International Handbook of

Research and Development of Giftedness and Talent

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Introduction

As the Year 2000 approaches, people and groups concerned with the nature and nurture of giftedness and talent—educators, policy-makers, researchers, the public—find that, despite a large and growing knowledge base, issues concerning the education and development of the gifted continue to be discussed and debated. It might even be said that, as in other fields, the more that is known, the more issues are raised and controversies are fueled. Issues concerning the gifted field have never been confined to a small group of children and youth identified as "gifted or talented" but have an impact on the whole of education. For example, the issues surrounding questions of *excellence and equity* affect all educational decisions, not just provisions made for the gifted. Despite a century of programming for the gifted, such efforts are still debated as to whether or not they are elitist, undemocratic and even necessary. In the 1990s, "tracking," one kind of ability grouping, had once again become the focus of policy debates with research cited to support both sides of the controversy. These are just a few examples of the perennial issues which are unresolved despite the accumulation of research, theory and experience over the past century. In fact, it is likely that they will never be fully resolved; supporters of gifted education will only find more solid basis for their positions with the growing base of research and theory.

In the first report on his longitudinal study, Terman (1925) suggested that, as more is learned about giftedness and how gifted children should be educated, we will learn more about increasing the talent reservoir:

> When the sources of our intellectual talent have been determined, it is conceivable that means may be found which would increase our supply. When the physical, mental and character traits of gifted children are better understood it will be possible to set about their education with better hope of success. . . In the gifted child, Nature has moved far back the usual limits of educability, but the realms thus thrown open to the educator are still *terra incognita*. It is time to move forward, explore and consolidate (pp. 16–17).

The German psychologist Stern emphasized in 1916:

> It is strange that until now there exist thorough diagnostic processes only for the children for whom we have concern because of some handicap but not for the children of hope (p. 114). For 2% of the highly gifted and another 10% of the gifted elementary school children we need provisions for appropriate nurturing (p. 109).

The novelist, John Hersey (1958) once wrote: Our uncertainty about exactly how to develop talent is only a part of the greatest unresolved problem in American education—the problem of how to help every child realize his maximum potential (p. 5). Recognition of the education of the talented as an integral part of a nation's total educational challenge and an understanding of the multiple dimensions of the problems of nurturing talent potential are important first steps. It has long been understood that the future of gifted education will be affected by developments regarding education and schooling in general. The history of gifted education is inextricably a part of the drive for quality education for

all and this has become even more so in the past two decades.

As the twentieth century nears its end, the consensus seems to be that, in many ways and in many contexts, education of the gifted is in a stronger position than it has ever been but that there is no millennium yet in its future. To reflect on research and education of the gifted in the year 2000 and beyond requires a look at the issues and problems in the field—many of which are perennial—which will shape the future of talent development.

The Beginnings of Study of the Gifted

Modern giftedness research has a long past but a short history. Confucius in China and Plato in Greece (in politeia, VI) discussed "heavenly" (gifted) children. They attempted not only to explain giftedness or high ability theoretically, but also made practical suggestions for the identification and selection of the gifted and for nurturing them in society. In this way giftedness or talent was considered as a national resource, to be encouraged and multiplied for the good of the community. It is interesting to note that both East Asian and Classical European traditions adopted largely identical interpretations of giftedness and talent, which were considered to be gifts from nature, in the form of exceptional cognitive abilities (perception, thinking, learning and memory).

The close relationship of giftedness to the concept of intelligence is shown etymologically not only in the Chinese attributes "Tsung" and "Ming" (exceptional sight and hearing) but also both in the Latin meaning of "intellect" in the philosophy of Aristotle and in the writings of the later English Sensualists (e.g., John Locke, 1632–1704). This European attitude or hypothesis was expressed in the assumption: *Nihil est in intellectu, quod non prius fuerit in sensu* (the intellect contains nothing that did not come to it through the senses). This intellectual conception of giftedness or talent was probably first broadened to include motivational components (cf. Renzulli's definition of giftedness). In the New Testament parable (Matthew 25, p. 15) Jesus spoke of the talents entrusted to mankind. The term "talent" (*talanton* in Greek, *talentum* in Latin) was derived originally from an ancient unit of weight or token. In Vulgate Latin (fourth century) *talentum* adopted, possibly for the first time, the meaning "mental aptitude". In the Middle Ages the term "talent" took on the meaning of giftedness in the sense of inborn ability; this meaning persisted into the first half of this century (e.g., Révész as late as 1952). The concept of genius, long native to psychiatry (cf. Anastasi, 1958), can also be traced back to its classical roots (Heller, 1993). For further information see Chapter 1 in this handbook.

In a more narrow sense, research on the nature and nurture of the gifted began at the turn of the century but has intensified and become increasingly more sophisticated, focused and informative in the last few decades. Americans tend to mark the beginning of serious research on the gifted with the 1922 initiation of Terman's so-called *Genetic Studies of Genius* when a life-span longitudinal study "was designed to discover what physical, mental and personality traits are characteristic of gifted children as a class and what sort of adult the typical gifted child becomes" (Terman & Oden, 1951, p. 21). Europeans sometimes cite William Stern's 1916 publication *Psychologische Begabungsforschung und Begabungsdiagnose* (*Psychological research and detection of the gifted*) as having preceded the Terman study and a better benchmark.

There were, of course, earlier studies about the nature of "genius," the training and exploits of *Wunderkinder* and other prodigies and the provisions made for rapid learners and academic achievers (see Chapters 10 and 25). The editor of a 1924 yearbook of the National Society for the Study of Education (NSSE) observed that:

> Lombroso's *Man of genius* (1891), Galton's *English men of science* (1874), Galton's *Hereditary genius* (1869), Constable's *Poverty and hereditary genius* (1905), Cattell's *A statistical study of American men of science* (1906–1910) are characteristic studies that have helped define the problem of the origin of superior achievement, especially to raise the issue as to the relative contribution of inherited constitution and educational training in the production of greatness (Whipple, 1924, p. 2).

The 1924 NSSE yearbook titled *The education of gifted children* contains an annotated bibliography of 453 entries—mostly American although several German citations are included. The sheer volume provides clear evidence that there was considerable interest in the nature and education of the gifted in the early part of the century. The content of the articles as reflected in the titles and annotations suggests that many of the topics discussed or reported were not unlike those one finds in more recent literature. There were articles on intelligence testing as a means of identification, descriptions of "superior groups," comparisons of "bright and dull pupils," honors plans, studies of precocious and "super-normal" children, outcomes of ability grouping, the nature of genius and even a 1906 article by Terman titled "Genius and stupidity". (This was a report on his doctoral dissertation which he finished in 1905. In June 1905 he received his doctoral diploma from the hands of President Theodore Roosevelt.)

In his Editor's Preface to the 1924 NSSE yearbook, Whipple noted that the "Committee has not found itself in agreement upon some fundamental principles involved in the education of gifted children" (p. iv) including the various means "for the selection of gifted pupils or the administration of their training" (p. 24). These same two classes of issues persist (see Chapter 2).

Themes and Issues from Earlier Research

In 1960, in connection with legislation being considered by the State of Illinois, Gallagher prepared a report whose purpose was "to review and summarize all of the information now available relating to the education of gifted children" (p. 3). Gallagher summarized his findings under the following headings: identification, cultural background, intellectual patterns, academic achievement, social popularity, emotional adjustment, elementary programs and program evaluation. He concluded that a clear generalization that can be drawn from the review of research was that "special programming for gifted children requires additional personnel and services" (p. 131).

In 1963 Mönks published a review article entitled *Contributions to the study of giftedness in childhood and adolescence*. In this article a survey was made of the then existing trends in the study of gifted children and adolescents. Six theoretical approaches were identified and summarized as follows: (1) clinical approach or the theory of disharmony, (2) socio-cultural/psychosocial approach, (3) psychoanalytical approach, (4) hereditary theory, (5) theory of differentation and (6) theory of harmony (after Terman's correlation of giftedness with psychological and physical health). The same article proposed a longitudinal study to develop an empirical basis for the improvement of psychological educational as well as instructional guidance of gifted students (see Mönks, 1992).

About 40 years before the 1963 Mönks' article there already existed in the Netherlands scientific interest in the gifted child. The contribution of the Dutch psychologist Révész (Hungarian by origin, residing in Amsterdam after 1921) about a musical prodigy in 1925 is well known. Other psychologists like Waterink and De Groot contribute to the study of giftedness theoretically and empirically. But at that time (1938, 1956) policy makers were more interested in "equal opportunities for all" and this meant for the children with handicaps. Concern for the appropriate education of the gifted and interest in theoretical conceptualizations of giftedness have a long history in Europe but a minimal impact on research and practice.

In a 1965 publication titled *Research on the talented*, Goldberg compared "some recent research findings with those from past research," examined "the extent to which current projects are seeking solutions to perennial problems which have remained unsolved" and reported on "efforts to study unchartered ground" (p. 1). Goldberg organized the review of research under the following categories:

- Social and personal characteristics: Are the personal and social characteristics attributed to gifted youngsters of the past descriptive of the gifted youngsters of today?
- Identification of the talented: How adequate are the commonly used identification procedures? What are some new directions in identification with respect to intellectual factors? Motivational factors?
- Discrepancy between prediction and achievement: What are the characteristics of underachievers? What can schools do to reverse patterns of underachievement?
- Administrative provisions: Ability grouping, acceleration and other adaptive provisions.
- Guidance provisions: What are the special needs of the gifted? Are the problems faced by gifted individuals sufficiently different from those of average persons to warrant special attention or new approaches?
- Course content and method: How should the actual course content and teaching method be differentiated for gifted students?

Commenting on research on the gifted in terms of what was known and was not known about programming for the gifted and talented, Renzulli (1980) wrote:

> In spite of vast amounts of research on every conceivable aspect of the learning process, we still have difficulty pinpointing the reasons for the remarkable differences in learning efficiency and creativity among persons with similar genetic backgrounds and environmental experiences. We simply don't know what factors cause only a minuscule number of Thomas Edisons or Langston Hugheses or Isadora Duncans to emerge while millions with equal "equipment" and educational advantages (or disadvantages) never rise above mediocrity. Why do some people who have not enjoyed the advantages of special educational opportunities achieve eminence while others who have gone through programs for the gifted fade into obscurity? The answer is, we simply don't know (p. 601).

Renzulli's query raises a number of related questions. For example, do we really know whether there are many "persons with similar genetic backgrounds and environmental experiences" or "millions with equal 'equipment' and educational advantages (or disadvantages)?" We have not yet pinpointed the factors which result in talent potential becoming talented performance, particularly with respect to extremely rare giftedness.

There is, as yet, no comprehensive theory that would explain what factors contribute to the emergence of superior/outstanding/unusual performance in a socially valuable area, let alone a variety of areas. In part, Tannenbaum has observed, theory building and research regarding the gifted has concentrated mostly on what is giftedness rather than what (and who) *makes* giftedness.

