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Process oriented curriculum model gifted and talented program

Mary R. Saylor

The University of Montana

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A PROCESS ORIENTED CURRICULUM MODEL

GIFTED AND TALENTED PROGRAM

By

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B. A., University of Montana, 1971

B. A., University of Montana, 1972

Presented in partial fulfillment of the requirements
for the degree of
Master of Arts
University of Montana
1986

Approved by

Chairman, Board of Examiners

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Date

March 14, 1986
This study surveys existing programs for gifted and talented students in the United States, summarizes literature pertaining to the specific educational needs of gifted and talented students and proposes a model curriculum designed for Somers, Montana, Elementary School, to meet those needs. Evaluation procedures for student progress and program effectiveness also are addressed.

The model developed utilizes a part-time pull-out design providing periods for specialized learning activities as well as maintaining interaction with regular programming. Integration of programs provides a total educational plan meeting social as well as intellectual needs.

Justification for program existence in terms of student needs is provided through a statement of philosophy reflecting community values. Identification and selection procedures are established to determine unique individual needs and provisions for meeting these needs within a flexible yet systematic curricular framework are made.

Unique capabilities of gifted and talented students requiring qualitatively differentiated programming extending beyond the level appropriate for regular students addressed in this study are the depth and breadth of study of a topic, the degree of processing of knowledge required and the range of acceptable responses. The ultimate concern of programming for gifted students was deemed the applicability and usefulness of knowledge gained in real life situations. To this end, development of processes as learning tools earned priority over specific content mastery in order that students may facilitate their own learning experiences and become independent learners. That the most complete and successful learning experience possible occur is afforded through freedom to pursue knowledge in self-selected learning styles.

Process development includes both the cognitive and affective domains, divergent skills, and problem solving strategies. These processes are organized into a hierarchical taxonomy providing scope and sequence to the curriculum. As a student progresses through the taxonomy, increasingly complex process development and challenging problem solving situations are presented.
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CHAPTER I

INTRODUCTION

Introduction

In recent years gifted and talented students have attained identity as a unique category of students with educational needs beyond the traditional boundaries of educational programming.

Recognition of the need for programming for Montana's gifted and talented students is addressed through the following goal statement derived from the Constitution of the State of Montana:

Educational Goals and Duties
Constitution of the State of Montana
Article X Section 1

It is the goal of the people to establish a system which will develop the full educational potential of each person. Equality of educational opportunity is guaranteed to each person of the state.

The Board of Trustees of Somers Public School further addressed this need in their Board of Trustees' Policies as follows:

Somers Public School Board of Trustees' Policies
Section I. Aims and objectives of Somers Public School
Paragraph 3: The Philosophy of Somers Public School

The Board of Trustee's basic objectives are to provide every child legally entitled to attend the Somers Public School with equal educational opportunity; that every child be sufficiently skilled in the basic subjects, consistent with his individual ability, to be proficient in their use; to provide a curriculum that will enable every child to exploit his individual capabilities consistent with his personal interests and aptitudes and to assist him in developing into a useful democratic citizen.
The administration and Board of Trustees of Somers Public School desired to make appropriate provisions for the unique educational needs of the gifted and talented students within its educational system. To more adequately address this issue, the development of a program for the gifted and talented was needed. Such a program would be required to function harmoniously with the established educational plan currently in operation at Somers Public School, yet identify and meet the special needs of the gifted and talented students.

**Problem**

To meet the unique educational requirements of gifted and talented students, curriculum programming must be developed to specifically correspond to individual needs without becoming a piecemeal collection of isolated activities. The problem lies in developing a program with systematic organization providing both scope and sequence while still allowing flexibility to meet individual needs. Individual learning activities must be components of an extensive, systematically designed instructional program.

**Purpose of the Study**

The purpose of this study was to develop a model for a gifted and talented program to be implemented in Somers Elementary School. Within this model, three major components were to be designed. They are (1) to provide an effective
and efficient system for identification of gifted and talented students and for specification of their individual educational needs, (2) to provide a systematically designed instructional curriculum which will meet these needs, and (3) to provide an evaluation system which will measure student progress and program effectiveness.

Questions Examined by This Study

This study was designed to seek answers to the following questions:

Question 1. How will students be identified and selected for participation in this program?

Question 2. What are the unique educational needs of this group of students?

Question 3. What type of programming will be required to meet these needs?

Question 4. What is this program going to do that the regular curriculum couldn't?

Question 5. How will this program coordinate with the regular curriculum to ensure a total educational plan?

Question 6. What physical design will best comply with the existing time, space and financial restrictions?

Question 7. How will student progress and program effectiveness be evaluated?

Significance of Study
Numerous gifted and talented programs exist in public elementary school settings. However, they are as varied as they are numerous. Each has evolved in response to the specific demands of its participants and limitations of its environment. Likewise development of a plan for implementation in Somers Elementary School must be conducted in compliance with specific features of that district.

Much has been written on the needs of gifted students and recommendations made for providing for individual differences. Collections of suggested activities particularly relevant for gifted students are abundant. However, the practitioner who must provide direct service to gifted students is in a difficult instructional situation for there are few organized curriculum resources to draw upon. Merely exposing students to numerous kits, packets, and puzzles is not effective programming. Consideration needs to be given to research findings and the information derived integrated into a systematic and sequential approach to learning that is defensible and justifiable.

**Assumptions**

The following basic assumptions were accepted for the purpose of this study:

1. It is assumed that learning is developmental and is achieved through motivation and purposeful activity.
2. It is assumed that the outcome of learning should be the ability to retain and transfer what has been learned.
3. It is assumed that a self-fulfilled individual is more
likely to be a socially contributive individual. A self-fulfilled individual is more likely to be happy and therefore less likely to be at odds with the social setting within which he is functioning.

Definition of Terms

For the purpose of this study, the following terms are defined:

Gifted and talented children are defined as those who, by virtue of outstanding abilities, are capable of high performance. They include those with demonstrated achievement and/or potential ability in any of the following areas: (1) general intellectual ability, (2) specific academic aptitude, and (3) creative thinking. Outstanding abilities in the areas of leadership, visual and performing arts and psychomotor skills are recognized as categories of giftedness but are not dealt with in the present study.

Curriculum represents what is to be learned and the processes which will make this learning possible.

Cognitive processes refer to the mental operations by which knowledge is acquired and processed.

Affective processes refer to the feeling or emotional processes by which knowledge is acquired and processed.

Resource usage is the use of a source to acquire knowledge pertaining to a particular question.

Creative thinking skills are characterized by the cognitive processes of fluent, flexible, original and elaborative thinking and by the affective processes of curiosity, intuition, risk-taking,
Learning styles recognize individual learning differences. They are defined as the reflection of individual mind patterns or underlying frames of reference of the mind that determines how learners view themselves, the world around them, and each other. They also indicate how individuals learn most efficiently and effectively.

Style differentiated instruction is the process that promotes the intentional match or mismatch of learning style to instructional methods.

Facilitator is one who aids or assists the learning process but does not direct it.

Pull-out program refers to a part-time resource room based program which pulls students out of the regular classroom for specific instruction.

Problem-solving skills means a system for approaching a problem in an organized manner and leads to effective action.

Independent study skills are those processes necessary for a student to facilitate his own learning. They include focusing and management capabilities.

Learning activities encompass any experience a student participates in from which knowledge is derived.

Self esteem refers to a feeling of self-worth or pride in oneself.

Qualitative differentiated curriculum differs from regular programming in the depth of study, the amount and type of material
studied, the degree of processing of information, and the range of acceptable responses.

A self-directed learner is a student who possesses the motivation and uses appropriate processes as learning tools to guide his own learning.

Thought processes are ways of thinking about things or sorting through information which make learning possible.

Content mastery is retention of information derived from a learning experience or that which has been learned.

