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Gifted Education

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Introduction

The field of gifted education is based on the notion that some children and students with either demonstrated outstanding or very high potential can achieve at the highest levels of accomplishment in academic, creative, leadership, or artistic areas or domains, when compared with their peers. Research in gifted education has found that gifted and high potential students require services and or opportunities that are not always delivered in classrooms or schools across the country. A comprehensive review related to the need for and types of interventions required by gifted and talented students suggests that the needs of gifted students are generally not met in American classrooms where the focus is most often on struggling learners and that many, if not most, classroom teachers have not had the training necessary to meet the needs of gifted and high potential students. Interventions for this population are based on a strong research base that demonstrates that the use of acceleration results in higher achievement for gifted and talented learners. Similarly, research on the use of enrichment and curriculum enhancement has found higher achievement benefits as well as other benefits such as opportunities for creative productivity and critical thinking. During the last decade or so, research has found that differentiation of curriculum and instruction for gifted and talented students in regular classrooms seldom happens, due to lack of training, resources, and support and so gifted programs are extremely important for this population of students.

General Overview

Gifted programs and strategies have been found to be effective at serving high-ability students in a variety of educational settings and in schools serving diverse ethnic and socioeconomic populations and also in reversing underachievement in these students.

A thought-provoking examination of some of the current research in the field of gifted education is summarized in the edited text by Plucker and Callahan (2007), suggesting the need for more research in the field, which is, of course, a direct function of how few research dollars is allocated to this field. To challenge gifted and talented learners, educators should develop a continuum of services in each school in both the academic and affective areas, as summarized in *Systems and Models in Gifted Education*, edited by Renzulli et al. (2009). This continuum of services should be developed to address the diverse learning and affective needs of gifted and talented students in each school. Services should be targeted for gifted and talented students across all grade levels, and a broad range of services should be defined to ensure that children have access to challenging curriculum and instructional differentiation. Benefits have been found for grouping gifted students together for instruction to increase their academic achievement, as demonstrated in research by Gentry and Owen (1999) and Kulik (1992). Gifted and talented students require a broad range of enrichment and acceleration opportunities to meet the needs of rapid, advanced learners, opportunities for advanced content to enable students to continue to make progress in all content areas, and the availability of opportunities for individualized research for students who are highly creative and want the chance to pursue advanced interests (Reis & Renzulli, 2010; Renzulli et al., 2009).

Students who are underachieving or who have gifts and talents, but also learning disabilities, counseling and other services may be necessary to address these special affective needs. The needs of gifted and talented students are varied and special classes and programs are necessary to meet these needs, as are teachers with specialized training who differentiate curriculum and instruction and extend gifted education strategies and pedagogy across content areas. Gifted education programs and strategies benefit gifted and talented students longitudinally, helping students increase aspirations for college and careers, determine post-secondary and career plans, develop creativity and motivation that is applied to later work, and achieve more advanced degrees. Longitudinal studies demonstrate that gifted programs and services produce results including higher levels of advanced degrees, high levels of success and life satisfaction, and consistent patterns of interest and creative expression over time (Hébert, 1993; Lubinski, Benbow, Webb, & Bleske-Rechek, 2006; Lubinski, Webb, Morelock, & Benbow, 2001; Park, Lubinski & Benbow, 2007; Reis & Renzulli, 2010).

Plucker, Jonathan, and Callahan, Carolyn, eds. 2007. *Critical issues and practices in gifted education: What the research says*. Waco, TX: Prufrock Press.

The definitive reference book for current research summaries of more than forty important topics in gifted education. Each author focused on rigorous, empirically grounded approaches to current research in gifted education in areas like talented readers, identification, assessment, counseling, early childhood, highly gifted students, homeschooling, parenting, and policy and advocacy.

Gentry, Marcia, and Owen, Steven V. 1999. An investigation of the effects of total school flexible cluster grouping on identification, achievement, and classroom practices. *Gifted Child Quarterly*, 43(4), 224–243. <https://doi.org/10.1177/001698629904300402>

Students at all achievement levels benefited from cluster grouping and other forms of instructional grouping accompanied by differentiated instruction and content. More students were identified as high achieving during the three years that cluster grouping was used in the school when our nation's creative productivity is threatened by other countries.