McClelland et al. (1958) have suggested that one major problem has been the focus of efforts on designing instruments to identify talent without an understanding of the phenomenon itself. He conjectured that even if an instrument were constructed which inevitably identified promising young persons, if we had "no idea as to why or how it worked, or what the problem of talent development really involved—in other words, if we had no theory," we would still not know what should be done with the "gifted students" the instrument had identified (p. 24). McClelland argued that an orientation which

emphasized talent potential as a fixed attribute of a very few people was problematic and speculated that:

> Talent potential may be fairly widespread, a characteristic which can be transformed into actually talented performance of various sorts by the right kinds of education. If so, the emphasis should shift from identifying talent potential to *studying the process by which talent becomes actual*, by which it develops. Such a focus requires above all a knowledge of theory—an understanding of what we are measuring, how it develops under different circumstances and how it is related to the ultimate criteria of talented performance which we want to predict. Until we achieve these goals, our ignorance of the process by which talented performance develops will remain an outstanding gap in current talent research (p. 25).

A quarter of a century after McClelland and his colleagues reported to the Social Science Research Council, a second SSRC group, its Committee on Development, Giftedness and the Learning Process presented its deliberations in an effort "to infuse the field with new life, fresh perspective or even good substantive criticism, to show that there are lively issues in the investigation of giftedness yet to be pursued" (Feldman, 1982, p. 5). That SSRC Committee believed "that the traditional emphasis on precocious test performance, however productive, has had an unfortunate tendency to narrow the focus of the field, leaving outside its borders many interesting research questions" and urged that "in-sights and findings from developmental sciences" be utilized for the better understanding of giftedness and creativity (p. 5).

While many perennial research themes are still being studied, as the Year 2000 approaches, other topics are now the focus of investigation, often using more insightful or more sophisticated means to probe more meaningful questions. For example, Heller (1992a) submitted the following research topics which seemed important to him in understanding talent and its nurture:

- Development of instructional concepts and pedagogy for the gifted.
- Curricular development for special academic courses, special classes or even special high schools for certain acceleration groups, for enrichment groups and for extracurricular support of the gifted—including evaluation of such courses and programs.
- The construction of identification instruments for process diagnosis (as complement to the "status diagnosis"), the testing of successive decision strategies and multidimensional classification models.
- Construction of area-specific counseling tests for talented adolescents.
- Longitudinal studies of the gifted including analyses of the living environment over a whole life span.
- Study of leisure-time activities of talented adolescents and their influence on personality development.
- Career problems of talented girls and women, especially in the fields of mathematics, natural sciences and technology.
- Analyses of metacognition, causal attribution, achievement motivation, self control, heuristic skills, the self concept (including sex differences) and self-evaluation of abilities.
- Quasi-experimental intervention studies for counseling and supporting gifted children and adolescents (pp. 75–76).

Definitions and Conceptions of Giftedness

A basic problem in building a theory about giftedness is that it is a multifaceted phenomenon, the nature of which is still at issue. Can a single theory account for the appearance of precocity as in 4-year olds who play chess or who write publishable poems or 10-year olds who are concert-class performers or children who perform exceptionally well on academic tasks or school-age children who develop patentable inventions? Put another way, can a single theory explain the rare Einsteins, Shakespeares, Nijinskys and similar talented individuals as well as the child whose "giftedness" appears to be achieving unusually well academically as measured by standardized achievement tests?

Research and experience over the past decades have underscored the range and variety of individuals whom school personnel and different communities (e.g., cultural, artistic, business and industry) have identified and labeled "gifted" or "talented." Depending on the criteria being applied, there are some children who are only slightly above average while others are so far above the average as to be extremely rare. In the U.S.A., the latter are sometimes called, only partly in jest, "severely and profoundly gifted". Some individuals seem to have talent potential in a single area while others appear to have potential in a variety of talent areas. Some individuals who have manifested talent potential seem to have little or no interest or motivation to develop or use that capacity while others are highly interested. motivated, committed and involved. Some youngsters are especially precocious, manifesting unusual talent potential at very early ages, while others are "late bloomers" who do not show unusual potential or performance until much later in their development. There are youngsters who educators believe are academically gifted—i.e., high achievers, good test-takers, good designers and implementers of school projects—but who are not necessarily outstanding performers and producers outside the classroom. Some talent areas seem to be manifested earlier than others. Some "academic absorbers" deal with their learnings in straightforward ways, while others seem to take delight in "playing around" with ideas and challenges in creative and innovative ways.

Thus, the gifted and the talented are clearly a very heterogeneous set of persons and it is this

multidimensional heterogeneity which may preclude a comprehensive theory. The absence of such a theory, however, does not prevent us from deepening our insights and understandings of the phenomena nor intensifying efforts to identify talent potential and nurture talented performance.

Giftedness and *talent* are terms which have been variously defined over the years and a variety of conceptions have emerged related to these diverse definitions. Feldhusen and Jarwan suggest that definitions of giftedness can be classified into six categories: psychometric, trait, social needs orientated, educationally oriented, special talent and multidimensional (see Chapter 13). Eysenck and Barrett view giftedness as a "fuzzy concept" that can be defined in three major ways: "(1) as synonymous with *general intelligence*; (2) as synonymous with *creativity*; (3) as synonymous with special (artistic or scientific) ability" (see Chapter 7).

Renzulli (1982) has asserted that despite efforts throughout the century, "the precise definition of giftedness remains a question with no universally accepted answer" (p. 723). He suggests that the many definitions of gifted range along a continuum from a "conservative" end represented by Terman's definition of the top 1% in general intellectual ability to the more "liberal" definition of Witty who recommended that the definition of giftedness be expanded to include any child "whose performance, in a potentially valuable line of human activity, is consistently remarkable."

Heller (1989) notes that "giftedness belongs to the class of so-called hypothetical "construct" terms whose definition is dependent on the chosen theoretical frame of reference", a term which "is strongly convoluted with relatively complex behavioral phenomena" (pp. 140–141). And the same author suggests:

> In a relatively broad sense *giftedness* may be defined as the total of personal (cognitive, motivational) and socio-cultural requirements for learning and performance . . . whereas the *development of giftedness* may be understood as the interaction of internal factors of aptitude and the external factors of socialization (Heller, 1991, p. 174).

Gallagher and Courtright (1986) have argued that "one term, *gifted*, has been used to describe two different constructs . . . [which] "although overlapping, emerge from different traditions and have a number of subtle differences that create confusion and contradiction" (p. 93). One construct derives from the studies of social scientists on individual differences while the other "stems from educational practice and the need for schools to design special educational programs for students who possess abilities and performance far in excess of their age mates" (p. 93). Gallagher and Courtright assert that the educational definition of giftedness has significant policy implications with identification and program goals following from the constructs accepted.

In Sternberg and Davidson's (1986) *Conceptions of giftedness*, some 17 different conceptions of the construct are presented and discussed by the persons who proposed and advanced them. These constructs, as Sternberg and Davidson put it, "although distinct, are interrelated in certain ways" (p. 3). They divide these different conceptions into those which are *implicit-theoretical*—each presenting "a somewhat different implicit theory of giftedness that seeks to define this elusive concept" (p. 4)—and those which are *explicit-theoretical*—each emphasizing explicit theories of giftedness in terms of cognitive or developmental psychology. The different conceptions of giftedness are also divided between those which are school-centered and those which focus on adult performance and productive behavior.

An example of an implicit-theoretical conception is that of Tannenbaum (1983) who views the interaction of five factors resulting in gifted/talented performance. These include: (1) *general ability* or tested general intelligence with different threshold IQs being required for various kinds of accomplishment; (2) *special ability* or special capacities or affinities for various kinds of work; (3) *nonintellective factors*, a confluence of affective elements such as ego strength, persistence, delayed gratification, etc.; (4) *environmental factors* including "stimulating home, school and community settings [which] are indispensable not only for maximizing potentialities but also for helping to determine the directions they take" and (5) *chance factors*, "unpredictable events in a person's life that are critical both to the realization of promise and to the demonstration of talents" (pp. 87–88).

Another example of clustering the different orientations and conceptions is the following: (1) trait oriented definitions, (2) cognitive component models, (3) achievement-oriented models and (4) socio-cultural/psychosocial oriented models (see Chapter 5). These models have to be seen as complimentary since each of them emphasizes an important aspect.

Sternberg's triarchic theory of intellectual giftedness is an example of an explicit-theoretical conception based on cognitive theory. Sternberg's (1986) theory consists of three subtheories: the first "relates intelligence to the internal world of the individual, specifying the mental mechanisms that lead to more or less intelligent behavior"; the second "specifies those points along the continuum of one's experience with tasks or situations that most critically involve the use of intelligence"; and the third relates intelligence to the individual's external world, "specifying three classes of acts—environmental adaptation, selection and shaping—that characterize intelligent behavior in the everyday world" (p. 223).

Sternberg and Davidson (1986) see definitions of giftedness having particular significance in identification and development:

> Giftedness is something we invent, not something we discover. It is what one society or another wants it to be, and hence its conceptualization can change over time and place. If the definition of giftedness is a

useful one, then it can lead to favorable consequences of many kinds, both for society and for individuals. If the definition of giftedness is not useful, valuable talents may be wasted, and less valuable ones fostered and encouraged. It is thus important for all of us to understand just what it is we, and others, mean by the concept of *giftedness* (pp. 3–4).

Many different decisions regarding identification, education and counseling, for example, depend on the often only implicit conception and definition of giftedness. Therefore clarification of underlying constructs is essential for both program and research design.

Definitions, concepts and constructs which guide research and educational planning are much more diverse, much more research and theory based and much more influential on the planning and program decisions being made for the identification and development of talent. As the Year 2000 approaches, it would appear that efforts to develop better theory and conceptions of giftedness and talent in order to improve program and practice will continue but the focus will no longer be on devising a single, comprehensive conception or construct of giftedness and talent. There is increasing recognition that theory building and conceptualization of the phenomena of giftedness have considerable significance in determining what should be done to bring talent potential to talent realization.

Identification of Talent Potential

The procedures and processes by which talent potential is measured have changed dramatically since Terman (1925) selected the 1528 subjects (857 boys and 671 girls) for his life-long longitudinal study: "The standard set for inclusion in the group was 140 IQ for Binet-tested subjects and 135 for high school subjects selected as the basis of the Terman Group Test" (Terman & Oden, 1951, p. 22). High intelligence, as measured by an individual or group test, became the basis for both defining giftedness and identifying gifted individuals.

In Chapter 11, Sternberg has reviewed procedures for identifying alternative approaches to assessing intellectual potential, arguing that "'giftedness' can be viewed as quite broader than a high score on a conventional intelligence test" and that "there can be different sorts of tests within each metaphor, depending upon the particular theory within the metaphor that generates the test".

Feldhusen and Jarwan submit that a sound identification system must deal with a number of issues: "(1) the rationale and goals, (2) defining the target population, (3) use of single or multiple criteria, (4) types of test performance, (5) criteria for test selection and (6) selection strategies (see Chapter 13).

Operational definitions and conceptions of giftedness guide identification and program planning. As Renzulli (1982) has pointed out: "there are very few educators who cling to a 'straight IQ' definition or purely academic criteria for identifying giftedness. 'Multiple talent' and 'multiple criteria' are almost the bywords of the present-day interest in the gifted" (p. 723).