**Organization of the Study**

Chapter I introduces the problem, states the questions to be examined in the study and defines terminology used. Chapter II contains a review of the literature and related research. Chapter III provides a discussion of the model. Chapter IV includes a presentation of procedures and methods used in implementing the model. Chapter V contains a summary of the study, the findings, the conclusions, and recommendations made as a result of the study.
CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Introduction

The general purpose of this study was to develop a model for systematically meeting the unique educational needs of gifted and talented students. A search of the literature was conducted to determine the specific needs of gifted students, programming provisions needed to meet those needs, and a theoretically justifiable means of systematically providing for those needs in an educational setting.

The following topics are considered to be paramount to the theme of this study and were reviewed: (1) the distinguishing characteristics of gifted students and corresponding identification procedures, (2) resultant specialized programming needs, (3) appropriate curriculum content and format to meet these needs, (4) teaching strategies appropriate to the learning environment, (5) factors relating to implementation of such specialized programming, and (6) evaluative procedures.

Literature related to the distinguishing characteristics of giftedness was reviewed to determine the unique educational needs of gifted students. Selecting appropriate procedures for identifying gifted and talented students and specifying unique individual needs must be based on an understanding of the characteristics which comprise giftedness.
Literature dealing with specialized programming needs resultant from the characteristics of giftedness was reviewed to determine ways a program for the gifted needed to vary from the regular curriculum. It was necessary to determine what a program for the gifted would do that the regular curriculum could not.

Literature regarding appropriate curriculum content and format for a gifted program was examined to determine methods of translating understanding of specific educational needs of the gifted into successful programming to meet those needs. Effective, systematic, organization of programming providing scope and sequence to learning activities was of particular interest.

As the learning process in a gifted program varies from that of a regular classroom, so must the teaching strategies and processes. Literature relating to the role of the teacher of the gifted was reviewed to determine the types of strategies successfully employed. Literature regarding differences in instructional and learning styles was reviewed to determine factors conducive to a positive learning environment.

To insure success in implementation of such a program, literature covering related intrinsic factors was considered. A thorough understanding of the impact of a gifted program on the existing system and interrelationship between programs was needed.

The intent to include evaluative measures existed even in the early planning stages. Literature covering procedures to determine both student progress and program effectiveness were reviewed. Adequate evaluative procedures were needed to justify the existence of
the program and ensure its continuance.

Characteristics and Identification Procedures

Early studies by Terman (1926) limited the concept of giftedness to general intelligence which could be measured by a single intelligence test score. This concept was broadened by future studies, especially the influential studies by Getzels and Jackson (1962) and Torrance (1969) who added the dimension of creativity as a characteristic of giftedness. These studies led to a search for other valuable talents beyond the purely academic. Efforts to identify a variety of talents broadened the definition of giftedness and culminated in the Marland Report (1972) which specified six separate classifications of giftedness. These categories are general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts and psychomotor ability.

Renzulli (1978) defined giftedness in terms of three interlocking clusters of traits. These are above average ability, creativity and task commitment. No single trait makes giftedness. Rather it is the interaction among these traits that research has shown to be the necessary ingredient for creative accomplishment.

Numerous lists of distinguishing traits of gifted children have been developed (Feldhusen, 1963; Feldhusen, Treffinger and Elias, 1969; Gowan, 1967; Hagen and Clark, 1977; Sisk, 1979; Clark, 1979; Treffinger 1980). While the gifted are not a homogeneous group, there are traits which differentiate them from other learners that
reoccur in high frequencies in groups of gifted students. Hagan and Clark (1977) have developed an extensive list of such distinguishing characteristics which include the following. Gifted students usually demonstrate the abilities to generalize concepts and apply them to new situations, synthesize information and perceive relationships, consider alternative solutions and abstract ideas. They are characterized by such cognitive characteristics as extraordinary memories, high level language development, advanced comprehension, flexible thought processes, and unusual capacity for processing information. Differentiating affective characteristics include heightened sensitivity, keen sense of humor, idealism and sense of justice at an early age, and intense emotions. The researcher further differentiated between high achieving students and gifted students. It is their contention that while high-achieving students get good grades and accomplish a great deal they function better with knowledge and comprehension-level learning. High achievers lack the range and diversity of thought processes which allow gifted students to excel in analytic and synthetic level learning. Newland (1976) noted gifted students particular competence in the acquisition and use of symbols which gives them advanced abilities to comprehend the world which is beyond their immediate experience. By thinking in terms of concepts rather than relying on more limited perceptions of their immediate world, their range of awareness is immensely extended.

Although characteristics can be generalized, not all gifted individuals possess all characteristics or exhibit them in the same manner. Accurately identifying gifted students in a school popula-
tition is a difficult task. Clark (1979) stated that depending on past experience, gifted potential may not even be visible. Due to the sometimes invisible nature of giftedness, it is important that screening procedures include all members of the school population.

Renzulli (1978) pointed out the necessity of using multiple criteria in screening procedures. Test scores alone give very limited information and should be used as only one piece of data along with other important information about the student gained through means such as teacher observations, parent interviews, peer surveys and pupil work records. Torrance (1970) demonstrated that using an intelligence test alone to identify gifted students is not credible. The top twenty percent identified as being gifted by an intelligence test did not include seventy percent of those identified as gifted on a test of creative thinking. In addition to achievement tests, intelligence tests and creativity tests, Clark (1979) refers to the importance of including information from teachers, parents, peers and the student himself. Group testing is a useful part of the screening procedure but is not efficient when used alone. It is important for teachers to be a part of the selection process as they are a valuable source of data. Interviews with parents provide important information of another type. While parents do not have a group norm to compare their child against as teachers do, parents are very aware of their child's behavior and can reveal a great deal about the child's interests and abilities. Peer identification has been found to be extremely helpful, particularly in identifying older children. Not to be forgotten are the student's own accomp-
Hobbies and extracurricular information should be included as well as schoolwork. Clark felt the more information that could be obtained, the more effective the assessment would be.

Data collected is then assembled and evaluated. Clark (1979) suggested that the assessment for placement in a gifted program is best done by a group of professionals from a variety of areas of expertise. Gowan (1967) also suggested submitting the collected data to the judgement of a selection committee for final selection purposes.

According to Clark (1979) the purpose of data collected is not only to aid in identification procedures but also to develop a student profile which indicates relative strengths and weaknesses useful in program planning for the individual. Assessment which shows those skills a student is competent in using and those in need of nurturing is essential to successfully meeting the needs of gifted students. Among the available published tests yielding diagnostic information are the Torrance Test of Creativity (Torrance 1974) for creative thinking skills, Ross Test of Higher Cognitive Processes (Ross 1976) for higher level thinking skills, and Learning Style Communicator (Butler 1984) for learning style. Test scores along with rating scales, nominations, and work records are all considered in determining if placement in a gifted program would meet an individual's specific educational needs.

Programming Needs

Kaplan (1974) stated, "The answer to the question of why a stu-
dent is gifted or talented is also the answer to the question of what type of curriculum provisions should be developed for this child" (p. 123). The curriculum for a gifted and talented program must be differentiated from the regular curriculum in the same manner as the gifted students it is comprised of differ from other students. The unique characteristics which differentiate gifted students from other students determine the variations necessary in a curriculum for the gifted.

According to Clark (1979), the differentiating characteristics "create related educational needs that make demands upon school programs in terms of modifications in classroom organization and methodology" (p. 163). Several studies have reviewed these differentiating characteristics and their instructional implications in great depth (Kaplan, 1974; Clark, 1979; Treffinger 1980). The following conclusions were derived from their research.

- Gifted students are capable of studying a topic in more depth than is suitable for an average class. Gifted and talented students need opportunities to elaborate on the regular curriculum through more time and additional resources and experiences to extend their learning. The aim of such opportunities is not accelerated material, but learning which is more qualitatively complex than the regular curriculum.

Gifted students learn more quickly and can consume several times as much material as is presented in the regular curriculum. These students need to be exposed to a greater amount of curriculum material. Experiences, resources, and materials generally not con-
sidered to be essential components of the regular curriculum or which are not in the same age or grade range of the student, as well as exposure to new or unusual ideas are all suitable material for the gifted curriculum. Caution must be taken to present more suitable material and not simply more of the same material. Sholseth (1978) warned that requiring completion of more than the regular amount of work that is assigned to the rest of the class is not extending the curriculum, but rather penalizing the child for being gifted.

