The World Council's ANNOTATED BIBLIOGRAPHY OF GIFTED EDUCATION

by
James J. Gallagher
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THE WORLD COUNCIL FOR THE GIFTED
TALENTED CHILDREN, INC.

ANNOTATED BIBLIOGRAPHIES OF GIFTED EDUCATION

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PREFACE

Some years ago the Executive Committee of the World Council for Gifted and Talented Children decided to embark upon a project that would bring some tangible benefits to its membership. One of the most difficult problems faced by members scattered across the globe is gaining access to a wide variety of information on gifted children and adults that is available, but often difficult to discover with limited library and information system capabilities.

Through the voluntary efforts of the World Council members from six countries, we have tried to assemble some of the key references in the field of gifted education in an annotated bibliography--a format that would provide a quick and easy reference source on topics of special interest to persons working in this field. The entries have been edited in a common format and occasionally some material has been added to the original offerings to bring them up to date, since there has been a long gap between the start of the project and its completion. We hope that there has been no essential damage to the original intentions of the compilers of this information during the editing process.

We have been invaluably aided in our efforts by a large number of volunteers who reviewed and submitted bibliographies and offered their suggestions for improvements to the comprehensiveness of the entries. We therefore wish to acknowledge the assistance of the following reviewers:

Kippy Abroms	Stan Kripner	Joseph Renzulli
Linda Addision	D.T.E. Marjoram	E.Paul Torrance
Ernest Bernal	Mary Meeker	Charles Whaley
Carolyn Callahan	Jock Omond	Joanne Whitmore
Joan Freeman	Rudy Pohl	

These people, many of whom are also contributors, have provided information to improve the collection of bibliographies, providing a level of quality no one person could achieve. We gratefully acknowledge their contributions of time and expertise.

We must also express our gratitude to our support staff, Ann Fogleman, Phyllis Pressley, and Ruth Kirkendall for their dedication to the production of an organized, legible document.

As a final note, we are pleased to mention that the contributors, reviewers, editors, and staff have agreed that any and all proceeds from this work shall be remitted to the World Council to further its work on behalf of gifted and talented children around the world. To all of them go our sincere gratitude.

James J. Gallagher
Richard D. Courtright

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IDENTIFICATION OF THE GIFTED STUDENT

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Introduction

The identification of gifted children has been a cause of great concern for planners of educational programs for the gifted. The dearth of empirical studies and the changing conceptualization of giftedness have greatly increased the uncertainty; however, the last decade has seen an increasing number of studies and conceptual papers which address the problems and techniques of identification.

The following selected bibliography includes resources for information on qualitative and quantitative studies and conceptual papers on identification of the gifted student. The selections represent a cross section of procedures and uses of instruments to identify giftedness among different ethnic groupings, in varying areas of abilities, and in varying age groups. The entries are concentrated on studies of the late sixties through the eighties.

[Taken from: Laubenfels, J. *The gifted student an annotated bibliography* London: Greenwood Press, 1977]

Author: Anastasi, A.
Title: Commentary on precocity project
Source: *Journal of Special Education*, Spring 1975, *9*(1), 93-103

Evaluation of report of a project in which identification was done by using indices of outstanding performance in particular areas of developed ability, and through intervention programs. Suggests use of California Personality Inventory and Adjective checklist to learn more about development and origins of mathematical talent.

Authors: Argulewicz, E. N., and Elliott, S.
Title: *VALIDITY OF THE SRBCC FOR HISPANIC AND ANGLO GIFTED STUDENTS*
Source: ERIC Catalog Number 210312, 1981

Investigated the validity of using Behavioral Rating Scale for identifying gifted or creative students among three ethnic groups. A comparison of elementary-age Anglo

and Hispanic students was made. Students were given the Stanford Achievement Test (SAT) and Scales for Rating the Behavioral Characteristics of Superior Students (SRBCC). Results indicated SRBCC showed minimal predictive validity for intelligence or achievement test performance among Anglo students. Results indicated some value for Hispanic students.

Author: Baldwin, A. Y.
Title: The Baldwin identification matrix
Source: *EDUCATIONAL PLANNING FOR THE GIFTED: OVERCOMING CULTURAL, GEOGRAPHIC, AND SOCIOECONOMIC BARRIERS*
Reston, Virginia: Council for Exceptional Children, 1978

The matrix format is designed to be a more equitable way of selecting students for programs for the gifted. It uses a series of instruments and a weighting method for getting a total score.

Author: Baldwin, A. Y.
Title: *THE BALDWIN IDENTIFICATION MATRIX 2*
Source: New York, New York: Trillium Press, 1984

The revised edition of the Baldwin Matrix provides a more structured format for organizing data on student abilities. A computer component has been included in the format, and a computer supplement is now available together with a disk for some of the most common machines.

Author: Bernal, E.
Title: *SPECIAL PROBLEMS AND PROCEDURES FOR IDENTIFYING MINORITY GIFTED STUDENTS*
Source: ERIC Catalog Number 203652

Author reviews key problems with the usual practices of identifying gifted students from the perspective of the minority child, in particular the gifted bilingual. Suggests alternate approaches for testing. The contribution of Guilford's Structure of the Intellect Model in expanding the definition of giftedness is pointed out. Recommends inclusion of children who show giftedness potential on one or more indicators of giftedness traits.

Author: Bruch, B.
Title: Modification of procedures for identification of the disadvantaged gifted

Source: *Gifted Child Quarterly*, Winter 1971, *15*(4), 267-272

Demonstrated the efficacy of using the Meeker method of interpreting the Stanford-Binet Intelligence Scale as a means of identifying giftedness among disadvantaged pupils.

Authors: Callahan, C. M., and Coruo, M. L.
Title: Validating the Ross test for identification and evaluation of critical thinking
Source: *Journal of the Education of the Gifted*, Fall 1980, *4*(1), 17-26

Assessed the structural validity of the Ross Test of High Cognitive Processes (a recently developed instrument designed to assess the higher level thinking skills of analysis, synthesis, and evaluation as outlined in Bloom's Taxonomy) with 154 gifted 3rd-6th graders.

Authors: Chambers, J. A., and Barron, F.
Title: *IDENTIFYING THE CULTURALLY DIFFERENT GIFTED STUDENT*
Source: ERIC Catalog Number 163693

Using 298 Mexican-American grade 3-6 students from urban and rural areas, students were rated by present and former teachers on traits characteristic of highly creative and talented individuals (student checklist), and on the American Association of Mental Deficiency Adaptive Behavior Scale. Students were given IPAT (Institute for Personality and Ability Testing), Culture Fair Intelligence Test, the Wallach-Kagan tests of creativity, and the Personal Adjective Checklist. Results show all tests except the Personal Checklist were fairly consistent when compared to teachers' ratings.

Authors: Delisle, J. R., and Renzulli, J. S.
Title: The revolving door identification and programming model: Correlates of creative production
Source: *Gifted Child Quarterly*, Spring 1982, 26(1), 24-26

Discriminant function analyses with one traditionally selected gifted students grades 1-8, and another group identified by using the Revolving Door Identification and Placement Model revealed that the most discriminating variable of group membership was class rank. For students in grades 1-3 or 4-6, academic self-concept was the second most powerful discriminant.

Authors: Duncan, J. A., and Dreger, R. M.
Title: Behavioral analysis and identification of gifted children
Source: *Journal of Genetic Psychology*, September 1978, *133*(1), 43-58

A discordant analysis was used to assess the capability of the Children's Behavioral Classification Project (CBCP) profiles to differentiate between gifted and normal samples of students. Results indicate that behavioral reports can be used to identify gifted children.

Authors: Dunn, R. S., and Price, G. E.
Title: The learning style characteristics of gifted students
Source: *Gifted Child Quarterly*, Winter 1980, *24*(1), 33-36

It was found that six of the twenty-four variables on the learning style inventory significantly discriminated between gifted and normal elementary-age students.

Author: Gear, G.
Title: Effects of training program, identification of the potentially gifted, on teachers' accuracy in the identification of intellectually gifted children
Source: *Dissertation Abstracts International*, April 1976, *36*(10A), 6548-6549

Teachers were given training in identification of potentially gifted to determine if training would enhance their ability to accurately identify disadvantaged gifted students. Results indicate training was valuable.

Authors: Glasnapp, D., et al.
Title: *USE OF DISCORDANT ANALYSIS IN THE IDENTIFICATION OF GIFTED STUDENTS*
Source: ERIC Catalog Number 209823, 1981

Sixty-four possibly gifted students from Garden City, Kansas were used to test the application of discordant analysis in identification of academically gifted elementary children. Screening included standardized tests, scores, teacher ratings, and student performance on nonverbal tasks. The descriptions of prevalent gifted behaviors given by 85 experts were also used. Results found that among nonverbal tasks the most predictive were the Maze Tracing Speed Test, the Identical Pictures Tests, Addition and Subtraction Test, Story Sequence Test, and Number Comparison Test. Use of the method for individual testing would have led to a 26% reduction in testing time while being 90% accurate in identification of gifted students.

Author: Kosc, L.
Title: A new test for differentiation of mathematical abilities in children
Source: *Psychologia A Patosychologia Dietata* (Polish), 1967-1968, *3*(4), 323-336

Describes the theoretical principals and content of an original collective test of math abilities—the Kalvala I Test. Presents results of research of the administration of this and other math and spatial ability tests to 375 11-year-old children.

Authors: Lang, R. J., and Ryba, K. A.
Title: Identification of some creative thinking parameters common to the artistic and musical personality
Source: *British Journal of Educational Psychology*, November 1976, *46*(3), 267-279

Musical artists, visual artists, and a control group of undergraduate students were given Torrance Tests of Creative Thinking, Barron-Welsh Art Scale, and a musical perception test. Both artistic and musical personalities showed preference for visual stimulus complexity in cognitive styles. Selected variables were shown as reliab predictors of identifying artistically gifted.

Author: McFarland, S. L.
Title: Guidelines for the identification of young gifted and talented children
Source: *Roeper Review*, November/December 1980, *3*(2), 5-7

Identification instruments and techniques are listed with their advantages. The author suggests it is wise to determine the types and goals of the gifted program before choosing identification techniques.

Author: Meeker, M. N.
Title: The prophecy of giftedness
Source: *Gifted Child Quarterly*, Spring 1976, *20*(1), 100-104

A paradigm for the identification and development of giftedness is offered. The paradigm is illustrated and shown to involve three major areas of functioning: academic, social-emotional, and physiological.

Authors: Mercer, J. R., and Lewis, J.
Title: Using the System of Multicultural Pluralistic Assessment (SOMPA) to identify the gifted minority child
Source: *EDUCATIONAL PLANNING FOR THE GIFTED*
Reston Virginia: Council for Exceptional Children, 1978

SOMPA, which was originally designed to prevent mislabeling of minority children as mentally retarded, was found useful in identifying gifted minority students. Uses three models: (1) medical model, (2) a social system model, (3) the pluralistic model. The SOMPA was standardized on 2,100 Hispanic, Black and White students in the California public schools. Results indicate that SOMPA potentially is effective in identifying more gifted minority than standard WISC-R tests. Recommends further experience with the measure to provide information on their limitations.

Authors: Payne, D. A., and Halpin, W.
Title: Use of Factor Biographical Inventory to identify differently gifted adolescents
Source: *Psychological Reports*, December 1974, *35*(3), 1195-1204

High school junior and senior gifted students were given Factor Biographical Inventory in different areas to determine the amount of differences in giftedness between the sexes and within the same sex.

Authors: Perrone, P., and Chen, F.
Title: Toward the development of an identification instrument for the gifted
Source: *Roeper Review*, September 1982, *5*(1), 45-47

Authors describe the development of the Male and Perrone instrument (GIFTS) for identifying gifted and talented achievers. The technique used the classification of behavior in six categories: convergent, divergent/creative, goal oriented, social skills, physical skills, and affective/feelings. Each category included ten behaviors ranging from simple to complex and organized into a student self-description checklist and parent and teacher student rating checklist. Eighty-nine junior and senior high students, sixty-seven teachers, and one hundred and sixty-eight parents completed the information. Analysis of results indicates that convergent ability, divergent thinking intraception, social awareness, and social effectiveness are characteristics of gifted and talented. It is suggested that the instrument may be used as a supplement to more traditional measures of GPA and IQ since it provides a more thorough analysis of the talented.

Authors: Renzulli, J., and Smith, L.
Title: Identification of gifted students
Source: *Exceptional Children*, May 1977, *43*(8), 512-518

Students in 1st, 3rd, and 5th grades were given traditional and case study tests in order to compare effectiveness and efficiency of using either approach. Case study was found superior on three levels: (1) use of multiple sources of information, (2) effective with minority students, and (3) less costly and time consuming.

Author: Richert, E. S.
Title: Identification of gifted children in the United States: The need for pluralistic assessment
Source: *Roeper Review*, 1985, *8*, 68-72

This article gives a comprehensive report on current practices in the U.S.A. in identifying children who are gifted. The article discusses the problems faced by a person in identifying the gifted, gives some recommendations, cautions in selection, and interpretation of data collected; and presents an analysis of the use of tests and other instruments. More than 60 instruments are noted. Each is assessed for its appropriateness in finding specific abilities and subpopulations.

Author: Stalker, M. Z.
Title: Identification of the gifted in art
Source: *Studies in Art Education*, 1981, 22(2), 49-56

Using 103 adult art students, study sought to develop a theoretical model for identifying those gifted in art based on the hypothesis that cognitive complexity, executive skill in drawing, and affective intensity correlate significantly with behaviors consistent with artistic success. Results confirmed the importance and measurability of these variables.

Authors: Torrance, E. P., Bruch, C., and Morse, J. A.
Title: Improving predictions of the adult creative achievement of gifted girls by using autobiographical information
Source: *Gifted Children Quarterly*, Summer 1973, *17*(2), 91-95

Torrance Tests of Creative Thinking were given to the total high school population of 7th to 12th grades in 1959 to predict future creativity. Results showed test was better at predicting male creativity than that of gifted girls.

Authors: Torrance, E. P., and Hall, L.
Title: Assessing the further reaches of creative potential
Source: *Journal of Creative Behavior*, 1980, *14*(1), 1-49

An article which discusses some limitations of present assessment procedures for identifying and understanding the further reaches of creative potential; identifies a few abilities of practical importance belonging to those reaches and suggests some means whereby these talents might be assessed.

Author: Welsh, G. S.
Title: *CREATIVITY AND INTELLIGENCE: A PERSONALITY APPROACH*
Source: Chapel Hill, North Carolina: University of North Carolina Institute for Research in Social Science, 1975, 267

Reported a study of non-cognitive aspects of creativity and intelligence with 1,155 academically or artistically talented adolescents attending the Governor's School in North Carolina. A battery of intelligence and personality inventories was given them and resulted in the identification of four distinct groups differing in intelligence and originality.

Summary Statement

The studies and conceptual papers which have been listed here point to the importance of continued research in the area of identification of the gifted. We are in the prehistoric era of testing and assessment of human abilities thus the cycle of conceptualization, development, experimentation, and evaluation must continue. These entries simply "scratch the surface."

CURRICULAR ADAPTATIONS

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Introduction

Discussions about the elements and conditions that constitute an appropriately differentiated curriculum for the gifted have taken place through the years. Although no single response to the curricular dilemma has been reached, the following references can aid the educator in formulating a perspective and understanding of the factors to be considered in the design and implementation of curricula for the gifted.

Author: Bloom, Benjamin
Title: *TAXONOMY OF EDUCATIONAL OBJECTIVES: COGNITIVE DOMAIN*
Source: New York, New York: David McKay Co., 1956

The taxonomy represents a hierarchical system of intellectual functions: knowledge, comprehensive, application, analysis, synthesis, and evaluation which can be used in the construction of objectives at various levels of difficulty appropriate to the needs of the learners. This model is useful in planning and organizing differentiated curricula and in ensuring that the consequence of curricular adaptation for the gifted is distinguished by different and varying levels of learning.

Author: Bruner, Jerome S.
Title: *THE PROCESS OF EDUCATION*
Source: New York, New York: Vintage Books, 1963

The author describes the elements that facilitate the act of learning: acquisition, transformation, and evaluation as well as the critical factors that stimulate intellectual growth: interest, organization of information, recording, and integration. Although this material concerning the nature and stages of learning was not written specifically for the gifted, it has ramifications for adapting the curricula and instruction for this population.

Author: California State Department of Education
Title: *PRINCIPLES, OBJECTIVES, AND CURRICULA FOR PROGRAMS IN THE EDUCATION OF GIFTED AND TALENTED PUPILS-KINDERGARTEN THROUGH GRADE TWELVE*
Source: Sacramento, California: California State Department of Education, Superintendent of Public Instruction, 1979

This pamphlet answers concisely these questions: "How best can the gifted be educated?" and "What are the needs of the gifted?" through an explanation of selected theories (Guilford, Piaget) and systems that classify knowledge (Bloom, Phenix). A delineation of curricular adaptations per grade level in the subject areas of mathematics, science, English, literature, social sciences, foreign language, arts, and music are presented.

Authors: Davis, Gary A., and Rem, Sylvia B.
Title: *EDUCATION FOR THE GIFTED AND TALENTED*
Source: Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1985, 154-182

A summary of nine models to be applied to the development of curriculum is presented. The specific elements of each model are described to guide the process of curriculum construction.

Author: Gallagher, James J.
Title: *LEADERSHIP UNIT: THE USE OF TEACHER-SCHOLAR TEAMS TO DEVELOP UNITS FOR THE GIFTED*
Source: New York: Trillium Press, Inc., 1982.

A demonstration of how curriculum can be created by using teams of teachers and scholars; includes a curriculum for Fifth and Sixth Graders on leadership together with implementation and testing information.

Author: Gallagher, James J.
Title: *TEACHING THE GIFTED CHILD* (THIRD EDITION)
Source: Boston, Massachusetts: Allyn and Bacon, Inc., 1985, 103-341

Content acceleration, content enrichment, content sophistication, and content novelty are four strategies used to differentiate curriculum for the gifted in content areas such as mathematics, science, social studies, and language arts.

Author: Goldberg, Miriam L.
Title: Organizational alternatives for content development and delivery
Source: *ISSUES IN THE EDUCATION OF GIFTED AND TALENTED CHILDREN IN AUSTRALIA AND THE UNITED STATES*
Canberra, Australia: Commonwealth School Commission, 1981, 45-49

In a pamphlet explaining the possibilities for United States-Australian Cross-National policy research related to the education of the gifted, the author addresses these questions: "How and by whom can instructional content and procedures be developed?" and "Which organizational patterns will be most effective for instruction?"

Author: Guilford, J. P.
Title: *THE NATURE OF HUMAN INTELLIGENCE*
Source: New York: McGraw-Hill Book Company, 1967

The "Structure of Intellect" is a model classifying intellectual factors into operations, contents, and products. Factors of the model can be used to formulate educational goals, define and organize the curricula, and determine effective methodology appropriate to the needs of the gifted.

Authors: Joyce, Bruce, and Weil, Marsha
Title: *MODELS OF TEACHING*
Source: Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967

Different approaches to teaching and learning are introduced and explained to aid in the systematic planning of curriculum and the implementation of such curriculum to match the learning styles and needs of students.

Author: Kaplan, Sandra N.
Title: *INSERVICE TRAINING MANUAL: ACTIVITIES FOR DEVELOPING CURRICULUM FOR THE GIFTED*
Source: Ventura, California: National/State Leadership Training Institute on the Gifted and the Talented, Ventura County Superintendent of Schools Office, 1979

This workbook offers a step-by-step approach to planning, defining, constructing, and implementing differentiated curricula for the gifted.

Author: Maker, June C.
Title: *CURRICULUM DEVELOPMENT FOR THE GIFTED*
Source: Rockville, Maryland: Aspen Systems Corporation, 1982

A presentation of the modifications necessary in the curricular elements of content, process, and product are accompanied by a detailed step-by-step plan for the development of a curriculum appropriate for the gifted. Descriptions of differentiated curricula for various types of program objectives and designs are included in this publication.

Author: Passow, Harry A.
Title: Differentiated curricula for the gifted/talented: A point of view
Source: *CURRICULA FOR THE GIFTED*
Ventura, California: National/State Leadership Training Institute on the Gifted and the Talented, Ventura County Superintendent of Schools Office, 1982, 4-20

his chapter reflects the common perspective of a recognized group of educators of the gifted concerning differentiated curriculum. It outlines a set of principles with concomitant curricular experiences that define an appropriate differentiated curriculum for the gifted.

Author: Phenix, Phillip H.
Title: *REALMS OF MEANING: A PHILOSOPHY OF CURRICULUM FOR GENERAL EDUCATION*
Source: New York: McGraw-Hill Book Company, 1964

A theory for sequentially organizing knowledge into bodies of meaning (symbolic, empirics, aesthetics, synnoetics, ethics, and synoptics) to effect the development and teaching of curricula is provided.

Authors: Renzulli, Joseph S., Smith, Linda H., and Reis, Sally
Title: Curriculum compacting: An essential strategy for working with gifted students
Source: The Elementary School Journal, *82*(3), January, 1982, 185-194

A rationale and set of procedures necessary to relieve gifted students from unnecessary learning experiences and/or to allocate the time necessary for appropriately-related learning experiences within the context and the expectations of the standard or regular curriculum is discussed.

Author: Renzulli, Joseph S.
Title: *THE ENRICHMENT TRIAD MODEL: A GUIDE FOR DEVELOPING DEFENSIBLE PROGRAMS FOR THE GIFTED AND TALENTED*
Source: Mansfield, Connecticut: Creative Learning Press, 1977

Three types of learning options: Type I—general exploratory activities, Type II—training activities, and Type III—individual and small group investigations of real problems are discussed. These options can be used to both define curricula and design programs for the gifted.

Author: Stanley, Julian C.
Title: The study and facilitation of talent for mathematics
Source: *THE GIFTED AND THE TALENTED: THEIR EDUCATION AND DEVELOPMENT*, (THE SEVENTY-EIGHTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION)
Chicago, Illinois: University of Chicago Press, 1979

The concept of acceleration as applied to students of specific aptitude in mathematics is outlined to illustrate both the selection of students and the articulation of curricula for this type of curricular adaption.

Author: Tannenbaum, Abraham J.
Title: *GIFTED CHILDREN: PSYCHOLOGICAL AND EDUCATIONAL PERSPECTIVES*
Source: New York: MacMillan Publishing Co., Inc., 1983, 420-439

The author has developed an enrichment matrix that guides the curriculum developer in adjusting content area disciplines by such strategies as telescoping the common care, expanding basic skills, programmatic and provisional augmentations, and out-of-school experiences.

Author: Tyler, Ralph W.
Title: *BASIC PRINCIPLES OF CURRICULUM AND INSTRUCTION*
Source: Chicago, Illinois: The University of Chicago Press, 1949

This book answers these questions: "What educational purpose should the school seek to attain?" "How can learning experiences be selected which are likely to be useful in attaining these objectives?" "How can the effectiveness of learning experi-

ences be evaluated?'' and ''How can learning experiences be organized for effective instruction?'' These represent the basic questions curriculum planners and developers need to address regardless of the nature of the learners for whom they are designing curricula.

Authors: Vernon, Philip E., Adamson, G., and Vernon, D. F.
Title: Enrichment
Source: *THE PSYCHOLOGY AND EDUCATION OF GIFTED CHILDREN*
London, England: Methuen and Co., Ltd., 1977, 172-196

This discussion of the concept of enrichment includes a synthesized review of the literature from the 1950's to the present.

Author: Ward, Virgil S.
Title: *DIFFERENTIAL EDUCATION FOR THE GIFTED*
Source: Ventura, California: National/State Leadership Training Institute on the Gifted and the Talented, Ventura County Superintendent of Schools Office, 1980

This revised edition of an earlier (1961) work presents a theory to support the philosophical need, and establishes a frame of reference for differentiated curricula. Behavioral characteristics of the gifted form the basis for a set of principles which become the criteria used to select and evaluate curricular adaptions for the gifted. These principles describe content and methods of adaptions in the intellectual, academic, personal, social, and character developmental areas of the curriculum.

Author: Williams, Frank E.
Title: *CLASSROOM IDEAS FOR ENCOURAGING THINKING AND FEELING*
Source: Buffalo, New York: D.O.K. Publisher Inc., 1970

A model to facilitate the interrelationship of the skills of thinking and feeling (Pupil Behaviors), the subject matter content from various disciplines (Curriculum), and the teaching strategies to foster the learning process (Teacher Behavior) into a curriculum for the gifted is presented.

Author: Zais, Robert S.
Title: *CURRICULUM PRINCIPLES AND FOUNDATIONS*
Source: New York, New York: Harper and Row Publishers, 1976

"Part III-Anatomy of the Curriculum" addresses the elements and structure of general curriculum. While this information is relative to curriculum for all students, this section of the text provides a foundation for understanding curriculum and thus, a reference for translating general curricular theory into the development of differentiated curriculum for the gifted.

Summary Statement*

The wide variety of curricular materials presented in the texts and in articles cited here indicates clearly the strong feeling that gifted children need a differentiated curriculum. These abstracts also indicate that such a differentiated curriculum should be in both the *content* and *process* fields. The enrichment triad materials speak to process as much as to content, and Williams' ideas for thinking and feeling focus on process as much as content.

