17

Learning in the Visual Arts: Characteristics of Gifted and Talented Individuals

David Pariser
Concordia University

Enid Zimmerman
Indiana University

In this research review about art learning and talented individuals, we first introduce theoretical concepts and then discuss the educational implications of these concepts. Definitions of giftedness, talent, and creativity are discussed early in the chapter, followed by a review of research on juvenile work of great artists, cross-cultural aspects of visual giftedness, and case studies of people talented in the arts. Next, is a review of research related to art talent development and identification and educational programming for artistically gifted children including these topics: potential and process versus performance and product; educational contexts; student abilities, personalities, values, backgrounds, and gender; the impact of educational opportunities; standardized testing; and teacher characteristics. The chapter concludes with recommendations for future research on art talent development and the education of artistically talented students.

DEFINITIONS OF GIFTEDNESS, TALENT, AND CREATIVITY

There are no agreed-upon definitions for the terms gifted, talent, and creativity. In popular usage, the term gifted often refers to students who have superior academic abilities, and the term talented usually refers to students with superior abilities in the visual and performing arts or sports. Teachers often describe their outstanding academic students as “gifted,” whereas outstanding art students are “talented.” Obviously there is a hierarchy of importance with talent as a term indicating a lesser endowment. The term gifted has retained that meaning, but talented also has been defined as possessing superior abilities in a single school subject, such as mathematics, language arts, science, or the fine arts. The term gifted and talented, in many contexts, has been replaced by talent development. So the emphasis has shifted from identifying predetermined gifts to nurturing talents (Feldhusen, 1992; Feldhusen & Hoover, 1986).

---

1Authors are listed alphabetically; both contributed equally to this chapter.
Winner (1996) offered a useful discussion of giftedness and distinguishes it from “talent.” She insists that the term gifted should apply equally to individuals with abilities in academic and artistic fields. Winner identifies gifted children by three traits: (a) precocity that is demonstrated by early and surprisingly great skill and ability in the mastery of a given symbolic domain. Gifted children master basics at a young age and show rapid growth in acquiring content and skills. (b) The urge to master. Gifted children value total immersion in the domain of their choice. They have an insatiable urge to absorb and learn as much and as quickly as possible. (c) Gifted children often find their own way. They do not march in lockstep with most of their peers, and very often find unique solutions to problems and sometimes do not need the “scaffolding” provided to less able learners. This is not to say that gifted children do not require any instruction, rather that their instruction needs to be qualitatively different from that offered to less gifted individuals. In our discussion we will use the term talented but will keep in mind the constellation of traits previously described by Winner.

There is no clear relationship among the terms talent, giftedness, and creativity. Sternberg and Lubart’s (1999) definition of creativity as “the ability to produce work that is both novel . . . and appropriate” (p. 3) is one that has been widely accepted. According to Csikszentmihalyi (1996), talent differs from creativity in that talent focuses on the ability to do something well, and most people in the case studies about creative adults that he and his colleagues researched achieved creative success without exceptional talent being evident. Gardner (1996) categorized seven individuals as creative according to each of his seven intelligence types (Picasso was included in the spatial intelligence category). Gardner explained that talented individuals function within a well-defined domain of knowledge within a culture. On the other hand, creative individuals often “lack fit” within a domain of knowledge and only after much time and effort do they establish a body of work that comes to be valued in a culture.

Certain personality traits may play a role in determining which gifted and talented children achieve their adult potentials in areas of art and science. As a result of his case studies of adults who achieved success in the arts and sciences, Feist (1999) concluded that giftedness as measured by high IQ scores might be a poor indicator of adult creative achievement and success. He conjectured that “lack of predictive validity of aptitude tests can be explained by the small relationship between intelligence and creativity” (p. 286).

THEORETICAL ASPECTS OF ART LEARNING AMONG GIFTED AND TALENTED INDIVIDUALS

In this discussion, we stress that special abilities and gifts found in the domain of the arts are just as “intellectual” and “cognitive” as gifts associated with high performance in domains such as math and science. Let there be no mistake, the visual arts do require intelligent thought and require problem-finding and problem-solving behaviors. Gardner’s (1983, 1999) research on multiple intelligences and the foundational work of Arneheim (1969) on visual thinking in the arts both firmly establish the claim for artistry as flowing out of intelligent behavior and not just simply as the expression of feelings. Thus, we assume that children gifted in the arts are every bit as intellectually endowed as those with academic gifts.

The relationships among giftedness, talent development, and creativity are challenging areas of research. Because researchers lack consensus about what constitutes creativity itself, progress in developing operational definitions of “creativity” has been slow (Clark & Zimmerman, 1992; Csikszentmihalyi, 1996; Hunsaker & Callahan, 1995; Sternberg, 1988). Although some scholars agree that creative achievement is reflected in the production of useful, new ideas or products that result from defining a problem and solving it in a novel way (Hunsaker & Callahan, 1995; McPherson, 1997; Mumford, Connely, Baughnan, & Marks, 1994; Wakefield, 1992), others distinguish between expert creative acts and those of novices. Csikszentmihalyi
(1988, 1996), Feldman (1982), and Winner and Martino (1993) referred to creativity as inventiveness within a domain of knowledge, where a creative individual’s work is recognized as a significant addition to that domain, by the social institutions (or field) that monitor the domain. No talented children, they claim, have “effected reorganization of a domain of knowledge” (p. 253). If we apply these criteria to student art, it would be rare that a student would create a work of art that is original, appropriate, and recognized by members of a disciplinary field. Fineberg (1997) has shown that numerous modernist artists appropriated motifs, images, and spatial organization from drawings and paintings of young children that these artists themselves collected. This appropriation does not, however, confer on the works of the children the title of “creative innovators” any more than the artisans who created the urinal used in Duchamp’s “Fountain” were path-breaking creative sculptors.

In the educational literature, problem finding, problem solving, divergent and convergent thinking, self-expression, and adaptability to new situations are all traits commonly associated with creativity (Csikszentmihalyi 1988, 1996; Mumford et al., 1994; Runco, 1993; Runco & Nemiro, 1993; Starko, 2001; Sternberg 1988, 1997, 1999). Some research demonstrates that problem-finding and problem-solving skills can be taught and students can be helped to master productive thinking and creative problem solving (Treffinger, Sortore, & Cross, 1993). Talent development can be enhanced in a “supportive, flexible, but intellectually-demanding academic environment” (Mumford et al., 1994, p. 245) by encouraging students to work consistently and responsibly when confronted by frustration. According to Feldhusen (1992), students can be taught to find problems, clarify problems, and use certain skills when attempting to solve problems. They also can be taught to monitor their own learning activities and seek and test alternative solutions.

Creativity also can be developed by adapting teaching strategies that balance students’ generation of new ideas, critical thinking abilities, and their ability to translate theory into practice (Sternberg & Williams, 1996). Feldman and Goldsmith (1986a) studied six children who were prodigies in many different areas, including the arts. These researchers were convinced that all progress in learning is the result of intensive and prolonged instruction. Rostan, Pariser, and Gruber (2000), in their examination of visual artists, supported the same conclusion. Successful teachers of highly able students are knowledgeable about their subject matter, and able to communicate instructions effectively. They select important learning experiences that challenge their students to attain advanced levels of achievement.

Educators have suggested a number of strategies for developing curricula in different subjects that support creativity and talent development. Some of these suggestions include having students: (a) practice problem-finding as well as problem-solving techniques; (b) use unfamiliar materials that elicit more novel thinking and lead to new ideas, (c) experience convergent (structured) and divergent (unstructured) tasks because they need knowledge and information for skill building and open-ended tasks for self-expression; (d) rely on both visual and verbal materials; (e) be exposed to curricula with open-ended outcomes that allow for unforeseen results; (f) follow their own interests and work in groups, as well as independently; (g) choose environments that support their talents and creativity; and (h) encounter a wide range of tasks intended to encourage, reinforce, and enhance emerging talents (Feldhusen, 1995; Mumford et al., 1994; Runco, 1993; Runco & Nemiro, 1993; Sternberg & Williams, 1996).