Kulik, James A. 1992. *An analysis of the research on ability grouping: Historical and contemporary perspectives* (RBDM9204). Storrs: University of Connecticut, The National Research Center on the Gifted and Talented. <https://nrcgt.uconn.edu/wp-content/uploads/sites/953/2015/04/rbdm9204.pdf>

Achievement is increased when gifted/talented students are grouped together for enriched or accelerated learning. Ability grouping without acceleration or enrichment produces few or no differences in student achievement. All students benefit from placement in their ability/instructional groups when the curriculum is adjusted to the aptitude levels of the group.

Hébert, Thomas. P. 1993. Reflections at graduation: The long-term impact of elementary school experiences in creative productivity. *Roeper Review*, 16(1), 22–28. <https://doi.org/10.1080/02783199309553529>

Gifted programs had a positive effect on subsequent interests of students affect post-secondary plans; early advanced project work serves as important training for later productivity; non-intellectual characteristics with students remain consistent over time.

Lubinski, David, Webb, Rose Mary, Morelock, Martha J., and Benbow, Camilla P. 2001. Top 1 in 10,000: A 10 year follow-up of the profoundly gifted. *Journal of Applied Psychology*, 86(4), 718–729. <https://doi.org/10.1037/0021-9010.86.4.718>

Follow-up studies found that 320 gifted students identified as adolescents pursued doctoral degrees at over 50X the base rate expectations. The base rate expectation for the general population is 1%—1 in 100.

Park, Gregory, Lubinski, David, and Benbow, Camilla P. 2007. Contrasting intellectual patterns predict creativity in the arts and sciences: tracking intellectually precocious youth over 25 years. *Psychological Science*, 18(11), 948–995.

<https://doi.org/10.1111/j.1467-9280.2007.02007.x>

Intellectually talented adolescents (top 1%) assessed on the SAT by age 13 were tracked longitudinally for 25+ years. Their creative accomplishments, (emphasis on literary achievement and scientific-technical innovation), were examined. Results showed that distinct ability patterns identified by age 13 portend contrasting forms of creative expression by middle age.

Reis, Sally M. and Renzulli, Joseph S. 2010. Is there still a need for gifted education? An examination of current research. *Learning and Individual Differences*, 20(4), 308–317. <http://dx.doi.org/10.1016/j.lindif.2009.10.012>

Important research in gifted education with summary tables focusing on curriculum, program benefits, student achievement, longitudinal research, and enrichment and acceleration. Results of the analysis show need for gifted education remains critical at this time in our nation's history.

Renzulli, Joseph S., Gubbins, E. Jean, McMillen, Kristin, Eckert, Rebecca, and Little, Catherine. eds. 2009. *Systems and models for developing programs for the gifted and talented*. 2nd ed. Mansfield Center, CT: Creative Learning Press.

Systems and Models includes 25 chapters on major systems and models for gifted programs by experts who developed seminal work including the Autonomous Learner Model, Multiple Menu Model, Purdue Three-stage Model, and Schoolwide Enrichment Model. Chapters provide comprehensive summaries of these models.

Textbooks

The following serve as comprehensive textbooks in the field, focused on graduate students who pursue Master's or Doctoral Degrees in Gifted Education. These texts are usually used at the graduate level in courses about defining and programming gifted and talented students, curriculum for gifted and talented students, gifted education program and models, and the social and emotional development of gifted and talented students. These textbook entries were selected because of their use in the field, the research credentials and the professional reputations of their authors and editors, and their longevity. Those interested in programming options and curriculum for the gifted will find both Davis, Rimm and Siegle (2010) and Van-Tassel-Baska and Little's texts thoughtfully organized. Social and emotional development of this population of students is summarized in the two books listed below edited by Neihart and co-editors in 2000 and the new text by Hébert (2010). The texts by Karnes and Bean (2008), Clark (2008), and Colangelo and Davis (2003) are most often used in introductory and survey classes in gifted education.

Karnes, Frances, and Bean, Suzanne M. eds. 2008. *Methods and materials for teaching the gifted*. Waco, TX: Prufrock Press.

A revised and updated edited textbook that both introduces readers to gifted education curricular planning, instructional unit design, evaluation, and teaching methods, as well as to differentiated instruction for gifted learners that includes resources such as web sites to help with differentiating instruction and planning gifted education curriculum.

VanTassel-Baska, Joyce, and Little, Catherine A. eds. 2010. *Content-based curriculum for high-ability learners*. 2nd ed. Waco, TX: Prufrock Press.