The degree to which gifted and talented students develop or process material is greater than for regular students. For gifted students the challenge lies not in the understanding of a concept for with their high intellectual abilities, comprehension is easily attained. The challenge lies in applying or using the concept or relating it to other information. Learning activities for gifted students need to extend beyond knowledge and comprehension. Instruction for them should focus on higher level thinking skills and creative outcomes. They need to be afforded opportunities to develop these processes and transfer their learning to new situations.

Treffinger (1980) pointed out that students' giftedness is not revealed in the material presented to them, but in their response to it. Therefore, curriculum materials which intentionally provide development of creative thinking and give students opportunities to respond creatively must be used.

The first principle for a curriculum for the gifted based on research findings is that it be qualitatively differentiated. Due to their unique capabilities to study a given topic in great depth, to
consume large quantities of information, to process information using higher levels of thought and seek alternative responses, learning experiences for the gifted need to be extended beyond the level that is appropriate for all learners. Instructional modifications dictated by these identifying characteristics are what constitute a qualitatively differentiated curriculum.

The rationale for a qualitatively differentiated curriculum also provides the solution to the issue of enrichment versus acceleration. According to Passow (1981), the problem with either of these approaches is fragmented learning. Experiences are unrelated to either those which preceded or those which follow these learning activities. A program for the gifted needs to have both scope and sequence while still allowing flexibility to meet individual needs. The needs of the gifted are not met through either enrichment or acceleration.

It is not a question of enrichment or acceleration, but rather a need to provide a curriculum which is appropriate and adequate in the first place. A competent gifted program needs to be qualitatively different. As Martin Dishart (1980) remarked:

It should not be necessary to either enrich or accelerate a curriculum in order to use it for the gifted. . . . An enrichment supplement does not really correct a curriculum that is weak, dull, or redundant for the learner. And such a curriculum pushed faster does not correct its faults even if the learner achieved content acceleration. . . . Educational programs for the gifted should be based upon the needs of the individual learners rather than upon making up for the program deficits in a curriculum for the non-gifted. There is a resultant difference between enriching or accelerating an inadequate or inappropriate curriculum for use in the first place. (p. 26)

A second principle of a curriculum for the gifted defended through research is the priority of process over content mastery.
One of Ward's (1961) fundamental premises supporting differentiated education for the gifted was that mastery of methods of inquiry increased the learner's knowledge, and at the same time provided tools necessary for making new discoveries.

Several studies pointed out that process mastery is the only viable means of remaining abreast of knowledge in society today (Treffinger, 1980; Silberman, 1970; Gallagher, 1975). To teach students everything they will need to know in their lives is an impossible task in a world of rapidly changing technology. Changes occur too fast and facts become obsolete. Even with computerized information storage and retrieval systems, advancements and ideas change so rapidly that it is difficult to keep track of them. Consequently, the only productive educational strategy is not to teach content, but instead to teach thought processes such as analysis, synthesis and evaluation that will help the student discover facts for himself.

These processes are ways of thinking about concepts or ways of sorting through information to find out specifically what one wants to know. Treffinger (1980) stressed the importance of acquiring these processes to use as tools to facilitate their own learning. By becoming proficient users of these processes, students will learn more about their current interests, generate new information, find new problems to solve, new questions to ask, new relationships to explore and can by using these same processes shift into the study of entirely new interests and subjects. As their proficiency increases with practice, they will become more and more independent.
learners.

Along with others, Kaplan (1974) discussed a third principle upon which a defensible gifted curriculum is based. It must be child-centered. This means allowing the unique needs of the individual child to take precedence over subject areas. The starting point for building an individual's curriculum is that student's own special interests. Renzulli (1977) emphasized the need for a student to be given the freedom to pursue those special interests to the depth and breadth desired. With a child's own special interest as the cornerstone for a learning experience, a motivated learner is guaranteed.

Closely related to this principle is another dimension of the gifted learner addressed in the literature, learning style (Renzulli and Smith, 1978; Gregorc, 1979; Butler, 1984). In addition to being afforded the freedom to pursue the topic of his own choosing, he must be allowed to do so in the manner which is natural for him to do so. In order for a learning experience to be as complete and successful as possible, a child must be allowed to participate in the style that is most natural to him.

Curriculum Content and Format

Introduction

The curriculum, or what is to be learned and the processes that will make that learning possible, is what gives substance to the gifted program. Curriculum is the system for organizing the learning activities to effect the specific cognitive and affective growth determined by student needs.
Such a system is not intended to be a lock-step progression or a uniformly prescribed route which all students must follow. Kaplan (1974) viewed it as a framework of alternatives or as a resource for ideas. Curriculum is not to be manditorily used in one specific sequence under all circumstances. Neither can one expect that in all occassions this framework will be used in it's entirety. Rather, Treffinger (1983) considered a variety of ways to achieve learner objectives as an indicator of a healthy curriculum. Curriculum must be as flexible as the individually determined learner objectives within it. Yet the learning opportunities which exist within this curriculum must all be directed toward enabling the student to be an independent producer of his own knowledge. Renzulli (1977) argued that students should be involved not merely as consumers of ideas and information but as producers of new information.

Principles of Curriculum

Kaplan (1974) listed five principles for developing learning activities within a curriculum for the gifted.

1. First, there must be an interrelationship between content and process. Every activity must be related to something from which content can be derived and thinking initiated.

2. Equally important is that the activity not involve the mere acquisition of information but emphasize the development of a thinking skill or process to use that information.

3. The combination of the first two principles lead to the third principle which is requiring the learner to personally use the content and process. Tasks used in learning activities need to
focus on the active involvement of the learner to insure internalization of the learning experience. This internalization is necessary for the learning to transfer to other settings and thus for the learner to be able to transfer his knowledge to new circumstances.

4. Transfer of learning is facilitated by providing learning opportunities which allow for various responses or alternative solutions. Treffinger (1980) also advocated the use of learning tasks for which there is no one right answer but are instead open-ended for encouraging the transfer of thought to other possible situations. The range of responses and the variety of transfer in learning will be as different as are the interests and preferences of the participants in the task.

5. The final principle is that in order to provide the options to satisfy individual needs, capabilities, and learning style preferences, there must be opportunities for self-selection of learning activities. When balanced with experience in directed learning, such experiences for students to self-style their learning move toward the ultimate goal of an independent learner.

Learning Processes

With the aforementioned principles in mind, attention is directed to the design of actual learning experiences within the curriculum. The first component of curriculum, (i.e., the content or that which is to be learned) will be determined by the learner. Therefore, virtually every possible subject is considered a content area of the program. To design specific learning activities for each possible content area would be an endless task and largely useless.
as well, for it has been determined that specific content mastery is not the goal of such a program. The goal is rather competency in using thinking processes as tools to discover knowledge desired by the learner. Rather than try to assemble an endless amount of content, the second component of curriculum or the processes which make learning possible will be the focal point. Through these processes, content will be learned and the goal of increased academic ability will be met as well as promoting independent learning.

An extensive review of the literature considering learning processes was conducted to validate the inclusion of each process in a program for the gifted.

Williams (1979) defined the entire set of skills required for retaining knowledge and the recording and processing of information as the cognitive domain. He summarized several models in which the cognitive domain has been conceptualized as consisting of several thought processes, ordered in a low to high sequential classification system.

The most widely used of such taxonomies of the cognitive processes in the field of education is that developed by Benjamin Bloom (1956). An over-simplified outline of Bloom's Taxonomy consists of a hierarchy of six levels in which the processes at one level are somewhat dependent upon processes at the previous levels.