REVIEW OF RESEARCH ON SIGNIFICANT INDIVIDUALS IN THE VISUAL ARTS

It is surprising that over the centuries art historians have not given much thought to the records of juvenile art by great artists. Even though collections of juvenilia exist for a number of world-class artists (Dortu, 1971; Duff, 1987; Glaesemer, 1973; Zervos, 1950) these collections
have only recently attracted the sort of study that they deserve. It has been the task of art educators and psychologists to examine these records to see what connections exist between artwork made in childhood and that made as adults (Carroll, 1994; Dennis, 1987; Duncum, 1984; Feldman & Goldsmith, 1986a; Golomb, 1995; Murray, 1991; Paine, 1987; Pariser, 1987, 1991, 1995; Rostan et al., 2001; Porath, 1988; Winner, 1996; Zimmerman, 1995). Such records are important for at least two reasons: First, they may help answer the mystery surrounding the growth of highly successful individuals, such as Klee, Picasso, and Munch, who have contributed hugely to the visual arts. These people are, in Winner’s terms, “creative with a big ‘C’.” Second, it is also a matter of some interest to see in what ways the graphic developmental paths of these fated individuals are similar to and/or different from the graphic development of individuals not destined for greatness.

What can be learned from looking at the juvenile work of acknowledged artists? First, these children were prolific, producing large numbers of drawings. Such productivity is the result of what has been described as the gifted child’s “rage to master” (Winner, 1996); that is, an intense involvement with a given domain in the service of imaginative play.

Second, we also learn that without exception, these children experimented with spatial rendering, naturalistic likeness, and more stylized approaches to representation; and there is clear evidence of a learning process. At an exhibit of children’s art Picasso said, “When I was their age, I could draw like Raphael, but it has taken me a whole lifetime to learn to draw like them” (Gardner, 1993, p. 145.) But there is little evidence to support his claim. In Picasso’s case, there is ample proof that although he was a very quick study and he learned drawing techniques of all sorts with frightening speed, he most certainly did not spring forth from the head of Athena, a fully formed child/artist. Yet, that myth persists (Staaller, 1986) and colors the degree to which instruction is accepted as a bona-fide basis for artistic growth. In short, any and all artists who left a record of their struggles clearly attained graphic mastery through effort, repetition, and the assistance of good teachers.

Porath (1988) suggested that if any anomalies exist in the development of gifted children, they will be found within the various stages of development rather than across such stages. She maintains that giftedness in childhood is a matter of quick learning in a domain, within a given stage, rather than a rapid development from one intellectual stage to the next. Porath examined Paul Klee’s juvenilia in the Bern museum and made the claim that gifted children are not conceptually much in advance of their chronological age peers—at least as manifested in their representation of pictorial space. Using the Harris Draw A Man Test (1963) as a measuring instrument, she found that Klee at age 6, drew people at an adult level. Yet, his organization of pictorial space was not much different from that of other 6-year-olds. She also examined a few of Lautrec’s childhood drawings and the same pattern emerged—Figures were handled with sophistication, but space and perspective were still rendered at only one substage above the one expected for the child’s chronological age. Pariser (1987) examined some of the same drawings and noted that although Lautrec drew horses and human figures with surprising sophistication, his birds and railroad trains were less well rendered. He, like many other children deeply involved in drawing, was a “specialist.”

Porath (1988) suggested that if any anomalies exist in the development of gifted children, they will be found within the various stages of development rather than across such stages. She maintains that giftedness in childhood is a matter of quick learning in a domain, within a given stage, rather than a rapid development from one intellectual stage to the next. Porath examined Paul Klee’s juvenilia in the Bern museum and made the claim that gifted children are not conceptually much in advance of their chronological age peers—at least as manifested in their representation of pictorial space. Using the Harris Draw A Man Test (1963) as a measuring instrument, she found that Klee at age 6, drew people at an adult level. Yet, his organization of pictorial space was not much different from that of other 6-year-olds. She also examined a few of Lautrec’s childhood drawings and the same pattern emerged—Figures were handled with sophistication, but space and perspective were still rendered at only one substage above the one expected for the child’s chronological age. Pariser (1987) examined some of the same drawings and noted that although Lautrec drew horses and human figures with surprising sophistication, his birds and railroad trains were less well rendered. He, like many other children deeply involved in drawing, was a “specialist.”

Porath (1988) found that well-practiced drawings were mixed in with Klee’s less accomplished performances and that there was no “uniform level” to his drawing performance. Research on Klee’s and Lautrec’s juvenalia (Pariser, 1987, 1991) supports the observation that these two children did not show any outstanding capacity for spatial rendering at an early age; what they did show was a phenomenal inventiveness and capacity for rendering their subjects with flavor and life.

All the artists who left traces of their childhood works were clearly able to master graphic conventions favored by their cultural milieux. What is evident is that Western children destined for artistic greatness demonstrated a phenomenal ability to draw “realistically.” It would be a
mistake, however, to think that mastery of realistic drawing techniques is always an indicator of adult greatness. Although we lack juvenalia of world-class Asian or African artists, we do have work from a highly gifted Chinese child, Wang Yani (Tan, 1993). What she demonstrates is a gift for mastering the highly conventionalized, nonnaturalistic, visual idiom used in traditional brush painting. Yani, at age 4 was able to function fluently, creating scenes and narratives that were much out of the ordinary (Andrews, 1989; Ho, 1989) (however, we have no knowledge of Yani’s present accomplishments). Yani’s childhood work illustrates Winner and Martino’s (1993) observation that: “What unites all children with artistic gifts is . . . the ability to master one or more of the culture’s norms of artistry at a very early age” (p. 10).

There is a hypothesis that talented children explore graphic representation along several stylistic and conventional tracks. It may be that the difference between these great artists and lesser mortals lies not in their progression through basic developmental steps, but perhaps in their experimentation with a multiplicity of genres and conventions, an eclecticism that Milbrath (1998) also observed in her own study of visually talented children. Three artists, Picasso, Klee, and Lautrec, who Pariser (1987) chose to study, all experimented with a variety of representational styles and genres simultaneously and occasionally in the same image. For example, Picasso at age 12 was both mastering classical drawing techniques and copying Spanish caricatures and newspaper broadsides.

Milbrath (1998) analyzed and compared the work of what she referred to as artistically talented and less talented children. Her several hundred drawings came principally from two sources: a 10-year longitudinal study of eight highly talented children and a cross-sectional study of spontaneous drawings from children between the ages of 4 and 14. Milbrath found that the most telling difference between talented and less talented children were matters of quality and kind. The more talented children performed differently in the following three ways: (a) the variability of their drawing output was above the modal level, unlike the less talented whose variability was below the modal level; (b) they used line to indicate edges of forms rather than simply an enclosure, discovering very early that lines can function effectively as the edges of solids and planes; and (c) their drawings were more realistic, incorporating visual distortions suggesting their position vis-à-vis the object rather than “canonical” views more typical of the comparison group. Milbrath suggested that artistically talented children begin drawing representationally a full 1 to 2 years earlier than other children, have a higher degree of originality or creativity, and have strong motivation or commitment to a domain.

Milbrath (1998) proposed two hypotheses to explain the qualities of graphic work by artistically talented children. One she calls the “farther faster” hypothesis. This explains the root difference between artistically talented and less talented children as just an outgrowth of their conceptual precocity—particularly in the area of spatial reasoning. The second set of hypotheses propose that especially able children develop as they do because of their heightened figurative abilities. That is, they see (perceive), remember (have excellent visual memories), and do (draw) earlier, in qualitatively different ways from their peers. Because some gifted children such as Eytan (Golomb, 1992) share some traits with exceptionally able autistic artist-children (Selè, 1983, 1995; Wiltshire, 1983) it is suggested that these two populations do in fact share some of the neurological components that make such phenomenal drawing performances possible.