What remains unclear from the current literature is whether there are some areas that are not to be considered as potential curriculum material for the gifted. Is every topic that one can think of a potential curricular topic for the gifted, if presented in just the right way, and with the relevant complexity to excite the gifted intellect? Since there is a limited time to present differentiated materials to the gifted student, how does one make choices between the alternatives? What are the rules for such choosing? These remain interesting and mainly unaddressed issues.

* Prepared by Senior Editor

THE GIFTED CHILD AND MATHEMATICS

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Introduction

The discipline of mathematics continues to be of major significance to individuals and society as the twentieth century draws to a close. A sound grasp of mathematics is an important prerequisite to most of the sciences,engineering, and technology. Even outside these areas, some understanding of the essence of mathematics, its characteristic patterns of thinking, and some of its workings are an important aspect of the concept of an educated citizen. For these reasons, all children are taught mathematics from pre-school to at least junior high school, and public concern and comment about the shape of the mathematics curriculum is never far below the surface. As far as gifted children are concerned, mathematics is an area in which problems readily surface: some will grasp mathematical ideas very quickly indeed, presenting significant programming problems for teachers; not all teachers are comfortable with mathematics as we would prefer; some children, especially talented in mathematics, will be easily disenchanted with a low-level curriculum poorly matched to their high-level thinking. Important questions in this area include "What comprises mathematical talent?" "What psychological processes give rise to the vast range of individual differences in mathematical ability?" "How can we recognize those with special mathematical talent at a sufficiently early age to respond appropriately to their needs?" "What curriculum and educational provisions are appropriate for mathematically gifted or talented students?" This bibliography addresses various aspects of these questions.

Author: Aiken, L. R.
Title: Ability and creativity in mathematics
Source: *Review of Educational Research*, 1973, *43*(4), 405-432

This is a definitive review of the research concerning the nature and development of mathematical ability and creativity up to the time of publication. Major sections include: types and factors of mathematical ability, the meaning and measurement of creativity, heredity and development in mathematical abilities, pyschosocial factors in mathematical ability and creativity, and education for mathematical creativity.

Authors: (Various)
Title: Challenge: The mathematically able student
Source: *The Arithmetic Teacher*, February 1981, *28*(6)

This special edition contains several brief papers concerned with various aspects of mathematics for the mathematically gifted. Included are discussions of identification, curriculum, mathematically able girls, research needs, district procedures, school provisions, and some suggested activities for students in various grades (K-8).

Authors: Bartkovich, K. G., and George, W. C.
Title: Teaching the gifted and talented in the mathematics classroom.
Source: *TEACHING THE GIFTED AND TALENTED IN THE CONTENT AREA SERIES*
Washington, DC: National Education Association, 1980

Arising from the Study of Mathematically Precocious Youth (SMPY) at the Johns Hopkins University, this booklet contains details of two approaches to accelerated mathematics programs for youth who "reason extremely well mathematically." The approaches, "fast-paced instruction" and "Diagnostic Testing-Prescriptive Instruction (DT→PI)" have been the subject of considerable research by SMPY and others, and much of this is referenced in the text. A major theme of the book is the need to tailor educational programs flexibly to the needs and characteristi of the students.

Author: Benbow, C. P.
Title: Adolescence of the mathematically precocious: A five-yea longitudinal study
Source: Benbow, C. P., and Stanley, J. C. (Eds.)
ACADEMIC PRECOCITY: ASPECTS OF ITS DEVELOPMENT
Baltimore, Maryland: The Johns Hopkins University Press, 1983, chapter 2, 9-37

This is the first of many projected longitudinal studies of the Study of Mathematically Precocious Youth (SMPY), giving a good deal of detailed evidence for the predictive validity of the SAT-Mathematical scale. Relative to appropriate comparison groups, mathematically talented students selected at the seventh and eighth grades performed better in mathematics at school, expressed stronger interest in mathematics and sciences, were accelerated more frequently, and were not hindered in terms of social and emotional development.

Author: Bloom, B. S.
Title: The role of gifts and markers in the development of talent.
Source: *Exceptional Children*, April 1982, *48*(6), 510-522

Having identified about 25 top-ranking young US research mathematicians, Bloom and his colleagues interviewed them, their parents, and their teachers as part of a study of talent development. General characteristics of mathematicians, as well as others, were: an unusual willingness to do great amounts of work, great competitiveness with peers, and ability to learn rapidly in their field. Special characteristics of the mathematicians were: (a) before age eight, much question-asking of parents and others followed by the child using the answers and much solitary activity on projects and play, (b) during adolescence, a great deal of independent learning from books as well as from observing others and identification as unusually able science and math students in high school.

Authors: Fox, L., Brody, L., and Tobin, D. (Eds.)
Title: *WOMEN AND THE MATHEMATICAL MYSTIQUE*
Source: Baltimore, Maryland: Johns Hopkins University Press, 1980

A collection of chapters dealing with various aspects of the special problems faced by gifted women and the subject area of mathematics. The role of socialization and societal biases are given attention as well as ideas on how to help gifted girls and women overcome the inhibiting forces that apparently keep them from reaching their full potential in this subject area.

Author: Keating, D. P. (Ed.)
Title: *INTELLECTUAL TALENT: RESEARCH AND DEVELOPMENT*
Source: Baltimore, Maryland: The Johns Hopkins University Press, 1976

A number of important research papers arising from the first few years of the Study of Mathematically Precocious Youth (SMPY) are presented in this volume. Without exception, the research has been carefully planned, data has been appropriately analyzed and studies responsibly reported. Extensive research on appropriate mathematical curricula, notably accelerative in character, is reported reflecting SMPY's emphasis in fitting the curriculum to the needs and aspirations of the child. Several other studies report characteristics, including sex differences, of mathematically gifted children.

Author: Krutetskii, V. A.
Title: *THE PSYCHOLOGY OF MATHEMATICAL ABILITIES IN SCHOOL CHILDREN*
Source: Chicago, Illinois: The University of Chicago Press, 1976 (Translated from the Russian by Joan Teller, Edited with a Preface and an Introduction by Jeremy Kilpatrick and Izaak Wirszup)

A highly influential report of a Soviet research program extending over ten years. The research program concerned the nature and development of mathematical abilities and used a variety of clinical research methods. Krutetskii is highly critical of Western psychology and especially psychometrics, condemning "the fetishistic mathematical treatment of test results, with a complete absence of interest in studying the process itself." The culmination of the work is a picture of mathematical ability that claims that mathematically gifted students process mathematical information in different ways to other students. Although much of the methodology of this study might be criticized, it provides a different view of the nature and development of mathematical abilities to that normally presented in the West, new perspectives on research procedures, and a fascinating glimpse at the Soviet educational ideology.

Author: Marjoram, D. T. E., HMI
Title: Maths for the gifted child
Source: *Gifted and Talented Ed, 1980, 2*

Describes characteristics of mathematicians young and older, and problems of identification and provision in the classroom. Examples of challenging problems are followed by observations about implications for teacher training, methodology, organization, and resources in the United Kingdom.

Author: Marjoram, D. T. E., HMI
Title: Mathematical gifts
Source: J. Freeman (Ed)
GIFTED CHILDREN
New York, New York: John Wylie, 1983

Develops ideas from "Maths for the Gifted Child" and concludes with an overview of developments abroad.

Authors: Ridge, H. L., and Renzulli, J. S.
Title: Teaching mathematics to the talented and gifted
Source: Glennon, V. J. (Ed.)

THE MATHEMATICAL EDUCATION OF EXCEPTIONAL CHILDREN AND YOUTH
Reston, Virginia: National Council of Teachers of Mathematics, 1981, chapter 6, 191-266

A careful consideration of the implications of Renzulli's "Three-ring" definition of giftedness and "Enrichment Triad" model for curriculum development in the particular case of mathematics. Most of the typically suggested curricular provisions for the mathematically able are discussed with some reference to the available research, some well-chosen examples, and a very useful set of appendices.

Author: Stanley, J. C.
Title: Rationale of the study of mathematically precocious youth (SMPY) during its first five years of promoting educational acceleration
Source: Stanley, J. C., George, W. C., and Solano, C. H. (Eds.) *THE GIFTED AND THE CREATIVE: A FIFTY-YEAR PERSPECTIVE*
Baltimore, Maryland: The Johns Hopkins University Press, 1977, chapter 5, 75-112

SMPY has developed into the most significant longitudinal study of giftedness since Terman's *Genetic Studies of Genius*. This is the most complete description of the rationale of SMPY and should be read carefully by all interested in the education of mathematically gifted children. In particular, both those in favor of accelerative approaches to mathematics and those not in favor should read carefully the persuasive case presented and backed by sound research.

Authors: Stanley, J. C., and Benbow, C. P.
Title: Educating mathematically precocious youths: Twelve policy recommendations
Source: *Educational Researcher*, May 1982, 4-9

The conclusions of 13 years of research with mathematically highly talented students and their longitudinal follow-up are presented and argued. Policy recommendations concern the need for students to be permitted to progress through standard and enriched curricula at their own rates, the need for the National Science Foundation to make better provisions for young, eager, fast learners, and the need for more research into provisions for the mathematically talented, sex differences, and longitudinal studies. The distinguishing feature of this set of policy recommendations is its strong research base.

Authors: Stark, E. W., and Stanley, J. C. (Eds.)
Title: Bright youths dispel persistent myths about intellectual talent.
Source: *The Gifted Child Quarterly*, Summer 1978, 22(2), 220-223

A panel discussion between a group of sixteen mathematically very able students, aged 6-20, and an audience of parents and educators. Half of the group entered college early, and they report their feelings on the effects and wisdom of acceleration as a curriculum alternative in mathematics. The students' views on acceleration, in particular, and the apparent long-term success of accelerated mathematical learning will indeed dispel some of the prevailing myths in this area.

Summary Statement

It is still not clear why some children are very much more mathematicallyable than "average," but it is clear that they are. The best available recent research, as well as the overwhelming conclusions of earlier research, suggests that educational acceleration is an appropriate strategy for many such students. The modification of existing curricula and the development of new curricula will continue to be important supplementary strategies, but will continue also to be both difficult and expensive to do well. The implementation of an appropriately conceived education for the mathematically talented seems likely to continue to be a difficult problem for administrative and other reasons.

SCIENCE

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Introduction

The main aspects of this topic at present being addressed in the literature, appear to be:

1. How (and how early and how adequately) gifted children with a special talent for an interest in science can be identified;
2. Special programs of various kinds—enrichment, acceleration, differentiated curriculum—being used with gifted young scientists;
3. Personality and motivational characteristics of gifted young scientists, with implications for their social and psychological development.

A. Programs:

Authors: Abelson, Harold and Di Sessa, Andy
Title: *STUDENT SCIENCE TRAINING PROGRAM IN MATHEMATICS, PHYSICS, AND COMPUTER SCIENCE*
Source: Cambridge, Massachusetts: Artificial Intelligence Lab, 1976

This report details a 6-week program in mathematics, physics, and computer sciences attended by 14 high ability secondary school students in the summer of 1976. Information is provided on the style and the environment of the program as well as the curriculum, which explored computation as an intellectual framework for mathematics and physics. Three projects undertaken by the group are discussed. Other activities, the method of participant selection and problems are briefly explained. An evaluation of the program and a list of staff and participants are included. Appended are the application package, exam solutions, and copies of newspaper articles about the program.

Authors: Albright, A. D., et al.
Title: *SOUTHERN HIGH SCHOOL PROGRAMS FOR ADVANCED STANDING AND ACCELERATED COLLEGE PROGRESSION*

Source: Fulton County, Georgia: Southern Association of Colleges and Secondary Schools, 1960

Approaches to educating able students of 45 high schools were presented. Most of the special programs fall into one of two categories: special classes organized in place of regular ones, and attempts to enrich or accelerate those classes already scheduled. The curriculum of most of the schools for these students included—English, physical science, mathematics, general science, and foreign language. They used such unique arrangements as rapid grade advancement, separate curriculum tracks, and rapid subject matter progression. Special materials, library volumes, laboratory facilities and supplies, as well as other aids were used. Teachers themselves were usually involved in some type of special preparation. Guidance, counseling, and special advisement were usually included. Some of the problems encountered included scheduling, instruction, grading, student attitude, and parent attitude. However, the educators and the evaluation of the student's performance proved that the programs were indeed beneficial.

Author: California State Department of Education
Title: *SCIENCE: CURRICULUM GUIDE FOR TEACHING GIFTED CHILDREN SCIENCE IN GRADES ONE THROUGH THREE: A SAMPLE ECOLOGY UNIT*
Source: Sacramento, California: Publication Sales, California State Department of Education, 1977

The natural science curriculum guide for gifted primary students includes a sample teaching-learning plan for an ecology unit and eight sample lesson plans. Chapter One provides an overview of the unit, a review of behavioral objectives, and a list of concepts and generalizations. The second chapter cites a teaching-learning plan dealing with such aspects of ecology as animal movement, seed dispersal, and erosion. Sample lesson plans in the final chapter contain information on behavioral objectives, teaching strategies, suggested activities, and resource materials.

Author: Demaray, Bryan
Title: *PROJECT SUCCESS: MARINE SCIENCE* (Introductory Packet, Basic Marine Science Laboratory Techniques, Oceanographic Instruments, Individual Projects, Bibliography)
Source: Poulsbo, Washington: North Kitsap School District 400, 1977

Five packets comprise the marine science component of an enrichment program for gifted elementary students. Considered in the introductory section are identification (pre/post measure) procedures. Remaining packets address the following topics

(subtopics in parentheses): basic marine science laboratory techniques (microscope techniques and metric usage); collection and observation techniques (classification of marine animals and plants); oceanographic instruments (water quality sampling and hydrographic studies); and ideas for individual student projects. A bibliography lists approximately 25 books and 100 films/filmstrips.

Author: Donaldson, Robert R.
Title: *SCIENCE FOR THE ACADEMICALLY TALENTED STUDENT*
Source: Washington, DC: National Education Association, 1959

Discussion and suggestions from a conference on program development for secondary school students academically talented in science are summarized. Specific topics include identification of the academically talented science student, content in science, teaching methods, the teacher, and a suggested program. Presented in the appendices are guidance principles for curriculum construction and a bibliography.

Author: Judson, H.
Title: *THE SEARCH FOR SOLUTIONS*
Source: New York, New York: Holt, Rinehart, and Winston, 1980

This book is designed to accompany and provide background for teachers using the nine segment film series of the same title. It covers different aspects of the scientific process: investigators, change, chance, feedback, modeling, strong prediction, evidence, and theory. It captures the key elements of science in a readable but scholarly fashion.

Author: Morrison, Charlotte
Title: *SCIENCE: CURRICULUM GUIDE FOR TEACHING GIFTED CHILDREN SCIENCE IN GRADES ONE THROUGH THREE*
Source: Sacramento, California: California State Department of Education, Division of Special Education, 1970

The curriculum guide for teaching science to gifted primary grade children in California focuses on natural science with an emphasis on ecology. Provided are a general overview of the unit, a set of behavioral objectives, a list of generalizations and concepts, a sample teaching-learning plan for the complete unit, and eight sample lesson plans. Each lesson takes up a different ecological topic: substratum, animal movement, seed dispersal, temperature's influence on environment, light, food, water, and erosion. Each lesson plan includes behavioral objectives, teaching strategies, suggested questions and activities, and suggested resource materials.

Author: Muir, Raquel
Title: *SCIENCE: A UNIT ON MICROBIOLOGY: CURRICULUM GUIDE FOR TEACHING GIFTED CHILDREN SCIENCE IN GRADES FOUR THROUGH SIX.*
Source: Sacramento, California: California State Department of Education, Division of Special Education, 1970

The curriculum guide for teaching science to gifted intermediate grade students presents material to be used for a unit on microbiology, as well as suggestions for a second unit on the subject. Examined in the unit are the structures, functions, growth, development, uses, and environments of different kinds of microorganisms, with an emphasis on bacteria. The first section of the guide, intended for teachers, presents suggested instructional approaches for teaching microbiological concepts and covers both the range of subject matter content and behavioral objectives. The second section, Suggested Learning Activities, is addressed to the student and contains four sample lessons. The third section, meant to be used by both teacher and student, defines scientific and technical terms, presents certain aspects of the classification of microorganisms, and provides directions for 10 technical procedures used in the projects suggested in the guide. Also listed are some resources and references, and recommendations concerning further study in microbiology.

Authors: Myers, John and Mangano, Sandra
Title: A resource course for gifted students in grade 10, 11 and 12
Source: G/C/T, September-October 1980, *14*, 28-32

The development of a humanities based program in which English, social studies, math, and science were interrelated for senior high gifted students is described. A sample unit on Greek civilization is included to illustrate the range of activities in philosophy, science, literature, mathematics, and art.

Author: Weil, R. (Ed.)
Title: *THE OMNI FUTURE ALMANAC*
Source: New York, New York: Harmony Press, 1982

This book extrapolates the current state of the art into the next two decades in the development of science and technology, medicine, ecology, space, business, etc. It is an interesting set of ideas for both the teacher and the gifted student, written by a series of experts about the world in which we are going to live.

Author: (Various)
Title: AUSTRALIAN SCIENCE EDUCATION PROJECT
Source: Canberra, A.C.T., Australia: Curriculum Development

Center, Department of Education and Science

These materials contain extension materials ("Options") that are open-ended and highly suitable for gifted children.

Authors: (Various)
Title: *S.C.E.P.S UNITS*
Source: Dr. E. Ogilvie, Director
Northampton NN27AL, England: Neve College, Moulton Park

Enrichment packages for gifted students grades 1-12, *some* of which are science topics. Quality with respect to curriculum design for the gifted varies. Each is by a different author. Some are now commercially available, the remainder can be obtained through the college.

B. Characteristics of Scientifically Gifted:

Authors: Endean, Lou and George, David
Title: Observing thirty able youngsters at a science enrichment course
Source: *The School Science Review*, December 1982

Convergent/divergent thinking characteristics of this group were measured, an open-ended assignment was completed and subjects described their ideal science teacher, ideal science classroom, and ideal school. Some significant and rather unexpected differences between male and female respondents emerged concerning their expectations of the teacher, the organization of the room, etc. The product (the assignment) was analyzed against the other data for individuals. This is a descriptive study which opens up a number of areas for further investigation.

Author: Gifted Children Task Force
Title: *"CLUSTER GROUPS"—A PROGRAM OF EDUCATION —ENRICHMENT FOR GIFTED AND TALENTED CHILDREN*
Source: Melbourne, Australia: Gifted Children Task Force, Education Department of Victoria, 1982

This describes a partial withdrawal scheme of enrichment in specific subject areas. Activities of individual regional cluster groups are described, many are in the science and applied science areas.

Author: Olson, Meredith B.
Title: Cerebral lateralization in science
Source: *Gifted Child Quarterly*, 1979, *23*(1), 142-150

A study on the relationship between insight and hemispheric use in science courses for gifted students is briefly described. It is explained that the study assumes that Wechsler Intelligence Scale for Children block design scores at a given age reflect hemispheric processing which in turn reflects insight, interest, and logic in inquiry laboratory science classes. The author states that a major finding of the study is that students express more interest in a science class whose laboratory time is matched to their spatial ability.

Author: Saslaw, Milton S.
Title: *EVALUATION OF A PROGRAM TO PROMOTE SCIENTIFIC CAREERS IN GIFTED STUDENTS AT THE SECONDARY LEVEL FINAL REPORTS*
Source: Coral Gables, Florida: Graduate School, Miami University, 1968

In the program, Motivation in Depth for Gifted High School Science Students initiated in 1964, specially selected seventh grade students took in successive summers Biological Sciences Curriculum Study (BSCS), Chemical Education Materials Study (CHEMS), and Physical Science Study Committee (PSSC) courses; a newly designed course, Laboratory Orientation and Instrumentation; and two academic years in the Laboratory Research Program. Evaluation was to determine program feasibility, collect selected data, and analyze differences between the experimental students and matched control students on the California Occupational Interest Inventory (COII). Feasibility was demonstrated by the following observations: 91.7% of all class performances met school requirements; participating students in BSCS and PSSC obtained scores on national tests more favorable than national controls; and participants performed satisfactorily compared with controls who took the regular academic program in tenth, eleventh, and twelfth grades. Data have been collected over the duration of the program by the Wechsler Intelligence Scale for Children and specially constructed structured interviews, and by group Rorschach, Bell Personality Inventory and COII. Analysis of the COII revealed a significant increase in the difference between experimental and matched control students in the personal-social factor.

Author: Tempest, N. R.
Title: *TEACHING CLEVER CHILDREN 7-11*
Source: Boston, Massachusetts: Routledge and Kegan Paul, 1974

Described is the curriculum and teaching methods used in a 4-year special class

for gifted (IQ over 130) 7-to-11-year-olds in Great Britain. An introductory chapter focuses on characteristics of clever children, problems of identification, and a rationale for curriculum enrichment. Learning activities are organized by the type of thinking involved rather than by subject matter. The chapter on observation and inquiry explains techniques used to develop research skills, methods of science teaching, and evaluation. Teaching methods for logical reasoning and mathematics are discussed in the chapter on problem solving. Considered in the chapter on imaginative work are reading, story telling, poetry and drama, music, individual work, improvisation, singing, listening, and group projects. Also described are miscellaneous activities of the group including instruction in German, arts and crafts, physical education and games, and field trips. The final chapter consists of a review of research about the gifted, including general studies, biographical, longitudinal, and special studies in areas such as curriculum methods, divergent thinking, and creativity.

Authors: York, Gordon L., et al.
Title: *THE RAPID LEARNER—K-6*
Source: North Dakota: Grand Forks Public Schools

The motivating concept in the development of the syllabus was that the increasing complexity of the educational task demands that we make special provisions for those who learn more rapidly and who can progress through the curricular program at a greater speed. These students should be challenged through the use of a variety of materials and techniques. Techniques for identifying the rapid learner include teacher observation of pupil characteristics, grades, achievement tests, and IQ tests. The suggestions for teaching are divided into the subject areas of science, social studies, language arts, and mathematics. Within each subject area the material is presented at appropriate grade levels from kindergarten through the sixth grade. A bibliography is offered at each grade level along with a general bibliography for each subject area. The bulk of the material presented is in the form of short suggestions for specific student activities within each subject area and at each grade level.

Summary Statement*

The influence of science and technology upon gifted children who will embark upon adulthood in the 21st century is inescapable. They either will seek a career in some area of science itself, or as citizens of a profoundly changing culture will be forced to cope with the vast amount of change that will come about through scientific advances. Either way, if we cannot help these gifted children to understand that science is not a way of knowing truth, but rather a way of searching for truth, then indeed we have done future generations a tremendous disservice.

There are many creative ideas and suggestions in these abstracts, and in the much larger literature from which these selections have been chosen, as to how to introduce science to gifted students and stimulate them to go farther in scientific pursuits.

The unfinished agenda for science and future scientists includes such small problems as what are the origins of the solar system, the universe, of life itself; plus a topic that should be of special interest to gifted students, how does the human nervous system perceive, think, and process information?

* Prepared by Senior Editor

STUDIES OF THE FUTURE

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Introduction

The study of the future is in the process of emerging as one of the NEW BASICS in educational programming. In the past few years there has been a proliferation of information and resources alerting educationists to the need for emphasis on the processes of thinking and problem solving relevant to a preparation for the future. Publications are becoming increasingly available,not only in terms of time forward, but also in application to the development of thinking skills demanded by the expanding global dimensionalities of a rapidly changing and complex society. Thinking levels required for extended considerations of time and space have a natural connection to gifted, talented, creative minds, and potential leaders. The following titles are offered as a sampling, with the expectation that interested readers will continue to explore the literature for ideas and practical strategies for classroom attention to the study of the future.

Author: Backstrand, Goran
Title: Sweden's secretariat for future studies
Source: *WORLD FUTURES* (Vol. 17), Gordon and Breach, Science Publishers, Inc., 1981

A report and endorsement of the establishment of the Secretariat for Futures Studies attached to the Swedish Council for Planning and Coordination of Research, a government agency under the Ministry of Education, addressing social, environmental, technological, and political futures.

Author: Bleedorn, Berenice
Title: *LOOKING AHEAD*
Source: Buffalo, New York: D.O.K. Publishers, 1981

Provides short- and long-term open-ended activities and projects that help students learn how to anticipate the future. Strategies for futurizing learning are applicable individually or in groups. Classroom-tested ideas and strategies are described and detailed.

Author: Bleedorn, Berenice
Title: Strategies and resources for creative encounters with the future.
Source: Gallagher, James J. (Ed)
GIFTED CHILDREN: REACHING THEIR POTENTIAL
New York, New York: Trillium Press, Inc., 1979

Presentation of a system organized around the General Systems concept of Genesa, designed to balance curricula between knowing, creating, and futurizing in a pattern of schooling for gifted and talented leadership for global futures.

Authors: Botkin, James E., Mahdi, Elmandjra, and Malitza, Mircea
Title: *BRIDGING THE HUMAN GAP: NO LIMITS TO LEARNING*
Source: Washington, DC: Pergamon Press, 1979

The message of this book is a reinforcement for educators interested in maximizing potential of gifted and talented. It asserts that learning, rather than material resources, is the key to the world's future, and that schools need to meet the challenge of "innovative learning" with focus on anticipation, participation, and potential.