Includes a solid introduction to curriculum development in gifted and talented education that align the core content with national and state standards focusing on the basic principles of curriculum development and integration of curriculum into specific content areas and processes such as critical and creative thinking.

Davis, Gary A., Rimm, Sylvia B., and Siegle, Del. 2010. *Education of the gifted and talented*. Upper Saddle River, NJ: Pearson Education.

An excellent practical resource summarizing practices in the field of gifted education that explores contemporary program models, as well as a comprehensive introduction to the field.

Clark, Barbara. 2008. *Growing up gifted: Developing the potential of children at home and at school*. 7th ed. Upper Saddle River: NJ: Pearson Education.

This popular textbook introduces readers to gifted and talented children and education that incorporates information from a wide variety of sources and is updated frequently.

Colangelo, Nicholas, and Davis, Gary A. eds. 2003. *Handbook of gifted education*. 3rd ed. Boston: Allyn and Bacon.

The chapters in this handbook are written by well-known experts and introduce issues, problems, and practical strategies in all the central components of gifted education with chapters on seldom mentioned topics such as artistic giftedness and gifted education in rural areas.

Neihart, Maureen, Reis, Sally M., Robinson, Nancy, and Moon, Sidney M. eds. 2001. *The social and emotional development of gifted children: What do we know?* Waco, TX: Prufrock Press.

Edited by a task force convened by the National Association for Gifted Children and written by leading scholars in the field of gifted education, an essential text for those interested in social and emotional development of gifted and talented with chapters on peer pressure and social acceptance, resilience, delinquency, and underachievement.

Hébert, Thomas P. 2010. *Understanding the social and emotional lives of gifted students*. Waco, TX: Prufrock Press.

A comprehensive examination of social and emotional development in high-ability and gifted learners with a discussion of the social and emotional characteristics and behaviors of gifted learners and identity development, as well as chapters on gifted underachievers gifted culturally diverse students, and twice-exceptional students.

Definitions and Conceptions of Giftedness and Talent

Young people identified as gifted are a very diverse group. They exhibit a wide range of characteristics in ability and achievement, temperament, and effort invested in reaching goals. No standard pattern of talent exists among gifted individuals and no standard definition exists. A careful review of the research on gifted and talented learners noted many different characteristics that describe this diverse group of young people and adults as noted in the original Sternberg and Davidson 1986 text. Early definitions of giftedness focused on high aptitude and IQ perhaps due to the seminal work of Lewis Terman in his series including *Genetic Studies of Genius*. Renzulli's work extended this notion and his Phi Delta Kappan article is the most cited in the field of giftedness. Gagne extends the concept by suggesting that giftedness is associated with domains of abilities that foster exceptional performance in varied fields of activities, or in other words, talents. Recent research conducted in the field supports the multiple components of giftedness as theorists and researchers in the second edition of Sternberg and Davidson published in 2005 portray giftedness as incorporating multiple qualities in addition to aptitude. Those interested in conceptions of giftedness should review both the first and second edition of the textbook edited by Sternberg and Davidson to access an integrated approach to the evolution of conceptions of giftedness

over time. More recently, insightful current analysis of the construct of giftedness is also offered in the Dai 2010 text.

The most recent federal definition summarized in a national report entitled *National Excellence* states that children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. The report further explains that these children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, possess an unusual leadership capacity, or excel in specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents have been found to be present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor. Though many school districts adopt this or other broadened conceptions and definitions as their philosophy, others still only pay attention to “intellectual” ability when both identifying and serving students. And, even though many psychologists and educators recognize broadened definitions of giftedness and intelligence, many students with gifts and talents who are culturally diverse continue to be unrecognized and underserved, as noted in the Donovan and Cross report of 2002.

Dai, David Yun, 2010. *The nature and nurture of giftedness*. New York: Teachers College Press.

This book expands the theoretical perspectives surrounding the long-debated questions about the nature of giftedness and the implications for developing high levels of human potential. Critical issues are addressed from an excitingly extended point of view that causes the reader to reexamine many long-held beliefs about giftedness.

Donovan, Suzanne M., and Cross, Christopher T. eds. 2002. *Minority students in special and gifted education*. Washington, DC: National Academy of Sciences - National Research Council.

This report summarizes the disproportionate representation of students of color in special education and the lack of representation in gifted education remains of the most challenging problems in the field. This report summarizes the problem and suggests ways to make positive changes.