In proposing this second set of hypotheses, Milbrath (1998) deftly incorporates several different sorts of research on child art. Researchers have identified at least three discrete elements that constitute drawing behavior: (a) the perceptual aspect that includes the mechanics of looking and analyzing what one sees; (b) the aspect of mental imagery found in mental representations and schemata used by the person making a drawing (Winner, 1996); (c) the mastery of the mechanics of the drawing process itself, planning, ordering, controlling, and monitoring the image as it appears on the page (Freeman, 1972). Milbrath claimed that the
data she has collected and analyzed suggest the hypothesis that, “talented children develop as they do not because they are conceptually advanced over their less talented peers but because they possess heightened figural capacities; simply stated . . . talent in the visual arts arises out of differences in children’s ability in figurative thought rather than differences in conceptual ability” (p. 355). In other words, artistically talented children see the world differently from their peers.

Milbrath’s work (1995, 1998) and that of Winner (1996), Golomb (1992), and others propose the notion that there is nothing developmentally anomalous about the emergence of noteworthy graphic performance—at least not as far as issues of cognitive and technical achievement are concerned. The three artists that Pariser (1987, 1991, 1995) studied also grappled with representing space and objects in space, in the same sequence of stages as their less gifted peers. All three artists left behind a collection of childhood drawings that indicates that, as Milbrath observed, there was no underlying cognitive difference between them and other less artistically able children.

The drawings of autistic child artists (Pariser, 1981; Selfe, 1977, 1983, 1995) should be of interest to all students of children’s drawing for some autistic children appear blessed with remarkable drafting skills, making images that can only be called uncanny. In particular, two children, Nadia Chomyn and Steven Wiltshire (both discussed in Selfe, 1995), made drawings that are phenomenally realistic. Nadia made her realistic drawings between the ages of 4 and 7 years—then reverted to unremarkable, age-appropriate imagery. Steven Wiltshire (now an adult) continues to draw architecture with meticulous skill. Nadia, and to a lesser degree, Stephen Wiltshire are asocial and autistic. They have received no drawing instruction, yet have mastered a style that is associated with a sophisticated understanding of the visual scene—in Steven’s case, two-point perspective. The question raised by their work, is simple: How can children who are intellectually impaired, be able to render the world with such accuracy? The examples of these two children suggest that there is a neural module that makes possible such drawing skills and that this module is capable of working independently of the “cognitive” modules that classify, abstract, and so forth. In fact, abstract thought and linguistic classification seem to inhibit rather than enhance accurate drawing. It is known that the absence of conceptual information about the subject of a drawing tends to make the drawing more realistic (Bremner & Moore, 1984). In effect, the work of these two autistic children makes the point that there is no necessary connection between intellectual understanding and realistic rendering—In fact, such understanding may be a liability. The sudden efflorescence of Nadia’s work also makes the point that so-called developmental sequences in graphic development are routes followed by “ordinary” children but not by exceptional children. Could one call either Stephen or Nadia “gifted,” “talented,” or “creative”? Both children clearly have an unusual facility in an area of art—a talent—But in neither case do they show signs of self-conscious experimentation and boundary pushing that mark significant creativity—as defined by Csikszentmihalyi (1988).

There is some preliminary research that addresses the question of how the juvenile work of great artists differs from that of children who are merely talented. In a pilot study, Rostan, Pariser, and Gruber (1998) asked: Would judges who were “blind” to the identity of the great artists find their juvenile work exceptional if it were mixed in anonymously among the work of contemporary art students? Seventy-one art students (6- through 11-year-olds) participated in the study. Although limitations of the 1998 study prevent any generalizations about the findings, it was found that the young artists’ works distinguished themselves by the degree of variability manifest across the whole corpus. Such variability would suggest that they, more than the other children, experimented with different technical approaches.

Subsequent work by Rostan, Pariser, and Gruber (2001) focused on the same questions. This research involved a much larger number of great artists’ juvenile drawings. There were approximately 80 juvenile drawings by great artists, and a comparison pool of 200 drawings...
were taken from artistically educated and naive children from European and Chinese communities in North America. The researchers found that the juvenile works of the great artists were generally ranked among the better drawings but did not stand out in any dramatic way.

**CASE STUDIES OF THE LIVES OF PEOPLE TALENTED IN ART**

The case study method has long been considered a productive avenue for considering the work of significantly creative adults and children alike. Luquet (1927) and Fein (1976), to name a few researchers who focus on children’s drawing abilities, offer longitudinal descriptive studies of children who loved to draw. Franklin (1994), who offered a qualitative description of the working histories of two women artists, acknowledged the utility of employing Wallace and Gruber’s (1989) approach to creative lives. These two psychologists produced a volume of work consisting of case studies of scientists and artists. In Gruber’s “evolving systems approach,” he tries to do justice to the complexity of the lives of significantly creative people. Gruber’s path-breaking work was first illustrated in his book on Darwin’s evolving conceptions of evolution (Gruber, 1982). In this study, Gruber presented his key notion that creative individuals, especially those of Darwin’s caliber, are people with “multiple networks of enterprise”; that is, people with a number of related but parallel interests. Gruber’s research is informed by five principles. Such studies should be: (a) developmental and systemic; (b) pluralistic and encompassing the multiplicity of goals that a creative person pursues; (c) culturally and socially interactive, (d) situated socially, historically, and institutionally; (e) constructionist in the sense that creative individuals select and alter their environments; and (f) reflective of the affective and experiential dimensions of an individual’s work.

Studies of artistically gifted children conducted by Rostan et al., (1998, 2000, 2001) are influenced by Gruber’s approach. To date, this research has generated statistical and descriptive data about the emergence of artistically gifted children. Results from the research suggest that even in childhood individuals deeply involved with a medium or an artistic practice already share certain features with adults similarly engrossed in artistic activity. Among these are high productivity, multiple interests, and a strong affinity for the discipline.

In her 1995 work, Golomb presented six case studies of unusually able children. These case studies provide researchers with profiles of children ranging from nascent world-class artists (Toulouse-Lautrec) to an autistic child with highly unusual drawing abilities (Nadia).

Sosniak (1985) interviewed a number of professionally successful pianists and identified three common phases in musical apprenticeship: (a) romance with the subject, (b) acquisition of discipline and technique, and (c) development of individuality and personal insight in musical practice. Sosniak found that each phase required a teacher with different traits. First teachers were generally characterized by their pupils as warm and empathetic, much like family members. In the second phase, teachers were less caring, but had excellent technical skills and were strongly connected to the discipline and field. Teachers for the third phase were demanding taskmasters who prepared their students for initiation into the field of musical performance. Teachers at the third level emphasized the need for students to develop their own “signature” or “voice.” It would appear that Sosniak’s model might provide a pattern for apprenticeship in the visual arts as well as in music. Although Bloom did not find a similar path for the sculptors he studied, it is easy to recognize the same three-step process in music talent development applies to the apprenticeships of Picasso, Lautrec, and Klee (Pariser, 1987).

These same patterns derived from Sosniak can be traced in the life histories of the two gifted children whose work and development Rostan et al. (2000) described in the initial phases of their research on artistic giftedness. Two gifted children were chosen with very different backgrounds. One (Eric) comes from a comfortable New England background, whereas the
other (Bin) is a Chinese immigrant, recently arrived in the United States. Both were devoted to the visual arts, and both were strongly supported by their families.

Eric’s work emerged from a stable familial and political climate. A colorist rather than a draughtsperson, he is clearly entering the second stage of Sosniak’s three-stage model; he is beginning to learn about the technical aspects of art—with less dependence on a supportive emotional climate. He sees himself as an artist, is prolific in terms of output, and demonstrates the special trait identified by Winner (1996) in gifted children, namely, the “rage to master.”

Bin is older than Eric is and his work is technically and conceptually far in advance of Eric’s. It is distinguished by its clearly political message. One of his recent paintings is a parody of images that were prevalent during the Cultural Revolution. Bin’s ability to work at a very high level in a number of different styles is one characteristic that can be observed in the work of other artists at the start of their careers. For example, Picasso, when he came to Paris in 1900 worked in the styles of Lautrec and Bonnard (Pariser, 1987). So, Bin certainly possesses at least one of the key feature of giftedness, a capacity to quickly acquire cultural conventions.