According to Bloom (1956), the initial step in the taxonomy is knowledge or remembering. It ranges from knowledge of specific facts to knowledge of terminology to knowledge of theories and universals. The second stage is comprehension which involves translating an idea.
into a different means of expressing it, such as describing, explaining or retelling. The third stage, application, is characterized by the student generalizing the facts acquired in the previous two stages and applying them in new situations.

Bloom's (1956) fourth level is analysis or the breaking down of ideas or materials into component parts to see how they relate to each other. The converse of this step is the fifth level of synthesis. Putting things or ideas together to form a whole or rearranging parts to form something new are the characteristic features of this level. The top tier of the hierarchy is labeled evaluation and involves the student comparing or measuring values and giving an opinion based on the criteria used.

A majority of the regular classroom learning experiences are comprised of activities using the first three processes. Johnson (1983) indicated that research has estimated that as much as seventy to eighty-five percent of instruction time in regular classrooms is devoted to developing these thinking skills. While this type of instruction may be appropriate for regular students, Sisk (1979) suggested that gifted students who memorize easily, recall rapidly, comprehend concepts quickly and readily see relationships and generalizations find such learning experiences quite limiting. Kaplan (1974) recommended that far more than the presently estimated fifteen to thirty percent of their time needs to be devoted to the upper levels of the hierarchy with which they are less familiar and find infinitely more motivating and challenging.

Treffinger (1980) advised the three upper levels of the hierarchy or the higher cognitive processes need to be individually

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developed as learning tools. Learning activities directed toward developing these higher cognitive processes build upon operations acquired in the earlier stages in an ordered sequence, but not rigidly so. Newland (1976) stated that students participating in learning experiences are encouraged to discover how knowledge at any level is related.

Renzulli (1977) stated, "the process is the path rather than the goal of learning" (p. 8). The importance of knowledge and comprehension should not be underestimated, but these processes should not be viewed as ends in themselves. Newland (1976) sees the lower cognitive processes rather as stepping stones to more productive endeavors. The lower stages are necessary but they must lead to more complex thought processes which make use of them. According to Drews (1980), developing the higher cognitive processes moves away from knowledge for the sake of knowledge and towards knowledge for the sake of using it to learn more.

Renzulli (1977) warned that simply developing competent use of these processes provides only a collection of interesting but segregated activities. Kaplan (1974) advised that these processes become valuable tools in first-hand inquiry or independent learning only when the processes are integrated with the content, which is determined by the needs of the learner.

Dr. J. P. Guilford (1956) developed a model which attempted to classify the cognitive processes as well as represent all components of the cognitive domain. He presented his theory as the Guilford Structure of the Intellect Model (see appendix A). The Guilford
a morphology which illustrates that any act of learning is composed of three parts: process, content and product. Of these three, only the process dimension is viewed as hierarchical. Guilford defined five mental operations (essentially the same as those in Bloom's Taxonomy (1956)) which can be performed upon four types of content to produce six different types of products resulting in one hundred twenty possible abilities or kinds of intellectual acts. Meeker (1969) developed a curricular plan with activities for each of those one hundred twenty cells of the model. By assessing a student's areas of strengths and weaknesses from their score on a major intelligence test, a student profile resulted that corresponded with specific abilities on the Structure of Intellect model. Implementing the use of materials designed for the appropriate cells would provide a curriculum plan for the student.

While Guilford's model represented an interrelated classification system for intellectual abilities which contribute to learning, the model accounts for only the cognitive aspect of human functioning. Clark (1979) referred to Meeker and Guilford's work as a valuable contribution, but only if carefully integrated into a comprehensive educational plan.

While an important component, the higher cognitive processes alone do not constitute an adequate and appropriate curriculum for the gifted. Clark (1979) believed that a learning environment which operates only in the cognitive domain is incomplete. Intellectual processes cannot really exist by themselves but must be put into operation by a student who is not only a thinking but also a feeling
creature. An equally important set of traits to develop are those of the feeling or affective domain. Williams (1979) defined affective processes as those which "deal with attitudes, values, dispositions and motivations of the pupil to want to do something with information, data and knowledge which has been cognized" (p. 141).

As in the cognitive domain, taxonomies have been developed to illustrate the affective domain. One such model which is widely accepted is that presented by Kratwohl (1964). This model consists of five stages beginning at the entry level with receiving or awareness of emotions. The model progresses to the second level of responding to those emotions through such experiences as satisfaction, enjoyment, or cooperation. The third stage, valuing, is characterized by appreciation and commitment. Level four consists of conceptualizing or organizing a personal value system based on one's own learning experiences at the previous levels. The highest level is called characterizing and implies internalization and characteristic living in accordance with that self-determined value system. Kratwohl's high level affective skills are also dependent on competent acquisition of lower order skills.

Clark (1979) addressed the critical need to include the affective processes in a curriculum for the gifted because gifted students, by nature of their unique abilities, are unusually sensitive to expectations and feelings of others, are idealistic, are intensely emotional, have heightened self-awareness, have high expectations of themselves and others, have accumulated more information and have a deeper understanding of broader concerns and more complex issues.
Lyon (1878) reported that research has shown that affective processes may be the single most important factor in separating gifted people who have realized their potential from those who have not. He participated in conducting a study for the White House Task Force on the Gifted in 1968 in which some of this country's most successful citizens were asked what had made the biggest difference in their lives. Each had the same answer. Lyons writes:

Some individual — a teacher, coach, or some respected adult — had taken off their role, their rank and their status and built an intimate one-to-one human relationship with that person, encouraging them to take risks, to try new things that they wouldn't have tried, encouraging them to believe in themselves as human beings. (p. 7)

While each domain is important in its own right, Kratwohl (1964) views one as inseparable from the other, with all cognitive behaviors having an affective component. It is the integration of the two which enhances learning. Piaget (1967) writes:

There is a close parallel between the development of affectivity and that of the intellectual functions, since these are two indissociable aspects of every action. In all behavior the motives and energizing dynamisms reveal affectivity, while the techniques and adjustment of the means employed constitute the cognitive sensorimotor or rational aspect. There is never a purely intellectual action, as numerous emotions, interests, values, impressions of harmony, etc. intervene, for example, in the solving of a mathematical problem. Likewise, there is never a purely affective act, e.g., love presupposes comprehension. Always and everywhere, in object-related behavior as well as in interpersonal behavior, both elements are involved because the one presupposes the other. (p. 42)

Williams (1979) believed that it is the combination of the cognitive and affective domains which results in effective learning.
Enhancing one in turn enhances the other. According to Williams, "the better the pupil feels about some fact or piece of data the more curious he becomes... the more he knows about a subject or area of knowledge the better he appreciates and values it" (p. 142).

Lyon (1978) described the relationship between the cognitive and affective domains as follows:

Don't force the child to read, but help him to discover to read the scent of the forest, the smell of the ocean, to read expressions on people's faces, to read body language, and the reading of words will come as a natural way to express those feelings. (p. 8)

Enhancing one domain without the other leaves a void. Alfred North Whitehead has said that after you understand about the sun and the stars and the rotation of the earth, you still may miss the radiance of a sunset.

A theoretical model was developed by F.E. Williams which attempted to include these affective factors as well as the cognitive factors in the development of learning experiences. Williams designed a modification of Guilford's Structure of the Intellect model which included affective factors. In the William's (1969) model, it is the interaction between the first dimension, which is the subject matter content, and the second dimension, which is teacher behavior, that effects the third dimension which is pupil behavior (see appendix A). More explicitly, the use of one or more of eighteen specified teaching strategies employed by the teacher in any subject matter content area will elicit student behaviors which reflect one of the four cognitive processes of fluent thinking, flexible thinking, original thinking or elaborative thinking, or
one of the four affective processes of curiosity, risk-taking, complexity or imagination. This model extends the curriculum to virtually any topic. Also inherent in it is the open-endedness of responses. Further, it required active involvement of the learner in the use of one or more processes in order to produce a response.

