisticated interpersonal skills.
• Is emotionally stable.
• Is willing to take risks.

Affective

Along with cognitive characteristics, gifted students frequently exhibit particular affective characteristics (Clark, 1997; Colangelo & Davis, 1991; Coleman & Cross, 2001; Khatena, 1992; Plirto, 1999; Rogers, 2001; Sternberg & Davidson, 1986; Swassing, 1985; Tannenbaum, 1983). Some researchers suggest that these emotional aspects of a gifted and talented individual may be traits or temperaments (i.e.,
genetic), while others may be developed (Csikszentmihalyi, Rathunde, & Whalen, 1993; Piirto, 1999; Winner, 1996):

- Is motivated in work that excites.
- Persists in completing tasks in areas of interest.
- Is self-directed, independent.
- Evaluates and judges critically.
- Has high degree of concentration.
- Becomes bored with routine tasks.
- Is interested in “adult” problems.
- Is concerned about right and wrong, ethics.
- Has higher self-concept, particularly in academics.
- Has high expectations of self and others.
- Has a sense of humor.
- Is highly sensitive.
- Takes other perspectives; is empathic.
- Is a perfectionist.

**Characteristics of the Hard-to-Find Gifted and Talented Student**

The interaction between these frequently cited characteristics associated with gifted and talented students and other factors such as the school task, the social situation, family background, and individual genetic traits can produce both desirable and undesirable behaviors (Clark, 1997; Whitmore, 1980). Undesirable behaviors tend to limit services for some gifted and talented students because teachers and other educators may have particular stereotypical expectations of how gifted students should perform (e.g., all are early readers, academic achievers, verbal, and “well-behaved students”). In Whitmore’s classic study, she found certain factors that appear to influence underachievement in gifted students. This set of factors mainly falls within three categories: school conditions, motivation, and personal characteristics that may lead to problems (see Table 1.1).
<table>
<thead>
<tr>
<th>Personal Characteristics</th>
<th>Motivation</th>
<th>School Conditions</th>
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</thead>
<tbody>
<tr>
<td>1. Perfectionism leads to high degree of self-criticism, competition, and/or unrealistic performance expectations.</td>
<td>1. Too easy or too difficult a task limits the GT student’s possibility for success.</td>
<td>1. If individuality is not valued, then social isolation occurs.</td>
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<td>2. Supersensitivity to social feedback leads to withdrawal.</td>
<td>2. The GT student fears failure from high expectations.</td>
<td>2. Teachers and others have unrealistic expectations of high performance in all areas consistently.</td>
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<td>3. Desire for independence leads to attempts to control the situation.</td>
<td>3. Desires and abilities may not match opportunities.</td>
<td>3. Teachers and others are uncomfortable with differentness, fear superior knowledge.</td>
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<td>4. Given an intense desire to satisfy curiosity, the GT student feels restricted in analyzing the problem in the time allocated.</td>
<td>4. No positive role model is present.</td>
<td>4. School activities are not differentiated or challenging, offer no depth or complexity.</td>
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<td>5. Using advanced problem solving, the GT student manipulates peers and adults.</td>
<td>5. The GT student doesn’t have a positive vision of the future.</td>
<td>5. The school district does not provide any appropriate educational provision.</td>
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<td>6. Desiring complexity, the GT student is not interested in memorization, repetition, or lower levels of thinking.</td>
<td>6. The GT student doesn’t have accurate self-knowledge about his ability.</td>
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<td>7. Unable to control emotions, the GT student is easily frustrated, embarrassed, and aggressive toward people who create obstacles.</td>
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<td>8. The GT student doesn’t have the energy to persist to completion of a goal.</td>
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*Note: Adapted from Giftedness, Conflict, and Underachievement, by J. R. Whitmore, 1980, Boston: Allyn and Bacon. Copyright ©1980 by Allyn and Bacon. Adapted with permission.*
When these factors are present, the gifted and talented student may not exhibit the characteristics that are listed in each of the above areas, but will choose to perform in school by rejecting assignments, functioning nonconstructively in groups, demonstrating poor study habits, procrastinating, showing a gap between oral and written work, or rebelling against teachers. Given these poor academic behaviors, the gifted and talented student may select companions who are negative toward school, alienate peers by constant aggression, or withdraw from social interactions in the classroom, at home, or both. These types of behaviors may ultimately lead to less satisfaction with school “rewards” such as grades or dropping out mentally or physically from school (Clark, 1997; Davis & Rimm, 1994; Laffoon, Jenkins-Friedman, & Tollefson, 1989; Whitmore, 1980).

Some groups of students are particularly vulnerable to exhibiting these negative behaviors or behaviors that are not necessarily stereotypical of gifted and talented students. These groups include culturally different students, those from lower income families, disabled students, and women.

**Culturally Different**

*Culturally different* refers frequently to gifted students from specific ethnic groups: Hispanics, African Americans, Native Americans, and Asian Americans. If the particular gifted student’s “abilities and interests are not synchronous with subgroup values, then the child must face the problems of gaining acceptance of his or her giftedness by both society and by members of the subgroup” (p. 197). Areas of cultural identity are multifaceted and include not only national origin, but also religion, geographic region, urban/suburban/rural, age, gender/sex, class, and exceptionalities (Clark, 1997; Gollnick & Chinn, 1990). The greater number of areas that are different from the macro culture, the greater chance that the gifted student will display characteristics that may be different from the norm.