Like other adolescent artists, such as a young man described by Gardner (1980), Bin is unafraid of crossing the lines of decorum. Shocking the adult world and violating political expectations would seem to be second nature for Bin. It is evident that Bin and Eric share the same intensity of purpose. Art making is as natural and vital to them as breathing. But, the two settings in which the impulse is played out are markedly different. Family expectations are distinct. Bin is expected to carry forward his father’s dreams; Eric is simply expected to articulate his own dreams and find some way of accommodating his own father’s ambivalence about the artistic profession as a career.

Recently, psychologists have used multiple, individual case studies to compare and contrast the influence of personality and patterns of development on adults who have achieved success in particular domains of knowledge including the visual arts (Feist, 1999; Gardner, 1996). Csikszentmihalyi (1996), after 30 years of research and in nearly 100 interviews with creative people in many different fields including the arts, determined that even the most talented individual needs the support of a society and culture. The potentially creative person will not be able to achieve anything of importance without a constellation of conditions consisting of training, expectations, resources, recognition, hope, opportunity, and both extrinsic and intrinsic rewards.

CROSS-CULTURAL ASPECTS OF VISUAL GIFTEDNESS

Golomb (1992) reviewed the results of graphic-developmental studies in Egyptian, Lebanese, Ghanaian, and North American aboriginal cultures and commented on cross-cultural comparisons of drawing development in general: “In my view, development seems to evolve across cultures in much the same way, with structurally simpler forms and figures always preceding the most complex ones. The rules for representing the world appear to be the same” (p. 337). Certain underlying features of children’s graphic development thus appear to be common across all societies and cultures. Children the world over are attracted to and actively explore the problem of representing objects and experiences in a given medium. This is not to suggest that there is a universal developmental “push toward optical realism”—realism is a parochial Western concern. As Winner stated:

The evidence from art produced by children in China, and by American children, outside of the culture of school, points to the clear conclusion that there is nothing natural about the goal of realism. What is natural and inevitable I believe, is the drive to master the pictorial conventions that are valued in one’s culture or sub-culture. (p. 15)
A body of cross-cultural research comparing Chinese and Western children’s performance on drawing tasks supports Golomb’s (1992) and Winner’s (1986) observations that many features of children’s drawing development are much the same the world over. We present the results of this cross-cultural research as an example of pan-human similarities and differences in drawing development. Note that Western art as such is no stranger to China. Sixteenth century art was known in middle kingdom and ever since the turn of the century; Western academic drawing and painting approaches have been known and widely practiced in Chinese schools and art academies. As early as 1912, schools of Western-style painting existed, and the drill of European academic drawing was a common feature of Chinese art education (Kao, 1998)—and remains so to this day. The fine Arts Academy of Beijing has an intensive course in plaster-cast drawing. It may be that Western academic art has taken such a hold in China precisely because this European import, like traditional Chinese painting, is rooted in mastery of a medium and requires mastery of graphic skills. The fact that there has been at least a century of Western cross-pollination in China should be kept in mind when considering the East-West comparisons that follow.

Chinese and American children aged 4 to 6 years master rendering of topological space before rendering Euclidean space (Hoffman & Trepannier, 1982). Chinese and Canadian children of these ages do not differ in the rate of shift from topological to Euclidean rendering (Harvey, Manshu, Biao, & Jue, 1986). Chinese and British children between the ages of 7 and 12 do not differ in developmental sequences in representing space (Case, Tu, & Berg, 1992) and appear to be at the same place in a standard graphic developmental trajectory (Stratford & Au, 1988). Hong Kong Chinese children, ages 3 to 5, draw human figures in conformity with figure drawing by children from around the world (Chan & Lobo, 1992). In addition to parallels in development, there are also some noted differences. For example, Jolley, Richard, Thomas, Gly, and Zhi (1996) suggested that differences that they observed in Chinese and North American children’s aesthetic responses may be due to greater emphasis in Chinese schools on mastery of detail and technical skill, as well as to early imposition of technical discipline. The Chinese children tended to be more sensitive to aesthetic dimensions when it came to responding to images. Certainly, emphasis in China on skill training and discipline fits well with an emphasis on compliance which is reported to be a key component of the Chinese socialization process (e.g., Reed, 1992).

There is evidence that even today, in the teaching of the arts in China, technical skill is viewed as the indispensable basis for development of true artistic ability and expression. When Gardner (1989a) went to China to study art programs and teaching methods, he found that most Chinese teachers “resisted the notion that one can be creative, or even begin to explore, before one has developed considerable skill. From their point of view we [Westerners] were simply and stubbornly attempting to put the cart before the horse” (p. 252). In a recent research article on drawing instruction in China, the following observation can be found: “In the Chinese weekend art schools a high level of drawing skill is considered essential: teachers argue that we cannot be creative without first becoming technically skilled, otherwise we have no way of expressing that creativity” (Cox, Perara, & Xu, 1998, p. 181).

In the case of artistically talented children from China, an example is the work of Wang Yani (Tan, 1993), a girl with precocious painting abilities. There is a record of her painting development from simple to more complex uses of value, line, brush control, and composition. The story of Yani demonstrates that the same three factors that contribute to the emergence of Western children deeply committed to the arts also contribute to the emergence of similar children in the East. These factors include support from the family, a strong (innate) affinity for the medium and the domain, and an insatiable hunger for mastery of cultural forms.

Feldman and Goldsmith (1986a), writing case studies of six child prodigies who excelled in five domains (music, chess, mathematics, foreign languages, and creative writing) stressed
that “cultures vary in the importance they attach to mastery of different domains at different
times” (pp. 13–14). Therefore, what is considered a valued ability in one culture, such as being able to copy artworks well, may not be valued in another. Artistically talented students therefore are dependent on instruction about artforms that can be communicated effectively within their cultures. Feldman and Goldsmith (1986b) claimed that potential talent cannot be developed without access to a symbol system, as well as to a domain of knowledge valued by the culture. Only those areas of artistic expression valued by a culture, or subculture, are developed sufficiently to offer organized symbol systems and domains that can be made available to artistically talented students. A student, therefore, can only be identified as talented in areas that a culture values (Feldman & Goldsmith, 1986b; Gallagher, 1985; Greenlaw & McIntosh, 1988; Zimmerman, 1992b).

Ghengis Blues is a touching and remarkable 1995 film that illustrates the socially contextualized theory of creativity proposed by Feldman and Goldsmith (1986a, 1986b) and by others. Ghengis Blues tells the story of Paul Penja, a blind San Francisco street musician from Cape Verde, whose talents for overtone singing were only recognized in Tuva, an Eastern province of Russia. Depressed and lonely after the death of his beloved wife, Penja began to listen to overtone singing on shortwave radio. Overtone singing involves voicing the notes in such a way that the overtones to a given note are plainly audible and can be played with to generate a second musical line. Penja taught himself the technique and added this style to his street-busking repertoire.

There were few overtone-singing fans in San Francisco, but one day a visiting Tuvan singer happened to hear Penja and was blown away by his abilities. He urged Penja to come to Tuva and to appear in the annual singing competition. The film documents Penja’s triumph in Tuva. Penja never achieved much recognition in the United States with his traditional folk and Blues repertoire, but his special vocal talents were immediately acclaimed in Tuva where he was known as “Earthquake” for the resonance and power of his voice—and for the excellence with which he had mastered Tuvan lyrics and overtone-singing forms. Paul Penja’s story illustrates the need to consider all necessary conditions for nurturance of special abilities in the arts including individual abilities, the existence of a valued symbolic domain, and the actions of the social world through a specific field. Until Penja happened across Tuvan singing, his special abilities were hidden. It still required the attention of expert judges and other members of the Tuvan culture to assess and recognize the special quality of his performance.

ART TALENT DEVELOPMENT IN EDUCATIONAL CONTEXTS

The role of the art teacher and his or her impact on an artistically talented student is great. Talented and sensitive teachers challenge their artistically talented students to have transformational experiences while making art. The students view themselves as possessing abilities to respond to and produce artwork at a very high level. In some cases, when involved with students with high interest and abilities in the visual arts, teachers can be a neutral factor or in more isolated cases can have a detrimental influence on a student’s art talent development. Factors such as student behaviors, personalities, gender, cognitive abilities, age, class, and ethnicity also play important roles in the impact of educational experiences on artistically talented students.