Gagné, Francois. 1985. Giftedness and talent: reexamining a reexamination of the definitions. *Gifted Child Quarterly*. 29(3), 103–112.

<https://doi.org/10.1177/001698628502900302>

In this article, Gagné differentiates between giftedness and talent by explaining that giftedness is associated with domains of abilities that foster and explain exceptional performance in varied fields of activities, known as talents. Gagné hypothesizes that a person can be gifted without being talented (as with the case of underachievers), but not have talents without being gifted.

Ross, Pat O’Connell. *National excellence*. 1993.

<https://files.eric.ed.gov/fulltext/ED359743.pdf>

Highlights the lack of programs for gifted and talented students and offers a more contemporary definition of gifted education. The most recent federal definition, cited in

this national report on the state of gifted and talented education, states that children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment.

Renzulli, Joseph S. 1978. What makes giftedness?: Reexamining a definition. *Phi Delta Kappan*, 60(3), 180–184m 261. <https://www.jstor.org/stable/20299281>

The most cited article in the field of giftedness introduces a broadened conception of giftedness consisting of above average abilities, creativity, and task commitment that influenced research as well as subsequent conceptions of giftedness. One of the first definitions of giftedness that extended beyond IQ and fundamentally changed perceptions of educators and the direction of research in the field.

Sternberg, Robert J., and Davidson, Janet E. 1986. *Conceptions of giftedness*. Cambridge, England: Cambridge University Press.

The first edition of an important work in the field of giftedness that describes the major conceptions of giftedness, and how they conceptions apply to identification, instruction, and assessment of the gifted.

Sternberg, Robert. J., and Davidson, Janet. E. 2005. *Conceptions of giftedness*. 2nd ed. Boston: Cambridge University Press.

One of the best resources available on conceptions of giftedness and when used in combination with the first edition, an important work in the field of giftedness that describes the major conceptions of giftedness, and how they conceptions apply to identification, instruction, and assessment of the gifted.

Identification of Gifted and Talented Students

For what purpose or programs are students identified? Differing views exist on why, how, and when to seek an assessment for identification as gifted or talented, as well as the utility of different types of tests to be used in different types of assessments. Comprehensive assessment of the child's abilities and achievement level rather than simple IQ testing must be the goal for any identification process for gifted education programs. The rationale for assessment should focus on the need to better understand a child's relative strengths and weaknesses and how these relate to educational and social settings, as well as to determine the level of intervention the child needs. This type of educational assessments enables teachers to better understand what the student needs for challenge and growth, suggesting that portfolios might be more appropriate including various types of instruments and information about actual student accomplishments, as opposed to the simple use of achievement or aptitude assessments. Susan Johnsen's 2004 book presents an overview of various methods of identification. Most comprehensive assessments conducted by private psychologists include some form of developmental history with examples of children's work, as well as a battery of assessments. Many tests are used to measure intelligence, aptitude, and achievement but little consensus exists about which tests are most effective for a variety of reasons.

Identification of gifted and high potential students in gifted education programs twenty or thirty years ago usually focused almost solely on intellectually or academically gifted students, when students were identified primarily through standardized test scores and intelligence tests. A decade later, students were still primarily identified by the same criteria but teacher recommendations were no longer in the forefront; instead most educators were using standardized test scores to identify this population. This more traditional method of identification resulted in disproportionately small numbers of culturally diverse, learning disabled, or economically disadvantaged students being identified for gifted programs, even though the American population was increasing in diversity, the number of minority students increased in schools (Ford & Grantham, 2003; Frasier & Passow, 1994), and the Individuals With Disabilities Act ensured that most students with special needs were mainstreamed and taught in regular classrooms. Accordingly, researchers interested in diverse gifted students began to be increasingly concerned about how to identify underrepresented populations for gifted services. More equitable methods have subsequently been developed, including the use of multiple criteria rather than the use of test scores alone or in combination with teacher recommendation. Some approaches match assessment with corresponding programming options such as the work conducted by Sternberg and colleagues (Sternberg 1996, Sternberg, 2004). Tests scores remain a part of most identification processes but teacher nominations and rating scales, as well as students' grades and work, are usually included in newer multiple criteria approaches (Renzulli, 2005).