In the U.S.A., depending on the definition of giftedness or talent, multiple sources of information about individual differences may include some or all of the following:

- Evidence of general ability and/or multiple intelligences including group and individual intelligence tests.
- Evidence of scholastic achievement, including standardized tests of achievement and teacher grades.
- Evidence from "creativity" measures, including standardized tests of creativity, divergent thinking and productive thinking.
- Nomination by teachers on various kinds of rating scales and check lists.
- Nomination by peers on various kinds of rating scales, inventories, check lists.
- Nomination by parents on various kinds of rating scales, inventories, check lists.
- Evidence of productivity through products of individuals such as writings, compositions, sculpture, science projects, reports and so on.
- Evidence of noncognitive behaviors—for example, work habits, task commitment, self-directedness, pride in accomplishment and so on—on inventories, check lists and rating scales.
- Autobiography and self-nominations.
- Evidence from judgment by experts in various talent areas, such judgments based on student products and/or performances, especially in areas such as dramatics, graphic arts, music and so on (Passow, 1985a, p. 2049).

In addition to relying more on student performance and products in the identification process, another significant development involves the design of environments or settings which provide opportunities for a larger number of students to engage in a self-identification process by participating in enrichment activities which enable them to demonstrate their capabilities and manifest their talent potential.

Identification procedures have been seriously criticized for their failure to identify gifted in such populations as racial and ethnic minorities, the disadvantaged and poor and those with limited language in their land of residence. There are increasing numbers of such students not only from a given country itself but also displaced by political and/or economic hardship. Increasing attention is being paid to procedures and techniques which will enlarge the talent pool from these seriously underrepresented populations.

Two examples of such efforts are The National Research Center on the Gifted and Talented at the University of Georgia, U.S.A., which is developing methods for identifying diverse populations and training teachers to recognize such giftedness, and The Center for the Study of Giftedness at the University of Nijmegen, The Netherlands, where work is ongoing in identifying

and providing enrichment for both minority students (primarily Turkish and Morrocan) and disadvantaged Dutch students.

As the Year 2000 approaches, it would appear that the multidimensions of giftedness and the concept of multiple talents will prompt the design and employment of much more authentic and complex identification procedures; less reliance on single tests, particularly tests of intelligence; more design and dependence on self-identification wherein individuals can demonstrate their talent potential by their performances and products; much more use of enrichment curricular opportunities to provide the basis for manifestation of talent potential; and increased efforts to identify talent potential among the many seriously underrepresented populations.

Gifted Education

Perhaps the fundamental question educators of the gifted must deal with has always been and continues to be: What kinds of education and socialization opportunities and experiences are needed to transform talent potential into talented performance? (See Chapters 18 and 19).

More than three decades ago, pointing to the tendency to believe that if only children with talent potential could be identified then they could readily be provided with appropriate experiences to nurture that talent, McClelland (1958) observed:

> Suppose we could locate that sleepy boy in the back row, the potential poet; what would we do for him? Would we offer him a liberal scholarship to one of our better private schools? Would we "enrich" his curriculum with special readings in poetry, or in the Greek classics? Or would we perhaps excuse him from school altogether on the ground that he would do better as a self-educated man? Or would we supply him with a vocational counselor who would help him find his real niche in life?. . . The plain fact is that we do not know what we would do; we do not know enough about what goes into the making of a poet . . . we still know far too little to be confident about how to develop talented performance out of talent potential (pp. 23–24).

While what goes into the making of a poet, a scientist, a painter, a musician, an orator or any other talent domain may not be known with the certainty that specific actions will result in nurturing particular giftedness, we do know that the absence of certain kinds of experiences will impede or thwart the realization of talent. For example, a strong case can be made that the "potential poet" whose language is not cultivated and enriched, whose understanding of the beauty and esthetics of language is not nurtured, who has not experienced various genres of poetry, who has not acquired the connoisseurship that enables him/her to distinguish between "good and bad" poetry, who has not had opportunities to produce poetry, who has not been encouraged to play around with words and ideas and who has not had opportunities to "do poetry"—is not likely to transform his/her potential into superior performance. We do not know that the "potential poet" will emerge but we are pretty certain that without these kinds of experiences and learning opportunities, he/she is very unlikely to become a gifted poet. The same arguments could be made for other areas of giftedness or talent.

Every area of specialized talent has a content and a substance, its very special methodologies and processes, its modes of problem definition and problem solving, its ways of exercising creativity, innovation and originality. A specialized curriculum for the gifted should activate and motivate the commitment and the development of the competencies and affective behaviors needed for nurturing one's special talent potential. For realizing these purposes advocacy groups play an important role (see Chapter 52).

Curricular Programs and Provisions for the Gifted

Educators planning for the gifted are concerned with designing educational settings and learning engagements that make available opportunities for students to acquire the knowledge, insights, skills, understandings, motivation, interest, values and other learning that will enable them to perform at levels of excellence that might be described as "gifted" or "talented." Not every potential poet will emerge as a poet but it is unlikely that potential will be realized without appropriate experiences. It is the nature of "appropriate experiences" that is at issue.

For more than a century schools have provided programs of various kinds aimed at nurturing the potential of gifted and talented children and youth. Practically every aspect of the educational process—the goals and objectives, curriculum content, instructional strategies, teaching/learning resources, personnel resources and evaluation and assessment programs—have been modified and adapted "to meet the needs of the gifted".

As the Marland Report (1971) put it, the gifted "are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society" (p. 2). The phrase "beyond those normally provided by the regular school program" implies that there is a curriculum which may be accelerated (experienced at an earlier age, in less time than is usual or at a more rapid pace), enriched (experienced in greater depth and/or breadth), or amplified (experienced beyond what is provided for other students, differing in nature or kind).

Programming for the gifted, i.e., the provision of differentiated curricula, raises a number of issues such as: Are there bodies of content and educational experiences that are essential for talent development? Is there a common body of curriculum content for all talent

development? What kinds of specialized curricula are needed to nurture diverse talents?

Are there education imperatives which are applicable to all gifted—i.e., are there learnings which are essential for all gifted and talented, regardless of their specific talent domain? Are there essential learnings that all gifted must experience if they are to achieve maximum self-realization and fulfil their potential? Positions taken on these issues vary widely. Most curricular and instructional programs are based on a particular conception of giftedness albeit in most instances this is only implicit (see Chapters 19 and 21).

There is a general consensus on the need for specialized curricula aimed at nurturing the diverse special areas of talent, providing learning engagements and opportunities that enable the individual to identify and develop the skills, knowledge, insights, understandings and values needed to realize one's area of specialized talent potential. The specialized curriculum starts the individual toward the development of his/her talent potential by activating and motivating the acquisition of and commitment to knowledge, skills and affective behaviors that contribute to talented performance.

Not only are there issues concerning the nature of such specialized curricula but there are questions about the appropriate balance between the differentiated basic or general curriculum and the specialized curricula. Which subjects, which disciplines, which learning opportunities are appropriate at the early stages of talent development and how do these change as the talent matures and comes closer to the behaviors of a gifted adult performer? To what extent should the individual be permitted or encouraged to focus his/her learnings on a specific talent domain or to what extent should he/she be required to engage in basic/general or common learnings? Should the potential poet and the exceptionally able mathematician have opportunities to pursue more intensive study of creative writing or of advanced mathematics "at the expense" of the general or basic education? The issues are essentially questions of what constitutes a sound and appropriate general education which can serve as a foundation or base for the development of specialized talents and what comprises the specialized curricula.

A closely related issue of curricular balance is that of acceleration vis-a-vis enrichment—when and how to accelerate learning and when and how to enrich learning. For many years, literature on gifted education posed acceleration and enrichment as opposing concepts and the controversy still rages among some advocates of each process (see Chapter 20). Passow (1985b) has argued that acceleration "enables the student to deal with more advanced concepts at higher cognitive levels and thus represents an enriching experience" while providing opportunities for more advanced study in the area being accelerated or in another area or areas (p. 37). On the other hand, by providing "learning experiences that enable the student to probe more broadly or more intensively" using advanced resources "enabling gifted individuals to attain higher levels of insight, understanding, performance, or product development", enrichment also involves acceleration (p. 37).

Both acceleration and enrichment have qualitative as well as quantitative dimensions which make it possible for gifted individuals to pursue differential experiences through a greater variety of opportunities and engagements. Thus, the issue is now beginning to be reformulated, not in terms of acceleration versus enrichment, but rather as the question: *When* is it more appropriate to alter the tempo or pace of instruction and learning and *when* is it more appropriate to alter the breadth or depth of experience and *how* shall this be accomplished?

During the past two decades, mainly in the U.S.A., there has been a proliferation of systems and models for designing programs for the gifted and talented (Fox, 1979; Maker, 1982; Renzulli, 1986). These models may focus on organizing for instruction (i.e., administrative models) or "consist of principles that guide the instructional process and give direction to the content, thinking processes and outcomes of learning experiences" (Renzulli, 1986). Maker (1982) observed that these models differ in terms of the theoretical assumptions made, "both regarding the nature of the learner (for example, learning, motivation, intellectual and emotional characteristics) and the nature or effectiveness of certain teaching methods" (p. 2).

Some ideas of the diverse foci, nature and comprehensiveness of the models and systems that are currently being implemented in the U.S.A. can be gathered from the following listing:

- SMPY's model for teaching mathematically precocious students.
- The Autonomous Learner Model for the gifted and talented.
- The Integrative Education Model.
- The Learning Enrichment Service (LES): A participatory model for gifted adolescents.
- The Purdue Three-Stage Enrichment Model for Gifted Education at the Elementary Level.
- The Purdue Secondary Model for Gifted and Talented Youth.
- The Grid: A model to construct differentiated curricula for the gifted.
- The SOI System for Gifted Education.
- The Enrichment Triad/Revolving Door Model: A schoolwide plan for the development of creative productivity.
- The Secondary Triad Model.
- Cultivating simultaneous student growth in both multiple creative talents and knowledge.
- Talents unlimited: applying the multiple talent approach in mainstream and gifted programs.
- The Enrichment Matrix Model.
- Fostering effective independent learning through individualized programming.
- The Cognitive-Affective Interaction Model for Enriching Gifted Programs.

- The cognitive and affective taxonomies.
- The basic structure of a discipline.
- Discussions of moral dilemmas.
- Creative problem solving.
- Teaching Strategies Program (Maker, 1982; Renzulli, 1986).

A criticism made of many of these models is that, with very few exceptions, they fail to deal with the total curricular experience and usually consider only one aspect of instruction and learning—whether to select and implement a particular system or model depends on the congruence between the conception and assumptions underlying the model and the particular goals of the school's program.

In the early 1920s the reform movement had a great impact on reshaping instructional and educational methods in schools. According to this movement education should be child centered. One of the most prominent reformers was Maria Montessori. Her educational system has been and continues to be a great help in optimizing individual development. Montessori-education like other individualized programs (Jenaplan, Daltonplan) has never so far explicitly formulated a gifted program. But in reality Montessori-education realizes the core principles of gifted education: The level and pace of individual ability determines the content and speed of the individual student. These "hidden" gifted programs should be made explicit and be made better known to parents and teachers.