PROGRAMMING OPPORTUNITIES

The major purpose of visual arts programs for artistically talented students is to bring together students with high interests and abilities, or potential abilities, in ways that broaden and deepen their knowledge about the world of art, sharpen their art skills, and offer them new learning
opportunities rarely found in a regular classroom setting. Based on a review of literature about educating artistically talented students (Clark & Zimmerman, 1994a), a number of programming arrangements were best suited to teaching artistically talented students: (a) mixed-ability grouping including in-class enrichment, cooperative learning, and individualized instruction (e.g., self-study units and mentoring); (b) ability grouping including specialized schools (e.g., magnet schools), special classes in regular school for the entire school day (students recruited from one school or several schools), special grouping for part of the school day (e.g., pull-out programs, special courses, released time, clubs, artists-in-residence), and grouping for school-related activities (e.g., field trips, school/museum visits); and (c) acceleration, including grade skipping, early admission, and rapid progress (e.g., accelerated programs, advanced placement, credit by examination). Clark and Zimmerman (1994a) described examples of many of these programs for artistically talented students in a publication for the Research-Based Decision-Making Series supported by the National Research Center on the Gifted and Talented. They concluded that gifted and talented visual arts, secondary students need access to space and facilities that resemble those used by artists. Students also need access to professional-level books, slides, computer programs, slides, art reproductions, and periodicals, as well as to appropriate spaces that support advanced or accelerated study and problem-finding and problem-solving project work about nonstudio aspects of the visual arts.

Clark and Zimmerman (1994a) also determined that there is not a foundation of research on which to conduct meta-analysis research about programming opportunities for artistically talented students. Based on their research they suggested administrators of school-based programs for highly able secondary art students create climates in which flexibility and alternatives in program planning are encouraged. Students offerings might include (a) remaining in their school for part of the day and attending a nearby college or university for advanced courses, (b) taking part in advanced placement art courses offered in high school that earn college credits, (c) enrolling in correspondence courses with college-level art content, (d) attending fast-paced art courses in which curriculum compacting allows 2 years of a course to be covered in 1 year, (e) bypassing course prerequisites by examination, (f) earning full credit for courses by examination, and (g) entering college early.

**IMPACT OF EDUCATIONAL OPPORTUNITIES ON TALENTED ART STUDENTS**

There have been a number of case studies about the work of talented young artists who showed precocious abilities in the visual arts (Gardner, 1980; Goldsmith, 1992; Golomb, 1995a, 1995b; Wilson & Wilson, 1980; Zimmerman, 1995). All of these studies emphasized spontaneous artwork done by precocious youngsters, from early childhood through their adolescence, or emphasized separate time periods during the development of these young artists. Only a few case studies have focused on schooling and on the effects of differential programming opportunities and options on the development of art talent (Clark & Zimmerman, 1987b; Nelson & Janzen, 1990).

Gardner (1980) presented a case study of spontaneous drawings of a 16-year-old artistically talented adolescent and did not find that formal art instruction had much impact on Garbriel’s development. Robertson (1987) reported a case study in which she intimated that formal art instruction, rather than supporting art talent development, might have been an inhibiting factor.

In case studies reported by and Golomb (1995a), formal art lessons or directed art experiences were viewed as inhibiting the visual art development of artistically gifted and talented students. Bloom (1985) and his associates reported case studies of talented individuals who, before the age of 35, had reached extremely high levels of accomplishment in their respective
fields. One of the case studies (Sloan & Sosniak, 1985) focused on 20 sculptors, and the researchers concluded that the absence of formal art education before college did not appear to have a negative effect on sculptors’ art development and eventual success as practicing artists.

Few researchers have studied the positive effects of accelerated or enriched learning in art on a student with high visual arts abilities, although a number of studies have shown that teaching can have a very positive impact. Wilson and Wilson (1980) studied the graphic work of a talented 15-year-old and credited the art teacher with encouraging the students’ talents by stressing the value of popular, narrative models, rather than by emphasizing fine arts instruction alone. In several of Golomb’s (1992) case studies, art teachers are credited with encouraging students’ talents.

Zimmerman (1992b, 1995) presented a case study of Eric, a talented art student. He spoke positively of the benefits of accelerated and enriched art programs. Similarly positive comments on enriched art programs have been expressed by other talented students (Stanley, 1977; Van Tassel-Baska, 1986, 1987). To produce and be supported in maintaining his body of work, Eric spoke about the development of both the perceptual and the conceptual qualities of his artwork through expression and skill with a variety of media. The positive characteristics of the teachers Eric identified included knowledge of art skills, general knowledge about art, empathy with students, ability to make classes challenging, and the encouragement of students to be reflective about art making.

Eric was fortunate in his elementary and junior high school years to study with teachers who were flexible and taught enriched, theme-oriented classes in which students could complete assignments according to their interests, abilities, and a variety of modes, including both visual and verbal problem solving. These kinds of curriculum adaptations allowed Eric to express his skills, abilities, values, and understandings in a variety of discursive and nondiscursive contexts. He described a number of transformational experiences that allowed him to view himself as a young artist achieving his own goals, chosen in the company of other like-minded art students. The accelerated and enriched art program options in which he participated in his precollege experiences gave him the impetus to continue to study art, and his skills were later applied as an adult when he became a successful designer of interactive games. Zimmerman (1992a, 1995) concluded that artistic development is not an automatic consequence of maturation. It is instead a learned set of complex abilities that, to a great extent, are influenced by culture and the educational opportunities available within that culture.

Feldman (1980) and Feldman and Goldsmith (1986a) studied children who were precocious in many different areas and were convinced that all progress in learning is the result of intensive and prolonged instruction. Talent, Feldman and Goldsmith contended, does not develop without an enormous amount of work, practice, and study, coupled with a great deal of direct assistance, guidance, and encouragement. Their conclusion that an individual’s talent within a culture involves the interplay of many forces, including education, has great relevance to the education of talented visual arts students.

POTENTIAL AND PROCESS VERSUS PERFORMANCE AND PRODUCT

Although notions of talent in the arts often emphasize a superior final product, a number of psychologists and educators have also emphasized attention to the processes that lead to such products. These researchers claimed that the processes students select and pursue are more important in defining a gifted or talented performance in the arts than the products that students create. They concluded that the ability to depict the world realistically is just one indicator of talent in the visual arts; other indicators may be deep emotional involvement
17. LEARNING IN THE VISUAL ARTS

as, for example, in “flow” experiences described Csikszentmihalyi (1990, 1996); importance of cultural norms (Feldman, 1980, 1982); and use of paradoxes, puns, and metaphors (Tannenbaum, 1983; Zimmerman, 1992b). Researchers such as Brown (2001), Gardner (1989b), and Wolf (1989) stress the importance of using process portfolios at elementary and secondary levels in order to meaningfully assess learning over time in the arts. Getzels and Csikszentmihalyi (1976) studied young college art students and the relationship between their problem-finding behaviors and the originality of their artworks. They concluded that students’ methods of discovery, visualization techniques, and the ways that they sought productive questions were often far better indicators of high ability than just their solutions to artistic problems.

Psychologists since the time of Binet and Simon (1916) have viewed intelligence traditionally as a single, measurable trait. Then in the 1980s researchers such as Gardner and Sternberg challenged the construct of a single intelligence. Gardner (1983), posited the existence of multiple intelligences: linguistic, logico-mathematical, musical, spatial, bodily kinesthetic, interpersonal, and intrapersonal. Recently, Gardner (1999) added three other kinds of intelligences to his list of seven: naturalist, spiritual and existential. One should note that Gardner does not posit a so-called “artistic intelligence” as a separate module. Artists use any and all of the intelligences available. Sternberg (1985) also posited specialized abilities, but his are related to general intelligence, whereas Gardner’s intelligences are tied to separate abilities (Feldhusen & Hoover, 1986). Sternberg described aspects of intelligence that include abilities to think at high levels, to process information effectively, to achieve insights and solve problems, and to use efficient metacognitive processing systems.