Ford, Donna Y., and Grantham, Tarek C. 2003. Providing access for culturally diverse gifted students: From deficit to dynamic thinking. *Theory into Practice*, 42(3), 217–225. https://doi.org/10.1207/s15430421tip4203_8

Practical strategies to help teachers and administrators shift perspectives about culturally diverse gifted students to focus on strengths and talents as opposed to deficits.

Frasier, Mary M., and Passow, A. Harry. 1994. *Toward a new paradigm for identifying talent potential* (Research Monograph 94112). Storrs: University of Connecticut, The National Research Center on the Gifted and Talented. <https://nrcgt.uconn.edu/wp-content/uploads/sites/953/2015/04/rm94112.pdf>

The under-inclusion in gifted programs of economically disadvantaged and minority children has been well-documented. Yet, these students are consistently underrepresented in programs for the gifted while being disproportionately represented in special education. This research monograph includes essential information sections to help practitioners identify giftedness among all groups of young people.

Johnsen, Susan K. 2004. *Identifying gifted students: A practical guide*. Waco, TX: Prufrock.

This is an overview of issues about the identification of gifted students that also includes practical suggestions for solutions for their assessment. This is a helpful guide to definitions and characteristics of gifted students that includes various approaches to culturally fair assessment.

Renzulli, Joseph S. 2005. *Equity, excellence, and economy in a system for identifying students in gifted education programs: A guidebook* (RM05208). Storrs: University of Connecticut, The National Research Center on the Gifted and Talented.

<https://nrcgt.uconn.edu/wp-content/uploads/sites/953/2015/09/rm05208.pdf>

Grounded in the Three-Ring Conception of Giftedness and the Enrichment Triad Model, and supported by a thorough review of research dealing with the underlying theories, this monograph introduces a flexible identification system that activates a much broader range of services and teaching practices that are specifically designed to develop a variety of talents in young people.

Sternberg, Robert J., Grigorenko, Elena L., Torff, Bruce, and Jarvin, Linda. 2004. *Modern theories of intelligence applied to assessment of abilities, instructional design, and knowledge-based assessment* (RM04196). Storrs: University of Connecticut, The National Research Center on the Gifted and Talented. <https://nrcgt.uconn.edu/wp-content/uploads/sites/953/2015/04/rm04196.pdf>

This monograph reports findings from three intervention studies in which the triarchic theory of intelligence was infused into the curricula. Teachers were trained in, and asked to implement, either triarchically enhanced curriculum (experimental groups) or were trained in mnemonic strategies and asked to implement their regular curriculum (control groups). Sample curriculum lessons are included in the text.

Sternberg, Robert J., Ferrari, Michel, Clinkenbeard, Pamela, and Grigorenko, Elena L. 1996. Identification, instruction, and assessment of gifted children: A construct validation of a triarchic model. *Gifted Child Quarterly* 40(3), 129–137.

<https://psycnet.apa.org/doi/10.1177/001698629604000303>

This article presents an approach for the identification, instruction, and assessment of gifted children. The rationale behind a unified model is outlined, and the use of the triarchic model in a variety of subject areas is summarized.

Enrichment, Acceleration, and Curriculum Models in Gifted Education

A sample of enrichment theories suggests that the several elements broadly describe enrichment theories in gifted education. The majority of enrichment theories incorporate the following premises: interest-based; integrate advanced content, processes, and products; include broad interdisciplinary themes; foster effective independent and autonomous learning; provide individualized and differentiated curriculum and instruction; develop creative problem solving abilities and creativity; and integrate the tools of the practicing professionals in the development of products. Enrichment theorists such as Renzulli and Reis (1997) and Betts (2004) have integrated these elements into their work.

Acceleration of various types enables academically talented and gifted students to move more rapidly than usual through the regular curriculum, and results in exposing students to curriculum at a younger age than is traditional (Colangelo, Assouline, & Gross, 2004). Research over the last few decades has demonstrated that acceleration practices have positive effects on academic achievement and limited or non-existent negative effects on psychosocial adjustment. A report funded by The Templeton

Foundation, entitled *A Nation Deceived* (Colangelo, Assouline, & Gross, 2004) identified 18 forms of acceleration that enable students to complete traditional school curriculum at much faster rates, including grade-skipping, early-entrance to school, compacting curriculum, and Advanced Placement (AP) courses. The report summarized research that shows that students who are accelerated tend to be more ambitious, and earn graduate degrees at higher rates than other students. Acceleration of high potential and gifted students has been studied for decades and research about this standard practice has been uniformly positive (Colangelo et al., 2004).