Author: Cornish, Edward
Title: The coming of an information society
Source: *The Futurist*, April 1981, 7(2)

A discussion of the impact of new information technology and the effect of instant information on social futures and networking processes. The article is written by the President of the World Future Society and Editor of *The Futurist*.

Authors: Cornish, Edward, et al.
Title: *THE STUDY OF THE FUTURE: AN INTRODUCTION TO THE ART AND SCIENCE OF UNDERSTANDING AND SHAPING TOMORROW'S WORLD*
Source: Washington, DC: World Future Society, 1977

A basic resource that refers to Futures Studies as a most exciting enterprise as well as an awesome responsibility. The book has an important place for teachers in backgrounding the development of futures studies as an academic discipline, acquainting the reader with outstanding futurists and their work, providing methods of studying the future, and offering a listing of organizations, research centers, and books by representative writers of a variety of national origins.

Author: Crabbe, A. B.
Title: Creating a brighter future: An update on the future problem solving program
Source: *Journal for the Education of the Gifted*, 1982, *5*, 3-11 (English)

Describes the goals, methods, and procedures of the Future Problem Solving Program at the end of the eighth year of its existence.

Authors: Feather, Frank and Mayur, Rashmi (Eds.)
Title: *OPTIMISTIC OUTLOOKS: LATEST VIEWS ON THE GLOBAL FUTURE*
Source: Toronto, Canada; New York; Bombay, India: Galaxy, A., International Experts, Global Futures Network, 1982

The collected articles by futurists with a variety of perspectives addresses questions of transformation to a new world order, the managing of the future, and the meeting of basic human needs. The optimistic outlooks stem from the underlying assumption throughout the essays that "our collective potential for creative change on this planet is truly enormous . . . and that our future together is limited only by our imagination."

Author: Fowles, Jib (Ed.)
Title: *HANDBOOK OF FUTURES RESEARCH*
Source: Washington, DC: Greenwood Press, 1978

Forty-six of the world's most prominent futurists contributed to this collection of reports and essays to provide a reference tool and information source in backgrounding for global future perspectives.

Authors: Franks, Betty Barclay and Howard, Mary
Title: *PEOPLE, LAW, AND THE FUTURES PERSPECTIVE*
Source: Washington, DC: National Education Association, 1979

A course manual for teachers in secondary education, arguing that futures studies and law-related education have much in common and that educators should consider combining the two fields in the classroom. Law, justice, and human rights are addressed with vision and insight.

Authors: Greenburg, M. H., and Olander, J. D.
Title: *INTERNATIONAL RELATIONS THROUGH SCIENCE FICTION*
Source: Washington, DC: World Future Society, 1978

An example of the value of science fiction as a resource for the imaginative treatment of almost all the major areas within the field of international relations—nationalism, arms control, economics, diplomacy, etc. This collection of fifteen works by well-known science fiction writers is a relevant tool for those interested in some probable outlines of the world's future.

Author: Harman, Willis
Title: *AN INCOMPLETE GUIDE TO THE FUTURE*
Source: New York: W. W. Norton & Co., 1979

The process of moving from a society focused on technology, growth, and industrialization to a transindustrial system is the theme of this book. Patterns of learning that lead to human fulfillment and social betterment suggest new images of personhood, and include the development of supraconscious possibilities of the mind. Strategies for a transition to a transindustrial society are suggested, along with the reminder that "in the end, education is our only salvation."

Authors: Hencley, S. P., and Yates, J. R.
Title: *FUTURISM IN EDUCATION: METHODOLOGIES*
Source: Berkeley, California: McCutchan Publishing Corporation, 1974 (English)

Describes how to use the major research methods for studying the future, including: contextual mapping, force analysis, relevance trees, Delphi technique, cross-impact analysis, scenarios, morphological analysis, trend analysis, and the like.

Authors: Hawken, Paul, Ogilvy, J., and Schwartz, P.
Title: *SEVEN TOMORROWS: SEVEN SCENARIOS FOR THE EIGHTIES AND NINETIES*
Source: New York: Bantam Books, 1982

The driving trends of society and their possible directions and interactions are identified, and scenarios presented representing both negative and positive possible alternatives. Emphasis is on the influence of changes in human perceptions, values, and belief systems as determinants of alternative futures. The book provides a variety of examples of scenario writing.

Author: Kauffman, Draper, L., Jr.
Title: *TEACHING THE FUTURE: A GUIDE TO FUTURE-ORIENTED EDUCATION*
Source: Palm Springs, California: ETC Publications, 1976

A book for teachers at all grade levels who care about preparing students for adult life in a world of rapid change. Emphasis is on teaching methods and resources which have been shown to be effective and flexible. Exercises on ways of thinking about the future, many appropriate for senior high school students, a brief history of the study of the future, and guide to resources, featuring simulation games, are included.

Author: Lada, Igor Bestuzhev
Title: School in the twenty-first century: The Soviet model
Source: *The Futurist*, April 1981, *15*(2)

A leading Soviet sociologist describes his predictions for the future of education, perceived trends toward more schooling, more specialization, and lifetime learning. The author is Head of the Department of Forecasting, Institute of Sociological Research, USSR Academy of Science in Moscow.

Author: Landau, Erika
Title: Children ask questions about the future of mankind
Source: Gibson, J., and Channels, P. (Eds.)
GIFTED CHILDREN: LOOKING TO THEIR FUTURE
London, England: Latimer, 1976

Attention to the need for bridging the gap between emphasis on past facts being taught in school and the actual life students will lead in the future is the theme of this article. Questions raised by children and reported in the text provide evidence of the global dimensionalities and humanistic values of their thinking.

Authors: Matsushita, K., and Galbraith, J. K.
Title: New horizons in education
Source: *PHP* (Peace, Health, Prosperity), 1979, *10*(2), 86-91
Published simultaneously in Japanese and English and distributed worldwide PHP Institute International, 32 Mori Building, 3-4-30 Shibakoen, Minato-ku, Tokyo 105 Japan; PHP Institute, P. O. Box 4210, Grand Central Station, New York, New York, 10017; and PHP International (S) Pte. Ltd., 202 Bedok, South Avenue 1, Singapore 1646, Republic of Singapore.

Describes a new school founded by Matsushita for training future leaders; espouses the self-directed learning model compatible with the goals of many school programs for the gifted.

Authors: Mische, Gerald and Mische, Patricia
Title: *TOWARD A HUMAN WORLD ORDER*
Source: New York: Paulist Press, 1977

A seminal statement based on a recognition of the realities of an interdependent global society and the possibilities for building institutions with a sense of human commonality and sharing. The optimistic argument for the emergence of a world order is based on the expectation that global education and a higher order of human thought and perception can have a positive influence on the future of humankind. A humanistic, nonpartisan, visionary argument and guide for educators.

Author: Naisbitt, J.
Title: *MEGATRENDS: TEN NEW DIRECTIONS TRANSFORMING OUR LIVES*
Source: New York: Warner Books, 1982 (English)

Describes a method of content analysis used by the author in determining trends, a method that can be used on a less extensive basis by gifted junior and senior high school students. Describes ten trends that Naisbitt maintains are transforming our lives and provides the context within which future studies must be done.

Author: Social Science Teachers, Nara Women's National University (Japan)
Title: Self directed field work in social sciences
Source: *Research Journal*, 1980, *21*, 68-75 (Japanese)

Describes a method developed by the social science teachers of the junior and senior high schools attached to Nara Women's National University to study and suggest solutions to future problems of the community caused by impending technological and social changes Combines classwork, library research, field studies, interviews, collection of data, etc.

Author: Torrance, E. Paul
Title: Gifted children of the future: Predictions and proposed solutions
Source: Gallagher, James J. (Ed.)
GIFTED CHILDREN: REACHING THEIR POTENTIAL
New York: Trillium Press, 1979

A respected international authority on gifted and talented presents his impressions of the subtle and quiet changes in education in the direction of greater creativity, purpose, involvement, openness, honesty, freedom, and joy; applications to programs for gifted and talented focus on their awareness of images of the future and future problem-solving programs.

Authors: Torrance, E. Paul, Bruch, C., and Goolsby, T.
Title: Gifted children study the future
Source: Gibson, J. and Channels, P. (Eds.)
GIFTED CHILDREN: LOOKING TO THEIR FUTURE
London, England: Lorimer, 1976

Evidence of interviews and data support the pronouncement that gifted children do study and image the future, with the tendency especially strong in highly creative children. Methods and materials for teaching gifted children how to study the future are provided and relevant research studies cited.

Author: Torrance, J. P., Torrance, E. P., and Crabbe, A. B.
Title: *HANDBOOK FOR TRAINING FUTURE PROBLEM SOLVING TEAMS*
Source: Cedar Rapids, Iowa: Future Problem Solving Program, Coe College, 1980 (English)

Describes the problem solving methods used in the Future Problem Solving Program and offers practical suggestions for training and coaching teams to work together to solve future problems.

Author: Whaley, Charles E.
Title: The study of global futures and the gifted
Source: *Roeper Review*, May-June 1980, 2(4),

A discussion of priority for curricula dealing with concepts of global futures studies for our "shrinking planet" lists systems theory, cultural analysis, communication, conflict, power, interdependence, and futures as relevant and dynamic "jumping off" places for study. Focus is on the development among gifted and talented students of an awareness of our planet's inhabitants and their societies, as well as potentials for positive and negative developments in the future.

Author: Whaley, Charles E.
Title: *FUTURES STUDIES: PERSONAL AND GLOBAL POSSIBILITIES*

Source: New York, New York: Trillium Press, 1984

An introductory curriculum designed to give gifted students grades 5-12 new perspectives on the multiplicity of futures possible for us. The book builds awareness of the choices open to us and the ramifications of our actions. Includes classroom activities, scenarios and research directions. Suitable for teachers and student use.

Authors: Whaley, Charles E. and Whaley, Helen F.
Title: *FUTURE IMAGES: FUTURES STUDIES FOR GRADES 4 TO 12*
Source: New York: Trillium Press, 1986

A manual designed to enable teachers to implement futures studies curricula into their classrooms. Inludes activities and a discussion of the Purdue three stage model.

Summary Statement*

The future has become an increasingly used curriculum topic in the education programs for gifted students. It is a subject that fits in very well with the interests of many gifted students who are fascinated by that future that they will live in, and it is a topic that their superior intellectual abilities allows them to conceptualize and imagine successfully. That is one reason why so many of these students enjoy science fiction stories.

Now there appears to be a growing technology and methodology which allows a student to make a systematic analysis of current trends in order to project alternative futures for consideration and study. With so many of these gifted students being prepared academically for future leadership, a firm grasp of how to look to the future from the present seems to be a natural area of study to focus upon.

* Prepared by Senior Editor

KNOWLEDGE PRODUCTION AND UTILIZATION (KPU) in DIFFERENTIAL EDUCATION FOR THE GIFTED (DEG)

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Introduction

Science of inquiry advances both through its chief instruments, philosophic analysis and emperical investigation, and through sociocultural processes which constitute other responses to the human need to know. Understandings of a given sort are straightforwardly assimilated into the prevailing thought of a given period; those of another kind are rejected; and on the other hand, certain attitudes and beliefs, born in the practical world of affairs by dynamics which virtually defy grounded explanation, live for decades or even centuries having the same effect as knowledge of an authentic nature.

The concept of Knowledge Production and Utilization (KPU) has arisen in philosophic and sociological thought to represent the various problems lying within and between the generation (i.e., production) of reliable and authentic information, and the utilization of such extended understanding in the practical affairs of people. Observations upon the general phenomenon, i.e., KPU, have specific applicability in the field of education for persons of positively extraordinary potentiality, i.e., DEG. The present limited sampling from the diversity of literature bearing upon the phenomenon is intended to represent the larger realms of existing and ongoing thought, and to invite attention of the community of scholars and scientists in education to the significance of this consideration among other facets of human inquiry.

The functional value of thought in the nature of KPU in DEG, and of activity responding thereto among theorists and serious practitioners of education, may be seen in at least two ways. First, in direct comparison with thought and knowledge about *research* as such, i.e., the discovery or construction of reliable information, the KPU concept invites attention to the conceptual foreplay which leads to the point of entry upon empirical investigation, and serves to strengthen the roots of inquiry. This level of analysis is mainly *philosophical*. Second, at the level of *sociological* analysis, the problems of attitude, belief, and reliable information, as these intermingle in human judging, deciding, and acting, are summoned into direct

focus, with a view toward improving the quality of human control over natural and social circumstance.

In that the Twentieth Century is recognized as one characterized by such marked sociocultural and technological change that even the rate of change itself appears to be increasing, with no certain end yet in sight, the connections between a culture influx and the knowledge base of the school curriculum, general and differential, are brought into sharp relief. Thus, a study of the processes involving both the roots of inquiry and the uses to which the products of inquiry, reliable and otherwise, are put in human affairs promises considerable advantage over and beyond the processes of continuing inquiry as such.

Sources of Information Relevant to KPU in DEG

Literature with some relevance to this body of thought is virtually as broad as the disciplines of philosophy and of sociology; but certain organizations, certain serial publications, and certain journals tend more than others to provide a concentration of directly relevant treatments Two such continuing sources are provided for the present purposes.

The Yearbooks of the National Society for the Study of Education

These prestigious volumes concentrate on educational problems and issues that are conceived and treated through the various contributing authors as conceptual levels both deeper and broader than the perennial mass of descriptive and prescriptive educational literature. Illustrative titles from several of these volumes are suggestive, thus:

The Fifty-seventh Yearbook (1958), Robert J. Havighurst, Chairman, *Education for the Gifted; and the Seventy-eighth Yearbook* (1980), A. Harry Passow, Chairman, *The Gifted and the Talented: Their Education and Development.*

Twenty years of change, or void, thereof, is made available through a comparison of these volumes, with the question left to the reflective reader whether the observable differences in content represent reliable advances in the depth and breadth of DEG theory as such, or whether thought remains at the relatively lower order of changes in surface particularity alone.

Seventy-first Yearbook (1972), Lawrence G. Thomas, Chairman, *Philosophical Redirection of Educational Research.*

The title of this remarkable yearbook suggests directly what is borne out in examination of the volume, that the conceptual roots of empirical inquiry are in significant proportion substantially weak, such that the knowledge that is thus

spawned forth is often unreliable, and therefore for the purposes of usage, it ranges from essential uselessness to potential abuse and danger.

Eightieth Yearbook (1981), Jonas F. Soltis, Chairman, *Philosophy and Education.*

In this yearbook, the radical nature of change is reflected in the observation that philosophic relations to the educational task itself are now seen differently from what they were in the yearbooks of 1942 (41st) and 1955(54th), both edited by John S. Brubacher. Instead of the earlier exposition of philosophic positions and their respective inferences for the practice of education, a "growing interpenetration of philosophy and education" is happily remarked upon by the committee, with contributing authors following suit in their respective chapters.

Proceedings, and Annual Conferences of the Philosophy of Education Society.

Like serial publications of a few other associations—notably those of the American Psychological Association, Division 24, Theoretical and Philosophical Psychology—these annual volumes, providing reprints of conference papers by currently prominent scholars in education, philosophy and related disciplines, treat issues at the forefront of contemporary thought which relates to the KPU phenomenon. Again, the problems of DEG may be approached inferentially at deeper conceptual levels, e.g., epistemology as distinct from curriculum; the logic of educational assumptions as distinct from the substantive exposition of given convictions; etc. Representative papers from recent volumes of the *Proceedings* are:

1970: George L. Newsome, Jr., "Philosophical Analysis as Conceptual Revision: An Analysis of Two Theories of Meaning," pp. 20-33; and Clive Beck, "Is Education a Discipline?", pp. 132-144.

1973: "Which Structure?" (Ed. note: Structure of the "disciplines"), pp. 69-76; and Jerome A. Popp, "Definition, Logical Analysis, and Educational Theory," pp. 256-265.

1979: Robert Halstead, "The Relevance of Psychology to Educational Epistemology," pp. 65-76; and D. C. Phillips, "The Interactive Universe and the Limits of Educational Research," pp. 135-145.

Authors: Beitz, Charles and Washburn, Michael
Title: *CREATING THE FUTURE: A GUIDE TO LIVING AND WORKING FOR SOCIAL CHANGE*
Source: New York, New York: Bantam Books, Inc., 1974

"We can choose our future We believe we can reconcile the need to earn a living with the desire to work at what we believe—justice, peace, and *environmental balance*. This is our source book, our essential guide, a job catalog for activists. In a very real sense, it contains our future." These words by the authors, from the book cover, describe the unusual contents of a work which encaptures the counter-culture movements of the 1960's and 70's, and reflects the culture of those periods in the identification of an impressive range of organizations, sources of information, and types of resources available to persons who otherwise might be overwhelmed by the impact of radical change.

Authors: Berger, Peter L. and Luckman, Thomas
Title: *THE SOCIAL CONSTRUCTION OF REALITY*
Source: New York, New York: Doubleday and Company, Inc., 1967

"This book re-formulates the task of the sociological subdiscipline that, since Max Scheler, has been known as the sociology of knowledge. . . . The authors open up vistas which provide a major breakthrough in the sociology of knowledge and sociological theory generally." From the book cover, citing a review by George Simpson in *American Sociological Review*.

Author: Burke, Kenneth
Title: *A GRAMMAR OF MOTIVES*
Source: Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1945

In this important work in semantics, Burke penetrates through the technical jargon of philosophy and literary criticism, offering under his concept of "dramatism" an analysis, i.e., a *grammar*, of human motivation inclusive of five key terms: Act, Scene, Agent, Agency, and Purpose. The appeal of this theoretic work is to "...all writers and readers concerned with the literary problems of form, expression, and communication."

Author: Elam, Stanley (Ed.)
Title: *EDUCATION AND THE STRUCTURE OF KNOWLEDGE* (Fifth Annual Phi Delta Kappa Symposium on Educational Research, B. Othanel Smith, Chairman)
Source: Chicago, Illinois: Rand McNally and Company, 1964

"The fundamental ideas central to the structure of all science and mathematics, and the basic themes that give form to life and literature, are the new subject matter of formal education. The key word is structure, or organizing principle." From the book cover

Author: Kneller, George F.
Title: *LOGIC AND LANGUAGE OF EDUCATION*
Source: New York, New York: John Wiley and Sons, 1966

"I have written this book primarily for teachers and others seriously interested in education. About logic itself, I say nothing new. My main concern is with the logical components of the educational process and with the role of logical analysis in educational discourse. I am also concerned that this book should play a part, however modest, in creating a better balance between logic and psychology as they apply to education." From the "Preface," by the author.

Author: Machlup, Fritz
Title: *KNOWLEDGE: ITS CREATION, DISTRIBUTION, AND ECONOMIC SIGNIFICANCE*
Source: Princeton, New Jersey: Princeton University Press, 1980

In a quite ambitious scholarly undertaking, Machlup projects an eight-volume series of books (possibly ten) under the above designation, representative title for volumes to come being: The Branches of Learning; The Economics of Knowledge and Human Capital; and Education. These erudite works, each of probable interest to different, selective groups, are to be anticipated with appreciation as extensions of the work begun by the author as early as 1962.

Author: Pai, Young
Title: *TEACHING, LEARNING, AND THE MIND*
Source: Boston, Massachusetts: Houghton Mifflin Company, 1973

These five theories of teaching, learning and mind—the theory of formal discipline; the apperception theory; behaviorism and the technology of teaching; methodological behaviorism; and cognitive teaching and field theory—are the substance of a book designed for courses in the philosophical and psychological foundations of education. "Too often, these approaches have been made disparate and unconnected; here Professor Pai brings them fruitfully back together again We see how the philosopher's concern with *Man* sooner or later must find expression in the concrete behavior of the psychologists' subjects, *men*." From the Editor's Preface.

Author: Piaget, Jean
Title: *PSYCHOLOGY AND EPISTEMOLOGY: TOWARDS A THEORY OF KNOWLEDGE*
Source: New York, New York: The Viking Press, Inc., 1972 (Translated by Arnold Rosin)

"The baffling and fascinating problem of the mind is a natural subject for Jean Piaget, the eminent Swiss psychologist. The origins, nature, methods, and limits of human knowing are an outgrowth of his long preoccupation with genetic origins and environmental development of logical thought in children. Piaget has lucidly and brilliantly broken new ground and laid down the scientific basis for an entirely new epistemology . . . he has discarded the assumptions of traditional epistemologies and sets forth that knowledge is not an accomplishment but a process." (From the book cover.)

Author: Pratte, Richard
Title: *THE PUBLIC SCHOOL MOVEMENT*
Source: New York, New York: David McKay Company, Inc., 1973

According to the author's "Introduction" (pp. 1-6), two claims have directed the course of this book. "The first is that we are in a stage of development which is so new that we have not yet formed the concepts necessary to order and understand it. . . . The second is the loudly proclaimed death of the Public School Movement in the United States. . . . I attempt to set forth the forces that are presently competing with and challenging today's PSM as well as suggesting some strategies for change, although avoiding the temptation to offer a a pratical program for the guidance of the education of the young."

Authors: Renzulli, Joseph, Reis, Sally M., and Smith, Linda H.
Title: *THE REVOLVING DOOR IDENTIFICATION MODEL*
Source: Mansfield, Connecticut: Creative Learning Press, Inc., 1981

With this volume, Professor Renzulli brings together the main aspects of his thought on "what makes giftedness," and offers a systematic account of what schools can do, and, under his growing influence, are doing, to assure that potentially gifted youth are provided with experience which evokes talent across a wide and varied spectrum. Renzulli and his associates have launched what appears to be the clearest and most forceful theory in recent years to encapsulate the significant current unrest with the thought of Terman and Hollingworth as founders of the gifted child movement, and to provide a provocative counteractive ideology.

Author: Short, Edmund C.
Title: Knowledge production and utilization in curriculum: A special case of the general phenomenon
Source: *Review of Educational Research*, Summer 1973, *43*, 237-301

In this commanding review: "The research materials to be reviewed and the categories in which they are presented have been selected in relation to three broad domains of interest: 1) the relationship of research to practice, 2) the nature of knowledge production, and 3) the nature of knowledge utilization. Whenever appropriate, each topic or subcategory is treated from three perspectives: first, studies related to KPU in general; second, related work within education generally; and finally, work more specifically related to curriculum." (p. 238)

Authors: Stanley, Julian S., George, William C., and Solano, Cecilia H.
Title: *THE GIFTED AND THE CREATIVE: A FIFTY-YEAR PERSPECTIVE*
Source: Baltimore, Maryland: The Johns Hopkins University Press, 1977

"The gifted child movement began in 1869 with the work of Francis Galton on hereditary genius." It receives its main impetus, however, in the early 1920's from L. M. Terman's inauguration of the first major longitudinal study of intellectually talented young people. . . . Commemorating the 50th anniversary of Terman's first study, *The Gifted and the Creative* presents eight essays that discuss trends within the movement from the latter part of the 19th Century to the present and provide distinctive interpretations of them." (From the book cover.)

Author: Travers, Robert M. W.
Title: *MAN'S INFORMATION SYSTEM*
Source: Scranton, Pennsylvania: Chandler Publishing Company, 1970

"This book is an outgrowth of a project sponsored many years ago by the United States Office of Education in which an attempt was made to bring together some of the knowledge available about perception, learning, information theory, and neurophysiology that might have implications for the design of audiovisual materials." The growing body of students specializing in media and educational technology ". . . need to be exposed to some of the basic knowledge which underlies the area of technology in which they plan to carve out a career." (From the Preface, by the author.)

Author: Ward, Virgil S.
Title: *DIFFERENTIAL EDUCATION FOR THE GIFTED*
Source: Ventura, California: Ventura County Superintendent of Schools Office, 1980

In this reprint of the author's earlier work (Doctoral Dissertation, Education, University of North Carolina, 1952; *Educating the Gifted: An Axiomatic Approach,* Merrill, 1961), a set of some twelve propositions and twenty-nine corollaries are constructed, by way of focally encompassing the significant thought and research investigations during the earlier period of the gifted child movement. In the reprint, the original text provides the core of the book, and updating sections include: 1) Hans G. Jellen and W. Brent White, "Current Thought: Fifty Contemporary Concepts in Differential Education for the gifted;" and Virgil S. Ward and Associates, "Studies in Differential Education for the Gifted," i.e., an annotated list of essays, project reports, and supervised dissertations accomplished over a period of some twenty-five years, mainly at the University of Virginia.

Summary Statement

In sum, it appears that the concept of KPU, here with the particular domain of DEG in reference, offers certain significant additions to the science and theory of education in the world of free nations. These additions are facets of understanding which have not been provided in concentrated and systematized form through the literature of any other sphere of contemporary knowledge, or certain other constructive persuasions, including:

1. Meta-analysis of research inquiry, both as to methodology and product, highlighting the general character of inquiry and trends therein, such that evaluative perspectives from a new plane of observation and inference may occur.
2. Dissociation of empirically evidenced observation and inference (i.e., "fact") from reflective uses of human mentality (reason, imagination), such that more advised derivations as to value, interpretation, and application, may clearly and consciously occur.
3. Facilitation of critical analyses derived from presented thought and event, such that both may be viewed in the light of criteria for theoretic phenomena, at which plane of thought all meanings are rendered "sensible" and "practical" or amenable to human enterprise.