Within various arts areas, many vastly different behaviors and abilities often are required for success. Students with superior drawing or painting abilities, for example, may have different sets of developed sensibilities than those talented at creating three-dimensional objects. Even within two-dimensional visual arts, different abilities and sensitivities are clearly needed in order to succeed in diverse fields such as photography, printmaking, painting, or political cartooning. Csikszentmihalyi and Getzels (1973) studied the personalities of young, college-level, visual arts students and concluded that their personalities and abilities differed substantially from those of advertising and industrial arts majors. Barron (1972) drew similar conclusions based on studies of students and professionals in acting, dance, writing, and the visual arts. Each domain required different abilities. Professionals in fields related to the arts, such as aestheticians, critics, and historians, demonstrate skills and abilities that differ greatly from those required for success by visual artists. Intelligence needed for success in the visual arts clearly cannot be defined as a “single characteristic, but as a phenomenon that contains multiple ways of dealing with knowledge” (Hurwitz & Day, 1991, p. 118).

IQ, CREATIVITY, AND ACHIEVEMENT TESTS

A contentious issue is determining the relationships among intelligence tests, creativity tests, and achievement tests, and how these relate to the identification of talent in the visual arts. One contested claim is that above average intelligence is a requirement for superior performance in the arts. Winner (1996) finds little evidence that visually gifted children consistently have high IQs in academic areas. However, the arbitrary separation of intelligence and art performance has been questioned for many years (Arnheim, 1969; Clark & Zimmerman, 1984a). During the 1970s, a number of researchers demonstrated that many highly intelligent students also were highly able in the arts, and that most highly able arts students are also highly intelligent in a traditional sense, although not all highly intelligent students possess art talent (Luca & Allen, 1974; Schubert, 1973; Vernon, Adamson, & Vernon, 1977). A high degree of intelligence has
been described as necessary for acquiring the kinds of advanced techniques and skills required for superior arts performance (Luca & Allen, 1974; Schubert, 1973).

Relationships between general intelligence and art talent have not been pursued in recent research, because IQ tests have been challenged by many educators and researchers (Gardner, 1983; Gagne, 1985; Feldhusen & Hoover, 1986; Sternberg, 1984, 1985, 1986; Treffinger & Renzulli, 1986). Despite such challenges, during the 1980s, some educators and researchers continued to advocate the use of IQ tests for identification of gifted and talented students, although always in conjunction with other measures (Borland, 1986; Kaufman & Harrison, 1986; Shore, 1987).

During the 1940s, Torrance (1962, 1972) and others developed what became known as creativity tests, and creativity became a by-word in gifted and talented education (Renzulli, Reis, & Smith, 1981). When originally designed, creativity tests were used to measure general problem-solving skills and divergent thinking abilities applicable to various situations. Kulp and Tarter (1986) developed instruments to measure creativity in order to identify highly able visual arts students, and a number of authors endorsed using creativity tests to identify talented students for visual arts programs (Greenlaw & McIntosh, 1988; Hurwitz, 1983; Khatena, 1982; Parker, 1989). However, Torrance (1962) reported that creative achievements in writing, science, medicine, and leadership were more easily predicted than creative achievements in music, the visual arts, business, or industry. With a population of elementary students, Clark and Zimmerman (2001b) have demonstrated a correlation between scores on the Torrance Test of Creativity and Clark’s Drawing Abilities Test.

STUDENT CHARACTERISTICS

In a review of research, based on 25 studies of identification procedures and instruments for talented art education programs, Boston (1987) concluded that “the criteria on which to identify students as being exceptional, intelligent, or talented in this subject area have yet to be agreed upon” (p. 1). This is especially true for students from economically disadvantaged families or minority groups (Richert, 1987).

As was indicated earlier in this chapter, art teachers use the term talent to refer to students of high ability in a specific visual arts area. There is little agreement among practitioners and researchers on how to define what constitutes high abilities in the visual or performing arts. One result of this lack of agreement is that identification recommendations for specific programs for talented art students are idiosyncratic (Bachtel, 1988; Zettel, 1979). Another is that current writers have moved away from a single criterion or definition and have endorsed multiple criteria identification practices (Clark & Zimmerman, 1984a, 1987, 2001b; Gallagher, 1985; Renzulli & Reis, 1985; Renzulli, Reis, & Smith, 1977). A third has been to avoid a generalized definition by specifying program content and goals and selecting only those students whose abilities would be served by the specific character of a program (Gallagher, 1985; Greenlaw & McIntosh, 1988; Parker, 1989).

Claims about the characteristics of artistically talented students therefore are varied and contradictory (Clark & Zimmerman, 1984a). There are many reasons for these inconsistencies: Researchers working in different cultures, times, and places have used different sets of criteria and artistically talented students have not been categorized systematically. Although examining art products for evidence of talent in the visual arts is common, it also is possible to observe behaviors that may indicate a predisposition to create art products or that manifest themselves while students actually engage in art making. Using content analysis and comparative analysis Clark and Zimmerman analyzed and grouped over 75 years of research about the characteristics of artistically talented students. The two largest categories that emerged were the observable characteristics of students’ art products and observable student behavior (Clark & Zimmerman,
1984a, 1984b). Hurwitz and Day (1991) referred to task commitment and cognitive, artistic, and creative characteristics of art students as ways of defining what they termed “artistic intelligence.” Other characteristics, cited by Pariser (1997), include intensity of application and early mastery of cultural forms, production of a large volume of works over a sustained period of time, nurturance from family and teachers, and thematically specialized work.

Although other examples could be offered; it is clear that there are many ways to describe and categorize the characteristics of students with talents in the visual arts, and no single set of characteristics will ever comprehensively describe all covert or overt manifestations of such talents. This would be neither possible nor desirable.

**STUDENT SKILLS AND COGNITIVE AND AFFECTIVE ABILITIES**

At this point, a germane question is, do skills and affective and cognitive abilities need to be accounted for in a definition of talent in the arts, or would any of these be sufficient alone as an indicator of talent? Stalker (1981), for example, included cognitive complexity (manifesting many solutions to problems), executive drawing abilities (superior skills in drawing), and affective intensity (strength of emotional responses and judgments) as parts of her definition of visual arts talent. Jellen and Verduin (1986) did not address problems of identification, but rather concepts that define gifted and talented students. They included three inclusive domains: cognitive (intelligence and imagination), affective (empathy and sensitivity), and conative (interest and motivation). These seem somewhat parallel to Renzulli et al.’s (1981) more familiar factors of intelligence, creativity, and task commitment. According to Gardner (1989), development in any skill area or talent area proceeds separately during a student’s years of greatest development; they may or may not be present at the same levels at the same time, although potential for talented performances may be latent in one or all of them.

**STUDENT BACKGROUNDS**

Clark and Zimmerman (1992, 1994a), in reviews of research about artistically talented students, found little that dealt with the personalities of talented visual arts students or their values and backgrounds. Only a small body of research dealt with educational opportunities for such students. Researchers in psychology and art education have conducted interviews with young art students or artists, in their formative years, to gain access to their early reminiscences. Getzels and Csikszentmihalyi (1976) interviewed young artists when they were college art students and after they left school. Bloom and his associates (1985) interviewed individuals who reached high levels of accomplishment in the their fields before the age of 35. Among the people interviewed were concert pianists and sculptors as well as high achievers in science, mathematics, and sports. Siblings and the parents of these individuals also were interviewed. A few researchers have interviewed young, artistically talented students to gain information about their perceptions and understanding of life situations (Rostan et al., 1998). Chetelat (1982) interviewed six artistically talented students, aged 11 to 14, to discern differences and similarities of specific characteristics and their living and learning environments. He also studied the early childhood experiences of six eminent artists as recorded in autobiographical accounts. Using interviews and open-ended questionnaires, Guskin, Zimmerman, Okola, and Peng (1986) studied artistically talented and academically gifted students, aged 9 to 15, in order to understand how high-ability students view themselves and how they interpret their abilities. Taylor (1986), drawing extensively upon Hargreaves’s (1982) work with adults, interviewed artistically talented students, aged 14 to 18, to determine how they developed a commitment to one or more art forms, and how they identified or empathized with artworks. Clark and
Zimmerman (1988) interviewed artistically talented students, aged 12 to 16, in a summer arts program on a university campus.