Another issue regarding a curriculum for the gifted is that of the balance between cognitive and affective development. Most of the focus of curriculum design for the gifted is on cognitive development: the stimulation of problem-solving and thinking skills and academic and intellectual growth. Far less attention is given to the affective development of the gifted (the feelings, values, motivation, attitudes, morality, self-concepts) although a few of the models do attend to this domain (Dixon, Meyer, & Hardy, 1986). Only a few models—e.g., Williams' (1986) Cognitive–Affective Interaction and Betts' (1986) Autonomous Learner Model for the Gifted and Talented—have the affective domain as a major focus. Passow (1992, p. 224) has observed that:

> Regardless of their specific interests or degree of talent, a [curriculum] should foster self-direction and independence, intellectual and emotional self-reliance, self-set goals and a love of learning. It should stimulate a desire to create and experiment with ideas and things. It should nurture an understanding and appreciation of one's cultural heritage. It should cultivate what Brandwein (1955) describes as persistence—a willingness "to labor beyond a prescribed time . . . to withstand discomfort . . . to face failure" (p. 10) and questing—"a dissatisfaction with present explanations of aspects of reality" (p. 11).

The processes of nurturing the affective development of the gifted has several dimensions: instructional, counseling and environmental. From a curricular and instructional perspective, every discipline or subject has the potential for enhancing affective growth through self-awareness, sensitivity to others, understanding, empathy, esthetic appreciation, interpersonal understandings and moral values (see Chapter 29). From the counseling perspective, gifted and talented students face particular affective problems of a personal and interpersonal nature for which guidance and support are needed. From the environmental perspective, classroom, school and community climates are powerful influences on student behavior and learning, especially on affective development: self-concepts, attitudes, motivations, task commitments, (see Chapters 28 and 29). As educators of the gifted have become more concerned with the affective dimensions nurturing talent, more attention is being given to the curricular, guidance and climate for learning as these have an impact on affective development.

Still another dimension of curricular significance for the gifted focuses on interdisciplinary study. Curriculum content, Passow (1982) has suggested, should "include more elaborate, complex and in-depth study of major ideas, problems and themes that integrate knowledge with and across systems of thought" (p. 7). Curricula which are organized across themes or problem areas, using interdisciplinary approaches of a high order, drawing on knowledge and multidisciplinary resources appropriate to deriving understandings and gaining insights into those problems and themes are increasingly being perceived as germane to the education of the gifted (see Chapter 19).

Another curricular issue focuses on the suitable balance between individual and group activity for the gifted. Independent study and individualized instruction are widely advocated for gifted students: opportunities to pursue their own interests, concerns, problems and preoccupations on their own and by themselves. On the other hand, in addition to the learnings which come from interaction with students with a wide range of abilities, there is a good deal of research regarding the stimulation and exhiliration that come from interaction with other equally able gifted students. A differentiated curriculum for the gifted must provide opportunities for independent study as well as group learning activities depending on the particular goals and objectives being pursued.

Dishart (1980) is critical of curricula which must be either enriched or accelerated in order to be used with gifted and argues:

> Educational programs for the gifted should be based upon the needs of the individual learners rather than upon making up for the program deficits in a curriculum for the nongifted. There is a resultant difference between enriching or accelerating an inadequate and inappropriate curriculum and designing an adequate and appropriate curriculum for use in the first place (p. 26).

As the Year 2000 approaches, educators of the gifted

are taking heed of the concept of differentiated curricula which are "adequate and appropriate . . . in the first place". Educational planners are giving more thoughtful attention to the creation of a community of learners, to problems of sequence and articulation over the school years, to the devising opportunities for individualized/independent study, to meaningful implementation of the concepts of acceleration and enrichment and to integrating curricular elements for the gifted with the total curriculum.

Moreover, increasingly planners are beginning to think in terms of curricula and learning experiences which extend beyond the classroom and into the community, using a broad array of relevant resources, both school and nonschool. Mentorships and apprenticeships, for example, relate students with talent potential to talented adults who provide learning opportunities and serve as role models (see Chapter 42).

There is, as yet, no certainty regarding appropriate and adequate curricula for the gifted but gradually the "busy work" and "fun-and-games" approaches to educating the gifted are being eliminated and there is increasing understanding and congruence between operating concepts of giftedness, goals and objectives and the design of learning opportunities and learning environments.

Extracurricular Programs and Experiences

Learning experiences outside school are often necessary and in any case very useful for the development of giftedness and talent, especially creative productivity. Because such individual activities are self-regulated learning processes, special interests are supported in an optimal way. Community facilities and opportunities for individualized leisure time activities are very important not only for the development of domain-specific competencies (e.g. see Chapters 22 and 23) but also for the enhancement of self-concept and task commitment. Furthermore, leisure time activities offer chances for many relationships between gifted peers, which are important for the development of giftedness and talent. Therefore extracurricular programs like after school working groups, Saturday and summer programs or academics, olympics, competitions, etc. (see Chapter 33), provide gifted adolescents with a great variety of challenging experiencies (Feldhusen, 1991).

Such learning opportunities are especially supportive for the development of gifted or talented girls and women (see Chapter 40). Inasmuch as the risk of limited sozialization experiences, e.g. in the field of technology, is quite higher in gifted/talented girls than in boys, balancing leisure time activities are necessary for girls in such fields. An affiliated problem is the lower participation quota in competitions of girls in comparison with boys. Hence group competitions offer useful supplementary learning experiences for girls.

Community Agencies and Institutions

As schools come to understand more about the nature of giftedness and its nurture, community agencies and institutions are being recognized as another essential element in talent development. Kough (1958) has argued that there are many specialized areas that schools can expose students to but often they cannot provide the expertise needed for developing potential to a high level as well as nonschool group and that "many of the educational functions which are directed by the schools can be enhanced by community activites" (p. 378).

Research and experience support the idea that education, socialization and enculturation take place in many different settings and that many agencies and institutions, besides the school, teach. A second important idea is that there are personnel and material resources in nonschool agencies which can enrich the learning opportunities and thus challenge gifted and talented students far beyond that which the school can do (see Chapter 43).

Community agencies and institutions often have far more appropriate, up-to-date and state-of-the-art equipment than those that the school can provide. Such agencies and institutions are not only sources for much needed materials and equipment but, equally if not more importantly, they are the places where practising specialists—scientists, artists, musicians, researchers, artisans, technicians, media personnel, writers, government leaders, other professionals and other creative and productive individuals—are available who can serve as mentors, teachers and role models for young persons with talent potential (see Chapter 42).

Increasingly, the human and material resources of nonschool individuals and groups are being used to extend educational opportunities and challenges for the gifted and talented. These resources are now recognized as not being simply enriching but, in many cases, they are absolutely essential and critical in talent nurturing efforts. A sound mentoring experience, for example, can have a significant impact on both the cognitive and affective growth of the child.

Administrative and Organizational Arrangements

Curricula may be implemented and learning opportunities for the gifted may be provided in a variety of settings. These settings can be in or out of school, within regular classes, special classes or special schools, part-time or full time, beginning at and available in every grade level.

Special groups may be organized on the basis of ability, achievement, aptitude, interests or motivation and may involve students or the entire school population. Groups may meet for a few minutes a day or for the entire school day. The groups may be organized for a variety of purposes such as practice for debate or academic bowls, for drama or chess. Groups may

include special classes or sections, special schools or school-within-schools.

Despite the various kinds of grouping used in providing for the gifted, the general practice—usually called ability grouping or tracking—has a long and controversial history on philosophical, psychological, sociological and educational grounds (see Chapter 32). Because ability grouping has been an issue and been studied for almost a century, there is a considerable body of research available but the controversy is hardly resolved. In the United States, ability grouping/tracking has been linked to provisions for the gifted and, from time to time, has been condemned as "elitist" and "undemocratic", hindering both equity and excellence. Currently the U.S. pendulum is swinging away from ability grouping and there seems to be a growing emphasis on cooperative learning.

Some gifted programs do separate the gifted from other students but, except for full-time special classes or special schools, complete isolation is rare. Research has indicated that, depending on the circumstances, there are positive outcomes from the stimulation of gifted students interacting with each other and the competition as well as the cooperation that occurs in those settings.

Grouping and tracking are organization procedures intended to facilitate teaching and learning. What appears to be emerging is a consensus that the issue is not one of grouping versus no grouping but rather one of *what kinds of grouping*—together with other elements of curriculum and instruction—are needed to foster optimum learning for all children, including those believed to have talent potential. A balance needs to be attained between learning experiences optimally engaged in with intellectual and creative peers and those that are best experienced with a broad mix of learners.

A variety of special schools for the gifted and talented, schools which usually have selected admissions and which provide distinctive domain specific learning opportunities, are still rare. Examples of such schools are the Bronx High School of Science (U.S.A.), The Israel Academy of Arts and Science (Israel) and the Yehudi Menuhin Music School (U.K.). In Europe there are many secondary schools for Dance, Music and the Fine Arts. In the United States there has been a growth of residential Governer's schools which select students from entire states who are gifted in specific areas: The North Carolina High School for Mathematics and Science, The North Carolina School of Fine Arts, The Louisiana School for Arts, Science and the Performing Arts and The Illinois Math and Science Academy exemplify such state supported selective special-purpose schools.

Despite the attainments of such schools, as with other forms of grouping, they continue to be controversial. The basic argument advanced for their support is that they provide the kind of stimulating environment and appropriate personnel and material resources which are not possible in any other setting. The argument against such special schools is that they are elitist, undemocratic and use scarce resources needed by other less able students. Although the issue of special schools has never been resolved to the satisfaction of all because of the deep philosophical and political differences, to the extent that the student body is inclusive of minorities and disadvantaged gifted—i.e., the equity question is dealt with, special schools and special programs appear to be more acceptable.

As the Year 2000 approaches, it seems likely that the many controversies surrounding various kinds of administrative and organizational provisions will not be resolved, essentially because they are part of the larger issue of equity and excellence. Planners of programs for the gifted will need to draw on research for support of special provisions but use these insights in the context of planning rich opportunities for learning for all (see also Chapter 31).

Socio-Emotional Development, Counseling and Guidance

Superior performance is determined by the interaction of many factors, cognitive, affective and social. The social and emotional issues, including self-concept can release or inhibit the full use of an individual's abilities (Tannenbaum, 1983; VanTassel-Baska, 1989). How an individual functions cognitively is affected by and affects the individual's affective functioning—cognitive and affective systems are congruent and interactive. Tannenbaum argues that:

> Ability alone cannot facilitate great accomplishment. It also requires a confluence of various nonintellective factors such as ego strength, dedication to a chosen field of productivity or performance, willingness to sacrifice short-term satisfactions for the sake of long-term accomplishment and many others. These traits are integral to the achieving personality regardless of the areas in which the talent manifests itself (p. 88).