CREATIVITY

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Introduction*

The topic of creativity has probably been written about more extensively than any other single topic in gifted education. There is a general recognition that the ability to generate novel and important ideas is the highest level of intellectual performance and that encouraging its expression is one of the key objectives of the teacher of gifted children. The following is a listing of selected works focusing on the stimulation of creativity. It should not be considered a comprehensive bibliography. This set of abstracts is merely a small selection from an enormous world-wide collection of materials on this subject.

* Prepared by Senior Editor

Author: Arieti, Silvano
Title: *CREATIVITY: THE MAGIC SYNTHESIS*
Source: New York, New York: Basic Books, 1976

Synthesizes a vast amount of theory and research on the cultivation of creativity and the conditions that facilitate creative functioning.

Authors: Bagley, M., and Hess, K.
Title: *200 WAYS OF USING IMAGERY IN THE CLASSROOM*
Source: New York, New York: Trillium Press, Inc. 1984

Gives a rationale as to why creative imagery is a vital component in stimulating creativity and guidelines for effectively using imagery in the classroom. Contains 202 exercises.

Author: Barbe, W. B. (Ed.)
Title: PSYCHOLOGY AND EDUCATION OF THE GIFTED
Source: New York, New York: Irvington Publishers, 1985

This book of readings is a splendid resource for such earlier writings as those by Burt, Witty, Terman, and Mead. There are sections on planning for the gifted in elementary school and high school.

Author: Beaudot, Alaine
Title: *CREATIVITY AT SCHOOL* (3rd Ed.) - (French Language)
Source: Paris, France: Presses Universitares de France, 1980

Originally published in 1969, this was the first book published in France giving a general survey of USA research on creativity. Also includes original research of author.

Author: de Bono, Edward
Title: *THINK LINKS*
Source: Dorset, United Kingdom: Direct Education Services, Ltd., 1976

Summarizes the author's theories about the teaching of thinking skills. Consists of a set of "Think Link" cards designed for playing a variety of games to give practice in verbal thinking skills. (Teachers can make up subject matter oriented cards for use in playing the same games.)

Author: de Bono, Edward
Title: *THINKING COURSE FOR JUNIORS (AGES 5-12)*
Source: Dorset, United Kingdom: Direct Education Services, Ltd., 1974

Includes rationale, instructions, examples, and illustrations for teaching problem solving skills through the drawing medium. Contains excellent procedure for teachers to use in discussing children's creative performances with them.

Author: Brandwein, Paul
Title: *THE GIFTED STUDENT AS FUTURE SCIENTIST*
Source: Ventura, California: National/State Leadership Training Institute on the Gifted and the Talented, Ventura County Superintendent of Schools, 1981

Originally published in 1955, this delightful account of how creativity can be stimulated through science education has now been reprinted and is again available.

Author: Callahan, Carolyn W.
Title: *DEVELOPING CREATIVITY IN THE GIFTED AND TALENTED*
Source: Reston, Virginia: The Council for Exceptional Children, 1978

Summarizes much research regarding the stimulation and development of creativity among gifted students. Implications for teaching gifted students identified and discussed.

Author: Chia, Fu-Ming
Title: *PSYCHOLOGICAL AND CREATIVE DEVELOPMENT* - (Chinese Language)
Source: Taipei, ROC: Taiwan Bookstore, 1970

Teacher's guide to the development of creative imagination.

Author: Cole, Natalie
Title: *THE ARTS IN THE CLASSROOM*
Source: New York, New York: John Day, 1940

This book has achieved the status of "classic" as it was a pioneering effort in discussing with teachers how to stimulate creativity through painting, clay work, design, block print, writing, and dancing.

Author: Davis, Gary A.
Title: *CREATIVITY IS FOREVER*
Source: Cross Plains, Wisconsin: Badger Press, 1981

Concisely and humorously written text, mostly about the different technologies that have been developed and tested for stimulating and developing creativity.

Author: Duminy, P. A.
Title: *GIFTEDNESS AND THE EDUCATION OF GIFTED CHILDREN* - (Dutch Language)
Source: Amsterdam, Netherlands: J. M. Meulenhoff, 1981 (Also available in the Republic of South Africa)

Emphasizes importance of different methods to stimulate creativity among gifted students.

Authors: Dutt, N. K., and Lal, G.
Title: *THE CREATIVE POTENTIAL AND EDUCATION*
Source: New Delhi, India: Ambala Cantt, Indian Book Agency, 1977

Identifies and explains methods and techniques for nurturing creativity.

Authors: Eberle, Bob and Stanish, Bob
Title: *CPS FOR KIDS: A RESOURCE BOOK FOR TEACHING CREATIVE PROBLEM SOLVING TO CHILDREN*
Source: Buffalo, New York: D. O. K. Publishers, 1980

Creative problem solving is presented step-by-step with practice at every step.

Author: Edwards, Betty
Title: *DRAWING ON THE RIGHT SIDE OF THE BRAIN*
Source: Los Angeles, California: J. P. Tarcher, 1979

This book applies recent discoveries in brain research to the teaching of drawing skills. It is geared for all levels of expertise, from the novice to the professional artist.

Authors: Feldhusen, John F., and Treffinger, Donald J.
Title: *CREATIVE THINKING AND PROBLEM SOLVING IN GIFTED EDUCATION*
ource: Dubuque, Iowa: Kendall/Hunt Publishing Company, 1977

resents specific teaching methods for stimulating creativity and many reviews of structional materials and books for stimulating creativity and teaching problem lving.

thor: Gallagher, James J. (Ed)
le: *GIFTED CHILDREN: REACHING THEIR POTENTIAL*
rce: Jerusalem, Israel: Kollek and Son, Ltd., 1979
(Available from Trillium Press, Inc.)

tains papers from several different countries, including papers on stimulating ivity by S. J. Parnes, E. P. Torrance, Berenice Bleedorn, Nouri Jaffar, and . Rajna.

r: Gergencsik, E. S.
CREATIVITY AND POSSIBILITIES FOR ITS STIMULATION IN ELEMENTARY SCHOOL - (Hungarian Language)
Budapest, Hungary: ELTE Pedagogical Studium No. 18, 1980

educational experiments in Hungary that ai

Authors: Gibson, J., and Chennells, P. (Eds)
Title: *GIFTED CHILDREN: LOOKING TO THEIR FUTURE*
Source: London, England: Latimer New Dimensions, Ltd., 1976 (Available from World Council for the Gifted and Talented, FAO 163, University of South Florida, Tampa, Florida)

Papers from several countries, including papers on stimulating creativity by A. H. Passow, E. P. Torrance, and Nouri Jaffar.

Authors: Gordon, William J. J., and Poze, T.
Title: *THE METAPHORICAL WAY OF LEARNING AND KNOWING: APPLYING SYNECTICS TO SENSITIVITY AND LEARNING SITUATIONS*
Source: Cambridge, Massachusetts: Synectics Education Systems, 1973

Shows how analogies and other synectics technology can be used to stimulate learning and thinking in the social studies, sciences, language arts, vocational subjects, and every-day problems.

Authors: Gowan, J. C., Khatena, J., and Torrance, E. P. (Eds.)
Title: *EDUCATING THE ABLEST*
Source: Itasca, Illinois: Peacock, 1979

This book is extremely comprehensive, ranging from program and curriculum to identification and evaluation to brain research and gifted women. There are also sections on the disadvantaged and on teachers.

Author: Guilford, J. P.
Title: *INTELLIGENCE, CREATIVITY, AND THEIR EDUCATIONAL IMPLICATIONS*
Source: San Diego, California: Robert R. Knapp, 1968

This book presents ways of envisaging psychological problems concerned with creativity and other high mental processes; curriculum and teaching are discussed.

Author: Guilford, Joy P.
Title: *WAY BEYOND THE IQ: GUIDE TO IMPROVING INTELLIGENCE AND CREATIVITY*

Source: Buffalo, New York: Creative Education Foundation, 1977 (Also available in Japanese language, International Society for Intelligence Education in Japan)

Practical guide for translating Guilford's monumental work on the *Structure of Intellect* into action.

Authors: Harrison, Alton, Jr., and Musial, Diann
Title: *OTHER WAYS, OTHER MEANS: ALTERED AWARENESS FOR RECEPTIVE LEARNING*
urce: Santa Monica, California: Good Year, 1978

ıred to grades 3-8, this book cites practical teaching strategies using relaxation, gery, dreams, meditation, and suggestology.

or: Horng, Ruey-yun
Science + future + imagination = Scenario - (Chinese)
e: *Gifted Child Quarterly*, February 1982, *5*, 11-16 (Published by Special Education Center, National Taiwan Norman University, Taipei, Taiwan, ROC)

es rationale of scenario writing as a future forecasting strategy and the ıce of future-focused role images and time perspective in creativity. A teaching plan is proposed.

Ibuka, Masaru
KINDERGARTEN IS TOO LATE!
New York, New York: Simon and Schuster, 1980 (Also available from Souvenir Press, Ltd., London, United Kingdom Original in Japanese published in Tokyo as *YOCHIEN DE WA OSOSURGIRU*)

ecific and practical suggestions for stimulating creativity during the s of a child's life.

Jones, Richard
FANTASY AND FEELING IN EDUCATION
New York, New York: University Press, 1968

This book was a pioneering effort to relate through the educative process, the flow of creative fantasy and rational steps of proof and justification.

Author: Kalmanchey, Marta G.
Title: Some theoretical and practical questions of developing creativity (Hungarian)
Source: *Acta Psychologia Debrecina*, 1981, *5*, Debrecen, KLTE

Analyzes creativity concepts of Guilford, Torrance, Parnes, C. W. Taylor, and F. E. Williams for application in school practice. Introduces creativity-stimulating tasks.

Author: Kawakita, Jiro
Title: *ABDUCTION PROCEDURES* (THE "KJ METHOD") - (Japanese)
Source: Tokyo, Japan: Chu-ko Shinsho, 1967 (There is a fairly good description of the "KJ Method" by T. Hoshino and J. H. McPherson in the *Creativity Newsletter*, 1981, *7*(3), 1-8, published by Manchester Business School, University of Manchester, United Kingdom)

Explains in detail the "KJ Method" of creative problem solving and gives examples.

Author: Khatena, Joe
Title: *THE CREATIVELY GIFTED CHILD: SUGGESTIONS FOR PARENTS AND TEACHERS*
Source: New York, New York: Vantage Press, 1978

Describes strategies and activities to stimulate creative behavior and give practice in using creative skills.

Author: Kranyik, R. D.
Title: *STIMULATING CREATIVE LEARNING IN THE ELEMENTARY SCHOOL*
Source: West Nyack, New York: Parker, 1969

This book is geared to kindergarten through sixth grade. The activities are practically presented.

Author: Krippner, Stanley
Title: *HUMAN POSSIBILITIES: MIND RESEARCH IN THE USSR AND EASTERN EUROPE*
Source: Garden City, New York: Anchor Press, 1970

This book contains two chapters on suggestology (accelerated learning), a chapter on Soviet techniques in hypnosis and creativity, and other material from seven nations.

Author: Kuo, You-Yuh
Title: *PSYCHOLOGY OF CREATIVITY* - (Chinese)
Source: Taipei, Tiawan, ROC: Cheng-Chung Books, 1975

A textbook on the psychology of creativity for college students.

Author: Kuroyanagi, Tetsuko
Title: *TOTTO-CHAN: A LITTLE GIRL AT THE WINDOW*
Source: Tokyo, Japan; New York, New York; and San Francisco, California: Kodansha International, 1982 Originally published in Japanese under the title *MODOGIWA NO TOTTO-CHAN*, 1981

Describes a special school in Japan that seems to have been successful in developing the creativity of highly creative children who were misfits in regular schools.

Author: Langgulung, Hasan
Title: *A STUDY OF CREATIVITY AMONG SCHOOL CHILDREN IN MALAYSIA*
Source: Bangi, Malaysia: Center of Education, University of Kebangsaan Malaysia, 1983 (Malay)

Reports empirical studies of the creative development of children in Malaysia, starting with elementary school children and going up to university students.

Author: Lett, Warren R.
Title: *THE CREATIVE ARTIST AT WORK*
Source: Sydney, Australia: McGraw-Hill, 1974

Edited papers of Australian authors, composers, and performers regarding their own artistic making.

Author: Lozanov, Georgi
Title: *SUGGESTOLOGY AND OUTLINES OF SUGGESTOPEDY*
Source: New York, New York: Gordon and Breach, 1978 (Also available from London, England and Paris, France: Gordon and Breach; and original version in Bulgarian available in Sofia, Bulgaria)

Perhaps the most authentic version in the English language of the famous "super-learning" methods of Lozanov.

Author: Marin-Ibanez, Ricardo
Title: *LA CREATIVIDAD* (Editions CEAC) - (Spanish)
Source: Barcelona, Spain, 1980

Emphasizes such creativity-stimulating techniques as: brainstorming, Delphi, Synectics, problem solving, etc.

Author: May, Rollo
Title: *THE COURAGE TO CREATE*
Source: New York, New York: W. W. Norton, 1975

This book focuses on creative courage—the discovery of new forms, symbols, and patterns on which society can be built. May writes out of his experience as a psychotherapist helping people to discover their creative possibilities.

Authors: Meeker, Mary N., and Maxwell, Jessica
Title: *SOI ABILITIES WORKBOOK: DIVERGENT PRODUCTION*
Source: El Segundo, California: SIO Institute, 1972

Exercises for developing fluency, flexibility, originality and elaboration according to Guilford's conceptualization. Creativity tests in creativity modules in French and Spanish.

Authors: Mehlhorn, George and Mehlhorn, M. G.
Title: *ZUR KRITIK DER BERGERLICHEN KREATIVITAT-FORSCHUNG* (German)
Source: Berlin, German Democratic Republic: VEB Deutscher Verlag, der Wissenschaften, 1977

Summarizes and evaluates the state of knowledge regarding creativity.

Author: Miel, Alice
Title: *CREATIVITY IN TEACHING*
Source: Belmont, California: Wadsworth, 1961

This is a book of papers, each focusing on education and creativity. Classroom illustrations of creative teaching are provided as are discussions of administration, staff learning, and evaluation.

Author: deMille, Richard
Title: *PUT YOUR MOTHER ON THE CEILING*
Source: Santa Barbara, California: Ross-Erickson, 1981

This is a book of "imagination games" for children; it can be used both at home and at school.

Author: Murphy, Gardner
Title: *FREEING INTELLIGENCE THROUGH TEACHING*
Source: New York, New York: Harper Brothers, 1961

This "classic" analyzes the impact of John Dewey's writings on education, and presents a spirited view of how teaching can be creative.

Author: Nakayama, Masakazu
Title: *A TO Z OR THE NM METHOD: A THEORETICAL AND PRACTICAL METHOD OF CREATING IDEAS* (Japanese)
Source: Tokyo, Japan: Sangyo-Noritsu-Daigaku Publishing Bureau, 1981

Describes rationale of the "NM Method" of stimulating creativity, problem solving procedures, and a variety of detailed examples. Relies heavily upon imagery and other nonverbal procedures.

Author: Neethling, Jacobus L.
Title: *INVESTIGATE AND APPRECIATE (VERKEN EN WAARDEER)*
Source: Cape Town, Republic of South Africa: Maskew Miller, 1976

Teaching strategies for experiencing poetry lessons in rich and creative ways.

Author: Onda, Akira
Title: *A STUDY OF CREATIVITY DEVELOPMENT* (Japanese)
Source: Tokyo, Japan: Koseisha-Koseikaku, 1980

Gives both historical and contemporary surveys of methods and procedures for stimulating the development of creativity, emphasizing experience, dreams, concentration, and meditation.

Author: Oner, Necla P.
Title: Creativity and intellectual giftedness (Turkish)
Source: *Psikoloji Dergisi*, Sayi 3, Eylul, Ankara, Turkey, 1978

Old and modern Turkish institutions and work stimulating and fostering the development of creative and gifted individuals are reviewed.

Author: Osborn, Alex F.
Title: *APPLIED IMAGINATION: PRINCIPLES AND PROCEDURES OF CREATIVE PROBLEM SOLVING* (3rd Ed.)
Source: New York, New York: Charles Scribner's Sons, 1963 (Japanese, Chinese, French, Spanish, Italian, German, and Swedish editions have also been published)

An all-time classic on stimulating creativity, giving a detailed description of Osborn's widely used method of creative problem solving.

Author: Parnes, Sidney J.
Title: THE MAGIC OF YOUR MIND
Source: Buffalo, New York: Creative Education Foundation, 1981

Describes a variety of approaches for stimulating creative responses through cartoons. The pun and humor with semantics are presented.

Authors: Parnes, Sideny J., Noller, Ruth B., and Biondi, Angelo M.
Title: *GUIDE TO CREATIVE ACTION*
Source: New York, New York: Charles Scribner's Sons, 1977 (Also published in Spanish)

Describes the step-by-step Creative Problem Solving method pioneered by Osborn. Also includes a collection of articles by leading creativity researchers and practitioners.

Author: Poole, M. (Ed.)
Title: *CREATIVITY ACROSS THE CURRICULUM*
Source: Sydney, Australia: Allen and Unwin, 1980 (also available from Boston, Massachusetts: Allen and Unwin)

Edited papers on stimulating creativity in various parts of the curriculum.

Author: de Prado-Diez, David
Title: *BRAINSTORMING: TOWARDS A MORE PARTICIPATORY KIND OF TEACHING (EL TORBELLINO DE IDEAS: HACIA UNA ENSENANZA MAS PARTICIPATIVA)* (Spanish)
Source: Madrid, Spain: Editions Cincel-Kapelusz, 1982

Describes possibilities for applying brainstorming techniques in the teaching of the social sciences, literary expression, natural sciences, and plastic expression.

Author: Raikov, V. L.
Title: *THE PSYCHOLOGICAL STUDY OF CREATIVE ACTIVITY*

Source: Moscow, USSR: Nauka, 1975

This book outlines the work of the author in "hypno-production," using hypnosis to assist role-playing and rehearsal in the facilitation of creativity.

Author: Raina, M. K. (Ed.)
Title: *CREATIVITY RESEARCH: INTERNATIONAL PERSPECTIVE*
Source: Sri Aurobindo Marg, New Delhi, India: National Council of Educational Research and Training, 1980

Contains papers from 17 different countries on the stimulation of creativity.

Authors: Raudsepp, Eugene and Hough, Jr., G. P.
Title: *CREATIVE GROWTH GAMES*
Source: New York, New York: Jove, 1977

This book contains 75 games which were designed to expand imagination and release originality.

Authors: Samuels, Mike and Samuels, Nancy
Title: *SEEING WITH THE MIND'S EYE*
Source: New York, New York: Random House, 1975

This book is a practical presentation of visualization techniques and their uses in art, healing, etc.

Author: Shallcross, Doris J.
Title: *TEACHING CREATIVE BEHAVIOR: HOW TO EVOKE CREATIVITY IN CHILDREN OF ALL AGES*
Source: Englewood Cliffs, New Jersey: Prentice-Hall, 1981 (Also available from Prentice-Hall in London, Sydney, Toronto, New Delhi, Tokyo, Singapore, and Wellington)

A practical, easy-to-follow handbook for encouraging the creativity of both teachers and students.

Author: Singer, Jerome L.
Title: *THE CHILD'S WORLD OF MAKE-BELIEVE: EXPERIMENTAL STUDIES OF IMAGINATIVE PLAY*
Source: New York, New York: Academic Press, 1973

This book is based on experimental data that explores make-believe and play in depth, relating them to developmental theories and applying these areas to education, child care, and psychotherapy.

Authors: Singer, Jerome L., and Switzer, E.
Title: *MIND-PLAY: THE CREATIVE USE OF FANTASY*
Source: Englewood Cliffs, New Jersey: Prentice-Hall, 1980 (Also available from Prentice-Hall in London, Sydney, Toronto, New Delhi, Tokyo, Singapore, and Wellington)

Describes step-by-step techniques to help tap reservoirs of creativity and imagination through the use of fantasy.

Authors: Stanley, Julian, George, W., and Solano, C.
Title: *THE GIFTED AND THE CREATIVE: A FIFTY-YEAR PERSPECTIVE*
Source: Baltimore, Maryland: Johns Hopkins University Press, 1977

This book commemorates the 50th anniversary of Terman's first study; its essays

include follow-ups on Terman's group (including the women), the longitudinal study of 3,000 mathematically talented young people, and an analysis of scientific giftedness in terms of the Structure of Intellect model.

Author: Stein, Morris I.
Title: *STIMULATING CREATIVITY: VOLUME I, INDIVIDUAL PROCEDURES* and *STIMULATING CREATIVITY: VOLUME II, GROUP PROCEDURES*
Source: New York, New York: Academic Press, 1974

Compilations of specific procedures for stimulating creativity among individuals and in groups.

Author: Torrance, Paul E.
Title: *GUIDING CREATIVE TALENT*
Source: Englewood Cliffs, New Jersey: Prentice-Hall, 1962 (Now out of print by Prentice-Hall, but reprinted and published by William Krieger Publishers, P. O. Box 9542, Melbourne, Florida. Eastern Economy Edition published in 1969 by Prentice-Hall of India in 40 countries. Japanese edition published by Seishin Shobo, Tokyo, Japan, 1966. Spanish language edition published in 1969 by Editorial Troguel S. A., Buenos Aires, Argentina. Portuguese language edition published in 1976 by IBRASA—Instituicao Brasileira de Difusao Cultural S. A.., Sao Paulo, Brazil.)

Gives attention to problems of helping children maintain their creativity and revive it when it has been suppressed by social and cultural pressures.

Author: Torrance, Paul E.
Title: *THE SEARCH FOR SATORI AND CREATIVITY*
Source: Buffalo, New York: Creative Education Foundation, 1979 (Also available in Japanese from Tokyo, Japan: Shinri Publishers, 1981)

Describes a great variety of technology from many sources for stimulating creativity Gives examples of exercises for developing specific creative thinking skills.

Author: Tripathi, S. N.
Title: *TALENT AND CREATIVITY*
Source: New Delhi, India: Macmillan Company of India, 1980

Describes procedures for stimulating creativity in various subject areas.

Author: Urban, K. K.
Title: *HOCHBEGABTE KINDER* (German)
Source: Heidelberg, Federal Republic of Germany: G. Schindele Verlag, 1982

Includes papers on stimulating creativity by Torrance, Baldwin, and Bien.

Author: Williams, Frank E.
Title: *A TOTAL CREATIVITY PROGRAM FOR INDIVIDUALIZING AND HUMANIZING THE LEARNING PROCESS*
Source: Englewood Cliffs, New Jersey: Educational Technology Publications, 1972

A kit containing several books, cassettes, posters, and other aids for training teachers to construct their own curriculum materials for stimulating creativity. Includes many examples of exercises and activities.

Author: Zinker, Joseph
Title: *CREATIVE PROCESS IN GESTALT THERAPY*
Source: New York, New York: Bruner/Mazel, 1977

This book presents the therapist as creative artist, and how psychotherapy can respect the client's inner experience at the same time it lifts creative blocks.

Summary Statement *

These abstracts reveal the diversity of strategies that are currently being used to open up the productive abilities of gifted children, and adults. Some approaches have stressed the training of cognitive skills while others have focused on the enhancement of key personality characteristics or learning styles of individuals that seem linked to the creative person.

The teaching of such methods and strategies would seem to be one important part of teacher preparation, particularly how such productive thinking skills can be integrated into the content of the curriculum itself. As we learn more about how the child processes information, we can expect to increase the interest and productivity of educators in this topic.

* Prepared by Senior Editor

EVALUATION OF EDUCATIONAL PROGRAMS FOR THE GIFTED AND TALENTED

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Introduction

The evaluation of educational programs for the gifted and talented has been problematic for at least two reasons. First, it is a dramatic departure from the tradition of assuming that "the gifted program" must inherently be satisfactory. Secondly, any thorough evaluation of gifted programs must face certain unusual or special conditions which have not always been taken into account.

The variety of opinions and attitudes about the usefulness of programs for the gifted almost inevitably calls for evaluations to document the utility of special programs. This bibliography provides a brief set of references that describe the various special problems encountered in such evaluation, as well as documenting recent findings.

Author: Bernal, E. M.
Title: Gifted programs for the culturally different
Source: NASSP Bulletin, March 1976, 67-76

The author maintains that the actual or potential presence of non-dominant minority students should be provided for in evaluations of gifted programs. Specific inquiries or studies should be directed to determine such variables as percent of minority students in program, peer status, teacher attitudes to the culturally different, and the affective status of gifted minority students.

Author: Bernal, E. M.
Title: Evaluation of educational programs for gifted migrant students: Notes from the field
Source: Valencia, A. (Ed.)
VIABLE STRATEGIES FOR ADVANCING THE EDUCATION OF GIFTED/TALENTED MIGRANTS
Fresno, California: California State University, 1984, 93-111

In this chapter Bernal points out that the pressure from gifted program advocates to receive categorical funding from state departments of education is increasing the demand to have gifted education programs evaluated more thoroughly. He discusses and presents solutions for some of the problems with traditional evaluation designs as they apply to gifted programs: ambitious (and hard to measure) objectives, greater individualization of programs, ceiling effects and regression effects and tests, and the greater fragmentation/lesser uniformity of programmatic efforts within most larger school districts.