Curriculum models in gifted education often focus on the three major components of differentiating curriculum; content, process, and product. Some approaches for developing curriculum center around the goal of recognizing the characteristics of the gifted and then providing reinforcements and extensions of the curriculum to meet the needs of those characteristics. Sandra Kaplan's approach as defined in *Systems and Models* (Renzulli, et al., 2009) defines different processes for constructing differentiated curricula for the gifted, including methods to determine the essential elements of a unit as well as the format in which to present it. Kaplan emphasized the importance of creating curriculum units around significant and open-ended themes instead of topics in order to be more inclusive of various subtopics children might want to explore, emphasizing not just basic skills but research and critical thinking skills as well. Renzulli, Leppien, and Hayes (2000) developed the Multiple Menu Model, Joyce VanTassel-Baska (2003) developed the gifted ICM model to aid in the development of curricula for the gifted. Recently, math curriculum for the gifted has been developed by Katherine Gavin and her colleagues (2009) and reading instruction for the gifted and talented by Sally Reis and her colleagues.

VanTassel-Baska, Joyce. 2003. Content-based curriculum for high-ability learners: An introduction. In J. VanTassel-Baska & C. A. Little (Eds.), *Content-based curriculum for high-ability learners* (pp. 1–23). Waco, TX: Prufrock Press.

Other extensive work on developing curriculum units to enrich curriculum for gifted students as been conducted by Joyce VanTassel-Baska who developed an Integrated Curriculum Model for the gifted ICM model for the gifted with a content mastery dimension, the process/product research dimension, and an epistemological concept dimension.

Renzulli, Joseph S., Leppien, Jann, and Hayes, Thomas. 2000. *The Multiple Menu Model: A practical guide for developing differentiated curriculum*. Mansfield Center, CT: Creative Learning Press.

Six practical planning guides are offered for teachers to use as menus to design in-depth curriculum units for classroom use, placing a greater emphasis on balancing authentic content and process, involving students as firsthand inquirers, and exploring the structure and interconnectedness of knowledge.

Colangelo, Nicholas, Assouline, Susan G., and Gross, Miraca U. M. eds. 2004. *A nation deceived: How schools hold back America's brightest students*. Iowa City: The University of Iowa. <https://files.eric.ed.gov/fulltext/ED535137.pdf>

This is the most compelling and comprehensive overview of acceleration and the research underlying multiple types of acceleration as a method to challenge and engage academically talented students. This book and the accompanying research is a must read in the field of gifted education.

Reis, Sally M., Eckert, Rebecca D., Fogarty, Elizabeth A., Little, Catherine A., Housand, Angela M., Sweeny, Sheelah M., Housand, Brian C., Muller, Lisa M., and Sullivan, Erin E. 2009. *Joyful reading: Differentiation and enrichment for successful literacy learning, grades K-8*. San Francisco, CA: Jossey-Bass.

This differentiated instructional reading approach motivates students to discover the rewards and delights of reading appropriately challenging books. An easy-to-implement program that encourages students to read independently for a period of time during the school day on books of their own choice while supporting them in learning comprehension strategies.

Renzulli, Joseph S. and Reis, Sally M. 1997. *The Schoolwide Enrichment Model: A How to guide for educational excellence*. 2nd ed. Mansfield Center, CT: Creative Learning Press.

The Schoolwide Enrichment Model offers practical, step-by-step advice for implementing successful SEM programs in the K-12 school setting, discuss schoolwide enrichment, and provides information about the model's school structures, organizational components, and service delivery, with collection of useful instruments, checklists, charts, taxonomies, assessment tools, forms, and planning guides.

Tomlinson, Carol A., Kaplan, Sandra N., Renzulli, Joseph S., Purcell, Jeanne H., Leppien, Jann H., Burns, Deborah E., Strickland, Cindy A., and Imbeau, Marcia B. 2002. *The Parallel Curriculum: A design to develop high potential and challenge high-ability learners*. Thousand Oaks, CA: Corwin Press.

The Parallel Curriculum Model offers four parallel approaches to curriculum development to ensure rich curriculum for all learners, and illustrates ascending intellectual demand as a means of extending the intensity of challenge as students develop along a continuum toward expertise in learning.

Betts, George, and Kercher, Jolene. 2004. *The Autonomous Learner Model (ALM) for the gifted and talented*. Greeley, CO: Alps Publishing.