It is a composite of these traits which is referred to as the creative thinking skills and which Treffinger (1980), Williams (1969) and Torrance (1974) consider components of creativity. Clark (1979) contended that whereas the intellect is more easily defined and measured, what constitutes creativity remains an illusive question. She says it appears to be released by the integration of the functions of feeling, thinking, sensing and intuiting. Renzulli (1978) suggested that creativity remains almost as much of a mystery as how to define it. However, by looking at creativity in terms of these cognitive and affective processes of the William's (1969) model which represent divergent ways in which learners think and feel, the concept of creativity becomes manageable although still not completely understood. Through developing these creative thinking skills or processes, a child's creative potential is encouraged.

The importance of including creative learning in a curriculum for gifted students is justified by Treffinger (1980) and Isaksen and Treffinger (1985) based on these students unique identifying characteristics. Gifted students are described as being curious, imaginative, productive, committed, persistent and concerned with solving problems. The authors concluded that learning is natural
for students with these talents.

The studies of Treffinger (1980), Renzulli (1978) and Gowan (1977) all cite the following reasons for including creative learning in a gifted curriculum. Students who require less time for routine assignments have more time and opportunities for creative learning. Creativity is also an important means of self-expression and gifted students may benefit greatly through increased awareness and understanding of themselves. As with all other learning processes, knowledge of the creative learning process itself becomes a tool for independent learning. Finally, creative learning provides a means to use both cognitive and affective thinking abilities in harmony.

Coupled with the development of these cognitive and affective processes is the need to learn to use the inquiry tools used by researchers. Torrance and Myers (1962) felt that students, in order to become proficient process users, must be able to locate and efficiently use appropriate resources. In preparation for investigating real problems, Treffinger (1980) advised that it is important for students to know how to conduct research. Skills identified as important are the ability to obtain information from multiple sources and make comparisons, to use one source as a reference to other sources to extend the depth of study and to use alternative sources to seek more precise information or to check inconsistencies. Kaplan (1974) stressed the need to provide learning experiences in locating appropriate resources and to give direct practice in efficient use of them. Text books, encyclopedias, almanacs, periodicals, dictionaries, atlases, and catalogs are among the sources of
Renzulli (1977) is concerned that the knowledge of content and processes of learning become useful to the student in dealing with the real world. As Treffinger (1980) admonished, real life problems do not often lend themselves very well to looking the answer up in a book. Students need to learn to extend their concept of a resource beyond those sources of information usually found in a library. Through directed learning experiences, students must come to accept verbal communications as well as written and experiences as well as objects as viable, valid resources. Kent and Esgar (1983) relate successful techniques for extending learning through television and the media. Field trips, movies, tapes, attendance at events, interviews, phone calls, radio, television, experiments and surveys are all types of resources included by Renzulli and Reis (1985).

One other related set of skills advocated for gifted curricula is creative problem solving which is defined by Treffinger (1980) as a system for approaching a problem in an organized manner and leads to effective action. Treffinger credited the work of Alex Osburn as the origin of this systematic approach to problem solving. Osburn's work has been extended by many others, among the most notable of whom are Noller (1977) and Treffinger (1980).

As developed by Isaksen and Treffinger (1985), Creative Problem Solving is a six step process with each step having a divergent or possibility generating phase and a convergent or screening and evaluation phase (see appendix A). The initial phase called Mess-Finding is a general statement of interest...
of the student's and his accepting ownership of his interest.
Starting with this very general idea, the student moves to the
Data-Finding stage which consists of probing to find out what he
already knows and identifying the most important data. In the
third stage of Problem-Finding, many possible problem statements
are generated and one is eventually chosen. Stage four or Idea-
Finding, uses all the cognitive and affective learning processes
to generate possible responses and alternatives to the problem
statement with the most promising ideas being selected. The
Solution Finding at stage five is done by developing criteria and
systematically evaluating the ideas. At the final stage, Acceptance
Finding, a plan of action is developed to put the solution to work.

Hierarchical Taxonomies

Attempts to organize the aforementioned components of curricu-
lum into an overall design for programming for gifted and talented
students have resulted in the construction of various program models.
A description of three of the most prominent models follows. While
they have great similarities and all converge at their peaks, there
are differences worth noting.

Treffinger's (1980) Model for Encouraging Creative Learning is
a very usable guide to organizing the previously discussed com-
ponents of creative learning into a systematically designed curricu-
lum. Each of Treffinger's levels has a cognitive and an affective
section which are separated only for descriptive purposes (see
appendix A). In practice, the integration of domains is essential
for the successful development of creative learning as was shown
Level I of Treffinger's Model provides the foundation upon which creative learning develops. It is labeled Divergent Functions and is intended to emphasize possibilities. The cognitive components of Level I are the lower cognitive processes from Bloom's Taxonomy and the four cognitive processes from the Williams Model. The affective components are the affective processes from the Williams model in addition to the lower levels of Kratwohl's model. All deal with recognizing or becoming aware of ideas or information.

According to Treffinger (1980), development of these processes is only to provide a foundation leading to more complex learning. Level I should never be viewed as an end in itself. Development of Level I processes is only useful to the gifted learner if they lead to Level II where they are extended and applied.

Level II is labeled Complex Thinking and Feeling Processes. The cognitive components are the higher level processes from Bloom's Taxonomy and methodological or research skills. In the affective domain, Level II consists of the third and fourth stages of Kratwohl's model, including more complex feelings, conflict and management, values and problem focusing.

Level III is the actualization of the goal or Involvement in Real Challenges. In the cognitive domain, it is characterized by the practicing self-directed learner. In the affective domain, it involves the internalization of a personal value system and is exemplified through characteristic living, as depicted in the highest tier of Kratwohl's model.
Within this hierarchical model, Treffinger (1980) stated that effective programming for the gifted stresses a continuum of progression through the model from Level I toward Level III. Programming that ends at Level I or Level II will be ineffective in promoting creative learning in the long run.

The model accounts for the developmental nature of learning as well as unique individual differences. There clearly are not specific tasks which should be undertaken by children at certain ages. Treffinger (1980) stated:

Thus the procedures for involving students at different age levels in various activities from the three levels of the model should be considered flexible and exploratory rather than fixed or prescriptive. You may provide a number of alternatives and options for students and observe carefully to determine the students' ability to deal with them . . . . However students should not be forced to attempt any exercises or activities in an effort to "move them up the levels" (p. 27).

Treffinger advised using feedback from student efforts in determining appropriate program alternatives. The learning experiences are not isolated activities to be used in the classroom every now and then as a time filler. Treffinger (1980) stated, "They are instead components of an extensive, systematically designed instructional program." (p. 28).

Renzulli's (1977) Enrichment Triad also takes the form of three hierarchical levels (see appendix A). Unlike Treffinger, he did not begin with process development but sees a preliminary stage of General Exploratory Activities. Type I Activities are strategies for expanding students interests. Their purpose is to provoke curiosity, rather than provide information about, possible
fields of future study. Themes are selected by the teacher to broadly represent areas of student interest. Students then engage in relatively free yet purposeful experiences such as interest centers, field trips and presentations by resource people.

Renzulli's model then progresses to Type II Activities which develop thinking and feeling processes as found in Levels I and II of Treffinger's Model. As with the Treffinger Model, the purpose of Type II activities is to develop processes that will enable the student to deal more effectively with content. Topics selected represent a logical outgrowth of student interests and concerns and are open-ended to allow for individual abilities. These activities are the bonding substance that ties together the exploration in Type I and the investigation in Type III.

In Renzulli's Type III Activities, the student becomes an actual investigator of a real problem. There is a shift from being a consumer of existing knowledge to using that knowledge as raw data to apply appropriate processing to produce new information which will be communicated in a meaningful manner.

Renzulli and Reis (1985) have recently developed a taxonomy within the Type II dimension of the Triad which provides a process-based scope and sequence matrix for Type II activities. The four categories used to classify activities are: Cognitive and Affective Training, Research How-To-Skills, Using Reference Materials and Communication Techniques. Within each category, process skills are listed in a logical hierarchy. However, the authors noted that appropriate introduction of these processes is often cyclical or
interrelated rather than linear. Use of a system organized in this manner ensures some degree of exposure and experience with all processes over a period of time. With this Taxonomy of Type II Enrichment Processes as a basis, a correlated listing of available published materials was developed.