Bernal discusses variables which he believes to be of interest to all gifted programs, including implementation success (degree of model implementation), time-on-task (academic engaged time), and certain student demographic data. These variables can serve as important covariables to help tease out subtle programmatic effects. The use of longitudinal evaluation designs and the study of spinoff effects are both strongly advocated.

Authors: Callahan, C. M., Covert, R., Aylesworth, M. S., and Vanco, P.
Title: Evaluating a local gifted program: A cooperative effort
Source: *Exceptional Children*, 1981, *48*, 157-163

This article describes a cooperative effort between a small, midwestern, suburban district, the state department of education, and a university to effect a thoroughgoing evaluation of a gifted program in grades five to eight. The resultant evaluation illustrates an application of Provus' Discrepancy Evaluation model which involves staff and evaluator cooperation during all major phases of the evaluation effort, and produces a detailed program description and analysis which becomes an important baseline for evaluation and the source of initial plans to modify a program's content, methods, or operations.

Authors: Gallagher, J., Weiss, P., Oglesby, K., and Thomas, T.
Title: *THE STATUS OF EDUCATION FOR GIFTED STUDENTS IN THE UNITED STATES*
Source: Los Angeles, California: National/State Leadership Training Institute for the Gifted and Talented, 1983

One section of this report contains a detailed review and critique of program evaluation attempts in education for the gifted. Suggestions are made on devices that can be used to improve evaluation projects and encourage their use.

Author: Ganople, S. J.
Title: The specification of objectives of gifted programs
Source: *Roeper Review*, April-May 1982, 26-27

Program validation efforts should focus primarily on the learner, despite the generally acknowledged limitation that higher levels of learning are difficult to measure. Ganople states that explicit objectives delineating what the learner is expected to be able to do as a consequence of instruction are necessary to minimize ambiguity, promote well-grounded instruction and assessment, and determine whether the desired outcomes were achieved.

Author: Paul, R. H.
Title: *EVALUATING CAREER EDUCATION IN THE ARTS: THE CENTER FOR CAREER EDUCATION IN THE ARTS, PROVIDENCE, RI*
Source: New York, New York: Policy Studies in Education, 1977 (ERIC Document Reproduction Service, No. ED 172 008)

Policy Studies in Education, a department of the Educational Research Council of America, conducted this third party evaluation. This report emphasizes pretest-post test methods of evaluating gifted and talented student participants' career awareness and attitudes. These data are supplemented by site visitations and interviews.

Author: Renzulli, J. S.
Title: *A GUIDEBOOK FOR EVALUATING PROGRAMS FOR THE GIFTED AND TALENTED*
Source: Los Angeles, California: National/State Leadership Training Institute for the Gifted and Talented, 1975

The most comprehensive source yet available on the design of evaluation programs for the gifted. Reviews basic evaluation models and basic concepts and outlines procedures by which program evaluation can be carried out.

Author: Renzulli, J. S.
Title: Evaluation! Who needs it?
Source: *A GUIDEBOOK FOR EVALUATING PROGRAMS FOR THE GIFTED AND TALENTED*, Los Angeles, California: National/State Leadership Training Institute for the Gifted and Talented, 1975, (also in *YEARBOOK OF SPECIAL EDUCATION*, 1978-79, Chicago, Illinois: Marquis Academic Media, 1978)

In this chapter Renzulli summarizes the aims, methods, foci, and constraints of evaluating gifted and talented education programs. Evaluation is needed to answer questions about program success, especially given the fact that many gifted children are capable of high levels of success even without a special program.

Evaluation should provide realistic appraisals of particular program components, so that sound decisions about their maintenance, modification, or termination may

be made. To effect these changes, the evaluator must be aware of and address the organizational values to which decision makers respond. Parental attitudes, dissemination, effectiveness of information about the program, student questionnaires, test or performance data—all these must be analyzed in a way which provides guidance and options to the users of evaluation reports.

Among the special problems which attend evaluations of gifted programs are:

1. The attainment of individualized objectives for each student.
2. The rigid adherence to behavioral objectives which often produces trivial but measurable goals instead of more satisfying, more valuable attainments which are difficult to estimate, such as the cultivation of creativity.
3. The use of norm-referenced tests which are not sensitive to achievement gains due to ceiling effects, and which are subject to regression effects in pre/post testing designs. Special norms and reliability studies are in order, and the use of non-parametric and multivariate statistics is recommended.

A practical, easy-to-follow handbook for encouraging the creativity of both readers and students

Author: Renzulli, J. S.
Title: Will the gifted movement be alive and well in 1990?
Source: *Gifted Child Quarterly*, 1980, *24*, 3-9

Renzulli argues that because the objectives for gifted and talented programs are relatively unique, traditional evaluation models, instruments, and procedures are largely inappropriate for their review. Rigidly stated behavioral objectives, for example, may cause program personnel and evaluators to focus on performance which is easily measured and perhaps trivial. The "right and proper" kinds of data for evaluation are the creative products of students, though these data be comparatively "soft." To develop the means for assessing the quality of student products, specialists in particular fields of endeavor will have to be consulted.

Renzulli also says that sound evaluation designs are not possible so long as gifted education within a school system remains a "patchwork collection" of activities.

Authors: Renzulli, J. S., and Smith, L. H.
Title: Issues and procedures in evaluating programs
Source: Passow, A. H. (Ed.)
THE GIFTED AND THE TALENTED: THEIR EDUCATION AND DEVELOPMENT (THE SEVENTY-EIGHTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION) (Part 1) Chicago, Illinois: University of Chicago Press, 1979

Product-related information can be gathered from a number of sources besides tests. For example, logs, analyses of school records, and checklists can provide ratings and frequency counts so essential to the evaluation of many of a gifted program's "Key Features." The Class Activities Questionnaire (CAO) by Steele and the Diagnostic and Evaluation Scale for Differential Education for the Gifted (DESDEG) by Renzulli and Ward are recommended.

Authors: Slocumb, P., and Wiederhold, R.
Title: Gifted programs: An investment
Source: *Roeper Review*, February 1982, 30-32

This article outlines a model for planning and monitoring an annual evaluation of a school district's gifted program. Five program areas are addressed: staff development, curriculum development, student goals, parent and community involvement, and the evaluation process itself. Procedural steps to collect attitudinal data are outlined, and a useful format for outlining an evaluation plan is presented.

Author: Stake, R. E. (Ed.)
Title: *CASE STUDIES IN THE EVALUATION OF EDUCATIONAL PROGRAMMES*
Source: Paris, France: Organization for Economic Cooperation and Development, Center for Educational Research and Innovation, 1974
(ERIC Document Reproduction Service, No. ED 152 786)

Ten brief illustrative case studies of large-scale educational programs are presented, one of which treats the evaluation of the Illinois (USA) Program for Gifted Children. This evaluation represents one of the earlier independent evaluation studies in the United States, 1967-1971.

Author: Storms, W. W.
Title: *COST EFFECTIVENESS FOR GIFTED AND TALENTED EDUCATION PROGRAMS*
Source: Columbus, Ohio: Ohio State Department of Education, Division of Special Education, 1975
(ERIC Document Reproduction Service, No. ED 112 550)

This brief monograph presents several useful methods for estimating cost effectiveness (CE) for gifted programs. Basic costs of the program should be determined and prorated according to the following six categories: (1) general administration, (2) support staff, (3) supervision (by principal, supervisory staff, program director,

etc.), (4) direct instruction, (5) auxiliary services (e.g., medical, transportation), and (6) operation and maintenance of the school plant.

Author: Stufflebeam, D. L.
Title: Philosophical, conceptual, and practical guides for evaluating education
Source: Marks, W. L., and Nystrand, R. O. (Eds.)
STRATEGIES FOR EDUCATIONAL CHANGE: RECOGNIZING THE GIFTS AND TALENTS OF ALL CHILDREN
New York, New York: Macmillan, 1981

In this chapter, Stufflebeam discusses some basic notions of evaluation and illustrates certain applications. His principles of evaluation are: technical adequacy, usefulness, probity, and practicality (i.e., do-ability).

Author: Tremaine, C. D.
Title: Do gifted programs make a difference?
Source: *Gifted Child Quarterly*, 1979, *23*, 500-517

Tremaine indicates that thorough evaluation studies of gifted programs are rarely conducted. It appears that, to many educators of the gifted, the program is beyond the need for critical examination. Accordingly, it is difficult to marshall objective evidence in support of gifted programs.

The author presents certain findings which would confirm the effectiveness of gifted education.

Author: Van Tassel-Baska, J.
Title: Evaluation of gifted programs
Source: Jordan, J. B., and Grossi, J. A. (Eds.)
AN ADMINISTRATOR'S HANDBOOK ON DESIGNING PROGRAMS FOR THE GIFTED AND TALENTED
Reston, Virginia: Council for Exceptional Children, 1980

In this chapter, Van Tassel-Baska views the evaluation of gifted programs under two general headings: program development and student growth. Program development evaluation requires that goals, objectives, and activities be reviewed on an annual basis. Staff development, curriculum activities, and student identification are highlighted, and the needs assessment process itself should be examined as part of the total evaluation design.

Authors: Van Tassel-Baska, J., Landau, M., and Olszewski, P.
Title: The benefits of summer programming for gifted adolescents
Source: *Journal for the Education of the Gifted*, 1984, *8*, 73-82

This article represents a specific approach to evaluating a popular programmatic option for gifted youth: the residential summer program which focuses on core academic areas and which is frequently conducted on a university campus. Both short-term and longer-term effects were studied: the former dealt chiefly with student and parent satisfaction, growth in academic and study skills, quality of social interactions, and personal growth; the latter, longer-term effects examined what actions the schools took to award credit for the summer experience and improve educational programming and counseling for the participants subsequent to their summer experience.

Questionnaires were the principal instruments used in this evaluation, and the limitations of this technique—chiefly the low response rates and the inability to match parental and school returns—are discussed.

Author: White, A. J. (Ed.)
Title: *CONN-CEPT IV: A CONNECTICUT PRIMER ON PROGRAM DEVELOPMENT FOR GIFTED AND TALENTED TASK FORCE REPORT ON EVALUATION AND RESOURCE DIRECTORY* (1978 REVISED EDITION)
Source: Hartford, Connecticut: Connecticut State Department of Education, Bureau of Personnel and Special Education Services, 1978

This document provides a brief review of evaluation designs for gifted educational programs. Section I includes three approaches to evaluation, statements about their strengths and shortcomings, and examples of instruments appropriate to each model:

1. Renzulli and Ward's Diagnostic and Evaluative Scales for Differential Education of the Gifted (DESDEG).
2. M. J. Eash's paper on "Issues in Evaluation and Accountability in Special Programs for Gifted and Talented Children" is included. He distinguishes the three successive levels of program development—initiatory, developmental, and integrated—and briefly describes the appropriate evaluation focus for each stage. The study of direct and indirect effects is reserved for the last stage when the program is mature and has settled upon specific objectives.
3. Renzulli's Key Features model includes three dimensions: key features, prime interest groups, and time. In contrast to the DESDEG model, this is a more general approach which leads the evaluator to identify the program's most salient features, design appropriate data gathering instruments, and present the data which are most meaningful to different interest groups.

Authors: Various
Title: Special topical issue: Evaluating programs for the gifted and talented
Source: *Journal for the Education of the Gifted*, 1984, 7(1)

This special issue covers a range of issues involved in evaluating programs for gifted and talented students: measurement issues, naturalistic approaches, instrument selection, alternatives to standardized instruments, and utilization of results of the evaluation are discussed by some of the most knowledgeable leaders in gifted education and evaluation.

Summary Statement

It is clear that there have to be many more evaluation attempts with more sophisticated measuring instruments and designs before we can confidently evaluate the results of gifted program intervention.

PROMISING RESEARCH DIRECTIONS

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Introduction

A bibliography focusing on "promising research directions" is somewhat like a book focusing on the future. We cannot know the future, but we can use past trends, performances, and logical analysis to identify trends and predict likely directions. Similarly, we can identify works which reflect sound thinking about issues in gifted education and recognize research studies which are likely to lead to meaningful developments in increasing our understanding.

In compiling this bibliography, the intention has been to identify publications which suggest those areas where research is needed, publications that have already begun to yield data with potential significance and publications that suggest theories or methodologies which have the potential to help us study the elusive and yet important questions within the field of gifted education. To this end the bibliography includes works from the field of the education of the gifted relating to identification, needs,characteristics, development, and programming strategies. In addition, we recognize the importance of including literature which identifies promising research directions in the closely allied areas within the general field of education such as curriculum and instruction, educational psychology, measurement and evaluation, policy analysis *and* from related fields such as human development and cognition from the discipline of psychology. Several of the most significant writings from those fields have also been included in this bibliography. Hopefully, this selection will yield a wide variety of directions which can be called promising.

This bibliography is divided into three sections. The first section identifies works which suggest areas in which research is needed and which suggest new methodologies or approaches to research questions. The second section identifies areas in which research has been recently reported or is currently on-going within the specific field of education of the gifted and seems to have potential as a basis for future work. The last section focuses on works from the fields of experimental design and psychology which have implications for research in the field of education for the gifted.

Part I: Needed Research

Author: Blaubergs, Maija
Title: Personal studies of gifted females: An overview and commentary
Source: *Gifted Child Quarterly*, 1978, 22(4), 539-547

The author summarizes and integrates research on the gifted female's personality characteristics and suggests avenues for research which go beyond traditional comparisons of males and females according to society's male-oriented definition of success.

Authors: Bloom, Benjamin S., and Sosniak, Lauren A.
Title: Talent development vs. schooling
Source: *Educational Leadership*, 1981 (November), 86-94

and

Author: Bloom, Benjamin S.
Title: The role of gifts and markers in the development of talent
Source: *Exceptional Children*, 1982, *48*(6), 510-522

These two articles are the first reports of the "The Development of Talented Research Project" currently underway at the University of Chicago. This is a study of persons who, before the age of 35, have demonstrated the highest level of accomplishment in specific artistic, psychomotor, or cognitive fields. Although retrospective in nature, it presents valuable information on the role of home, school, and other educational experiences on the development of these individuals. The first article reports on the roles of the schools and the home in talent development, while the second article reports on the role of inherent gifts ("markers") and the influence of parents and teachers in the development of outstanding talent.

Author: Gallagher, James J.
Title: Issues in education for the gifted
Source: *THE GIFTED AND TALENTED: THEIR EDUCATION AND DEVELOPMENT* (THE SEVENTY-EIGHTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION)
Chicago, Illinois: University of Chicago Press, 1979

Through a discussion of major issues still unresolved in the field of education of the gifted, Gallagher points to the promising leads and needs for future research in the areas of identification (especially in the special case of underachievers and the culturally different), educational programming, and definition.

Authors: Carter, Kyle R., and Kontos, Susan
Title: An application of cognitive-developmental theory to the identification of gifted children
Source: *Roeper Review*, 1982, 5(2), 17-20

This article outlines the usefulness of cognitive-developmental theory as a basis for further research on definition and identification of gifted children—particularly those between the ages of 8 and 10. Further, it suggests the potential for research incorporating both psychometric and developmental traditions to describe the cognitive functioning of the gifted child.

Author: Rekdal, C. K.
Title: Hemispheric lateralization, cerebral dominance, conjugate saccadic behavior and their use in identifying the creatively gifted child
Source: *Gifted Child Quarterly*, 1979, 22(1), 101-108

The author proposes that research on brain hemisphericity suggests an alternative to traditional measures of creativity which have been critized as too highly correlated with intelligence. Although no new research results are presented, the review of existing research in the area and implications for needed research are of value.

Part II: Current Research with Future Potential

Author: Burg, Blankz
Title: Special programs for the gifted in Israel
Source: *Gifted International*, 1984, 2(2), 30-43

This study provides some initial data on the effects of regular classroom instruction and special class instruction on the self-perceptions and attitudes of gifted children, on the effects on social relationships, and on the attitudes of parents toward those programming arrangements.

Authors: Carter, Kyle R., and Ormand, Jeanne
Title: Acquisition of formal operations by intellectually gifted children

Source: *Gifted Child Quarterly*, 1982, 26(3), 110-120

Examining the intellectual functioning of gifted children relative to Piagetian theory, the authors found that gifted children did indeed achieve the stage of formal operations earlier, suggesting the need for careful assessment of developmental level and appropriate curricular planning which reflects developmental level.

Authors: Chamers, Jack A., Barron, F., and Sprecher, J.
Title: Identifying gifted Mexican-American students
Source: *Gifted Child Quarterly*, 1980, 24(3), 123-128

In the search for means of identifying the culturally-different gifted child, this article offers hope of significant research on the use of alternatives to traditional IQ testing.

Authors: Cunningham, Claude H., Thompson, B., Alston, H. L., and Wakefield, J. A., Jr.
Title: Use of S.O.I. abilities for prediction
Source: *Gifted Child Quarterly*, 1978, 22(4), 506-512

The authors have examined one alternative to intelligence tests for identifying giftedness in culturally-different populations (Mexican-Americans and Blacks). Although the instrument was only useful in predicting certain teacher perceptions, the relative success of the study suggests that research using alternative instruments such as certain subtests of the S.O.I. may lead to more valid and widespread identification of disadvantaged, minority, and/or culturally-different gifted children. (See also entry on Stenson, C).

Authors: Davidson, Janet E., and Sternberg, Robert J.
Title: The role of insight in intellectual giftedness
Source: *Gifted Child Quarterly*, 1984, 28(2), 58-64

Sternberg's conceptions of intelligence and the differentiating characteristics of giftedness are outlined in the article which also includes data which offer initial verification of his hypotheses.

Author: Devall, Yvonna L.
Title: Some cognitive and creative characteristics and their relationship to reading comprehension in gifted and non-gifted fifth graders
Source: *Journal for the Education of the Gifted*, 1982, 5(4), 259-273

In an attempt to identify differences between gifted and non-gifted students' areas of cognitive development, cognitive style, and creative ability, the author studied ability to solve analogy problems, proverb understanding, field independence/field dependence, preference for complexity, fluency, uniqueness of response, and reading comprehension. The findings of the study indicate differences between the gifted and non-gifted sample in all areas except preference for complexity, fluency, and uniqueness of response. This study of cognitive characteristics of gifted students is important in its extension beyond the traditional measures of differences and its attempt to be more specific about the cognitive abilities of the gifted child.

Authors: Dirks, Jean, and Quarfoth, Joanne
Title: Selecting children for gifted classes: Choosing for breadth vs. choosing for depth
Source: *Psychology in the Schools*, 1981, *18*(4), 437-449

This exploratory study of two types of models for identification provides preliminary evidence that underachieving gifted are best identified through models which focus on a singular strength area rather than models that require that students meet "two out of three" or "three out of four" criteria.

Authors: Ebmeirer, Howard, Dyche, B., Taylor, P., and Hall, M.
Title: An empirical comparison of two program models for elementary gifted education
Source: *Gifted Child Quarterly*, 1985, *29*(1), 15-19

This article presents data which support the success of regular classroom teachers in changing student behavior as measured by the *Ross Test of Higher Cognitive Processes*.

Author: Feger, Barbara
Title: Problems of the gifted among the disadvantaged: The children of the foreign workers in West Germany
Source: *Gifted International*, 1982, *1*(1), 73-78

A description of the problems of identifying and programming for the disadvantaged gifted student in West Germany is followed by a proposal for action to solve those problems. The author promises that a research plan is to be implemented which will investigate the effectiveness and efficiency of the various screening procedures and the quality of the final diagnosis.

Author: Harvey, Steven
Title: A new view of the relationship between creativity and intelligence
Source: *Journal for the Education of the Gifted*, 1982, *5*(4), 295-307

This study represents a factor analytic test of the relationships between intelligence and creativity as well as an examination of the theories of fluid and crystallized intelligence as discussed by Horn and Catell (see reference below). The findings relative to general fluency, general intelligence and a factor identified as creative energy have implications for our understanding of creativity.

Authors: Harvey, Steven, and Seeley, Kenneth R.
Title: An investigation of the relationships among intellectual and creative abilities, extracurricular activities, achievement, and giftedness in a delinquent population
Source: *Gifted Child Quarterly*, 1984, *28*(2), 73-79

One of the frequently discussed, but little documented area in gifted education is the population which is identified as the delinquent gifted individual. In this article, the authors begin to examine the incidence, the characteristics, and the problems of this population.

Author: Kanevsky, Lannie
Title: Computer-based math for gifted students: Comparison of cooperative and competitive strategies
Source: *Journal for the Education of the Gifted*, 1985, *8*(4), 239-255

Although this article's central focus is on the attainment of basic math skills, the findings that using competitive strategies in instruction had a negative impact on gifted students' attitudes toward working cooperatively with others in social or academic settings is most significant and implications for further study of instructional strategies are great.

Author: Kaufmann, Felice A.
Title: The 1964-1968 presidential scholars: A follow-up study
Source: *Exceptional Children, 1981, 48*(2), 164-169

The follow-up of individuals who were identified as gifted in childhood and/or adolescence has the potential to provide valuable information about accuracy of identification and influences on success. The importance of this study lies not only in the immediate data presented but also in the potential for its use as a base for comparison in later follow-up studies.

Author: Montemayor, Raymond
Title: Changes in parent and peer relationships between childhood and adolescence: A research agenda for gifted adolescents
Source: *Journal for the Education of the Gifted*, 1984, *8*(1), 9-23

In this detailed report of the research on adolescence, the author points to the possible implications for gifted children if such patterns are true within the gifted population. He then suggests specific research questions which should be addressed in order to fully understand the gifted adolescent and draw reasonable conclusions about the stresses and strains for these individuals.

Author: Stenson, Carol M.
Title: Note on concurrent validity of structure of intellect gifted screener with Wecksler Scale for Children-Revised
Source: *Psychological Reports*, 1982, *50*(2), 552

The widespread use of the Gifted Screener is predicated on its validity as a measure of intelligence and/or as a predictor of giftedness. This article suggests that the validity of the instrument is questionable, and therefore, further research into predictability is necessary.

Authors: Wolf, Willavene, and Shigaki, Irene
Title: Developmental study of young gifted children's conditional reasoning ability
Source: *Gifted Child Quarterly*, 1983, *27*(4), 173-179

The authors of this study have begun an investigation of the reasoning ability of preschool and early elementary gifted children. Focusing on the very narrow, but important area of conditional logic, they have begun to build a base for understanding the functioning of the very young gifted child.

Author: No author listed
Title: Cooperative research group of supernormal children: A preliminary research of 21 supernormal children
Source: *Acta Psychologica Sinica*, 1979, *11*(1), 118-125

Identified 21 1-11 year-old children with "supernormal intelligence" and investigated conditions of their development and the appropriate way to educate them. Case histories, school performance, intellectual facilities, and personality traits were obtained for all S's. The data presented in the preliminary report were to serve as a starting point for tracing these children's development in the future.

Part III: Works in Related Fields

Author: Amabile, Teresa M.
Title: THE SOCIAL PSYCHOLOGY OF CREATIVITY
Source: New York, New York: Springer-Verlag, 1983

This work explores the relatively new field of social psychology of creativity with an emphasis on the impact of internal and external motivation on creative productivity. It is a comprehensive review of the research on personality, testing, cognition and creativity training as they relate to her theory of the social psychology of creativity.

Authors: Barron, Frank, and Harrington, David
Title: Creativity, intelligence and personality
Source: *Annual Review of Psychology*, 1981, *32*, 439-476

This chapter contains both reviews and analysis of trends in research on theories of creativity, measurement of creativity, the association between creativity and other special abilities, and the relationships between creativity and personality in specific discipline areas (art, literature, music, etc.).

Authors: Fox, Lynn H., and Durden, William G.
Title: *EDUCATING VERBALLY GIFTED YOUTH*
Source: Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1982

This monograph provides an overview of the program at Johns Hopkins University for verbally gifted children, provides a summary of research findings to date, and has an excellent bibliography on current research in this area.

Author: Gardner, Howard
Title: *FRAMES OF MIND*
Source: New York, New York: Basic Books, 1983

Presenting a new theory of multiple intelligences, Gardner challenges the role of the IQ test as the best measurement of an individual potential. He draws from the research in cognitive psychology and neuropsychology to build a case that, in fact, there are a multiplicity of intelligences which should be tested and developed if society is to maximize the potential of its individuals.

Authors: Goldman, Z., Sohmer, H., Godfrey, C., and Manheim, A.
Title: Auditory nerve, brainstem and cortical response correlates of learning capacity
Source: *Physiology and Behavior*, 1981, *26*(4), 637-645

Sophisticated measures of evoked response are allowing researchers to identify correlates between auditory pathway evoked response parameters and mental ability. The authors of this article summarize past research in this area, present new data on differences among gifted, normal, and retarded children on these variables, and speculate on environmental influences on the development of mental abilities which relate to the data presented.

Author: Horner, John L.
Title: Human abilities: A review of research and theory in the early 1970's
Source: *Annual Review of Psychology, 1976, 27*, 437-485

This chapter includes an important review of current research on both intelligence and creative productive thinking. It is notable in its analysis of research trends in those areas and its comprehensive bibliography.