Regardless of specific interests or degree of talent, opportunities are needed to foster such qualities as self-direction and independence, intellectual and emotional self-reliance, self-set goals and a love of learning, a desire to create and experiment with ideas and things—all affective behaviors. Opportunities are needed to cultivate what Brandwein (1955) called *persistence* a willingness "to labor beyond a prescribed time . . . to withstand discomfort . . . to face failure" (p. 10)—and questing "A dissatisfaction with present explanations of aspects of reality" (p. 11).

As a group, gifted children tend to be more highly motivated, often have a strong desire for self-advancement and unusual emotional depth and intensity; they tend to have higher self-concepts and stronger ego strengths; are inclined to be greater risk-takers; tend to be more sensitive to the expectations

and feelings of others; often express idealism and a sense of justice earlier and tend to be more independent, more forceful and more competitive.

By virtue of their being "different", the gifted often encounter socio-emotional problems which can become serious ones. For example, sometimes, the gifted child's cognitive development far outstrips his/her affective development and adults expect equally "mature behavior", creating problems by such expectations. Adult uncertainty about the nature of giftedness can result in their pressuring a child to conform or behave in particular ways or in their avoiding or ignoring recognition of unusual ability. Excesses in either direction can contribute to socio-emotional problems which require guidance and counseling.

Classroom curriculum and instruction can be boring and unchallenging or the classroom climate and school environment can influence student behavior and learning, positively or negatively.

Allen and Fox (1979) have categorized the affective problems of gifted children as environmental, interpersonal and intrapersonal. *Environmental* problems arise in a school setting where lack of a sufficiently interesting or challenging curriculum leaves the child felling bored, resentful, hostile or disengaged. School problems arise when mediocrity is accepted, excellence is not recognized or rewarded and superior performance is denigrated or ignored. *Interpersonal* problems stem from the gifted child being perceived as "different" by peers, teachers and adults whose consequent behavior may cause the gifted student to reject or deny his/her potential in order to become "more acceptable". Interpersonal problems may also arise when parents, teachers, counselors and other adults have unrealistic expectations regarding the gifted child's performance and behavior. The gifted child's *intrapersonal* problems are those of self-concept, self-esteem and self-acceptance which can lead either to the development of appropriate coping strategies or to developing dysfunctional behavioral responses.

In addition to these three classes of problems, the gifted child also faces problems of educational and career choice—decisions regarding higher education and professional pursuits stemming from their greater potential and higher achievements. All of these problems or potential problems call for guidance and counseling which meets the particular needs of gifted children.

The still new history of the counseling of gifted students includes few publications (St Clair, 1989). Some of them are aimed at teachers, others at the students' parents. Some publications also focus on the personality of the individual looking for counseling. Need for counseling arises directly from giftedness or talent when, for example, there is an inappropriate interaction between the gifted child and the environment. Often age-related distributions of counseling needs specific to the gifted/talented can be found: These age-related problems are frequently confounded with gender-related socialization effects (Webb, Meckstroth, & Tolan, 1984; Feger & Prado, 1986; Mönks, 1987; Stapf, 1990; Colangelo, 1991).

According to other recent statistics (e.g., Prado & Wieczerkowski, 1990; Keller, 1992) the following percentage frequencies of counseling problems—related to a German counseling clientele (Geisler, 1991)—may be illustrative of the most frequent counseling needs (see Table 1). Keller (1992), who statistically evaluated the gifted clientele of another counseling center, found

TABLE 1

Percentual Frequencies[a] of Counseling Needs Specific to the Gifted (cf. Heller, 1992b)

	Boys:			Girls:	
1)	Search for nurturance possibilities	43.7%	1)	Search for nurturance possibilities	54.5%
2)	Academic achievement problems	31.3%	2)	Identification of giftedness	45.5%
3)	Identification of giftedness	31,0%	3)	Educational counseling	24.2%
4)	Boredom at school	22.3%	4)	Skipping a class	21.2%
5)	Doctor's recommendation problems	12.6%	5)	Academic achievement problems	15.2%
6)	Skipping a class	11.7%	6)	Boredom at school	12.1%
7)	Behavior problems	11.7%	7)	Doctor's recommendation	6.1%
8)	Discrepancy between intellectual and social development	10.7%	8)	Descrepancy between intellectual and social development	6.1%
9)	Educational counseling	8.7%	9)	Psychological problems	6.1%
10)	Concentration problems	4.9%	10)	Discrepancy between intellectual and motivational development	3.1%

[a]Multiple listings possible

a quite similar picture. School career planning and individual nurturance of the gifted students were the most frequent needs. Behavior problems only made up about 20%, in contrast to the findings of Müller (1992) who interviewed parents of gifted students. In Müller's study the most frequently reported needs were: (1) behavior problems, (2) study and achievement difficulties, (3) lack of cognitive challenge. However, parental causal attributions of counseling needs do not necessarily reflect the reality as seen from the picture in Table 1. Also in a cross-national perspective we must consider particular differences in focus on the counseling needs (e.g. reported by Webb et al., 1984).

It is particularly interesting to look at the gender differences indicated in the table. Behavior problems and developmental discrepancies are observable in boys more frequently than in girls, although less frequently reported than in the American literature. The number of gifted underachievers is also significantly higher in boys than in girls (see Chapter 37). What can we conclude from this for the counseling of gifted students?

The task of counseling the gifted must be oriented toward the individual needs and thus toward concrete counseling problems and at the same time toward the goal of optimal development of the student. In this sense, the counseling of adolescents is very important in supporting their identity formation. The essential importance of counseling in a sufficient program for gifted is emphasized by Silverman (Chapter 36). Silverman reminds us that the development of gifted children is frequently asynchronous. Such uneven development leads to greater vulnerability for the gifted, especially for the highly gifted. Such children need counseling to assist them in dealing with their intense emotional lives, their heightened awareness and their difficulties in fitting in with age peers and rigid educational systems. Silverman postulates that the aim of counseling is not just the remediation of problems: its main goal should be guidance toward self-actualization.

Those being served by counseling services for the gifted include also the gifted's parents, teachers and other important socialization agents including siblings and peers. Parents and teachers of the gifted often need support because of the specific/unique needs of the gifted. Although scholastic counseling and individual psychological counseling are sometimes indistinguishable because of the inevitable overlapping of these two areas, they can be differentiated as follows: (1) *Scholastic counseling* includes problems of identification, nurturance or cognitive learning and achievement, appropriate classes as well as acceleration measures such as special schools, early admittance to school and skipping grades, extracurricular enrichment activites and guidance toward appropriate post-secondary education; (2) In *individual counseling*, issues such as those listed in Table 1 are prominent.

One must always take the gifted individual's learning and thinking characteristics, interests and social-emotional needs into account (see Chapters 26–28). One should take the gifted's natural superiority in information processing into consideration when developing programs for the gifted in order to avoid boredom and loss of motivation. An extended period of non-challenging education frequently leads to later difficulties, usually when the task difficulty increases rapidly during secondary education and the gifted elementary school child has not learned how to learn, study or experience academic failure or frustration.

For counseling and nurturing talented girls in particular see Detzner and Schmidt (1986), Wieczerkowski and Prado (1990), Kerr (1991a,b), Beerman et al. (1992).

Counseling services need to be appropriate and adequate also for gifted students with learning disabilities and for those with physical handicaps. Counseling agents should also be trained to deal with populations too often underrepresented in gifted programming such as racial and ethnic minorities, the disadvantaged and those with limited language ability in their current land of residence. Increasingly, all over the world, perhaps especially in the United States and in Western Europe, there are students with the added psychological and/or economic handicaps that come from being uprooted from their original homeland. (Additional counseling concerns are dealt with in Chapters 36–41.)

An integrative model of counseling the gifted has been presented by Perleth and Heller (see Figure 1). The model explicates the necessity for cooperation between various counseling agents (school psychologists, school and vocational counselors, social workers, teachers of the gifted) and institutions (school, counseling agencies, research institutes) in order to meet the challenge of counseling the gifted and talented.

This model is certainly still a far cry from the reality of cooperation between research and education of the gifted. But it makes clear the position of guidance and counseling of the gifted within the context of gifted research and practical requirements of education of the gifted in the school and outside. Thus, it serves as an integrating function for the further development in this field. Particular attention should be paid to the mutual nourishing of research topics and methods and the unsolved practical counseling problems. It is very important to strengthen the training of those involved in counseling students by including the area of giftedness in developmental, educational and clinical psychology. Counseling personnel should be able to identify and counsel gifted students. There is also a need for inservice counselor training programs (Milgram, 1991).

As the Year 2000 nears, it seems likely that increased attention to the mental health and affective development of the gifted will result in making available group and individual guidance and counseling appropriate to the particular needs of the gifted and talented. As educators become more sensitive to the affective characteristics and needs of the gifted, they will design and adopt educational, counseling and socializing experiences to meet those needs.

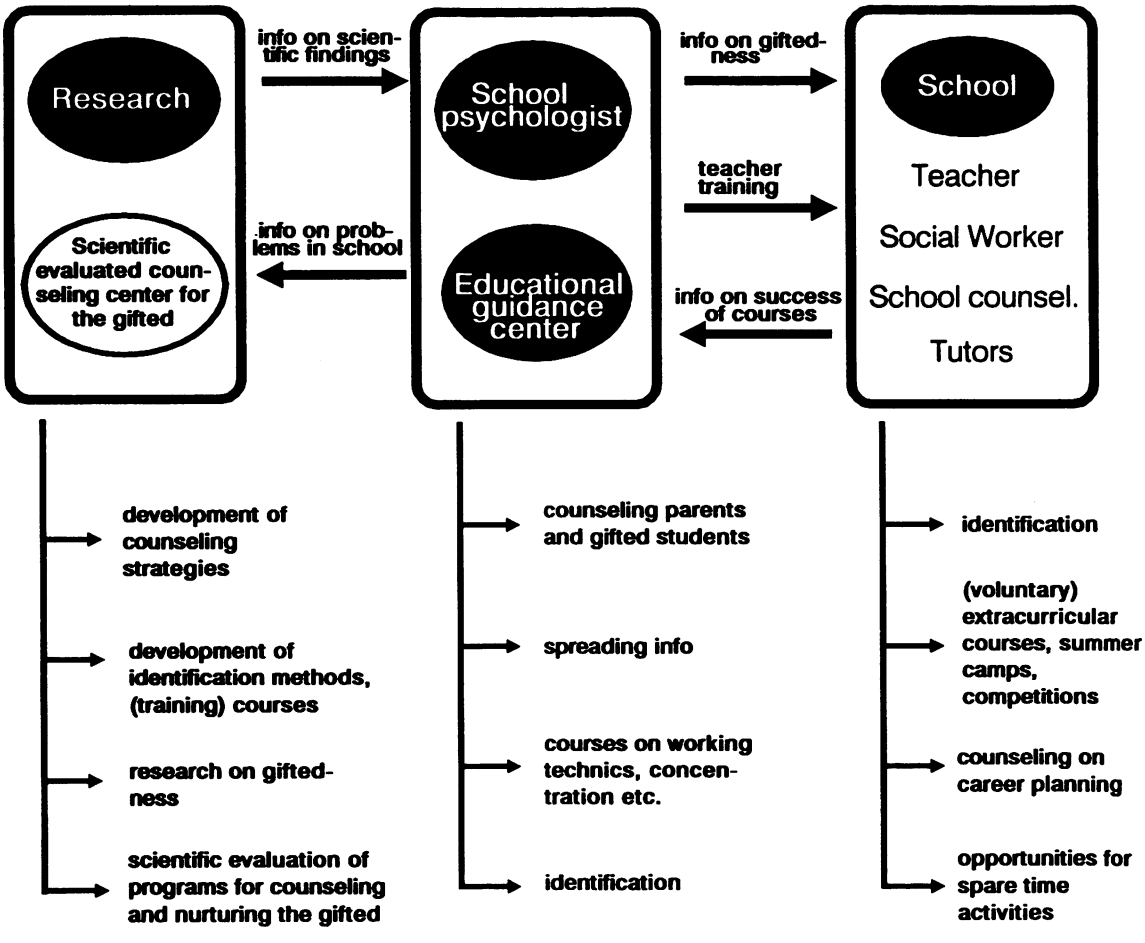

FIGURE 1. Mediating model of counseling the gifted students (cf. Perleth & Heller, 1992, p. 376)

Creativity

In the lexicon of gifted education, the term *creativity* looms large (see Chapter 30). For some researchers, creativity is a basic component of giftedness, a characteristic or trait to be assessed in the process of identifying and selecting gifted and talented students. Some writers use the term as synonymous with giftedness. For others, creativity is a trait to be nurtured if talent potential is to become talented performance. Some researchers write of creative scientists, creative mathematicians or creative artists, for example. Others use the term creativity as synonymous with productive thinking, divergent thinking, critical thinking and even problem solving and view it as a quality to be stimulated and nurtured.