The third model to be considered was developed by Feldhusen and Killoff (1978) and is identified as the Purdue Three-Stage Enrichment Model (see appendix A). This is also a hierarchical progression of enrichment activities developed on a foundation of cognitive and affective processes. As the student works through the model, he becomes an increasingly self-directed and independent learner. Stage I is simple, directed divergent and convergent skill building activities. Stage II is more complex creative thinking and Problem Solving Strategies leading to Stage III Independent Learning Abilities which is slightly different than the independent investigation envisioned in the other two models. Here the problems are simpler and the investigation less complex in contrast to the highly independent inquiries suggested in the Renzulli Model.

Teaching Strategies

Introduction

Assuming that placing a properly identified gifted or talented student in a specialized program designed to meet individualized instructional needs will result in successful learning experiences is leaving out an essential element. A student may have a great deal of potential but not know how to use it. A teacher is needed
Role of Teacher

Treffinger (1980) contended that students require assistance in turning their potential into effective, useful skills. Students need to learn how to manage and direct their learning. According to Walling (1981), guidance and direction must be supplied by a facilitator to their learning experiences rather than a director of the learning experience. The important role of facilitator falls to the teacher of the gifted program. Just as the teaching process changes with regard to the gifted, in that learning and thinking processes have priority over content mastery, Renzulli (1977), Drews (1980), Carney (1981), and Lyon (1978) agree that the teacher of the gifted must adjust to a new role as a facilitator of access to needed learning opportunities rather than a dispenser of knowledge. Drews (1980) states, "The teacher's role, I believe, is more that of a facilitator and source of inspiration than of a fount of knowledge" (p. 38).

According to Renzulli (1977) and Renzulli and Smith (1978), the role of the teacher of the gifted is three-fold. The teacher's first responsibility is to assist students in analyzing their own interests. Since motivation and task commitment are functions of the sincerity of student interest, assuming ownership of the interest is an essential first step. Once defined, students then need assistance in focusing their interests and translating them into solvable problems. The second responsibility of the teacher is to provide students with the tools of inquiry appropriate to
their investigations. Thirdly, the teacher is to help students communicate the results of their investigative work in a realistic and meaningful manner and to identify appropriate outlets and audiences for student products.

While it is the teacher's responsibility to help students communicate their results in a meaningful manner, it is not consistent with the role of teacher as facilitator to evaluate these products. While the teacher supports and facilitates the efforts, Walling (1981) asserted that it is the student himself who must validate the results. The teacher must view student products nonjudgementally, that is, "assigning no value other than that placed upon the product by its producer" (p. 8). This forces the student to look inward for motivation and to become a verifier of his own learning experience.

Newland (1976) advised that to fulfill these responsibilities the teacher must prethink all aspects of facilitating the learning experience of the student which means that the short-term goal of a particular activity and the long-term goals of the entire learning process have to be determined. He contended that the teacher must also make sure that the learning experiences expected of the child are appropriate to his level and that individual stylistic needs are met by guiding students in the use of qualitatively different options. This requires the teacher to not only be aware of the student's learning style but of the teaching style as well.

As Newland (1976) pointed out, no one teaching strategy is uniquely appropriate to the needs of the gifted. The successful
teacher needs to be skilled in a variety of methods to draw upon which will cultivate, nurture and enhance the student's divergent and creative thinking in accord with the circumstances. The focus should be on "helping them learn to learn" (p. 153). Ward (1961) reinforced this by advocating emphasizing "enduring methods and sources of learning" (p. 156).

Lyon (1978) listed genuineness, empathetic understanding, caring, trust, and competence in subject matter as essential traits of a teacher of the gifted. Newland (1976) contended that high levels of self-reliance, intellectual curiosity, intelligence, and acceptance and understanding of the gifted are most important. Drews (1980) suggests acceptance and love are the key characteristics. In Drews words:

There are a number of qualities that must be present in a good learning environment....The teacher as conductor – in both the sense of conduit for an electrical charge and as a maestro – is the vital factor. A good environment is one that helps all to feel accepted and free to be their best selves....Love is vital to acceptance, the central ingredient. (p. 38)

Learning Style

It is acknowledged that children naturally learn and present their ideas in various ways. Recognizing these individual learning differences is recognizing individual learning styles. While learning style preference has been the topic of a wealth of research, the work of Butler (1984) which is based on the research of Anthony Gregorc's model of style, is used as the point of reference for this study.

Gregorc's understanding of learning style as interpreted by
Butler (1984) is investigating learning as it is experienced by the individual human mind. What an individual's driving forces are and what effect those forces have on the way an individual experiences learning equal the learning style. Every mind is perceived as having an overriding set of qualities which, when channeled through the mind, are the means through which one expresses oneself. It is theorized that each mind contains all qualities but that it is in the variation of intensity with which each quality is used that individuals differ from one another.

The qualities of the mind considered by Butler as important to learning and teaching style are perception abilities or the means through which one grasps information and ordering abilities or the way in which one arranges and systematizes information. Every mind has both qualities but vary in the intensity with which these qualities are used. Perception abilities range along a continuum from concretely grasping and mentally registering data by the direct use of the physical senses to abstractly conceiving through reason, intuition, or emotion. Ordering abilities also range along a continuum and vary from sequential, linear ordering at one end to random, nonlinear, chunking of information at the other.

According to Gregorc, combining these two sets of mediation abilities characterized four types of mind channels: concrete sequential, abstract sequential, abstract random and concrete random. Butler (1984) stated, "Each of these channels has its own particular behaviors and characteristics or its own style. Each channel's style has a unique and organized view of the
world" (p. 11). Thus an individual learns and expresses himself or relates to the world from the organized viewpoint of his dominant mind channels.

Butler related Gregorc's use of the imagery of the rainbow to explain his perception of qualitative differences of individuals:

Unlike a continuum running from black through shades of gray to white, the rainbow begins with a common source, but then separates into qualitatively different colors, each different, yet equal. So, too, minds are qualitatively different, yet equal. (p. 10)

Butler asserted that these behaviors are not learned or adapted to the environment, but stem from qualities integral to the being. When working within their style, students are comfortable. "They work easily, efficiently, and effectively within their style and appear to have a sense of self, inner peace, and spontaneous energy flow when able to use their own style" (p. 23). Students must be free to use their own style and be their natural best to effectively interpret their true capacities and abilities.

Butler related this theory to a curriculum model in which learning style is the content and teaching style is the process. A style based approach to curriculum provides options both in choosing the manner learning is conducted and in selecting a means of expressing that learning through a product. Unless students use their learning style to develop their potential we can only give them existing knowledge. Freeing them to be themselves and realize their natural abilities aids them on their path to self-actualization which according to Gregorc is the primary purpose of life.
Butler pointed out several advantages to a style based learning environment. If many different ways to learn are accepted, children have more opportunity to see themselves as capable learners. Mismatches between learning style and instructional style result in underachieving students and behavior problems. Nurturing nondominant styles helps students learn techniques for adapting to the legitimate demands of the world through style flexing or coping. Recognition of other abilities is enhanced and increased understanding of individual differences releases students from the pressures of conformity.

**Implementation Factors**

The curriculum is the framework for developing a gifted program but this structure is dependent upon an underlying rationale for a firm foundation. Kaplan states:

A successful program is constructed on a philosophical framework which supports the overall program design and lends purpose to its implementation. The program which is based on a rationale and operated as an extension of a defined philosophy is more likely to be successfully maintained by the system and is less likely to have to justify its existence than one which does not have a sound philosophical base. (p. 26)

Della-Dora (1976) indicated that a gifted program's philosophy must promote the values of a democratic society; these being opportunity to develop individual potential and commitment to improving quality of life. Betts (1983) concurs that the major goal is to facilitate the total growth of the individual student, guiding him on his way to becoming an autonomous learner. Kaplan (1974) indicated that is accomplished by weaving together the personal and
societal values with the principles and theories of learning which substantiate the purpose for a program and becomes its philosophy. "This philosophy is the benchmark against which decisions about program participants and provisions are made" (p. 27).