Authors: Price, Gary E., Dunn, Kenneth, Dunn, Rita, and Greggs, Shirley
Title: Studies in Students' Learning Styles
Source: *Roeper Review*, 1981, *4*(2), 38-41

The learning styles of gifted students receiving considerable attention as an area upon which research must focus if teachers are to adequately plan for instruction of these children. The Learning Styles Inventory of Dunn, Dunn, and Price is one instrument used for that purpose. This study is a report of early research using the LSI to describe ways in which the cognitive processing and learning styles of gifted children may vary with age and how their learning styles differ from those of the non-gifted population.

Authors: Reiss, Sally M., and Renzulli, Joseph S.
Title: A case for a broadened conception of giftedness
Source: *Phi Delta Kappan*, 1982, *63*(9), 619-620

The conception of giftedness offered by Renzulli (3-ring sign) and the "Revolving Door Model" of identification suggest revolutionary changes in programming for gifted children. This article presents preliminary evidence that gifted students identified using this model are not significantly different from gifted students identified through traditional means on the quality of student products produced.

Authors: Rimm, Sylvia, Davis, Gary A., and Bein, Yehuda
Title: Identifying creativity: A characteristics approach
Source: *Gifted Child Quarterly*, 1982, 26(8), 165-171

The authors present reliability and validity data on a self-report instrument for identifying creativity Using an instrument with psychological, personality, motivational, and biographical traits as the basis for items, the authors have presented evidence for its usefulness in identifying the creative underachiever and minority group child.

Authors: Robinson, Halbert B., Roedell, Wendy C., and Jackson, Nancy E.
Title: Early identification and intervention
Source: *THE GIFTED AND TALENTED: THEIR EDUCATION AND DEVELOPMENT* (THE SEVENTY-EIGHTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION)
Chicago, Illinois: University of Chicago Press, 1979

The Seattle Project, a longitudinal study of intellectually advanced children undertaken by the Child Development Research Group at the University of Washington, served as the basis for this report on research in the area of early identification and intervention. The findings of that particular study on methods of identification (by performance and by parent nomination), and intervention strategies are integrated in this chapter with other research on this topic. Directions for future research are outlined as the study of long-term implications of various types of intellectual precocity, and the study of actual qualitative differences in the thinking and problem-solving skills of the young gifted child.

Author: Stewart, Emily D.
Title: Learning styles among gifted/talented students: Instructional technique preferences
Source: *Exceptional Children*, 1981, *48*(2), 134-138

In determining appropriate instructional strategies, it is important that the decisions be based on empirical evidence of preferences. This study focuses on learning styles as "instructional strategies most preferred by students" and presents some initial evidence of preferences for methods favoring independence among gifted and talented students.

Authors: Springer, Sally P., and Deutsch, Georg
Title: *LEFT BRAIN, RIGHT BRAIN*

Source: San Francisco, California: W. H. Freeman and Company, 1981

This volume reviews and synthesizes the recent research into the nature of hemispheric asymmetries. The authors carefully identify that which is based on fact and that which is based on speculation within the literature of this field. The study of brain functioning has obvious implications for our understanding of the cognitive processing and learning characteristics of the gifted. Recent interest in the functional asymmetry of the brain has stimulated considerable activity aimed at identifying cerebral dominance and developing activities to stimulate certain areas of the brain. This book is valuable in both its review of the research findings and its evaluation of the conclusions and implications that have been drawn by educators and the popular media and the correlated needs for additional research.

Authors: Stanley, Julian C., Keating, Daniel P., and Fox, Lynn
Title: *MATHEMATICAL TALENT: DISCOVERY, DESCRIPTION AND DEVELOPMENT*
Source: Baltimore, Maryland: Johns Hopkins University Press, 1974

The major research project entitled the Study of Mathematically Precocious Youth has stimulated and continues to stimulate interest in research on rapid acceleration and advanced placement for the intellectually gifted child. The first reports on this research are compiled in this volume. Subsequent research is reported in the first two volumes listed below and the extension of the project to include verbally precocious children has been reported in the monograph by Fox and Durden also listed here. These research reports elaborate on the characteristics of the children identified, programs provided, and case studies of individual children. See also:

Keating, D. P., (Ed.) *Intellectual talent: Research and development*, Baltimore, Maryland: The Johns Hopkins University Press, 1976.

Stanley, J. C., George, W. C., & Solano, C., (Eds.) *The gifted and the creative: A fifty-year perspective*, Baltimore, Maryland: The Johns Hopkins University Press, 1978.

Author: Torrance, E. Paul
Title: Growing up creatively gifted: A 22-year long longitudinal study
Source: *Creative Child and Adult Quarterly*, 1980, *5*(3), 148-158, 170

This follow-up of individual students identified as creative in the original studies

using the *Torrance Tests of Creative Thinking* presents predicative validity data on that instrument, but also examines other factors contributing to adult creative achievement.

Summary Statement

The significance of research directions in the field of education of the gifted can be measured in any number of ways. Significance might be assessed in terms of the degree to which the research expands our knowledge of the characteristics and needs of the gifted. Or significance might be measured in terms of the degree to which the research contributes to our ability to identify the gifted and talented more accurately, effectively, and efficiently. Or it might be measured in terms of an increased understanding of effective programming and curricula. Inclusion in this bibliography is based on a judgment that the identified line of research has potential significance. Whether that significance is achieved, rests first on the question of whether or not the research lines that have begun to evolve (as evidenced by the publications to date) will continue to develop. Secondly, significant impact on the field will also depend on whether that line of research receives appropriate attention from individuals who are in positions of funding further research, or those who make policy decisions, and those who are responsible for the education of the educators.

SOCIAL LEADERSHIP

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Introduction

The following is a listing of selected works focusing on aspects relating to social leadership of gifted pupils. Though this list should not be considered as a comprehensive bibliography, it serves to highlight the problem of the scarcity of works in this field and to emphasize the need for further research in this area.

Authors: Barbe, W., and Renzulli, J. S. (Eds.)
Title: *PSYCHOLOGY AND EDUCATION OF THE GIFTED*
Source: New York, New York: Irvington, 1975

This is an interesting book which deals with various aspects of giftedness. Social dimensions of the gifted child are considered. Of particular interest is the assumption relating to the ability of the gifted to capitalize on various aspects of their talents and personality to gain favorable social position. These traits constitute an important ingredient of social leadership.

Author: Burns, J.
Title: *LEADERSHIP*
Source: New York, New York: Harper and Row, 1978

A classic book, written in popular style, that focuses on the anatomy of political leadership. The author has good discussions on the uses of power, the origins of leadership from an individual standpoint, and the nature of leadership for transformation and reform.

Authors: Butler, N., and Butler, R.
Title: Parents and children's perception of special classes for highly gifted children

Source: Gallagher, J. J. (Ed.)
GIFTED CHILDREN: REACHING THEIR POTENTIAL
Jerusalem, Israel: Kollek and Son, 1979, 223-245 (Reprinted in: *Gate*, 1979, *1*, 112-126)
Both available from Trillium Press, Inc.

This study investigates the perceptions of parents and children in cognitive, emotive, and social aspects of special classes for the gifted in Haifa. It is relevant to note that social development was perceived in terms of fulfillment of personal social needs, and not in an orientation toward social roles of responsibility and leadership.

Author: Butler-Por, N.
Title: A cross-cultural study of giftedness
Source: Freeman, J. (Ed.)
THE PSYCHOLOGY OF THE GIFTED
London, England: John Wiley and Sons, Ltd., 1985

This study investigated the value systems of various cultures and subcultures in Israel. Findings indicated that social values within the gifted populations were ranked in very high positions. However, it is interesting to note that these values were perceived in terms of personal social success, whereas the value of social leadership coded a very small percentage of responses. The findings indicate a need for the development of social commitment in gifted children.

Author: Butler-Por, N.
Title: Gifted children in three Israeli cultures
Source: Freeman, J. (Ed.)
THE PSYCHOLOGY OF GIFTED CHILDREN
London, England: John Wiley and Sons, Ltd., 1985, chapter 17

This study investigated the value systems of gifted children and their parents in Israeli cultures and subcultures: Jewish of Western origin, Jewish of Oriental origin, and Arabs. Findings indicated that social values within the gifted populations were ranked in very high positions. However, it is interesting to note that these values were perceived in terms of personal social success, whereas the value of social leadership coded a very small percentage of responses. The findings indicate a need for the development of and education for social commitment and involvement in gifted children.

Author: Cawood, Joseph
Title: The gifted child—tomorrow's leader?

Source: *Gifted International*, 1983, 2(1)

In this article, Cawood presents his argument for viewing leadership as a group function, defines leadership as the exerting influence to advance a group toward its goals, as opposed to the "trait" or "situation" theories of the development of leadership. A structure for the teaching methods to be utilized to foster the leadership potential in every student is presented. Cawood further argues that the "group function" theory requires that training in leadership is appropriate for all individuals, yet offers the gifted a unique opportunity to flourish and grow in their potential as future leaders.

Author: Daddario, E. O.
Title: Science, the future and the gifted child
Source: *The Gifted Child Quarterly*, 1977, *21*, 32-36

This interesting article discusses the role of social leadership for the gifted. The writer perceives the new generation of gifted young people as future leaders in a society that must develop its scientific and technological resources. The progress of the society of the future, the author argues, must utilize imagination and optimism, traits which the gifted are endowed with. These characteristics are perceived by the writer as related to social leadership, a role that the gifted should be encouraged to fulfill.

Authors: Gallagher, J. J., Oglesby, K., Stein, A., Caplow, D., Courtright, R., Fulton, L., Guiton, G., and Langenbach, J.
Title: *LEADERSHIP UNIT: THE USE OF TEACHER-SCHOLAR TEAMS TO DEVELOP UNITS FOR THE GIFTED*
Source: New York, New York: Trillium Press, 1982

This work had two purposes in its development. The first was the creation of a curriculum unit on leadership appropriate for gifted middle-school students, including readings, lessons, activities, and an evaluation, with the expressed goal of developing leadership skills among their students. The second purpose of the document was to outline a reproducable method of curriculum development utilizing a liaison between the teachers and the content specialist, an academician who advised the teachers regarding the basic concepts and concepts of leadership to be incorporated into the unit.

Author: Gallagher, J. J.
Title: *TEACHING THE GIFTED CHILD* (3rd Ed.)
Source: Boston, Massachusetts: Allyn and Bacon, 1985

This book is a most interesting and comprehensive analysis of the various dimensions

of the education of the gifted. In terms of the education for social leadership, the author discusses the need to involve the gifted in educational activities concerned with value clarification in social and moral issues, a process relevant for education toward social leadership.

Authors: Kames, F. A., and Brown, A.
Title: Moral development and the gifted: An initial investigation
Source: Kramer, A., et al (Eds.)
GIFTED CHILDREN: CHALLENGING THEIR POTENTIAL: NEW PERSPECTIVES AND ALTERNATIVES
New York, New York: Trillium Press, 1981, 46-55

This study, which is concerned with the development of moral judgment in gifted children, is relevant to the understanding of the potential for social leadership. The indication that gifted children may reach during adolescence, a level only attained by about 10-15% of adults, points to the need to utilize this ability in the education toward social leadership.

Authors: Milgram, R. M., and Milgram, N. A.
Title: Personality characteristics of gifted Israeli children
Source: *The Journal of Genetic Psychology*, 1976, *129*, 185-191

The superior social adjustment of gifted children is indicated by the findings of this study of personal social adjustment of gifted and non-gifted children in Israel. The gifted were characterized generally by a more positive self-concept and more internal locus of control, factors which should be conducive to the development of social leadership.

Authors: Olivero, J., Parnes, S., et al.
Title: *A NEW GENERATION OF LEADERSHIP—EDUCATION FOR THE GIFTED IN LEADERSHIP*
Source: Los Angeles, California: National/State Leadership Training Institute on the Gifted and Talented, 1978

This book includes chapters on identification of leadership potential, curriculum development for programs to promote development of leadership skills, and garnering industrial/commercial resources for sponsoring programs. There is an excellent survey of the literature on leadership by A. Arnold included in this selection.

Authors: Richardson, W., and Feldhusen, J.
Title: *LEADERSHIP EDUCATION: DEVELOPING SKILLS FOR YOUTH*

Source: New York, New York: Trillium Press, 1984

An excellent guide and manual for teachers who wish to pursue the development of a curriculum unit that would place an emphasis on leadership. Three aspects of leadership information are stressed: information on the nature of leadership education; leadership from the perspective of a leader and a group member; and leadership from an organizational perspective. Each chapter provides specific objectives and topics, including committee organization, parliamentary procedure, and communication skills. Group activities are presented in enough detail to be useful in a program for secondary-school gifted students.

Authors: Ross, A., and Parker, M.
Title: Academic and social self-concepts of the academically gifted
Source: *Exceptional Children*, 1980, *47*(1), 6-10

On the basis of the findings that the social concept of gifted pupils was much lower than their academic self-concept, the writers envisage a role to be played by educators in enhancing social responsibility in the gifted. The researchers suggest that gifted pupils fail to attain social leadership as a result of their channeling all their efforts toward attaining academic success.

Summary Statement *

The topic of social leadership is one of recent emphasis in gifted education which is evident from the relatively small number of references cited here. While every culture aspires to have responsible adult leadership, the two countries that seem to be most concerned about this topic from an academic viewpoint are the United States and Israel. There is a strong need to obtain data from other cultures on this topic.

Even more pressing is the problem of how moral judgments develop and how such judgment fits into the characteristics of social leadership. Does the moral judgment of the gifted youth become a shaping factor for the adult leader? Can we advance understanding of moral issues through a differential educational experience? There are many difficult and important issues needing attention in this topic area.

* Prepared by Senior Editor

GIFTED WOMEN

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Introduction *

The role of gifted women in their culture is a topic of concern in many modern societies. We have come to realize that few cultures can prosper when one-half of the people are not using all of their intellectual resources. The abstracts of articles and books given here provide an interesting collection documenting the difficult tasks many gifted women have in reaching their full potential.

* Prepared by Senior Editor

Authors: Bachthold, Louise M., and Werner, Emmy E.
Title: Personality profiles of gifted women: Psychologists
Source: *American Psychologist*, March 1970, *25*(3), 234-243

Compared the responses of the sixteen PF of 124 highly successful women psychologists with women in general, college women, and successful academic men to identify personality factors enabling these women to succeed in spite of powerful sex-role expectations to the contrary. In terms of test scores, women psychologists were significantly more intelligent than women in general. Despite similar test profiles of successful academic men and women, the women scored higher on intelligence, radicalism, and super-ego strength, and lower on self-sentiment.

Authors: Benbow, Camilla P., and Stanley, Julian C.
Title: Sex differences in mathematical reasoning ability: More facts
Source: *Science*, 1983, 222, 1029-1031

Almost 40,000 selected seventh-grade students from the Middle Atlantic region of the United States took the College Board Scholastic Aptitude Test as part of the Johns Hopkins regional talent search in 1980, 1981, and 1982. A separate nationwide talent search was conducted in which any student under age 13 who was willing to take the test was eligible. The results obtained by both procedures establish that by age 13 a large difference in mathematical reasoning ability exists and that it is especially pronounced at the high end of the distribution: among students who

scored ≥ 700, boys outnumbered girls 13 to 1. Some hypothesized explanation of such differences were not supported by the data.

Authors: Benbow, Camilla P., and Stanley, Julian C.
Title: Intellectually talented boys and girls: Educational profiles
Source: *The Gifted Child Quarterly*, 1982, *26*(2), 82-88

The purpose of the study was to characterize the educational experiences and values of the intellectually talented (especially mathematically) group of 7th-grade and under-age 8th-grade students who participated in the Study of Mathematically Precocious Youth (SMPY) 1976 mathematics talent search. The most consistent and noteworthy finding was that, despite their wide ranges in mathematical and verbal scores on the College Board's Scholastic Aptitude Test, these students were remarkably homogeneous in background, experiences, interests, and values. Sex differences were noted in mathematical reasoning ability, attitudes toward mathematics and science, perceived performance in mathematics and science, and how mathematics knowledge was considered to have been acquired. All these sex differences, except in ability, were considered only small or negligible because of their associated effect sizes. An investigation into the family backgrounds of SMPY talent search participants found no indications of differential training or encouragement of boys and girls.

Author: Blaubergs, Maija S.
Title: Sex-role stereotyping and gifted girls' experience and education
Source: *Roeper Review*, 1980, *2*(3), 13-15

The intellectual development of gifted girls, as well as girls in general, is hampered by sex-role stereotyping. The choice of toys and low expectations by parents and teachers makes it harder for them to learn and to achieve. The awareness of gifted girls of sex-role stereotyping can reduce its impact.

Author: Bledsoe, Carl E.
Title: Career aspirations of gifted junior and senior girls currently in Georgia high schools
Source: *Dissertation Abstracts International*, 1982, *43*(6)

Gifted girls do not differ from gifted boys in career aspiration; however, gifted girls differ significantly from non-gifted girls in the clerical, professional, and service occupations. Of the gifted girls who aspire to the traditionally male dominated professions, two-thirds perceive no future loss of feminine identity as a result of entering these occupations.

The data from this study suggest very high occupational aspirations among gifted girls, and very high expectations of fulfilling these aspirations. In view of projected employment trends in the professions a high percentage of the girls aspire to (namely, medicine and law), these aspirations may be unrealistic. A need exists to help the gifted girls find ways to deal with the sex-specific problems that may face them as they enter the work force.

Authors: Bruch, C. B., and Morse, J. A.
Title: Initial study of creative (productive) women under Bruch-Morse model
Source: *The Gifted Child Quarterly*, 1972, *16*(4), 282-289

Creative women who had participated in Torrance's long study were studied after 12 years, and findings suggest that creative characteristics are stable over time. The authors discovered a significant relationship between subject complexity and creativity predictor variables.

Author: Callahan, Carolyn M.
Title: The gifted girl: An anomaly?
Source: *Roeper Review*, 1980, 2(3), 16-20

Though gifted girls tend to earn higher grades in school, and the prevailing stereotype includes superior performance in English, foreign languages, and the arts, the adult productivity of males is superior in all fields. A number of reasons are discussed:

- young girls are generally not encouraged to be assertive and explore their surroundings; this may lead to a lack of field independence which in turn accounts for a lack of visual-spatial ability needed for achievement in mathematics and science.
- it appears that many young girls and women have been enculturated to the extent that they fear they may be rejected socially or be considered unfeminine if they appear too bright or too competent ("fear of success," lack of achievement motivation).
- girls suffer from sex-role stereotyping in textbooks and lack of female role models in everyday situations.
- the effects of different types of administrative options (enrichment, acceleration, homogeneous ability groups, etc.) on males and females have not been taken into account yet.

A number of points for curriculum planning for gifted females are suggested.

Author: Cray-Anderson, Martha J.
Title: Gifted female adolescents' perceptions of career and lifestyles

Source: *Dissertation Abstracts International*, 1984, *44*(9)

The twenty-two subjects had little difficulties stating their career preferences. The career related variables were interests, capabilities, money, and family. Additionally, careers were to be challenging, offer diversity, and be of service to people. Lifestyle aspirations were less specific. Lifestyle was often characterized as out of control, dependent on unpredictable variables such as children, husband's job, financial needs, etc. The problem of balancing career and lifestyle goals was repeatedly discussed. They expected to be primary caretakers of children and pursue careers. They saw the ability to be flexible and adaptable as an asset. They sensed the competitive and complementary nature of career and lifestyle goals. Their ability to see both sides placed them in the position of struggling with balance in order to maintain viable options for attaining the multifaceted lives they envisioned.

Author: Drews, Elizabeth M.
Title: Counseling for self-actualization in gifted girls and young women
Source: *Journal of Counseling Psychology*, Summer 1965, *12*(2), 167-175

Various approaches to counseling and curriculum which emphasize being and becoming show that gifted girls are helped to break through restraining social sanctions and to move toward greater self-actualization.

Author: Fox, Lynn H.
Title: Sex differences: Implications for program planning for the academically gifted
Source: Stanley, J. C., George, W. C., and Solano, C. H. (Eds.) *THE GIFTED AND THE CREATIVE: A FIFTY YEAR PERSPECTIVE*
Baltimore, Maryland: Johns Hopkins University Press, 1977

This paper reviews the sex differences in intellectual abilities, achievement, values, and interest that have relevance to educational planning for gifted children. Early admission to kindergarten or first grade and early college entrance both appear to be valuable for gifted boys and girls. Grade skipping, subject matter acceleration, and advanced placement programs in mathematics and the sciences in the junior high school years, however, are more effective for gifted boys than for gifted girls. Homogeneously grouped accelerated programs in mathematics can promote achievement of gifted girls, as well as gifted boys, in some classroom environments but not in others. Part of the differential academic success of the sexes in subjects such as mathematics is a result of sex-role stereotyping activities in early childhood and adolescence. The reduction of sex-role stereotyping should increase both male and

female creativity and achievement in many areas. Early identification of children and counseling of parents is needed. Career education and early planned intervention are particularly crucial for gifted girls. Teachers need to help gifted students, especially girls, to become better intellectual risk takers.

Author: Fox, Lynn, H.
Title: Changing times and the education of gifted girls
Source: Gallagher, J. J. (Ed.)
GIFTED CHILDREN: REACHING THEIR POTENTIAL
Jerusalem, Israel: Kolleck and Son, 1979, 364-381.
Available from Trillium Press, Inc.

This paper discussed sex differences in academic achievement and explored possible contributing factors. The SMPY program fostering rapid acceleration of gifted students in mathematics is described, as well as conditions under which greater achievement among gifted girls was realized. Barriers to high academic achievement of gifted girls are explored and educational strategies to overcome these barriers suggested. The gifted girl, who is often discouraged from seeking intellectual challenge and developing her full potential, must learn to deal with real and imaginary, internal and external barriers to achievement.

Author: Hall, Eleanor C.
Title: Sex differences in IQ development for intellectually gifted students
Source: *Roeper Review*, 2(3), 25-28

The sample consisted of 29 boys and 30 girls with a minimum IQ of 130 on the Stanford-Binet. In the elementary grades the girls outnumbered the boys, but from 8th-grade through high school the trend reversed. Significantly more girls than boys had fathers with Ph.D. degrees. In this particular sample, no significant difference in achievement in math between boys and girls was found, but more girls than boys increased or decreased in IQ on the WISC Full Scale score in high school.

As teachers tend to expect girls to conform and be passive, the most conforming girls may get the highest grades and consequently be identified as gifted, whereas the girls with the highest IQs may be overlooked. An increased use of tests instead of teacher nomination is suggested.

Authors: Hollinger, Constance L., and Fleming, Elyse S.
Title: Internal Barriers to the Realization of Potential: Correlates and interrelationships among gifted and talented female adolescents
Source: *The Gifted Child Quarterly*, 1984, 28(3), 135-139

The sample consisted of 284 female adolescents identified as gifted and talented in one or more of 15 talent dimensions including both traditional (aptitude and academic achievement) and non-traditional (demonstrated ability in the performing arts, athletics, leadership) indices.

Whereas 85 of the adolescents showed no indication of internal barriers, the results of the study indicate that gifted and talented female adolescents, diagnosed as possessing one or more internal barriers which could thwart realization of potential, are characterized by a unique profile of personality correlates.

Author: Leder, Gilah
Title: Fear of success: Mathematics performance and career choice
Source: Kramer, Alan H. (Ed.)
GIFTED CHILDREN: CHALLENGING THEIR POTENTIAL
New York, New York: Trillium Press, 1981, 165-177

Leder examines whether Horner's "Fear of Success" (FS) theory still applied 10 years after it had been postulated. The sample consisted of 20 female and 30 male students who had been selected for a gifted program. Though findings were not significant, they indicated that Horner's FS construct was still relevant. Girls, whose maths performance and expectations were lower than expected, were particularly aware of social pressures on career choice.

Author: Leukhard, Joan C.
Title: Students in a special program for gifted female adolescen
A conceptual case study for planning curriculum
Source: *Dissertation Abstracts International*, 1984, *44*(8)

The case studies of 48 gifted female adolescents in a special program identifies four types: self-assured, self-directed, successful; obedient, outer-directed, successful; open, changeable, unrealistic; and self-denigrating, fearful, unsure. The principles of curriculum development are as follows:

- —Educators need to acquire knowledge in the content areas and need to acquire skills in the affective realm as prerequisites to meeting the needs of gifted female students.
- —Gifted female students need to have educational experiences which will attend to their school achievement and self-concept.
- —Gifted female students need to have career education tailored to the concerns of women's careers.
- —There are optimum times to schedule various phases of career education for gifted female students.
- —Gifted female students need to be involved in expanded special education programs.
- —Gifted female adolescents need to learn mathematics in a special format.

Authors: Ludwig, Gretchen and Cullinan, Douglas
Title: Behavior problems of gifted and nongifted elementary school girls and boys
Source: *The Gifted Child Quarterly*, 1984, *28*(1), 37-39

The sample consisted of 54 male and 54 female pairs of elementary students, one gifted and one nongifted in each pair.

Results indicate that gifted elementary students show fewer behavior problems than their nongifted classmates. Regardless of gifted or nongifted status, boys exceed girls in conduct disorder problems. It is entirely possible that students who show poor adjustment (e.g., aggression, disruption, fearfulness, aloofness, inattentiveness) are unlikely to be selected for a gifted program. Thus, if gifted program students, as was the case in this sample, are utilized as gifted subjects, behavior problems of gifted children may be underestimated because poorly adjusted gifted students might be excluded a priori.