Clark (1992) suggests that "creativity involves the synthesis of all functioning and still more. It includes a spark from another dimension" (p. 49). To Clark,

> *Creativity* is more than intelligence and results from the synthesis of all of our brain's functions, the knowing that is processed internally and that which comes to us from outside our system. At least four areas of creativity are being studied: creativity as rational thought, as unique products, as high levels of mental health and as intuitive spark. We must understand all these areas if we are to understand creativity, for it is the integration of all these abilities that allows us to create. Creativity is a holistic concept (p. 68).

A number of theories of the nature of creativity have been advanced—e.g., psychoanalytic, humanistic, personal attribute, developmental stage and right and left brain, to cite a few (Tannenbaum, 1983). These theories attempt to explain the nature of creativity—some in terms of creative processes or abilities, others in terms of creative potential.

Research on creativity has focused on understanding its nature and functioning, on procedures for assessing its nature and on ways of stimulating or nurturing it. Each focus has raised a number of issues. One perennial issue

is the relation between intelligence and creativity—are they distinct and different or are they related and, if so, how? For example, Guilford (1968) theorized that the structure of the intellect consists of 120 abilities and that some of these operations, contents and products are closely related to aspects of creativity. Guilford's work became, as Stein (1986) observed "not only the starting point for those who study the intellect and those who wish to develop creativity tests, but it has also become a model for curriculum development.

A number of test batteries have been developed to identify creativity and these have been replete with controversy. One kind of problem has to deal with the validity of such tests. Tannenbaum (1983), for example, asserts that: "For a test to have good face validity, its content must resemble in some way the essential phenomenon it is measuring. This would be especially difficult to demonstrate in tests of creativity, considering the multidimensionality of the concept, how it develops in the human psyche and the mental processes involved in activating it" (p. 270). There have been a number of batteries of tests of creativity developed, and these have their supporters and their critics. While numerous studies have been done on many such batteries , as Tannenbaum notes, "from the research produced thus far, it is impossible to draw a clear picture about the relationships among tested creativity, IQ and achievement" (p. 293).

Efforts to nurture creativity fall into two main categories: one is the development of a number of "programs" for in-school or extracurricular use, and the second is the adaptation of the regular curriculum in order to stimulate the creative processes. Among the former, for example, are programs aimed at direct instruction to nurture creativity—such as the Meyers–Torrance Workbooks, the Purdue Creativity Training Program, Parne's Creative Problem Solving and Williams' Classroom Ideas for Encouraging Thinking and Feeling, to cite a few. Extracurricular programs are exemplified by the Future Problem-Solving Program and the Odyssey of the Mind, both national competitions designed to stimulate creativity. The latter involve a variety of instructional strategies—e.g., differentiated assignments, independent projects, real-life problems—which require students to deal with the regular curriculum in novel and innovative ways resulting in the stimulation of the creative processes. A basic issue posed is the extent to which these various school-centered curricula and activities actually stimulate creativity—however conceptualized and defined—and whether there is a carry-over to fulfillment of potential beyond the classroom. That is, are children who experience these programs and engage in these activities "more creative " in their fields of endeavor as adults?

Tannenbaum (1983) argues that:

> The large body of research on creativity is valuable in the sense that it has alerted educators of the gifted to locate children who are proficient in divergent thinking and to emphasize these though processes in the classroom. However, as a psychological phenomenon, it is hard to evaluate because there is no universal agreement on how to recognize or measure it (p. 324).

Clearly, issues concerning the assessment, identification and nurturing of creativity continue to involve both researchers and practitioners. In the coming years, it is likely that the theories and studies of creativity—its nature, assessment and nurture—will lead to a better understanding of the creative process and its relation to gifted and talented behaviors.

Underachievement

A report by the Fund for the Advancement of Education (1957) framed the problem of underachievement as follows:

> Despite the great strides made by American education over the last 50 years, we are still far-short of the goal of enabling and encouraging every young person to develop his full potential. The resulting waste of rich human resources is enormous and is deeply rooted in our educational system, right down to the earliest grades. We must therefore attack the long-run problems of talent supply primarily through our school and colleges (p. i).

The phenomenon of underachievement is both a puzzling and a challenging one—puzzling in its complexities and challenging in the difficulty in reversing or overcoming it (see Chapter 37). Underachievement is essentially a school-centered concept—i.e., most definitions refer to a serious gap between predicted and actual school achievement. As Raph, Goldberg, and Passow (1966) have noted: "The broadest definition of underachievement among the more able would refer to all those who, for whatever reasons, fail to develop their potentialities maximally. Only if it were possible to assess potential with sufficient accuracy to enable prediction of performance for all individuals would such a definition become operationally meaningful" (p. 2). Clearly, the accuracy of assessment and predictions has not reached that stage. Thus, Raph et al. (1976) suggested a much narrower definition of underachievement to include:

> intellectual or academic ability on intelligence and aptitude tests but fail to develop their abilities . . . all those who rank in the upper third of the population in ability, but who do not graduate from high school, do not go on to college, or drop out of college before completing their studies, thus failing to acquire the academic preparation needed for the high level jobs they are potentially able to fill (p. 3).

Researchers and practitioners have used variations of this definition but almost all have focused on some

variant of the discrepancy between actual attainment and expected attainment. Tannenbaum (1983) observes that "studies of underachievement show variations not only in symptoms but in etiology as well" (p. 224).

Explanations of the nature and causes of underachievement vary considerably. They include what Raph et al. (1966) called "phenomenological factors related to the underachiever's self-concept, self-ideal, motivation and adult models" (p. 181) as well as a variety of home and family factors such as parental pressures, expectations and attitudes as well as home climate and support (Butler-Por, 1987). Other researchers focus on school programs and classroom conditions as well as personality characteristics (Rimm, 1986; Supplee, 1990; Whitmore, 1980).

As the Year 2000 approaches, the seriousness of the phenomenon of underachievement and its effects on individuals and society are being recognized and better understood. Because the probable causes of underachievement are so diverse, the intervention strategies proposed for reversing it are diverse as well. Suggested strategies include: changing the classroom climate to affect "the teacher's values, expectations, educational aims and her ability to establish accepting and supportive relationships between her and the children among the class members" (Butler-Por, p. 103); "systematic curriculum work in basic subjects" together with "stimulating curricula experiences" and curriculum enrichment (Butler-Por, pp. 108–109); focused counseling and guidance; and mentors and role models from the community and school.

Underrepresented Populations—Gifted Minority and Disadvantaged

Over the years, the under-representation of minority groups in programs for the gifted and in various fields of specialized talents has been a real concern for educators and society at large all over the world (see Chapter 39). The minority groups which have been of particular concern in the United States, include African Americans, Hispanic, Native Americans, Asian Americans and the disadvantaged—i.e., children who live in poverty. Some four decades ago, the Conservation of Human Resources Project observed:

> Superior performance in any society is limited by the number of individuals with a high order of intelligence but in our society the number of such individuals could be substantially increased through improving the opportunities for members of the lower socioeconomic classes to become interested in and acquiring a good education (Bray, 1954, p. 51).

Research has not contradicted the belief that talent potential is actually equally distributed across lines of race, class and socioeconomic status.

As studies have shown, it is not simply a question of becoming "interested and acquiring a good edcuation" but rather one of removing a variety of barriers to identifying and nurturing disadvantaged and minority gifted. Passow (1986) identified these barriers as including, but not limited to the following:

- Attitudes and expectations of educators who often do not believe there is giftedness in culturally different populations.
- Over-reliance on intelligence tests as the prime criterion for identification.
- A rigid learning environment and an inflexible curriculum which fail to take into account the individual needs and learning styles of these populations.
- Failure to provide the necessary general education, basic skills foundation and learning-how-to-learn skills which are required for the further development of specialized talents.
- Failure of the schools to understand the significance of a mother tongue other than English, denigrating language habits and speech patterns and failing to provide bilingual education where needed.
- Failure to create a learning environment and a climate for learning in which attention is given to both the affective and cognitive elements or talent development.
- Failure to select, assign and provide appropriate inservice education to teachers, counselors, administrators and other educators who must create the conditions for learning and who, by serving as the gatekeepers for programs and services are critical in talent development.
- Failure to help culturally different students enhance their self-esteem and recognize that systematic and long-term discrimination contributes to lower self-perceptions (pp. 152–155).

In countries around the world, there have been numerous programs aimed at increasing the participation of minority and disadvantaged populations in talent identification and talent development programs. These are generally focused on the perceived barriers and are aimed at using more appropriate multiple techniques and procedures in the identification processes, designing curricula and instructional strategies accelerating and enriching educational opportunities for underrepresented groups, providing appropriate counseling and other affective supports, rendering guidance to families and building support, involving community personnel as a way of extending resources and enlarging learning opportunities, developing culturally pluralistic, multicultural programs, creating a "climate for excellence" in the school and community. Several countries have extended the school day and the school year in order to provide enrichment experiences.

In the United States, the Jacob K. Javits Gifted and Talented Students Education Grants Program provides financial support to help build a nationwide capability in meeting the special education needs of gifted and talented students in elementary and secondary schools. Since its passage in 1988, at least half of the appropria-

tions have gone to proposals designed to serve gifted and talented students who are economically disadvantaged.

An outstanding example of serving such populations is the Inanç High School in Istanbul. This school—for academically gifted students from all parts of Turkey—provides a free quality education for children between the ages of 11 and 18, who are economically disadvantaged.