Torrance (1969) suggested 18 “creative positives” that may be helpful in identifying culturally different youth (pp. 71–81):

- ability to express feelings and emotions;
- ability to improvise with commonplace materials and objects;
- articulateness in role-playing, sociodrama, and storytelling;
- enjoyment of, and ability in, visual arts, such as drawing, painting, and sculpture;
- enjoyment of, and ability in, creative movement, dance, dramatics, and so forth;
- enjoyment of, and ability in, music, rhythm, and so forth;
- use of expressive speech;
- fluency and flexibility in figural media;
- enjoyment of, and skills in, small-group activities, problem solving, and so forth;
- responsiveness to the concrete;
- responsiveness to the kinesthetic;
- expressiveness of gestures, body language, and so forth, and ability to interpret body language;
- humor;
- richness of imagery in informal language;
- originality of ideas in problem solving;
- problem-centeredness or persistence in problem solving;
- emotional responsiveness; and
- quickness of warm-up.

On the other hand, Frasier and Passow (1994) suggested that all gifted students, regardless of their cultural background, express their abilities by demonstrating:
• a strong desire to learn;
• an intense, sometimes unusual interest;
• an unusual ability to communicate with words, numbers, or symbols;
• effective, often inventive strategies for recognizing and solving problems;
• a large storehouse of information;
• a quick grasp of new concepts;
• logical approaches to solutions;
• many highly original ideas; and
• an unusual sense of humor.

Lower Income

Children from lower income backgrounds have the most difficulty in being selected for programs for gifted and talented students (Clark, 1997). They may have a family background that is not rich in language and reading or family members who have not had positive experiences with school, who have not attained higher education degrees, or who solve problems using violence (Baldwin, 1973). For these reasons, this group of gifted students is particularly vulnerable to becoming underachievers in school.

Researchers have identified these characteristics that appear to assist in identifying children from lower income backgrounds (Baldwin, 1973; Clark, 1997; Torrance, 1969):

• Has high mathematical abilities.
• Is curious; has varied interests.
• Is independent.
• Has a good imagination.
• Is fluent in nonverbal communication.
• Improvises when solving problems.
• Learns quickly through experience.
• Retains and uses information well.
• Shows a desire to learn in daily work.
• Is original and creative.
• Uses language rich in imagery.
• Responds well to visual media; concrete activities.
• Shows leadership among peers; is responsible.
• Shows relationships among unrelated ideas.
• Is entrepreneurial.
• Has a keen sense of humor.

Disabled

It has been estimated that approximately 2% of the disabled population is gifted. Children with disabilities include those with learning disabilities, visual or auditory impairments, physical disabilities, emotional handicaps, or speech delays. Most often, the child may have extreme ability in one or more areas and need remediation in others. The disability may mask the ability or vice versa. For example, a gifted child with a hearing impairment may be delayed in language and may need assistance from a speech therapist. Since special education services often focus on remediation, the gift might go unrecognized. On the other hand, a gifted child with a learning disability may be able to answer comprehension questions on a test by matching words in the passage to the answers even though she doesn’t know how to read. In this case, the gifted student would hide the disability and most likely not be served by special education or the program for gifted and talented students.
Table 1.2 includes the characteristics Whitmore (1981) has identified that reveal giftedness in children with disabilities.

<table>
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<tr>
<th>Disability</th>
<th>Impeding Characteristics</th>
<th>Characteristics Revealing Giftedness</th>
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</table>
| Learning disability         | Little or no productivity in school—cannot read, write, spell easily or accurately | 1. Superiority in oral language—vocabulary, fluency, structure  
2. Memory for facts and events  
3. Exceptional comprehension  
4. Analytical and creative problem-solving abilities  
5. Markedly advanced interests, impressive knowledge  
6. Keen perception and humor  
7. Superior memory, general knowledge |
| Developmental delay in motor area | Poor motor skills, coordination. Writing is painfully slow, messy. Child is often easily distracted from tasks and described as inattentive. | 1. Drive to communicate through alternative modes: visual, nonverbal body language.  
2. Superior memory and problem-solving ability  
3. Exceptional interest and drive in response to challenge |
| Cerebral palsy, deafness    | Absence of oral communication skills. | 1. Superior verbal skill, oral language  
2. Exceptional capacity for manipulating people and solving "problems"  
3. Superior memory, general knowledge |
| Emotional handicap          | Disordered behavior—aggressive, disruptive, frequently off-task. Extremely withdrawn, noncommunicative. | Most difficult to identify—the only key is response to stimulation of higher mental abilities unless superior written work is produced. |


For the most part, boys and girls do not differ significantly in cognitive skills (Kerr, 1991; Linn & Hyde, 1989; Maccoby & Jacklin, 1974). In fact, gifted girls are more similar to gifted boys than to average girls in their interests, attitudes, and aspirations (Kerr, 1991). However, while changing, the culture still tends to encourage more passivity in girls (e.g., playing with dolls, reading) and more spatial and analytic reasoning in boys (e.g., playing video games, using building blocks; Clark, 1997). Girls who show talent may be viewed as unfeminine, bossy, and show-offs, thus more girls hide their talents by adolescence.
Teachers need to be particularly diligent in identifying girls for programs in mathematics and science. Kitano (1994/1995) and Kerr (1994) suggested that research on mainstream gifted women may not necessarily be generalized to include gifted women from other ethnic and racial groups.