Some of the results of these studies are in agreement; others are not. Clark and Zimmerman (1988) found that a majority of students in their program felt good about themselves and their abilities and could accept criticism in order to improve their work. Nearly half the students mentioned the importance of winning awards as a factor in maintaining their interest in art and contributing to support from their families. The majority of students expressed pleasure at being grouped with others with similar interests and abilities. In this study, most students were aware of their art talent, were interested in improving their abilities, and were introspective about the role of the arts in their lives. A majority of students knew that they possessed unusual interest and abilities in the arts, a finding similar to those reported by Bloom (1985) and Chetelat (1982). Students had favorable views of themselves and of talented students in general, as did students in the Guskin et al. study (1986). Bloom (1985) and Chetelat (1982) also found, as did Clark and Zimmerman, that young people with talent in the arts find art-making experiences rewarding. Although Getzels and Csikszentmihalyi (1976) reported that emotional crises were stimulants to creating art, the majority of subjects in the Clark and Zimmerman study made no reference to an emotional crisis as a basis for their art making. Most of the students in the Clark and Zimmerman study reported that their families encouraged them to maintain their interest in art, although family members did not have art backgrounds. Bloom and Chetelat reported strong support from both parents and encouragement for their children. Subjects in this study reported similar support in most cases. This finding contradicts findings by Getzels and Csikszentmihalyi that young art students frequently received support only from their mothers and had harsh memories of their fathers.

Bloom (1985) reported that parents of talented students varied greatly in the level of education they had completed, the type of work they engaged in, their economic levels, and their avocational interests and activities. In the Clark and Zimmerman study, students’ responses and other information verified similar findings about parents. Bloom reported, however, that the students he studied came from homes that emphasized music and the arts; few subjects in the Clark and Zimmerman study were offered such opportunities either at home or in any other aspect of their lives. Recollections of their art teachers varied widely among subjects in this study, although many recalled specific teachers who rewarded and encouraged them. Unlike Chetelat’s (1982) subjects, not all recalled their art teachers positively. In this study, as well as in studies by Bloom and Chetelat, researchers found that positive motivation for art was generated among students when their artworks were selected for exhibit, when they participated in an art club, or when they were otherwise singled out for praise.

The issue of identifying and providing appropriate programs for students with superior talent in the visual arts in diverse populations is of current concern to many researchers and educators. Students from diverse backgrounds, including minority students and students from low socioeconomic groups, usually are underrepresented in one or more phases of identification programs for special educational opportunities (Richert, 1987). In Clark and Zimmerman’s (2001b) study of elementary students with interest and abilities in the visual arts, they found that students from “minority” groups, who were economically challenged, could be identified as talented through sensitive measures developed locally by teachers, students, parents, community members, and artists.

### DIVERSE EDUCATIONAL CONTEXTS

A number of studies point to the impact of community involvement in successful programs for rural students with high interest and abilities in the visual arts (Cleveland, 1980; Lally, 1986). Of
particular interest is research that has been done in Israel on the involvement of local community members in educational programs for gifted and talented students. In a “Discovery Program,” selected rural and other underserved students are identified and prepared to be accepted into the Israel Arts and Sciences Academy, a national, residential high school for very highly gifted and talented students (Amran, 1991). Several procedures were found to be helpful in ensuring the success of rural and underserved gifted and talented students, including meeting with an official from each community to solicit and guarantee his or her prolonged support; holding a series of meetings with school principals, local teachers, and parents of highly able students to ensure understanding of the program’s goals and activities; and employing local people who understand community needs and values as program administrators and teachers. Such program personnel are more successful in promoting positive educational outcomes than are outsiders.

Clark and Zimmerman (1988) interviewed a random sample of 12- to 16-year-old artistically talented students. As a result of interviews with these students, it was clear that rural students with high abilities in the visual arts had fewer opportunities than students from urban areas to experience music or art, either at home or in their local communities. Students from rural areas viewed school as a social environment, and did not have many friends with similar art interests; whereas students from urban areas described a variety of places where they socialized with friends who had similar art interests. It also was suggested that a variety of authentic measures be used to collect information from students, teachers, parents, and others so that identification procedures, differentiated curricula and program options could be designed to both meet the needs of artistically talented students and at the same time provide enrichment opportunities for entire school populations. Finally, community involvement should be a high priority in rural art programs for high-ability art students. In such programs, parents, local artists, and other concerned citizens should be actively involved in all aspects of programs designed for rural, artistically talented students. Such community involvement often leads to positive communication among local school administrators, teachers, and parents who understand community values and mores.

ABILITY GROUPING IN DIVERSE CULTURES

A comparative analysis of ability grouping around the world, conducted by Arnowe and Zimmerman (1999), focused on whether or not to emphasize individual differences or group commonalities, and whether excellence or equity should be foremost in policy decisions governing education. They concentrated on a few comparative cases in the United States, Japan, South Korea, France, Germany, Canada, and China. Although there are many differences in the educational and political systems in these countries, all have policies and practices that lead to sorting students and exposing them to differentiated curricula. Arnowe and Zimmerman found that there were differences in the point at which differentiation occurs, how subtle the process is and the form it takes, and the extent to which selection is based not only on some criteria of merit but also on nonachievement factors. Although this study did not focus on art talent development exclusively, a number of the cases included input from art educators. The researchers concluded that “despite historical and societal differences, there is a tendency for education systems to converge on a middle point between the extremes of highly centralized educational systems with little attention to individual differences and highly decentralized systems giving little attention to group similarities” (p. 126). They noted a parallel continuum that exists between polar opposites of excellence and equity. In the countries studied, a tension between excellence and equity is manifest in policies for identifying and cultivating unique talents of gifted and talented students while simultaneously downplaying individual
differences and providing access to high-quality programs for all students (Zimmerman, 1997). Arnone and Zimmerman concluded that “all countries need balanced policies that uphold this dynamic tension . . . but, at the same time, meet specific needs of students studying in a variety of contexts, connected to a particular society’s political, social, and economic values” (p. 126).

GENDER ISSUES AND ARTISTICALLY TALENTED STUDENTS

Although there is a paucity of research about artistically talented girls, there is a considerable amount of research about academically gifted girls (Kerr, 1987; Reis, 1987, 1991; Silverman, 1986). There have been a few studies about artistically talented girls (Goldsmith, 1992; Golomb, 1992; Nelson & Janzen, 1990); however, there are many more longitudinal case studies about artistically talented boys and these included study of their artworks, art education, and perceptions and life situations (Duncum, 1984; Gardner, 1980; Wilson & Wilson, 1980; Zimmerman, 1995). Zimmerman (1995–1996) interviewed artistically talented teenagers and found some similarities and differences with studies about academically talented girls. She found that cultural stereotyping (Reis, 1987, 1991) was apparent in the choices of subject matter and media that girls and boys remembered using at an early age. Although all boys realized at an early age that they possessed special talents, only half the girls were aware of their capabilities in art. As did academically talented boys (Kerr, 1987), artistically talented boys developed a stronger sense of identity through their artwork than did girls. Artistically talented girls generally lacked self-esteem. Such poor self-esteem contributes to females’ lower levels of achievement (Reis, 1987, 1991). Zimmerman found almost all the girls had unrealistic notions about what artists must do to achieve success. Lack of realistic and practical planning for future careers was more apparent in girls’ responses than in boys’; these outcomes mirrored Kelly and Cobb’s (1991) findings for academically talented girls. Silverman (1986) stressed the importance of parents and others who encouraged their daughters; she also emphasized the importance of support and assistance of males. In Zimmerman’s study, most mothers encouraged their daughter’s artwork; however, only 25% of the fathers were interested or supported their daughters’ artwork.