This approach to gifted education was developed specifically to meet the diversified cognitive, emotional, and social needs of learners. The model is currently implemented at all grade levels with the gifted and talented, as well as all learners in the regular classroom. Emphasis is placed on meeting the individualized needs of learners through the use of activities in five dimensions of the ALM.

Renzulli, Joseph S., Gubbins, E. Jean, McMillen, Kristin S., Eckert, Rebecca D., and Little, Catherine A. eds. 2009. *Systems & models for developing programs for the gifted and talented*. 2nd ed. Mansfield Center, CT: Creative Learning Press.

Systems and Models includes 25 chapters on major systems and models for gifted programs by experts who developed seminal work including the Autonomous Learner

Model, Multiple Menu Model, Purdue Three-stage Model, and Schoolwide Enrichment Model. Chapters provide comprehensive summaries of these models.

Gavin, M. Katherine, Casa, Tutita M., Adelson, Jill L., Carroll, Susan R., and Sheffield, Linda J. 2009. The impact of advanced curriculum on the achievement of mathematically promising elementary students. *Gifted Child Quarterly*, 53(3), 188–202. <https://doi.org/10.1177/0016986209334964>

Challenging math curriculum resulted in significant gains in achievement in math concepts, computation, and problem solving each year over a 3-year period for talented math students in grades 3, 4, and 5. Students using the curriculum outperformed a comparison group of students of like ability from the same schools.

Social Emotional Adjustment of Talented Youth

A current comprehensive review of research (Neihart, Reis, Robinson, & Moon, 2002) pointed to one clear finding: high-ability students are generally at least as well adjusted as any other group of youngsters, meaning that most talented students do not face any more social and emotional problems than do other students. One exception to this statement is documented in research, as creatively gifted adolescents who are talented in writing or the visual arts have been found to manifest significantly higher or lower rates or severity of depression than those for the general population. This review also found that gifted and talented students can and often do face a number of situations that, while not unique to them, constitute sources of risk to their social and emotional development if their needs are not met (Neihart et al., 2002). The failure to address affective components that often help to develop talents in young people may compromise or thwart the actualization of their high potential. Three major areas constitute risks to the social and emotional development of gifted and talented children, including issues deriving from their academic advancement as compared with their age peers and from unevenness in their development; common areas of psychological response to talents, including underachievement and perfectionism; and their dual identification as twice exceptional, such as having a learning disability or attention deficit and also having talents and gifts (Neihart et al., 2002). A recent text provides much research-based strategies for meeting the social emotional needs and helping gifted and talented students to achieve healthy social and emotional development (Hébert, 2010).

Neihart, Maureen, Reis, Sally M., Robinson, Nancy M., and Moon, Sidney M. eds. 2001. *The social and emotional development of gifted children: What do we know?* Waco, TX: Prufrock Press.

Edited by a task force convened by the National Association for Gifted Children and written by leading scholars in the field of gifted education, an essential text for those interested in social and emotional development of gifted and talented with chapters on peer pressure and social acceptance, resilience, delinquency, and underachievement.

Hébert, Thomas. P. 2010. *Understanding the social and emotional lives of gifted students*. Waco, TX: Prufrock Press.

A comprehensive examination of social and emotional development in high-ability and gifted learners with a discussion of the social and emotional characteristics and behaviors of gifted learners and identity development, as well as chapters on gifted underachievers gifted culturally diverse students, and twice-exceptional students.

Journals

Due to increased research in gifted education due to the Jacob K. Javits legislation, current research and knowledge in gifted education has increased and several scholarly and teacher practice journals are available. In this section, an overview of the professional journals in the field of gifted education is summarized. Three journals including *Gifted Child Quarterly*, *Journal for the Education of the Gifted*, and *The Roeper Review*, serve both as outlets for scholarly research in the field and also as outlets for teacher and administrator research-based practices on issues related to gifted education and talent development. *Exceptional Children* is the premiere journal in the field of special education that often publishes articles about the intersection of both giftedness and special education, such as students considered twice exceptional. For an international perspective of global attempts to serve gifted and talented students, readers should turn to *Gifted Education International* and for the best compendium of teacher education practices, teachers should consult *Gifted Child Today*.

Gifted Child Quarterly (GCQ) [<https://journals.sagepub.com/home/gcq>]

For articles related to research about gifted education, readers should refer to *Gifted Child Quarterly*, the journal of the National Association of Gifted Children, that publishes original research and new and creative insights about giftedness and talent development in the context of the school, the home, and society in general.