Analogous to development of a statement of philosophy is the translation of philosophy into implementation through goal statements and corresponding objectives. According to Kaplan (1974), objectives relate to the specific purposes, practices and procedures involved in administering the program. Kaplan says, "Each objective rests on the other and is dependent on the support of a solid philosophical foundation" (p. 26). In a discussion of goals and objectives, Sholseth (1978) stresses the importance of including affective goals such as self-understanding, contributing to society, and valuing learning as well as cognitive goals such as progress in skill development and successful content mastery.

To insure acceptance and adoption of a gifted program by the existing educational structure it is important to involve that structure in planning and implementing a new program. Della-Dora (1976), Renzulli and Smith (1979), and Gorden and Regan (1979) stress the importance of involving those to be affected by the program in the planning stages. Renzulli and Smith advise discovering the major concerns of prime interest groups. Della-Dora (1976) encouraged involving teachers, students, parents and administrators in both the planning stages and the life of the program. Gorden and Regan (1979) suggest employing a council of community representatives, teachers, students, administrators and the program coordinator to
monitor progress of the program.

Another factor addressed in the literature which contributes to program success is the administration. Carney (1981) asserted that administrative commitment is required for success of a non-mandated program. Since administrators control financing, room assignments and supervision of staff members, their decisions can make or break a program for the gifted. Newland (1976) further suggested that success of a gifted program is dependent on "the extent to which the administrator understands and accepts the need for such a program" (p. 169). Newland also contended that the administration should be committed to the encouragement of preventative educational practices as well as remedial and would regard a gifted program as an integral part of the total functioning program.

Inservice training on gifted education for regular classroom teachers is described by Gordon and Regan (1979) as an integral component of the program, by Carney (1981) as crucial to program success, by Della-Dora (1976) as a chief consideration, and by Sholseth (1978) as at the core of program development. Jackson (1980) sees the need for in-service training as "a continuous and systematic effort to upgrade the skills and knowledge of the teachers" (p. 30) involved with gifted programs. Carney (1981) lists numerous reasons why inservice is crucial. Among them are the need to understand the concept of giftedness for accurate identification, the need to be trained in techniques for compacting the regular curriculum, the need to create stimulating activities in their own classrooms for gifted students, and the need to develop a cooper-
ative, supportive working relationship with the gifted program.

Clark (1979) discussed the traditional grouping plans or physical designs of gifted programs ranging along a continuum from ability grouping in the regular classroom, to pullout, to special classes, to special schools. Advantages and disadvantages of each were sighted. Also offered is a summary of conclusions reoccurring in several research studies on ability grouping with gifted students. These results show ability grouping to be a partial answer but warn against complete segregation and overlooking individual differences. Newland (1976) concurs that isolation should not be imposed upon the gifted. He says a program for the gifted should "reconcile the unique paradox of developing and maintaining positive interpersonal relationships and of being able to enjoy their need for and right to isolation" (p. 145). Carney (1981) argued that the most effective use of gifted curriculum models "requires the services of a part or full-time resource room teacher of the gifted" (p. 43). Cluster grouping is advocated by Sisk (1979) for its spillover value in the regular classroom or "the positive effect gifted and talented students have on average and above average students" (p. 155).

**Evaluative Procedures**

Newland (1976) proposed that even as a program is in the planning stages there should be "a full and firm anticipation that it will involve meaningful evaluation both of what happens to the pupils in the program and of general aspects of the program per se" (p. 188). Gallagher (1975) views evaluation procedures as the means...
which a school system assures itself that it is doing a creditable job.

Renzulli and Smith (1979) suggested that evaluative procedures be both formative and summative in design. Newland (1976) agreed that evaluation must incorporate both short- and long-term time spans to yield necessary information. Formative evaluation data is gathered at intermediate points throughout the program year. According to Renzulli and Smith (1979), the purpose of evaluation is to provide "continuous in-process feedback so that appropriate modifications and revisions can be made as the program develops" (p. 99). Callahan (1978) demonstrated agreement with a cyclic model for student evaluation. In this model, evaluation serves as the diagnostic step which determined successive instruction. Summative evaluation is concerned with over-all program effectiveness so this data is collected at the end of the program year. Renzulli and Smith (1979) suggested that these results are used "in making decisions about the adoption or continuation of a program" (p. 100).

Renzulli and Smith (1979) also recommended focusing on three types of evaluative data which they term product, process and presage. Process evaluation is concerned with "what goes on in a learning situation" (p. 102). This includes the teaching strategies and learning activities being used to facilitate the desired learning. Several instruments have been developed to aid in assessing this dimension: The Ross Test of Higher Cognitive Processes (1976), The Torrance Test of Creativity (1974), Steel's Class Activities Questionnaire (1969).
Product evaluation is defined by Renzulli and Smith (1979) as "what comes out of a learning situation" (p. 101), or change in student performance. This includes student products, work files, testing records, teacher reports, and student self-assessments. Newland (1976) pointed out the necessity of this data being as objective as possible while still measuring the desired information.

The third type of evaluative data suggested by Renzulli and Smith (1979) is termed presage or intrinsic factors which "may be thought of as the purposefully planned activities that are designed to bring about changes in student performance" (p. 104). This involves evaluating the non-product dimensions of the program such as comprehensiveness of the screening system used, criteria used for identification, placement procedures, adequacy of facilities and program design. Such information would be most clear and useful in a nonjudgemental descriptive form.

Renzulli and Smith (1975) recognized that programs for the gifted and talented are characterized by variety of activities and highly individualized objectives. Therefore, assessment is not an easy or precise process. Newland (1976) warned against the tendency to drop variables from consideration because measurement will be difficult. To do so would impair the value of the evaluation.

Another challenge in establishing evaluation procedures for gifted programs is that the usual assessment tools in education, i.e., testing and grading, are both inappropriate. Callahan (1978) contended that grades are inappropriate for all gifted and talented programs because the processes attended to in such programs are not
easily quantifiable and the focus on individual needs prohibits com-
parative and criterion-referenced grading.

Renzulli and Smith (1975) discussed measurement and statistical
problems of testing in a gifted and talented program. They noted
that standardized testing doesn't measure true growth of gifted
students because of low ceilings of the tests. There isn't enough
range to show maximum growth. They also suggested that standardized
tests are based on systemwide or nationwide objectives which may have
little relevance to the individual objectives developed for a
specific child.

Renzulli and Smith (1975) also advised of problems presented
in the statistical treatment of evaluative data derived from con-
ventional testing. One such problem is test reliability being a
function of group diversity. The more heterogeneous the group, the
higher the reliability. The subpopulation in a gifted and talented
program is a relatively homogeneous group so test reliability should
be viewed very cautiously.

Another major statistical problem they discussed was the re-
gression toward the mean effect, which means that predicted scores
tend to move toward the mean of the distribution. Due to this ef-
flect, caution must be used in evaluating pretest/posttest infor-
mation. If pretest scores are initially high, posttest scores may
decrease due to the regression effect rather than the more probable
conclusion of negative student progress.

Renzulli and Smith (1975) presented a step-by-step procedure
for developing an evaluation plan which was called the Key Features
evaluation System. This plan consists of four sequential steps. The first step is identification of key features or "major factors that contribute to the effectiveness of the program" (p. 110). The second step is the development of instruments and/or techniques which will provide information relevant to each Key Feature. Step three consists of collecting and analyzing the data. The fourth step is reviewing the results and making recommendations.