Authors: Meece, J. L., Parsons, J. E., Kaczala, C. M., Goff, S. B., and Futtermann, R.
Title: Sex differences in math achievement: Toward a model of academic choice
Source: *Psychology Bulletin*, 1982, *91*, 34-48

The paper summarizes the common explanations of this problem and continues to integrate the research into a theoretical model. This psychological model links academic choice to expectations of success and the subjective value of a particular course. In addition, the model specifies the relations among a set of other variables that are believed to mediate individual differences in both students' expectations of success and their perceptions of the relative value of various academic options. The utility of this model for increasing of course enrollment patterns and career decisions and for designing appropriate intervention strategies is discussed.

Author: Navarre, Jane
Title: What is good for the gander is good for the goose - Should gifted girls receive differential treatment?
Source: *Roeper Review*, 1980, 2(3), 21-25

Navarre quotes twelve examples of gifted girls refusing to go on to higher education or to even contemplate a career in engineering; gifted girls being less valued by their parents than gifted boys; losing social acceptability because of an unusual career; being preferred by gifted boys because of the intelligence, etc. The examples are then discussed in the light of recent research and evaluation. Suggestions to remedy the unsatisfactory situation such as compensatory courses in maths, female role models, and peer groups in male-oriented courses are made.

Author: Norfleet, Mary A.
Title: Personality characteristics of achieving and underachieving high ability senior women
Source: *Personnel and Guidance Journal*, June 1968, *46*(10), 976-980

Utilized the CPI and the Gough Adjective Check List in an investigation of the relationship between personality characteristics and academic achievement in gifted university women.

Author: Sampson, Shirley
Title: Education of gifted and talented girls
Source: Braggett, E. J. (Ed.)
EDUCATION OF GIFTED AND TALENTED CHILDREN FROM POPULATIONS WITH SPECIAL NEEDS
Canberra, Australia: Commonwealth Schools Commission, 1985

The difficulties gifted and talented girls face are in the main similar to those faced by girls as a whole. Sampson contends that there is now no area in which sex differences in achievement are accepted as genetic in orgin. Problems fall into three main categories:

a) aspects of classroom interaction including teacher perception
b) lack of confidence or self-esteem
c) lack of female role models for leadership or excellence

Sampson sees a need to actively intervene on the behalf of girls.

Author: Schwartz, Lita L.
Title: Advocacy of the neglected gifted: Females
Source: *The Gifted Child Quarterly*, 1980, *24*(3), 113-117

In spite of having more doors open to them than they did a generation ago, gifted females still face continuing barriers of sex-role stereotypes, reputed fear of success, and long induced lack of self-confidence. To use their intellectual and creative potential, women need stimulation, self-confidence, feelings of independence as well as recognition, acceptance, and opportunity.

Authors: Sears, P. S., and Barbee, A. H.
Title: Careers and life satisfaction among Terman's gifted women
Source: Stanley, J. C., George, W. C., and Solano, C. H. (Eds.)
THE GIFTED AND THE CREATIVE: A FIFTY YEAR PERSPECTIVE
Baltimore, Maryland: Johns Hopkins University, 1977

Of the 671 women originally selected by Terman for his gifted group, 420 responded to a questionnaire in 1972. Two measures of satisfaction were used: of the women's work pattern and of a broader measure of life satisfaction. Results show the women employed outside of the home to be satisfied with their work, the homemakers less satisfied with theirs. Homemakers report themselves more satisfied on a broader measure of satisfaction.

Author: Whiteside, Marilyn
Title: What happens to the gifted girl?
Source: *PTA Magazine*, February 1974, *68*(6), 20-21

Dr. Whiteside discusses how the assignment of certain traits as masculine or feminine has caused many gifted girls to not develop their talents and creativity.

Summary Statement *

The literature on this topic has provided a strong documentation for the nature of the problem faced by many gifted girls and women. There are far fewer abstracts on how to provide a constructive solution to these issues than there are that restate the problem.

It is clear that there are many persons who fear that while we are about the business of solving one problem (the lack of intellectual stimulation for gifted women) we might be increasing the likelihood of another problem (less interest in home and family solidarity).

We need to have some demonstrations on how to encourage full use of the intellectual resources of gifted women without incurring other unfavorable results. It is demonstrations of this sort that will convince many of those who hang back that their fears are largely ungrounded and thus gain their support.

* Prepared by Senior Editor

UNDERACHIEVEMENT AMONG THE GIFTED

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Introduction

Since the longitudinal research of Lewis Terman highlighted the issue, there has been interest in the student who has great talent but a mediocre academic record. The literature on this topic generally falls in two specific dimensions. The first focuses upon the characteristics of the gifted underachiever, with much of the attention being directed to the personality characteristics or family characteristics of the gifted underachiever. The second area of interest lies in the attempts to try to modify or change the pattern of gifted underachievement through a variety of intervention strategies, principally counseling and special education programs.

Authors: Behrens, L. G., and Vernon, P. E.
Title: Personality correlates of overachievement and underachievement
Source: *British Journal of Educational Psychology*, November 1978, *48*(3), 290-297

Canadian seventh-graders were given intelligence, mathematics, and English tests. These scores and their class grades were compared with personality questionnaire measures of aggression, self-concept, and attitudes. Substantial correlations were obtained between the ability and personality variables, with marked sex differences.

Author: Butler-Por, N.
Title: The phenomenon and treatment of academic achievement in children of superior and average ability
Source: Cardiff, Wales: University of Wales, 1982 (Unpublished doctoral dissertation)

A treatment of thirty-six underachievers resulted in improved grades and positively altered levels of absences, tardiness, participation in class, and general social activities compared to a matched control group after thirty-six weeks. The basic principles underlying the treatment program were: 1) that there should be an acceptance of the child, 2) the child should recognize the need for behavioral change,

and 3) the child would accept personal responsibility for the change. Treatment included Glaser's reality therapy utilized in weekly meetings and contracts between students and their teachers.

Author: Delisle, J.
Title: Learning to underachieve
Source: *Roeper Review*, 1984, *4*(4), 16-18

The author describes underachievement as learned behavior resulting from the conflicting expectations of the educational system. Sprinkled with quotes from gifted students, the article calls for a transition in approach from an emphasis on remediation toward a focus on prevention.

Author: Fine, B.
Title: *UNDERACHIEVERS: HOW THEY CAN BE HELPED*
Source: New York: E. P. Dutton & Company, 1967

A review of various attempts to intervene in the life patterns of gifted underachievers. Numerous case studies provided to enrich the general principles expounded by the author.

Author: French, J. L.
Title: Characteristics of high ability dropouts
Source: *National Association of Secondary School Principals Bulletin*, February 1969, *53*(334), 67-79

Each year more than 80,000 youth who are within the top 25% of the nation's population intellectually and who have the scholastic potential for higher education and a high level job leave school before graduation. This study surveys bright dropouts in Pennsylvania, and compares them to school persisters in vocational interest, personality, and attitude.

Author: Kornrich, M.
Title: *UNDERACHIEVEMENT*
Source: Springfield, Illinois: Charles C. Thomas, 1971

Fifty-one papers, selected for their contribution to our understanding of underachievement, explore the psychodynamic and socio-cultural factors related to under achievement and various treatment approaches. Though dated, this collection presents a broad, balanced perspective of the underachiever.

Author: LeGrand, K. R.
Title: Perspective on minority education: An interview with anthropologist John Ogbu
Source: *Journal of Reading*, May 1981, 24(8), 680-686

Nigerian anthropologist John Ogbu examines the academic failure of minority groups within the context of American society and draws comparisons to minority group education in five other cultures. Has implications for research on the causes and characteristics of gifted underachievers across cultures.

Author: Perkins, H. V.
Title: Classroom behavior and underachievement
Source: *American Educational Research Journal*, January 1965, 2(1), 1-12

Study identifies student behavior, learning activity, teacher behavior, and teacher-role variables related to lack of achievement in high-ability fifth-grade pupils. Underachievers exhibited more withdrawal behavior in response to academic tasks.

Author: Pringle, M. L.
Title: *ABLE MISFITS: A STUDY OF EDUCATIONAL AND BEHAVIOR DIFFICULTIES OF 103 VERY INTELLIGENT CHILDREN (IQ'S 120-200)*
Source: London, England: Longmans, 1970

One of the titles in the "Studies in Child Development" series conducted by Britain's National Bureau for Cooperation in Child Care, this volume examines the educational and behavioral difficulties of 103 very intelligent children (IQ's 120-200).

Authors: Raph, J. B., Goldberg, M. L., and Passow, A. H.
Title: *BRIGHT UNDERACHIEVERS: STUDIES OF SCHOLASTIC UNDERACHIEVEMENT AMONG INTELLECTUALLY SUPERIOR HIGH SCHOOL STUDENTS*
Source: New York, New York: Teacher's College Press, 1966

The authors present a thorough review of the research literature (1925-1965) and a complete summary of their own work comparing achievers and nonachievers. The authors' studies present data on the self-perceptions and attitudes of the underachiever, his teachers' views of his problems, and the effects of remedial efforts by educators to correct his difficulty. They comment on the great waste of talent which occurs among the underprivileged because of adverse learning conditions both at home and at school.

Authors: Shaw, M. C., and McCuen, J. T.
Title: The onset of academic underachievement in bright children
Source: *Journal of Educational Psychology*, June 1960, *51*(3), 103-108

Authors hypothesize "that underachievement among bright students is not a problem which has genesis within the educational framework, but rather one which the underachiever brings with him, at least in embryo form, when he enters high school." This intensive study of a small number of gifted underachievers found an under-
achievement pattern present by grade five for males. However, the underachievement pattern was not apparent in females until grades nine and ten.

Authors: Terman, L. M., and Oden, M.
Title: The gifted child grows up
Source: *GENETIC STUDIES OF GENIUS* (Vol. 4)
Stanford, California: Stanford University Press, 1947

A follow-up study of Terman's subjects, this volume highlights the discrepancy in performance between high achievers and underachievers. This work compares subjects on academic performance, occupational status, and personality traits.

Author: Whitmore, J. R.
Title: *GIFTEDNESS, CONFLICT AND UNDERACHIEVEMENT*
Source: Boston, Massachusetts: Allyn & Bacon, 1981

The author focuses on the characteristics and needs of the underachieving student in the primary grades. The book provides an historical foundation for the field, a discussion of the psychological and educational needs of the gifted, and a description of the development and implementation of an experimental project established by the author for highly gifted underachievers.

Summary Statement

There are two unanswered questions of major dimensions in the field of gifted underachievement. First, there is little epidemiological evidence with regard to the numbers or percentages of youngsters who would fit this category. If the percentage is 25% of the gifted population, that would make this problem substantially more significant than if it were 5%. Very few systematic attempts have been made to characterize the size of this problem. The second major area that is needed is a continued search for strategies and techniques that would seem to be effective in influencing the underachiever. Most of the effort that had been made to the present time require an extensive commitment of highly trained personnel over a long time period in order to modify these behavior patterns significantly.

THE GIFTED LEARNING DISABLED

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Introduction

Widespread concern for the educational, psychological, and social needs of gifted learning disabled children is fairly recent. The literature on this topic includes considerable case study material, aimed at showing that the gifted learning disabled do exist, that they are difficult to identify, and that their educational needs are different from the gifted or the learning disabled. There are a few experimental studies, and some programming suggestions. This is an emerging field, and the publications listed here reflect the basic philosophical and definitional issues inherent in the early development of a body of knowledge.

Authors: Baum, S., and Kirschenbaum, R.
Title: Recognizing special talents in learning disabled students
Source: *Teaching Exceptional Children*, Winter 1984, 92-96

This article describes how the superior photographic interests and skills of an academically failing high school student was enchanced through use of Renzulli's Enrichment Triad Model.

Authors: Chermak, G. D., and Burgerud, D. M.
Title: Receptive language of gifted and learning disabled-gifted children
Source: *The Exceptional Child*, November 1983, *30*(3), 226-229

Twelve normal, ten gifted, and eight gifted learning disabled children, aged eight to thirteen, were administered three tests of receptive language. The *Token Test for Children* differentiated the GLD from the other two groups, while the Verbal Absurdities Subtest of the *Detroit Tests of Learning Aptitude* differentiated the gifted from the other groups.

Author: Clarke, Louise
Title: *CAN'T READ, CAN'T WRITE, CAN'T TALK TOO GOOD EITHER*
Source: New York, New York: Penguin Books, 1973 (280 pages)

This book presents the story of Mike, a gifted boy with a severe language disability, from the ages of two to twenty. Written by his mother, it traces his early development, difficulties with school work, and personal frustrations and turmoil as an adolescent. Sections relating to advocacy on behalf of learning disabled children, and suitable programs and therapies are included.

Author: Daniels, Paul R.
Title: *TEACHING THE GIFTED/LEARNING DISABLED CHILD*
Source: Rockville, Maryland: Aspen, 1983 (223 pages)

Drawing on nineteen years of experience with severely reading and learning disabled children, the author presents practical suggestions for teachers, administrators, and parents regarding identification, remediation procedures, programs for specific abilities and written language, and supportive systems. The book focuses on gifted children who have disabilities in reading and/or language.

Author: Dixon, John Philo
Title: *THE SPATIAL CHILD*
Source: Springfield, Illinois: Charles C. Thomas, 1983 (234 pages)

Although spatial ability is one of the primary ways in which giftedness is manifested, it has been given little consideration in the planning of programs for gifted children. Biographical data on historical figures such as Einstein, Picasso, and Rodin suggest that some children who possess spatial ability may not manifest their abilities in usual school settings. Drawing on data from a variety of theoretical fields, the author proposes an interdisciplinary approach to understanding, identifying, and educating spatially gifted children.

Authors: Ellis-Schwabe, M., and Conroy, D.
Title: A discussion of the creative abilities of learning disabled, gifted, and learning disabled/gifted children
Source: *Journal for the Education of the Gifted*, 1983, *6*(3), 213-221

The Torrance Test of Creative Thinking, Figural Form A was administered to six learning disabled, six gifted, and six gifted learning disabled boys in grades four through six. There was no difference between groups on scores of flexibility and originality. The LD and GLD groups had higher fluency scores than the G group, while the GLD and G groups had higher elaboration scores than the LD group.

Authors: Fox, L. H., Brody, L., and Tobin D. (Eds.)
Title: *LEARNING-DISABLED/GIFTED CHILDREN: IDENTIFICATION AND PROGRAMMING*
Source: Baltimore, Maryland: University Park Press, 1983 (297 pages)

In separate chapters, experts in the areas of learning disability or giftedness focus on concepts and characteristics of the GLD, problems and practices relating to identification, educational programs, and future directions for research and practice. This book dispels some of the myths surrounding the GLD and provides an understanding of the characteristics and special needs of these children.

Author: French, Joyce M.
Title: The gifted learning disabled child: A challenge and some suggestions
Source: *Roeper Review*, 1982, *4*(3), 19-21

An instructional technique providing rules and categories, meaningful materials, and active responding is used to improve the academic achievement of an elementary grade child with superior abstract skills but weak perception and memory.

Authors: Harris, D. G., and Avery, S. W.
Title: Gift behind the difficulties
Source: *The Pointer General*, Fall 1978, *23*(1), 65-68

This article presents a case study of a gifted grade two boy with learning problems in reading and spelling, attributed to perceptual and attentional deficit.

Authors: Krippner, S., and Herald, C.
Title: Reading disabilities among academically talented
Source: *The Gifted Child Quarterly*, Spring 1964, 12-20

The major contributing factors in the reading disabilities of twenty-one academically talented children were disturbed neurological organization and neurotic tendencies, while for 124 children of average intelligence, the major contributing factors were disturbed neurological organization and dominance or directional confusion.

Author: Mindell, Phyllis
Title: The gifted dyslexic: A case study with theoretical and educational implications
Source: *Roeper Review*, 1982, *4*(3), 22-23

Based on the school experiences of an unusually talented metalsmith, the author suggests that instead of focusing on teaching reading to the severely dyslexic, time would be better spent on developing their nonverbal gifts.

Author: Rawson, Margaret
Title: *DEVELOPMENT LANGUAGE DISABILITY: ADULT ACCOMPLISHMENTS OF DYSLEXIC BOYS*
Source: Baltimore, Maryland: Johns Hopkins Press, 1968

A long-term study of fifty-six language disabled boys of high ability who attended a small private school in Pennsylvania showed a negative correlation between degree of disability and both number of years of higher education achieved and adult job status. The boys with the most severe disabilities tended to achieve the most.

Authors: Schiff, M. M., Kaufman, A. S., and Kaufman, N. L.
Title: Scatter analysis of WISC-R profiles for learning disabled children with superior intelligence
Source: *Journal of Learning Disabilities*, August/September 1981, *14*(7), 400-404

The WISC-R profiles of thirty gifted learning disabled children exhibited strengths in verbal comprehension, expression and conceptualization, and relative weaknesses in sequencing ability and distractibility. Verbal-Performance IQ discrepancies and subtest scatter were greater than those reported for children with normal intelligence.

Author: Thompson, Lloyd, J.
Title: Language disabilities in men of eminence
Source: *Journal of Learning Disabilities*, January 1971, *4*(1), 39-50

Biographical data on eminent men like Thomas Edison, Auguste Rodin, and Albert Einstein suggest that they had unusual difficulty with aspects of language such as reading and spelling, and may well have been dyslexic.

Author: Vautour, J. A. Camille
Title: Discovering and motivating the artistically gifted LD child
Source: *Teaching Exceptional Children*, Winter 1976, *8*(2), 92-96

Four artistically gifted children with learning disabilities were identified by teachers using a checklist, and a special remedial program with an art focus was developed for them.

Author: Whitmore, Jeanne Rand
Title: *GIFTEDNESS, CONFLICT AND UNDERACHIEVEMENT*
Source: Boston, Massachusetts: Allyn and Bacon, 1980 (462 pages)

In the Cupertino Project, gifted learning disabled children were included in classes for the underachieving gifted. This book deals with characteristics, identification, and definition of gifted underachievers, and describes a special program develope for them. A case study of a gifted learning disabled boy is presented in Chapter 4.

Authors: Whitmore, J. R., and Maker, C. J.
Title: *INTELLECTUAL GIFTEDNESS IN DISABLED PERSONS*
Source: Rockville, Maryland: Aspen, 1985 (335 pages)

Gifted individuals with severe learning disabilities face many of the same general affective and intellectual needs as other gifted disabled persons. This book summarizes current knowledge and practices, and suggests what needs to be done with regard to research and development, preparation of professionals, and services to disabled persons. A case study of Marcia, an intellectually gifted individual with specific learning disability, is featured in Chapter 6.

Author: Yewchuk, Carolyn
Title: Identification of gifted/learning disabled children
Source: *School Psychology International*, January 1986, 7(1)

Because of their contradictory characteristics, GLD children are problematic to identify. The need for awareness of their general characteristics, and of difficulties relating to interpretation of WISC-R Verbal-Performance differences, subtest scatter, and style of responding are discussed in detail.

Summary Statement *

The gifted-learning disabled students have only recently become a topic of some significance in gifted education. The larger focus of gifted students has been on their positive characteristics and only slowly have we realized that the range of individual differences includes some gifted students with very special type of learning problems who have often been ignored or not treated correctly.

It seems likely, though hardly proven, that children with high intellectual abilities would have a greater potential to respond favorably to remedial programs for their learning problems. Even so, such patterns as have been revealed in individual cases here will require a sustained and systematic treatment program if results are to be

obtained. As in other topics in this area, we are only at the beginning of trying to find the best methods for helping these children reach their potential in learning.

* Prepared by Senior Editor

PARENTING AND GIFTED CHILDREN

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Introduction *

The important role that parents play in the nurturance of gifted children has long been recognized, but it has only been in relatively recent years that educational professionals have reached out to the family to provide additional help, as these abstracts indicate. While the professionals have seen their role as an information giver to the parent, they now see an expanded responsibility in being of support to the parent to help them bear the special stresses that parents of gifted children face, to aid the parent in being an encourager of talent, and finally to help the parents become a political force by joining together with other parents to insure that the educational needs of their children are met. The abstracts included here will touch on all of these roles.

* Prepared by Senior Editor

Author: Bloom, Benjamin
Title: *DEVELOPING TALENT IN YOUNG CHILDREN*
Source: New York, New York: Ballantine Books, 1985

This book reports on a study of world-class scientists, athletes, and artists to try to determine the factors that influenced them in their early years. The results of this retrospective view of the early lives of highly successful persons emphasized the importance of the family, both in encouraging the child's special gifts and in actively seeking out additional experiences for the child to improve their skills.

Author: Bridges, Sydney
Title: *PROBLEMS OF THE GIFTED—I.Q 150*
Source: New York, New York: Crane, Russek and Company, 1973

Three chapters dealing with parents recognizing giftedness, the problems of gifted children, and how to deal with them.

Authors: Hall, Eleanor and Skinner, Nancy
Title: *SOMEWHERE TO TURN: STRATEGIES FOR PARENTS OF THE GIFTED AND TALENTED*
Source: New York, New York: Teachers College Press, 1980

Helps parents in determining if their child is gifted and resources to use beyond the home. Specific description of a program provided in Ann Arbor, Michigan designed by parents. Experiences in alternative education, too.

Author: Hitchfield, E. M.
Title: *IN SEARCH OF PROMISE: A LONG-TERM NATIONAL STUDY OF ABLE CHILDREN AND THEIR FAMILIES*
Source: London, England: Longmans, 1973

Chapter 6 deals with parents and their views on raising a gifted child.

Author: Kanigher, H.
Title: *EVERYDAY ENRICHMENT FOR GIFTED CHILDREN AT HOME AND SCHOOL*
Source: Ventura, California: National/State Leadership Training Institute for the Gifted and Talented, 1977

Parents will appreciate the many everyday suggestions involving both parent and child—all encouraging creativity, experimentation, and research. The book is arranged in convenient subject area chapters.

Author: Kaufman, F.
Title: *YOUR GIFTED CHILD AND YOU*
Source: Reston, Virginia: The Council for Exceptional Children, 1976

This slim volume, written specifically for parents, seeks to help them develop their children's gifts. It includes suggested strategies for parents to assist school in providing for their children.

Author: Khatena, Joe
Title: *THE CREATIVELY GIFTED CHILD: SUGGESTIONS FOR PARENTS AND TEACHERS*
Source: New York, New York: Vantage Press, 1978

The author focuses on creativity more than cognition and helps parents to cope with all aspects of giftedness.

Author: Landau, Erika
Title: *PARENTS AND THEIR GIFTED CHILD*
Source: Tel Aviv, Israel: The Young Persons' Institute for the Promotion of Art and Science, Museum Haaretz, 1979

This "essay" of 30 pages expresses the author's ideas on how to foster the potential of a gifted child.

Author: Lewis, D.
Title: *HOW TO BE A GIFTED PARENT*
Source: United Kingdom: Souvenir Press, 1979

Some rather dogmatic statements on "inherited" giftedness and the faults of the environment in preventing babies' fulfillment, but practical advice to parents on what to do and what not to do.

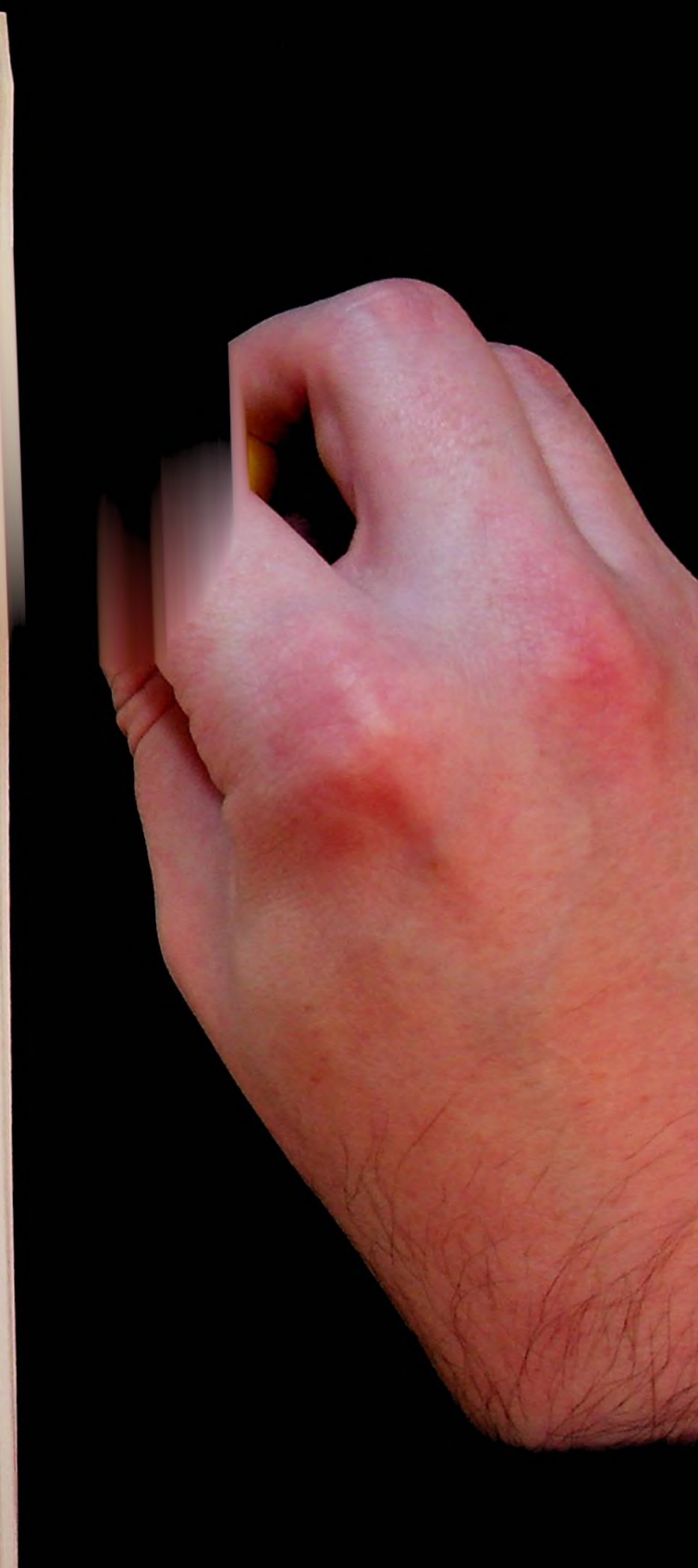
Authors: Miller, Bernard S., and Price M. (Eds.)
Title: THE GIFTED CHILD, THE FAMILY AND THE COMMUNITY
Source: New York, New York: Walker and Company, 1981

This book is a collection of short selections on gifted children and their characteristics, their homes and families, their community, their school, their potential and the realities they face, written by a variety of experts in programs, counseling, policy, and psychology in the area of giftedness.