Currently, there is a clear and widespread recognition that minorities and disadvantaged populations around the world represent the largest reservoir of undeveloped potential available and the identification and development of this talent potential has become especially apparent. The driving force behind the efforts to increase the representation of minorities and disadvantaged populations in the programs for the gifted is essentially one of achieving the twin goals of equity and excellence.

Parents and Families

The family and parents constitute a child's first school (see Chapter 38). Research has shown that parents and families play a particularly important role in the development of the gifted child—especially in the affective domain, in the nurturing of self-concepts, values, attitudes, motivation, interests and commitment. For example, Bloom's (1985) study of 120 "immensely talented" musicians, artists, athletes, mathematicians and scientists" found "strong evidence that no matter what the initial characteristics (or gifts) of the individuals, unless there is a long and intensive process of encouragement, nurturance, education and training, the individuals will not attain extreme levels of capability in these particular fields" (p. 3). Bloom found certain family values in all four talent groups studied: the value of achievement and the importance of doing one's best whatever the task was very important in the subject's homes. The parents' commitment to the productive use of time, the introduction of the child to the talent field, parental encouragement, the provision of resources and materials, the arrangement of learning opportunities were very significant in the child's ultimate achievement. As Bloom and his colleagues concluded:

> The parents' interest and participation in the child's learning contributed significantly to his or her achievement in the field. We find it difficult to imagine how these children could have gotten good teachers, learned to practice regularly and thoroughly and developed a value of and a commitment to achievement in the talent field without a great deal of parental guidance and support. The role of the home in supporting the long process of talent development is only one piece of the picture, but it is a crucial one (p. 476).

Parenting of gifted children involves many of the same issues, problems and challenges which arise in the parenting of any child—but much more. Fine (1977) has observed:

> There is a need for parents to be very self aware regarding their personal investments in the child and also to maintian an accurate and balanced perception of the child as a growing person. Gifted and creative children need parents for emotional support and encouragement, for value and behavioral guidance and to set realistic goals; it is appropriate and important that parents of gifted and creative children in fact do fulfill a parenting "contract" with their children (p. 500).

Research has found that having a gifted child in the family affects relations among family members. Coleman (1985) has described the effects as follows:

> The presence of a gifted child in a family can affect relationships among family members and their thoughts about their relationships. Changes are a product of the family rearranging itself to deal with a member who presents a behavioral pattern that departs from typical expectations. . . Once a child is suspected of being different, parental concerns begin to surface. These concerns become enhanced and even exaggerated as the differences between the gifted and other children become clearer and the parents feel the need to respond in some special way. . . The intrusion of official recognition by the school can create concerns for the family that were previously dormant or non-existant (p. 126).

Mentally and physically handicapped children have had strong advocacy for many years from their parents as well as from other concerned citizens. However, the gifted have a more recent and less effective advocacy. Parents and others who perceive the needs of gifted children have sometimes been hesitant to ask support for those who "have it all." Fortunately, parents have been aided by organizations such as the National Association for Gifted Children (NAGC) in the United States, the European Council for High Ability (ECHA), the World Council for Gifted and Talented Children (WCGT), parent organizations in several European countries and groups on the more local level—organizations who have developed programs of advocacy (see Chapter 52). NAGC, having a 40 year history, has developed a strong legislative branch and has obtained the attention and support of legislators. (This support led to the Jacob Javits Grant which currently funds the National Research Center at four state university sites.) Parents are encouraged to participate in these local, regional, national and international organizations. Thus, parental concerns can be addressed, their understanding increased and their voices strengthened.

As the Year 2000 approaches, there is increased recognition that the identification of talent and its nurture is not a task which can be accomplished by the school alone. Research and experience have made clear that parents and families are essential in

the identification and fostering of giftedness but, just as the school cannot fully develop potential without the nurturance that takes place in the home, parents cannot play out their roles fully without the nurturance that occurs in the school. The role of parents and families in talent development is being acknowledged and studied. Increasingly, meaningful two-way communication channels are being established to facilitate mutual support betwen home and school. Counseling and advising services are being provided—not just the schools providing services to the parents and family but mutual interaction as parents provide information about the child from which the school can benefit as well.

Needed Research and Related Topics

Finally, some state of the art consequences are formulated. The following topics seem to be of the utmost importance for research on giftedness and talent (for greater detail see Chapter 3):

(1) Increase in *basic research*: Cognitive science studies (see Chapter 8) are needed as a supplement to psychometric studies, e.g., for prediction of excellence (see Chapters 4 and 17). Also longitudinal studies of giftedness are indispensable to uncover causal explanations of intra- versus interindividual differences in changes over the time and of the interactions of developmental variables (Chapter 9). Increasingly interdisciplinary research projects including neuro-psychological and biological approaches (Chapter 7) or genetic studies (Chapter 6) as well as cross-national/cultural studies should continue to be intensified, expecially to examine the generalizability or universal validity of many theories in the field. Quasi-experimental and qualitative studies are also increasing our understanding of causes and of developmental changes. Without such basic scientific findings, applied research will wither and the quality of gifted education will be affected in the near future.

(2) Deficiencies in *applied research*: Elaboration of multidimensional and multiple theory based identification strategies as well as process-diagnostic approaches to the diagnosis of giftedness are needed for practical tasks of gifted counseling and education (see Chapters 11–15 and 27). Further desired ends are the development of intervention programs—and prevention measures—for balancing gender-specific differences in cognitive abilities and performances, especially in the fields of mathematics, "hard" sciences and technology, and new conceptions and methods of evaluating school and extracurricular programs.

There is a continuing evolution in the creativity programs from emphasis primarily on divergent thinking in the 1950s and 1960s to models including a wide range of dynamic and expanding conceptions including critical thinking and varied abilities. Most creativity programs are still based on the older, limited models. Hence existing programs and curricular materials should be rethought in light of new concepts, such as Simonton's Chance Configuration Theory (1988), or Sternberg's Investment Theory (Sternberg & Lubart, 1991). It seems especially important to revise one-sided training programs based on promotion of divergent thought processes but neglecting mediation of knowledge (Weisberg, 1992). Investigations of the expertise–novice paradigm could provide useful information to domain-specific and (domain-independent) concepts of creativity (see Chapter 16). Additionally, the life-span approach to exceptionality and the study on late-life potential (cf. Simonton, 1993) should be included in the study of creativity.

Last but not least, more interest needs to be dedicated to the evaluation of new educational gifted programs and of counseling or support measures. In connection with evaluation, problems arise concerning the qualification of teachers, counselors and other gifted education related personnel (Chapter 35).

Real progress in knowledge, which provides a theoretical basis to practice, can be expected only in the long run. Thus, applied research can often serve only to optimize pragmatic procedures. More important is the demand for careful evaluation of concrete identification and effective gifted methods and curriculum. These measures, of course, always depend on value decisions and aims. These values should be explicitly taken into account in corresponding evaluation models. Well planned evaluation can have the positive side-effect of bridging the often criticized gap between scientific research and educational practice (for greater details see Chapter 34). Progress in knowledge from giftedness research is closely connected with material and personnel resources. Internationally these are quite differently distributed (see Chapters 44–51). In the U.S.A. and a few other countries, there are basic training programs for future expert personnel in the field of gifted education. In Europe and in many other countries around the world, inservice training programs dominate, e.g., for teachers and/or counselors. As far as we know, special gifted qualification programs for scientific research personnel are still missing. Hence post-graduate (doctorate) programs are necessary for recruiting the ablest junior scientists into the field of giftedness research. Unquestionably, the scientific and practical outcome of giftedness research is highly dependent on the level of qualification of the scientists working in this area.

On the other hand, "efforts to increase connections between studies of giftedness and mainstream psychological and educational research" (Jackson, 1993, p. 46) are necessary, because most mainstream researchers ignore or pay little attention to gifted journals. "However, studies of giftedness have contributed to mainstream theory and may play some special roles in theory development. Strategies for overcoming barriers to further integration with mainstream research are proposed" by Jackson (1993, pp. 46–50).

Conclusion

As the Year 2000 approaches, there are important advances to anticipate challenging tasks in Gifted Education. Most significant are the increasing tendencies toward interdisciplinary communication in research and practice, cross-cultural research and sharing of conceptions and practices and the continued tendency to perceive giftedness from a developmental perspective. There is evidence of evolving interdependence of research and practice, and we continue to press for greater understanding and awareness of giftedness by highly trained researchers.

The emergence of interdisciplinary approaches to the study of giftedness and related fields is a strong and promising trend. In reflection of a new world order there is increasing cross-cultural research and shared understanding. Internationally there is an increasing awareness of the special needs of gifted students and broader understanding of identification methods. Thus, this handbook may enhance the exchange of information and experience of researchers and practitioners both in the gifted field and in the overall educational field. With encouraged and enlightened teachers, administrators, counselors and parents, gifted young people will more probably be enabled to develop fully their potential and their own contributions to the world.

References

Alan, S. D., & Fox, D. K. (1979). Group counseling of the gifted. In J. H. Orlloff (Ed.), *Beyond awareness: Providing for the gifted.* Falls Church, VA: Northern Virginian Council for Gifted/Talented Education.

Anastasi, A. (1958). *Differential psychology* (3rd edn). New York: MacMillan.

Beerman, L., Heller, K. A. & Menacher, P. (1992). *Mathe: nichts für Mädchen? Begabung und Geschlecht am Beispiel von Mathematik, Naturwissenschaft und Technik* (Mathematics: nothing for girls? Gender-specific talents in Math, Natural Sciences and Technology). Bern: Huber.

Betts, G. T. (1986). The autonomous learner model for the gifted child. In J. S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented* (pp. 27–56). Mansfield Center, CT: Creative Learning Press, Inc.

Bloom, B. S. (Ed.) (1985). *Developing talent in young people.* New York: Ballantine Books.

Brandwein, P. F. (1955). *The gifted child as future scientist.* New York: Harcourt.

Bray, D. W. (1954). *Issues in the study of talent.* New York: John Wiley & Sons.

Butler-Por, N. (1987). *Underachievers in school.* New York: John Wiley & Sons.

Clark, B. (1992). *Growing up gifted: Developing the potential of children at home and at school* (4th edn). New York: Merrill.

Colangelo, N. (1991). Counseling gifted students. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 273–284). Boston: Allyn and Bacon.

Coleman, L. J. (1985). *Schooling the gifted.* Menlo Park, CA: Addison-Wesley Publishing Co.

Detzner, M. & Schmidt, M. H. (1986). Are highly gifted children and adolescents especially susceptible to anorexia nervosa? In K. A. Heller & J. F. Feldhusen (Eds.), *Identifying and nurturing the gifted. An international perspective* (pp. 149–162). Toronto: Huber Publ.

Dishart, M. (1980). The gifted and talented: Their education and development. *Educational Researcher*, **9**, 26–27.

Dixon, B., Meyer, J., & Hardy, A. (1986). *Reaching the gifted: A re-source book for affective development.* Toronto, Canada: Ontario Institute for Studies in Education.

Feger, B., & Prado, T. M. (1986). The first information and counseling center for the gifted in West Germany. In K. A. Heller & J. F. Feldhusen (Eds.), *Identifying and nurturing the gifted* (pp. 139–148). Toronto: Huber Publ.