The *Journal for the Education of the Gifted*, [<https://journals.sagepub.com/home/jeg>]

A publication of The Association for the Gifted (TAG), a division of the Council for Exceptional Children, is committed to publishing information and research on the educational and psychological needs of gifted and talented children. This journal reports research findings on topics such as effective programs for gifted children and characteristics and special populations of gifted children.

Gifted Education International [<https://www.nace.co.uk>]

Introduces readers to current issues about giftedness and programming across the world, with fascinating articles about current programming options on every continent.

Exceptional Children [<https://exceptionalchildren.org>]

The official quarterly publication of the Council for Exceptional Children, this outstanding peer-review journal publishes original research on the education and development of children, and youth with exceptionalities and articles, including gifted children and the intersection of giftedness and special needs such as high ability students with learning disabilities.

The Roeper Review [<https://www.tandfonline.com/journals/uror20>]

In this journal, research about all areas of gifted education is summarized with a multidisciplinary focus that pertains to practice, policy, and applied research.

Gifted Child Today [<https://journals.sagepub.com/home/gct>]

The leading journal for teachers and parents with information about teaching and parenting gifted and talented children, and articles related to teaching strategies in gifted education.

National Reports in Gifted Education

Important national reports are often cited in gifted education. Those referenced below have had national importance and are extremely important in this field, leading to research agendas, national standards, and calls for action from researchers, teachers, and parents. The two earliest reports, *A Nation at Risk* issued in 1983 and *National Excellence* in 1993, portrayed the negative plight of gifted children in American schools dealing with how few teachers had training and continuing with how little was being done to challenge this group. More current national reports include the *Mind the Gap* that summarizes that the highest achieving American students are not performing as well as they have in previous years and a new report entitled *Preparing the Next Generation of STEM Innovators* that suggests new directions for reducing the gap between American and foreign-born talent. Also cited below is the report entitled *A Nation Deceived* that demonstrates the clear benefits of the many different ways to accelerate the academic progress of gifted students and the many research findings and reports that are online and accessible from The National Research Center on the Gifted and Talented.

A Nation at Risk: The imperative for educational reform. 1983.

[<https://files.eric.ed.gov/fulltext/ED226006.pdf>]

This prominent report on American education, from the National Commission on Excellence in Education, found that gifted and talented students were at risk in American schools and the report highlights the many missed opportunities for this group and calls for additional research and programming in the field of gifted education.

National Excellence: A case for developing America's talent. 1993.

[<https://files.eric.ed.gov/fulltext/ED359743.pdf>]

Highlights the lack of programs for gifted and talented students and offers a more contemporary definition of gifted education. The most recent federal definition, cited in this national report on the state of gifted and talented education, states that children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment.

Mind the (Other) Gap!: The Growing Excellence Gap in k–12 Education. 2010.

[<https://files.eric.ed.gov/fulltext/ED531840.pdf>]

A comprehensive study of student achievement test results from every state. Issued by the Indiana University Center for Evaluation and Education Policy (CEEP), this report

summarizes the achievement gaps among high ability students from different economic, racial and linguistic backgrounds in the U.S. are large and growing, and some of the top achieving groups aren't performing as well as in the past.

Preparing the Next Generation of STEM Innovators: Identifying and Developing Our Nation's Human Capital. 2010. [<https://www.nsf.gov/nsb/publications/2010/nsb1033.pdf>]

A stimulating new report that includes recommendations and policy solutions to help close the widening gap between American and foreign-born talent as well as a research agenda for each item. The report focuses on three key areas: providing opportunities for excellence, casting a wide net, and fostering a supportive ecosystem.

A Nation Deceived: How schools hold back America's brightest students. 2004. [<https://files.eric.ed.gov/fulltext/ED535137.pdf>]

This report summarized the advantages of acceleration for gifted children, and illustrated our country's inability to meet the needs of its most able students despite the overwhelming research supporting acceleration practices in schools.

Research Monographs from the NRC/GT [https://nrcgt.uconn.edu/online_resources/]

Many outstanding research monographs and other informational resources are published and available from on a variety of important topics from a diverse group of researchers associated with The National Research Center on the Gifted and Talented (NRC/GT) funded by the Jacob K. Javits Education Act.