Author: Mitchell, Patricia Bruce
Title: *AN ADVOCATE'S GUIDE TO BUILDING SUPPORT FOR GIFTED AND TALENTED EDUCATION*
Source: Washington, DC: National Association of State Boards of Education, 1981

This advocacy handbook consists of six articles written by experts in different aspects of advocacy for the gifted. It offers the necessary skills to sell the special needs of gifted children to legislators, boards of education, and the public-at-large.

Author: Moore, Linda Perigno
Title: DOES THIS MEAN MY KID'S A GENIUS?
Source: New York, New York: McGraw-Hill Publishing Company, 1981



A readable book for parents needing clarification of the implications and consequences of a child's being labeled gifted, from the parent's point of view. The thorough treatment of giftedness demystifies and explains concepts which cause confusion to parents newly introduced to the field.

Author: Northwest Regional Educational Laboratory
Title: Organizing a parent support group for the talented and gifted
Source: *PARENTING GIFTED CHILDREN*
Portland, Oregon: Northwestern Regional Educational Laboratory, 1979

Two helpful booklets for parents in directly helping their gifted child and in fostering the gifted child movement.

Author: Pickard, P. M.
Title: *IF YOU THINK YOUR CHILD IS GIFTED*
Source: United Kingdom: Allen and Unwin, 1976

Designed primarily for parents of talented and gifted children, this book gives practical suggestions on cooperation with the real world authorities with examples of how some parents managed to help their children, their schools, and themselves. Recommended for parents.

Author: Pringle, M. L. Kellmer
Title: *ABLE MISFITS: A STUDY OF EDUCATIONAL AND BEHAVIORAL DIFFICULTIES OF 103 VERY INTELLIGENT CHILDREN*
Source: London, England: Longmans, 1970

Deals with the impact of parental expectations; emotional stress in the home; and home background and parental attitudes affecting gifted children.

Author: Rowlands, P.
Title: *GIFTED CHILDREN AND THEIR PROBLEMS*
Source: London, England: J. M. Dent & Sons, Ltd., 1974

Chapter 8, "What Parents Can Do," suggests what parents should, and often more important, what they should not do showing a number of examples and case histories. "Be prepared to compromise" is sound advice also given in an article listed below. A family can do so much to extend a child's experience and horizons which require only the willingness to go to art galleries, museums, libraries, the outdoor world, or the urban centres of knowledge.

Authors: Russell, D., Hayes, D., and Dockery, L.
Title: *MY CHILD IS GIFTED! NOW WHAT DO I DO?*
Source: Winston-Salem, North Carolina: North Carolina Association for the Gifted and Talented, 1986

This 100-page booklet provides answers to the most common questions raised by parents of gifted children, and offers many proven suggestions and home learning activities appropriate to the development of deeper understandings and cooperative parent-child relations.

Author: Strang, Ruth
Title: *HELPING YOUR GIFTED CHILD*
Source: New York, New York: Dutton, 1960

An early book intended to help parents with the problems of raising a gifted ch.

Author: Vail, Priscilla
Title: *THE WORLD OF THE GIFTED CHILD*
Source: New York, New York: Penguin, 1980

This book presents case histories that describe the gifted and their needs and many suggestions for activities for use by parents with their gifted children.

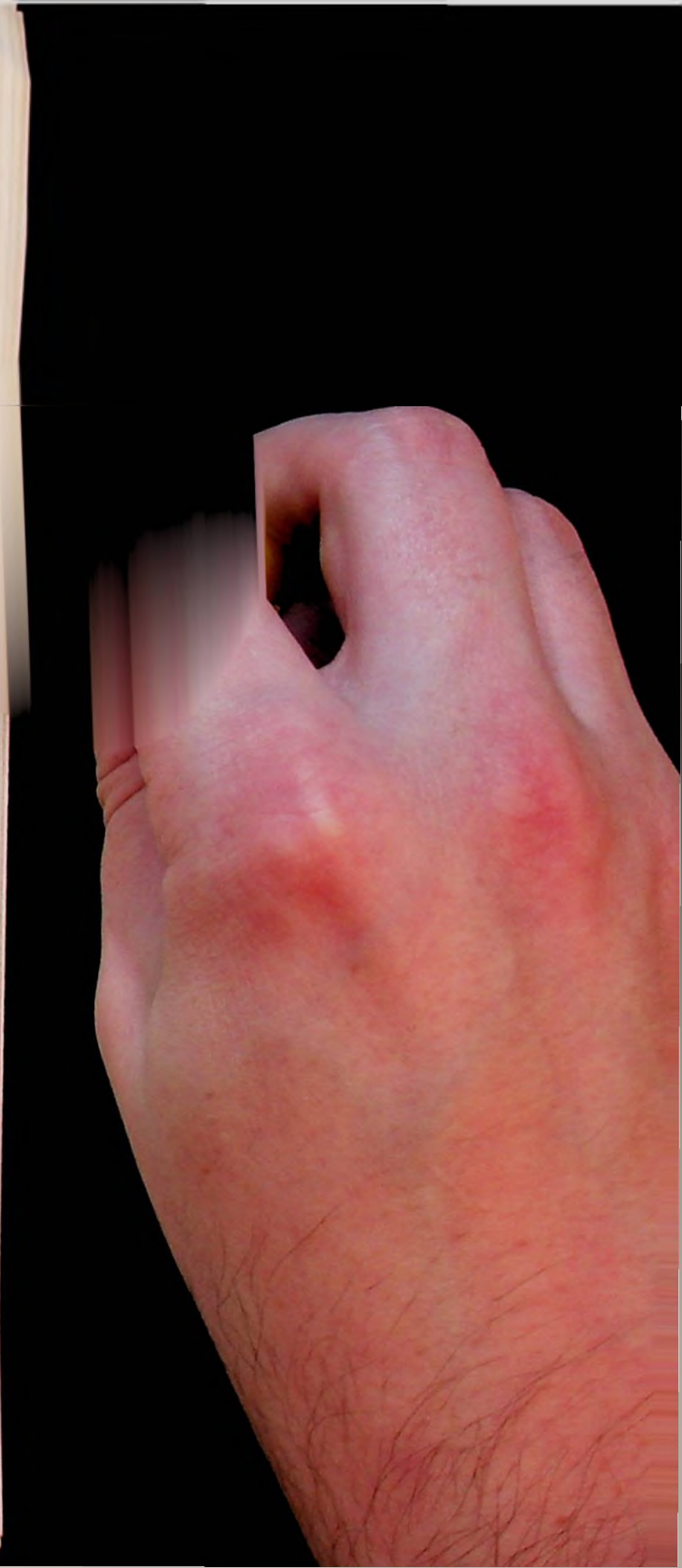
Authors: Webb, James T., Meckstroth, E. A., and Tolan, S. S.
Title: *GUIDING THE GIFTED CHILD*
Source: Columbus, Ohio: Ohio Psychology Publishing Company, 1982

With the emphasis on practicality, advice to parents is offered in the areas of motivation, discipline, stress management, depression, sharing feelings, and parent, sibling, and peer relationships. A wide range of practical, behavioral solutions to the problems of parents who need help in a real-life rather than theoretical way.

Summary Statement *

The critical role that is played by the family in the emergence of giftedness is only now being fully recognized. The families are so diverse in character and interests it would seem important to develop a flexible strategy that meets each family's particular needs. What is the menu of services that should be available to the family to help them in encouraging the talent of their special child?

How should educators react to situations where there is no parent present who



is able or interested in playing this important supportive role? Should the school adopt a strategy of being a "parent substitute" to provide the necessary encouragement? Educators have traditionally been wary of the family and to avoid too close a contact with them. In this instance, however, we need to explore more, not less, interactions in the goal toward the full development of the child's special gifts.

* Prepared by Senior Editor

PSYCHOPATHOLOGY, SUICIDE, AND GIFTEDNESS

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Introduction

It is hard to distinguish between suicide amongst youths, in general, and suicide in gifted youths. Perhaps they are both the same entities and no separations or differentiations can be made. Youth suicide is characteristic of disturbed family situations or a perceived loss of a significant other or object in the child's life. The child, often lacking the experience and thus knowledge for adequate problem-solving skills may choose to end frustrations by attempting suicide. Turkington (1983) noted that "about 12,000 children aged 5 to 14 are admitted to psychiatric hospitals for suicidal behavior every year, but this number could represent less that 5% of children who actually try." This contradicts the once believed notion that preadolescents lacked the ability to plan and carry out a suicidal act. Furthermore, distress and intense negative emotions are sometimes resolved through suicidal ideations, the child most often not fully understanding the terminality of death.

Nevertheless, some giftedness specialists believe that the gifted have more advanced cognitive techniques for dealing with problems because of their greater ability in thinking diversely than nongifted children of the same age. The gifted child, therefore, should be less likely than his normal peers to commit suicide, assuming that suicide is in response to a very troubled period in the child's life. Other educational professionals believe that the gifted child is more sensitive than usual and that due to dyssynchrony between intellectual and emotional development, it would, in turn, have more adjustment problems and thus be more vulnerable to suicide. Nevertheless, Scholwinski & Reynolds (1985), reported that high IQ children are found to have significantly lower anxiety than their low IQ peers. Both sides of the argument can be supported as no definite causes for suicide are yet known. Thus, whether the gifted child is more prone to suicide than a nongifted child is debatable.

At this point it is only just to pause and consider the gifted children, somewhat emotionally immature, that do not attempt suicide. Nevertheless, within the nongifted adolescent suicidal population, one can detect a certain psychopathology related to suicide that may be just as applicable to the gifted suicidal population. Thus, one can firmly conclude that suicidal behavior is not caused by giftedness, but that a predisposition to the particular psychopathology may lead to it in the presence of appropriate stimuli, e.g., stress, both in gifted and nongifted populations.

Although a large number of sources on emotional development, parental attributes to the gifted child's development and emotional distress experienced by gifted and nongifted children was originally collected, an attempt was made to select the most relevant material in portraying the issues of suicide. Particular attention was given to articles which emphasized the stresses and emotional underdevelopments that lead to suicide in nongifted and most importantly in gifted children. This was done in support of the notion that no differentiation for suicidal behavior can be made between the two groups.

However, there was an evident lack of substantial or statistical information concerning gifted suicides, possibly due to social stigmatism, but also due to the fact that some suicide victims may have been unidentified gifted children. Because of the general lack of information about suicide, it was deemed appropriate to include in this bibliography some general entries on suicide which provide important background on the topic or which have implications for the gifted in this context.

References to the Introduction

Scholwinski, E. and Reynolds, C. Dimensions of anxiety among high IQ children. *G/C/T*, 1985, *29*(3), 125-130.

Turkington, C. Child suicide: An unspoken tragedy. *American Psychological Association Monitor*, 1983, *14*, 15.

Author: Altman, R.
Title: Social-emotional development of gifted children and adolescents: A research model
Source: *Roeper Review*, 1983, *6*(2), 65-68

This summary of the contradictory evidence regarding the social and emotional stability of gifted youngsters points out six concepts that clearly show a differentiation of the gifted child's abilities: advanced cognitive functioning, older peer contacts, early language competence, earlier onset of developmental stages, rapid progress through developmental stages, and awareness of being different. Altman also suggests that individual differences in response to stress should not be disregarded in the gifted. Finally, it emphasizes the importance of sources of data, psychosocial traits and demographic variables in studies of giftedness, whose interactions should be taken into account when assessing findings concerning the gifted child. This paper provides excellent background for the researcher interested in giftedness and stress or suicide.

Author: Bowlby, J.
Title: Disruption of affectional bonds and its effects on behavior
Source: *Canada's Mental Health Supplement*, 1969, *59*, 1-10

Bowlby introduces the topic of emotional problems that may be influenced by the disturbance of affectional bonds in humans. He speaks of the high rate of parent-child bond disturbances observed in cases of psychopathology, as well as suicide. The assumptions listed are well referenced and the simplification of the data listed is representative of good research report style; this informative and practical paper is most highly recommended to the layman as well as the professional interested in the familial interactions that may be influencing suicidal behavior.

Author: Delisle, J.
Title: Striking out: Suicide and the gifted adolescent
Source: *G/C/T*, 1982, *24*, 16-19

This article describes the particular problems of living in a social vacuum and lists some common characteristics of presuicide adolescents. It emphasizes the parental and, in turn, the individual's expectation of perfectionism as well as developmental immaturities that add pressures to the gifted. In closing, Delisle suggests some preventative steps to suicide. It is an article that would be helpful to anyone interested in understanding the emotional problems of gifted children.

Authors: Finch, S. M., and Poznanski, E. O.
Title: *ADOLESCENT SUICIDE*
Source: Springfield, Illinois: Charles C. Thomas, 1971

Finch and Poznanski emphasize that suicide is an impulsive reaction to a stressful situation which the suicidal child cannot overcome cognitively. They speak of the precipitants of suicidal behavior, emphasizing "loss" (usually parental), sexual identity problems, the struggle for independence, and school difficulties that are found to fluctuate in adolescent life. However, there is a distinct emphasis on the role of psychopathology in the suicidal adolescent, as well as familial background and environmental influences. Case studies are included for better understanding. A small section included on the biological factors influencing suicide, i.e., the biochemical correlates, inheritance and menstruation and pregnancy in females have been found as associated factors. References have been offered. Assessment and management of suicidal persons is discussed in the final section.

Author: Haim, A.
Title: *ADOLESCENT SUICIDE* (Translated by A. M. Smith)

Source: New York, New York: International Universities Press, 1974 (Originally published in French as LES *SUICIDES D'ADOLESCENTS* Paris, France: Payot, 1969)

Haim begins by describing the different kinds of suicide, the notion of adolescence and supporting data as to the rates, sex, and methods from the mid-1960's, as well as rates from over 30 foreign countries. He claims his most important sections are those on adult attitudes toward the adolescent, death, and adolescent suicide. He states the lack of abundant research in these areas, yet his presentation is to the point, uniform and well documented. Sociological, psychological, and causal factors are discussed. Chapter 19 is a collection of the hypotheses of the suicidal process, and the final chapter is briefly devoted to treatment and research possibilities. An overall positive impression is acquired from this text. It offered well planned and well thought out information and topics related to the subject of adolescent suicide from different perspectives, i.e., adults, researchers, and foreign countries. In comparison to other texts of its nature, it is one that is of higher literary quality In the introduction, Haim emphasizes the particular limits of the texts; he has included some data and graphs, has distinguished between the outcomes, i.e., fatal suicides and attempts, as well as portraying death and suicide in adolescents. He acknowledges the criticisms made upon his work and states that the text does include personal biases. It is highly recommended to those interested in the presentation of some and criticisms of other stands in the area, especially for the student or professional involved with research.

Author: Klagsburn, F.
Title: *TOO YOUNG TO DIE: YOUTH AND SUICIDE*
Source: Boston, Massachusetts: Houghton Mifflin Company, 1976

In this text, myths of suicide, as well as some excellent and relevant case studies are presented. Indirect self-destructive behaviors were mentioned only briefly, but should have been more detailed to better understand the process that may lead up to suicide. Nevertheless, it is an excellent presentation of a vast amount of material. This book is highly recommended to those inexperienced with the topic of adolescent suicide.

Authors: Lajoie, S. P., and Shore, B. M.
Title: Three myths? The over-representation of the gifted among dropouts, delinquents, and suicides
Source: *G/C/T*, 1981, *25*(3), 138-143

This article compares what we seem to be able to conclude about the gifted and others among dropouts, delinquents, and suicides. Many gifted suicides, it is

suggested, may be escaping the statistics because of misidentification and the limitations of definitions of giftedness. Lajoie and Shore criticize some of the methodologies used in arriving at some of the conclusions on the topic of giftedness. This article is recommended to the professional interested in a review of the literature in a compressed but focused fashion. It would also be an appropriate guide for parents trying to understand a child's troubled period in development.

Authors: Manaster, G., and Powell, P. M.
Title: A framework for understanding gifted adolescents' psychological maladjustment
Source: *Roeper Review*, 1983, 6(2), 70-73

Manaster and Powell assume the problems in adjustment are a result of a child being "out of stage, phase, and sync" in relation to their peers. The article ends with the criticism that the label "gifted" could be a possible causal factor for maladjustment, but research elsewhere on labeling does not completely support this. Changes in the attitudes toward giftedness of teachers, researchers, and gifted children, themselves, would be beneficial in the amelioration of psychosocial problems of the gifted. Teachers and counselors would benefit most from this article as references are made to previous research, yet parents would also find it extremely valuable if technical aspects are disregarded.

Author: McCants, G.
Title: Suicide among the gifted
Source: *G/C/T*, 1985, *38*, 27-29

McCants covers many topics concerning suicide. She acknowledges the added social and emotional problems the gifted can experience because of their dominance, forcefulness, independence, and competitiveness. McCants also mentions how, through their heightened awareness and sensitivity to their surroundings, they can easily become disturbed about the realities of life, possibly leading to suicide. The article is quite personal, caring and warm; it answers most questions most often asked. It would be highly recommended to those seeking an overview of the problem of giftedness and suicide, although for the professional counselor, it is neither sufficiently detailed nor informative.

Author: Miller, A.
Title: *THE DRAMA OF THE GIFTED CHILD*
Source: New York, New York: Basic Books, 1981

This is a psychoanalytic account of the effect narcissistic parents have on the emotional lives of their talented children. It is a personal view of emotional disturbances in the child that Miller has observed in her gifted patients over the years.

It is an extraordinary book in that it provides the reader with so much insight, on the one hand devastating, but on the other realistic. The reader should be cautioned that because of the manner in which psychoanalytic case studies are collected, the overall picture may be more negative than in other portrayals of the problems.

Author: Pfeffer, C.
Title: Suicidal behavior of children
Source: *Exceptional Children*, 1981, *48*(2), 170-172

This is a short summary of suicidal behavior in children. Pfeffer lists a set of facts concerning the affects, motivations, and diminished ego functions of these children, yet no emphasis is made on giftedness. However, her assumptions are well referenced and can be applied to giftedness if one assumes that a particular psychopathology would lead to any suicide.

Author: Shneidman, E. S. (Ed.)
Title: *DEATH AND THE COLLEGE STUDENT*
Source: New York, New York: Behavioral Publications, 1972

This is a superb collection of brief essays on death and suicide by students at Harvard University. It reveals the creativity and fears, but also, potential and motives for self-destruction by very astute observers, most of whom have not yet been overburdened by personal tragedies. This collection of essays is quite different from the rest of the material in this bibliography in that it is a first person account of attitudes toward death and suicide. It is highly recommended to parents and those involved with gifted children in an academic setting to increase their awareness of the perspective of the potentially suicidal.

Author: Shneidman, E. S. (Ed.)
Title: *ON THE NATURE OF SUICIDE*
Source: San Francisco, California: Jossey-Bass, 1973

Fifty-eight years have lapsed since the first symposium, in 1910, on suicide and this is a collection of papers about suicide, i.e., the act, the reasons for it, including Freudian and existentialist views, and the different types of data having been collected. Also, criticisms of previous stands in the field are made, as research has accumulated over the years. This is a more scientific collection, in comparison to others, in that criticisms of definitions and theories are most prominent. This text is highly recommended to the student or the professional of suicidology and fields related to mental health care. It would not be useful to nonprofessionals as the terminology is too technical.

Author: Shneidman, E. S.
Title: Suicide among the gifted
Source: *Suicide and Life-Threatening Behavior*, 1981, *11*(4), 254-281

This article is based on the 28 suicides among the 1528 gifted students in Lewis Terman's original subjects of 1921. The focus is primarily on the analysis of the particular childhood, adolescent, and adult lives experienced by these suicidal subjects. In all suicides, two major factors, perturbation, i.e., how upset an individual is, and lethality, i.e., the desire to die, were investigated and it was found that although nonpsychotic, the subjects could be categorized during their youth as unstable, depressed, alcoholic, usually having been acutely rejected by one or both parents, having had fluctuations in income, a crippling physical disability, disappointment in the use of one's potential, and a competitive or self-absorbed spouse. Regardless of the high suicide rate, by 1960, the figures indicated a favorable mortality rate in the Terman group lower than the general population from which it was sampled. Overall, this article offers great individual data and case reports which can be highly informative to the counselor of the gifted. This longitudinal report can be read by the layman interested in the gifted lives, but would be most beneficial to the caretaker, i.e., the parent, counselor, and educator of the gifted. It is both blunt and informative, yet represents a clear and realistic view in an empathetic manner.

Authors: Webb, J. T., Meckstroth, E. A., and Tolan, S.
Title: *GUIDING THE GIFTED CHILD*
Source: Columbus, Ohio: Ohio Psychology Publishing, 1982

The authors have demonstrated a superb knowledge and collection of the most important aspects to be considered in giftedness. There is much emphasis on the emotional development of a gifted child and brief presentations of the "do's" in dealing with a gifted child that would be most helpful to educators of the gifted, parents, and counselors. Questions most often asked are confronted. Eventually, it reveals certain handicaps that can arise in the child's cognitions that may lead to depression and it explains the problems experienced, but it emphasizes that gifted children are not more apt than others to commit suicide. Although suicide is not a major part of the text, the emphasis on emotionality is extremely well presented. It is highly recommended to the layman with an interest in enabling full expression of the gifted child.

Author: Whitmore, J. R.
Title: *GIFTEDNESS, CONFLICT AND UNDERACHIEVEMENT*
Source: Boston, Massachusetts: Allyn & Bacon, 1980

This, by far, is the most complete account of giftedness and underachievement, which may be a contributor to suicide. It is superbly presented with an introduction to, identification of, and understanding of giftedness, as well as offering recommendations for educational programs to enhance achievement and self-esteem and to decrease the gaps between aptitude and achievement. This text deals with the social-emotional development of the gifted underachiever and subsequent problems that can arise. Appendices provide measures of self-concept and social-emotional development. Nevertheless, there is no particular mention of suicide, yet extrapolations of emotional problems reveal how prominent the act is under certain circumstances. The content is specific, informative, yet compassionate and empathetic. Whitmore has a remarkable insight into the problems of underachievement and of the variability in emotional and social stability in giftedness. She successfully presents an overview of the damage that can result from non-or misidentification of gifted children to themselves and to society.

Summary Statement *

Much of the literature describing the personality characteristics of gifted students has a markedly upbeat and confident air about it. We are told that gifted children are well adjusted, popular, and possess high self-esteem. These statements often seem designed to counteract earlier views of the gifted as tending to be emotionally disturbed.

These abstracts reported here clearly indicate that there is a dark side to the personality of some gifted girls and boys. High intellectual ability is no insulation to the feelings of despair, alienation, and helplessness that lead some youth to take their own lives. Indeed, there are hints that the increased sensitivity of many gifted students when combined with these other negative social traits may increase the likelihood of suicide. Still, on the positive side, the high levels of intellectual ability seem to make the prospect of psychotherapy a better one. In our rush to seek generalizations about the gifted, we need to be aware of those individuals who carry with them sociopathological traits and are in as much need of help as any of their less intelligent peers.

* Prepared by Senior Editor

ANNOTATED BIBLIOGRAPHIES ON THE GIFTED AND

- ☐ IDENTIFICATION
- ☐ CURRICULAR ADAPTATIONS
- ☐ MATHEMATICS
- ☐ SCIENCE
- ☐ FUTURE
- ☐ CREATIVITY
- ☐ EVALUATION OF PROGRAMS
- ☐ RESEARCH
- ☐ LEADERSHIP
- ☐ WOMEN
- ☐ UNDERACHIEVEMENT
- ☐ LEARNING DISABLED
- ☐ PARENTING
- ☐ PSYCHOPATHOLOGY & SUICIDE

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