Most girls in the Zimmerman study were model students, interested in getting good grades and gaining admiration from their teachers and peers; they demonstrated what Loeb and Jay (1987) described as a need for achievement through conformity. Boys were less interested in being well behaved or conscientious about their school work and were more independent and self-reliant than were girls. For artistically talented girls, the most preferred class was math, this same subject disliked by most of the artistically talented boys. This finding differs from most studies about academically talented students (Reis, 1987, 1991) and does not fit the stereotype of girls having a high incidence of math anxiety.

DISTRIBUTION AND STANDARDIZED TESTING

No discussion of issues about defining talents in the visual arts would be complete without acknowledging how talent is distributed in the world’s population. A number of arts education researchers, across the years, have speculated—or displayed—that talent in the arts is normally distributed among all students in schools and the adult population, with those considered superior at the upper end and those below average at the lower end (Clark & Zimmerman, 1995, 2000; Lark-Horovitz, Lewis, & Luca, 1967; Lark-Horovitz & Norton, 1959; Munro, 1956; Sarason, 1990). If talent is taken to be normally distributed, then the possibility of standard testing in the visual arts is a viable concept. In the visual arts, however, there are few
nationally standardized tests that have been used to measure preferences for design, drawing abilities, or aesthetic judgment, such as those developed by Graves (1978), Horn (1953), or Meier (1963). These tests have been evaluated by numbers of reviewers, and questions have been raised about their usefulness in respect to outmoded items and illustrations, inadequate samples, weak validities, inconsistent scoring, and lack of completeness as measures of art abilities (Buros, 1972; Clark & Zimmerman, 1984a; Eisner, 1972). A few nationally available rating scales or checklists exist and have been used with some success (Khatena, 1982; Renzulli, Smith, White, Callahan, & Hartman, 1976). At the state level, in 1990, about 23 locally designed visual arts achievement tests were in use (Sabol, 1994). Most attempts to develop standardized tests for use within a state have resulted in emphases on basic abilities that have been used as measures in other content areas (Hamblen, 1988).

An exception is Clark’s Drawing Abilities Test (CDAT) that has been shown to be reliable and valid in a variety of educational contexts (Clark, 1993; Clark & Wilson, 1991; Clark & Zimmerman, 2001b). The CDAT was used as a research instrument in a federally funded project that was designed to identify high ability, artistically talented, elementary students from four different ethnic backgrounds, in seven rural schools, and to implement differentiated arts programs for them (Clark & Zimmerman, 2001b). In research about identification of students in this project, scores on the Torrance Tests of Creativity, Clark’s Drawing Abilities Test, and state achievement tests were found to be correlated. Except at one site, gender was not found to be a significant variable on these tests. In the same project, locally designed identification measures, developed by teachers and community members, were found to be appropriate by teachers and staff if several, different measures were used. As a result of this study, it was recommended that local measures, the CDAT, and achievement tests be used to identify artistically talented students in rural communities with populations similar to those in this project.

Many scholars have suggested multiple criteria systems should be used for art talent development identification and assessment (Boston, 1987; Clark & Zimmerman, 1994, 2001b; Chetelat, 1982; Cox & Daniel, 1983; Hurwitz & Day, 1991; Khatena, 1989; Saunders, 1982; Stalker, 1981; Wenner, 1985, 1990). These systems include using a number of procedures such as self-nominations; peer nominations; parent nominations; teacher nominations; observations; interviews; grades in art; selected, standardized art and creativity tests; portfolios; and work samples done on site.

TEACHER CHARACTERISTICS AND STRATEGIES RELATED TO TALENTED STUDENTS’ ART LEARNING

Descriptions of ideal teachers for gifted and talented students has been generated by a number of authors on the basis of armchair speculation (e.g., Gold, 1965; Khatena, 1982; Torrance, 1962). These descriptions generally are impractical because they are either idealistically unattainable or they fail to differentiate between good teachers for all students and good teachers for certain students with high abilities (Clark & Zimmerman, 1984a; Gallagher, 1975). There are a few studies about teachers of academically gifted students and still fewer about teachers of artistically talented students.

Story (1985) reported that traits most often cited in literature about successful teaching of academically gifted students were not directly identified from observed behavior patterns; rather, these traits were identified through interviews and qualitative analyses. Lundsteen (1987) advocated using qualitative methods to better understand processes of teaching academically gifted students. Although there are a few qualitative studies about teachers of academically talented students, there is a paucity of such studies about teachers of artistically talented students.
Bloom (1985) and his colleagues described characteristics of teachers of individuals who had attained world-class accomplishments before age 35. The group of individuals studied were sculptors who noted that the most important part of their professional art education was studying with teachers who were professional artists (see also, Albertson, 2001). As they progressed in their education, these sculptors related that they were taught less about skills and techniques and more about “art issues” (p. 127) that included becoming intensely involved in the study of art history and art criticism. Through projects, classes, interactions with teachers, and “copying” the work of artists, these individuals slowly learned “the language, the history, the rituals, and the techniques of making art” (p. 128).

Zimmerman (1991, 1992a) studied the teaching methods and strategies of two teachers who taught 2-week painting courses for 13- to 16-year-old artistically talented students. These two case studies of painting teachers yielded two models of teaching highly able young adolescents who were identified as talented in the visual arts. One teacher met the students’ needs for developing skills and techniques; the other teacher, in addition to teaching skills and techniques, encouraged students to become engaged in art issues and to think reflectively about the context in which they were creating art. The latter teacher mirrored more qualities associated with teachers who were identified in the Bloom (1985) study as successful art teachers for talented students. It was concluded from this comparative study that if artists teach talented students they should be aware that their students may have needs for knowledge and understandings that include becoming aware of the contexts in which they make art, examining their reasons for creating art, and becoming intensely involved in art issues that go beyond the acquisition of art skills and techniques.

**RECOMMENDATIONS FOR FUTURE RESEARCH**

We offer these suggestions for further research in this area.

- Collaborative work by researchers in the fields of both psychology and education should explore the ill-defined terms, *talent, giftedness, and creativity*.
- Future research into the development of artistically gifted children and adults needs to incorporate two key notions in artistic development: (a) that graphic development has several end points, not just one; (b) graphic development cannot be understood as a single-minded quest for “realism.”
- Future researchers should look much more closely at the development of certain features of graphic development that have up to now been overlooked such as development of expression, use of color, and the acquisition of culturally approved graphic models and conventions and the myriad of graphic properties that do not depend on the acquisition of mimetic skills.
- Future researchers should examine the relationship between those aspects of graphic development that are universally given as a function of the laws of perception and representation and those aspects that are culturally imposed norms.
- The myth that artistically talented students learn best if left to their own devices is still alive and well. We have presented a number of studies that challenge this notion. There is clearly a need for more research about the impact of educational opportunities, educational settings, and the role of art teachers on the development of artistically talented students.
- So that equitable art learning experiences can be provided for all students in a variety of educational contexts, more research about visual art talent development must be conducted. This should focus on students’ backgrounds, personalities, gender orientations, skill development, and cognitive and affective abilities.
• There also is a need for researchers to focus on art talent development in cross-cultural contexts and on the impact of global and popular culture on the education of artistically talented students.

• The relationship of standards and the testing movement with processes of nurturing art learnings for artistically talented students should be clarified. In an age of performance-based outcomes, we also need to ask if the educational environments we provide are best suited to educate our talented visual arts students.

• Students’ backgrounds, personalities, values, gender, and age need to be studied further as factors in the identification of art talent. Multiple criteria that are sensitive to the communities in which students learn need to be developed and studied in terms of their effectiveness in a variety of settings.

• Large-scale studies and longitudinal case studies should be conducted about the nature of programming opportunities for high-ability art students from a variety of diverse backgrounds. When program evaluations are reported, they should include discussion of both strengths and weaknesses of standardized and authentic assessment measures.

REFERENCES


PARISER AND ZIMMERMAN


17. LEARNING IN THE VISUAL ARTS


Reis, S. M. (1987). We can’t change what we don’t recognize: Understanding the special needs of gifted females. *Gifted Child Quarterly, 31*(2), 83–89.


17. LEARNING IN THE VISUAL ARTS