Feldhusen, J. F. (1991). Saturday and Summer Programs. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 197–208). Boston: Allyn and Bacon.

Feldman, D. H. (1982). Editor's notes. Developmental approaches to giftedness and creativity. In W. Damon (Ed.), *New directions in child development* (Vol. 17). San Francisco, CA: Jossey-Bass, Inc.

Fine, M. J. (1977). Facilitating parent-child relationships for creativity. *Gifted Child Quarterly*, **4**, 487–500.

Fox, L. H. (1979). Programs for the gifted and talented: An overview. In A. H. Passow (Ed.), *The gifted and the talented: Their education and development* (pp. 104–126). 78th Yearbook, Part 1, National Society for the Study of Education. Chicago: University of Chicago Press.

Fund for the Advancement of Education (1957). *They went to college early.* New York: Fund for the Advancement of Education.

Gallagher, J. J. (1960). *Analysis of research on the education of gifted children.* Springfield, IL: Office of the Superintendent of Public Instruction.

Gallagher, J. J., & Courtright, R. D. (1986). The educational definition of giftedness and its policy implications. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 93–111). New York: Cambridge University Press.

Geisler, H.-J. (1991). *Beratung hochbegabter Kinder und Jugendlicher und ihrer Bezugspersonen* (Counseling gifted children and adolescents and related persons). Interim Report to the Federal Ministry of Education and Science in Bonn. University of Munich: Institute of Educational Psychology.

Goldberg, M. L. (1965). *Research on the talented.* New York: Teachers College Press.

Guilford, J. P. (1968). *Intelligence, creativity and their educational implications.* San Diego, CA: Knapp.

Heller, K. A. (1989). Perspectives on the diagnosis of giftedness. *The German Journal of Psychology*, **13**, 140–159.

Heller, K. A. (1991). The nature and development of giftedness: A longitudinal study. *European Journal for High Ability*, **2**, 174–188.

Heller, K. A. (1992a). Giftedness research and education of the gifted and talented in Germany. In F. J. Mönks, M. W. Katzko, & H. W. van Boxtel (Eds.), *Education of the gifted in Europe: Theoretical and research issues* (pp. 71–85). Amsterdam/Lisse: Swets & Zeitlinger.

Heller, K. A. (1992b). *Identifying and counseling the gifted students.* Paper (keynote) at the International Conference Europe 2000—Tendencies and Perspectives in Counselling and Guidance of the Hellenic Society of Counselling and Guidance (HE. S. CO. G.) in Athens, Greece, November 13–15, 1992. In HE. S. CO. G. (Ed.), proceedings, in press.

Heller, K. A. (1993). International trends and issues of research on giftedness. In W. T. Wu, C. C. Kuo, & J. Steeves (Eds.), *Proceedings of the Second Asian Conference on Giftedness: Growing up gifted and talented* (pp. 93–110). Taipei, Taiwan: NTNU.

Hersey, J. (1958). Wanted: A larger frame of reference. In N. B. Henry (Ed.), *Education for the gifted* (pp. 4–9). 57th Yearbook, Part II, National Society for the Study of Education. Chicago: University of Chicago Press.

Jackson, N. E. (1993). Moving into the mainstream? Reflections on the study of giftedness. *Gifted Child Quarterly*, **37,** 46–50.

Keller, G. (1992). Schulpsychologische Hochbegabtenberatung (Schoolpsychological Gifted Counseling). *Psychologie in Erziehung und Unterricht,* **39,** 125–132.

Kerr, B. (1991a). *A handbook for counseling the gifted and talented.* Alexandria, VA: American Association for Counseling and Development.

Kerr, B. (1991b). Educating Gifted Girls. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 402–415). Boston: Allyn and Bacon.

Kough, J. (1958). Community agencies and the gifted. In N. B. Henry (Ed.), *Education of the gifted.* 57th Yearbook, Part II, National Society for the Study of Education. Chicago: University of Chicago Press.

Maker, C. J. (1982). *Teaching models in education of the gifted.* Rockville, MD: Aspen Systems Corporation.

Marland, S. P. Jr. (1971). *Education of the gifted and talented.* Washington, DC: U. S. Government Printing Office.

McClelland, D. C., Baldwin, A. L., Bronfenbrenner, U., & Strodtbeck, F. L. (1958). *Talent and society: New perspectives on identification of talent.* Princeton, NJ: Van Nostrand.

Milgram, R. M. (Ed.) (1991). *Counseling gifted and talented children.* Norwood, NJ: Ablex.

Mönks, F. J. (1987). Einzelfallanalyse in der Hochbegabtendiagnostik (Casuistry in gifted counseling). *Zeitschrift für Differentielle und Diagnostische Psychologie,* **8,** 235–240.

Mönks, F. J. (1963). Beiträge zur Begabtenforschung im Kindes- und Jugendalter (Contributions to giftedness research). *Archiv für die gesamte Psychologie,* **115,** 362–382.

Mönks, F. J. (1992). From conception to realization. In F. J. Mönks, M. W. Katzko, & H. W. van Boxtel (Eds.), *Education of the gifted in Europe: Theoretical and research issues* (pp. 13–21). Amsterdam/Lisse: Swets & Zeitlinger.

Müller, E. A. (1992). Fragestellungen praktischer Schulpsychologie bei intellektueller Hochbegabung (Problems of applied school psychology concerning gifted pupils). *Psychologie in Erziehung und Unterricht,* **39,** 49–56.

Passow, A. H. (1982). Differentiated curriculum for the gifted/talented: A point of view. In S. N. Kaplan et al. (Eds.), *Curricula for the gifted* (pp. 4–20). Ventura, CA: Ventura County Superintendent of Schools Office.

Passow, A. H. (1985a). Gifted and talented, education of. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education* (pp. 2045–2056). Oxford, UK: Pergamon Press.

Passow, A. H. (1985b). Intellectual development of the gifted. In F. R. Link (Ed.), *Essays on the intellect* (pp. 23–43). Alexandria, VA: Association for Supervision and Curriculum Development.

Passow, A. H. (1986). Educational programs for minority/disadvantaged gifted students. In L. Kanevsky (Ed.), *Issues in gifted education: A collection of readings* (pp. 148–172). San Diego, CA: San Diego City Schools.

Passow, A. H. (1992). Nurturing the affective aspects of giftedness: A neglected component of talent development. In F. J. Mönks & W. Peters (Eds.), *Talent for the future* (pp. 222–226). Assen/Maastricht: Van Gorcum.

Perleth, Ch., & Heller, K. A. (1992). Results and implications of the Munich study of giftedness. In J. Kotásková (Ed.), *Psychological development and personality formative processes* (pp. 366–376). Proceedings of the 6th Prague International Conference. Prague: Institute of Psychology, Czechoslovak Academy of Sciences.

Prado, T. E., & Wieczerkowski, W. (1990). Mädchen und Jungen in einer Beratungsstelle für Hochbegabtenfragen. Ergebnisse, Beobachtungen, Erfahrungen (Gifted girls and boys as clientel of a School Counseling Center). In W. Wieczerkowski & T. M. Prado (Eds.), *Hochbegabte Mädchen* (pp. 59–80). Bad Honnef: Bock.

Raph, J. B., Goldberg, M. L., & Passow, A. H. (1966). *Bright underachievers.* New York: Teachers College Press.

Renzulli, J. S. (1982). Gifted persons. In H. E. Mitzel (Ed.), *Encyclopedia of educational research* (pp. 723–730) (5th edn). New York: The Free Press.

Renzulli, J. S. (Ed.) (1986). *Strategies and models for developing programs for the gifted and talented.* Mansfield Center, CT: Creative Learning Press, Inc.

Renzulli, J. S. (1980). What we don't know about programming for the gifted and talented. *Phi Delta Kappan,* **10,** 11–24.

Révécz, G. (1952). *Talent und Genie* (Talent and genius). Bern: A. Francke.

Rimm, S. B. (1986). *Underachievement syndrome: Causes and cures.* Watertown, WI: Apple Publishing Co.

Simonton, D. K. (1988). Creativity, leadership and chance. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 386–426). Cambridge: Cambridge University Press.

Simonton, D. K. (1993). Career paths and creative lives: A theoretical perspective on late-life potential. In C. Adams-Price (Ed.), *Creativity and aging: Theoretical and empirical perspectives.* New York: Springer, in press.

St. Clair, K. L. (1989). Counseling gifted students: A historical review. *Roeper Review,* **12,** 98–102.

Stapf, A. (1990). Hochbegabte Mädchen: Entwicklung, Identifikation und Beratung, insbesondere im Vorschulalter (Gifted girls). In W. Wieczerkowski & T. M. Prado (Eds.), *Hochbegabte Mädchen* (pp. 45–58). Bad Honnef: Bock.

Stein, M. I. (1986). *Gifted, talented and creative young people: A guide to theory, teaching and research.* New York: Garland Publishing Inc.

Stern, W. (1916). *Psychologische Begabungsforschung und Begabungsdiagnose* (Psychological giftedness research and identification of the gifted). Leipzig, Germany: Teubner.

Sternberg, R. J. (1986). A triarchic theory of intellectual giftedness. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 223–243). New York: Cambridge University Press.

Sternberg, R. J., & Davidson, J. E. (Eds.) (1986). *Conceptions of giftedness.* New York: Cambridge University Press.

Sternberg, R. J., & Lubart, T. (1991). An investment theory of creativity and its development. *Human Development,* **34,** 1–31.

Supplee, P. L. (1990). *Reaching the gifted underachiever: Program strategy and design.* New York: Teachers College Press.

Tannenbaum, A. J. (1983). *Gifted children: Psychological and educational perspectives.* New York: Macmillan.

Terman, L. M. (1906). Genius and stupidity: A study of some of the intellectual processes of seven 'bright' and seven 'stupid' boys. *Pedagogical Seminary*, **13**, 307–373.

Terman, L. M. (1925). *Genetic studies of genius. Volume I: Mental and physical characteristics of a thousand gifted children*. Stanford, CA: Stanford University Press.

Terman, L. M., & Oden, M. H. (1951). The Stanford studies of the gifted. In P. Witty (Ed.), *The gifted child*. Boston, MA: D. C. Heath.

VanTassel-Baska, J. (1989). The role of the family in the success of disadvantaged gifted learners. *Journal for the Education of the Gifted*, **13**, 22–36.

Webb, J. T., Meckstroth, E. A., & Tolan, S. S. (1984). *Guiding the Gifted Child* (3rd edn). Dayton: Ohio Psychology Press.

Weisberg, R. E. (1992). *Creativity, genius and other myths* (2nd edn). New York: Freeman.

Whitmore, J. R. (1980). *Giftedness, conflict and underachievement*. Boston, MA: Allyn and Bacon.

Whipple, G. M. (Ed.) (1924). *The education of gifted children*. 23rd Yearbook, Part I, National Society for the Study of Education. Bloomington, IL: Public School Publishing Company.

Williams, F. E. (1972). *A total creativity program kit*. Englewood Cliffs, NJ: Educational Technology Publications.

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