Summary

This chapter has presented a review of the literature and related research studies which relate to implementing a gifted and talented program within the existing educational plan of a school system. The literature attests to the need to provide a qualitatively differentiated curriculum based on identified individual needs in a comprehensive, systematically designed program. Program success is viewed as dependent upon basing the program on a statement of philosophy developed by those to be involved and maintaining ongoing evaluative procedures which document fulfillment of program goals.
CHAPTER III

DISCUSSION OF THE MODEL

Introduction

This chapter provides a narrative description of the program model developed. To allow for individual examination of each major component, the chapter is divided into five sections: development of a statement of philosophy, specification of goals and objectives, determination of identification criteria and establishment of individual needs, establishment of a qualitatively differentiated curriculum, and provisions for evaluative procedures.

Statement of Philosophy

As noted in the literature review in Chapter II, a statement of philosophy, which will withstand the test of implementation, must accurately reflect the values of the community in which it will exist. Therefore, the statement of need for gifted programming and the purpose of such a program were derived from the policy manual of the existing educational system and the state constitution. Relating these values to research findings on the educational needs of gifted and talented students provides direction for program development. Developing programming in terms of student needs provides justification for existence of the program and serves as a rationale for decision making.

Following is the statement of philosophy developed for this
model to be implemented in Somers Public School:

**Statement of Philosophy**

According to the Constitution of the State of Montana and the Board of Trustees' Policies of Somers Public School, the purpose of public education in our society is to develop the full educational potential of each person. It is recognized that there are a number of gifted and talented students in our educational system who, due to their unique learning styles and abilities, require qualitatively different educational opportunities from those available in the regular classroom. Programs must be developed and implemented to seek out the gifted and talented and to assist them in accomplishing maximum development. Such programs must provide learning opportunities which are qualitatively different with respect to depth of study, variety of content areas, degree of processing of information required and open-endedness of acceptable responses. Learning activities must stem from the student's own specific interests and be approached by the student in his or her own natural learning style. Experiences must be sequential in developing the learning processes which will guide the child on his or her way to becoming a life-long self-directed learner.

**Goals and Objectives**

Translation of the statement of philosophy into implementation leads to the development of goal statements and objectives. Based on the guiding principle declared in the statement of philosophy that the purpose of the gifted and talented program is to provide the
students with the learning tools which will propel them on a life-long career of self-directed learning, program goal statements and corresponding objectives have been developed for the model. The goals and objectives have been divided into three categories: (1) those dealing with overall program operations, (2) those relating to the instructional process, and (3) those relating to desired learning outcomes.

Operational Goal Statements

1. To implement an efficient and effective system to identify gifted and talented students, which is consistent with the definition for gifted and talented.

2. To provide formally identified gifted and talented students with a qualitatively differentiated curriculum designed to advance their higher level cognitive processes, independent study skills, creative thinking processes and problem solving proficiencies.

3. To develop an evaluation process that will be accountable in terms of stated goals and objectives.

4. To take the appropriate steps to insure the continuation and necessary expansion of the gifted and talented program within Somers Public School system.

Operational Objectives

1. Establishment of Identification System

An efficient and effective system of identification will be formulated and implemented for each of the selected areas of
2. **Program Delivery**
   a. **Phase I**

   The formally identified gifted and talented students will be provided with a part-time resource room "pull-out" program designed to advance their higher level cognitive processes, problem solving proficiencies, creative thinking skills, and independent study skills.

   b. **Phase II**

   In addition to the program established in Phase I, specialized programming will be facilitated within the regular classroom for cluster grouped gifted and talented students.

3. **Program Refinement**

   An ongoing evaluation process for measuring student progress will be utilized. A periodic evaluation will be made to ascertain to what extent the objectives of the program are being fulfilled.

4. **Program Continuation and Expansion**

   Appropriate in-service training for all faculty and parents involved in the identification and/or instruction of gifted and talented students will be provided.

**Instructional Goal Statements**

1. To provide gifted and talented students learning experiences designed to systematically develop the use of higher level cognitive processes, creative thinking skills, problem solv-
ing proficiency, resource usage abilities and independent study skills as processes to be used as learning tools.

2. To provide gifted and talented students with opportunities to identify and pursue topics of study to whatever depth and extent their abilities and interests allow.

3. To allow maximum flexibility in the learning environment so that students can pursue individualized interests and advanced areas of study in a manner that is consistent with their own preferred style of learning.

4. To provide an educational program which will enable each gifted and talented child to develop his own abilities to the fullest potential, building self-awareness, self-understanding, and self-expression by using materials and tasks which are differentiated in content and intent.

5. To coordinate the experiences that gifted and talented students pursue in the special program with the regular classroom to ensure the effectiveness of the total school program.

**Instructional Objectives**

1. **Provide Experiences in Using Learning Processes**

   Gifted and talented students will participate in learning activities which will familiarize them with higher level cognitive processes, creative thinking skills, problem solving, resource usage, and independent study skills in a systematically developed progression.
2. **Provide a Qualitatively Differentiated Curriculum**

Gifted and talented students will identify areas of interest and will be given opportunity to pursue their own interests to the extent they desire.

3. **Provide for Individual Learning Styles**

A variety of options will be available to the student in order that he/she may be allowed to pursue individualized study in accordance with the student's own learning style.

4. **Provide for Self-Development**

The flexibility needed to provide for the unique needs of each individual's self-development will be maintained.

5. **Provide for Child's Total Educational Program**

Frequent conferences between the regular classroom instructor must be held to coordinate all aspects of each child's total educational program.

**Learner Goal Statements**

1. To provide gifted and talented students with participatory experiences using the higher cognitive thought processes of analysis, synthesis and evaluation.

2. To familiarize gifted and talented students with the components of creative thinking.

3. To introduce gifted and talented students to the steps of creative problem solving and provide activities using the process to solve real problems.

4. To provide opportunities for gifted and talented students to identify topics of their own interest to study to the degree
of depth and breadth they desire.

5. To provide gifted and talented students with learning experiences using various resources.

6. To enhance the self-development of gifted and talented students through developing the unique abilities and talents of each individual.

7. To propel gifted and talented students on a life-long career of independent learning by providing the processes to use as learning tools.

**Learner Objectives**

1. **Advancement of Higher Level Cognitive Processes**
   The gifted and talented students will demonstrate advancement in higher level thinking skills as measured by the Ross Test of Higher Cognitive Processes. Sample work will also be compiled as demonstrated evidence of superior understanding of the processes.

2. **Advancement of Creative Thinking Skills**
   The gifted and talented students will demonstrate observable growth in creative thinking skills as measured by the Torrence Test of Creative Thinking. Sample work will also be compiled as evidence of superior products.

3. **Advancement of Problem Solving Proficiencies**
   The gifted and talented students will exhibit a working knowledge of problem solving by successfully demonstrating the stages of the Creative Problem Solving Process necessary to pursue an investigative problem of the student's own.
choice.

4. **Advancement of Independent Learning Skills**
   The gifted and talented students will demonstrate independent learning skills and self-direction by identifying, planning and carrying out an investigative project.

5. **Advancement of Resource Usage Skills**
   The student will demonstrate advanced level performances in research skills such as using appropriate references, comparing sources, and categorizing information.

6. **Advancement of Self-Esteem**
   The gifted and talented students will develop a better understanding of themselves and learn to recognize and deal with their feelings about being gifted as demonstrated by improved self-image, freedom of self-expression and enhanced peer relationships. Evidence of such development will be reported by the gifted program instructor and the regular classroom teacher using both objective and subjective criteria.

7. **Advancement of Lifelong Love of Learning**
   The gifted and talented students will view competency in using these processes not as ends in themselves but as the means for a lifelong career of learning. This will be demonstrated through the use of these processes to identify new areas of interest, to plan future investigations, to seek new problems to solve, and to actively engage in independent investigations.
Identification Procedures

The definition of gifted and talented children currently used by the United States Office of Education was adopted for this study and is as follows:

Gifted and talented children are those identified by professionally qualified persons who, by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:

1. General intellectual ability,
2. Specific academic aptitude,
3. Creative or productive thinking,
4. Leadership ability,
5. Visual and performing arts,
6. Psychomotor ability.

In the initial phase of efforts to meet the educational needs of the students in the model program only three of the six specifically defined areas of giftedness will be addressed. These areas are general intellectual ability, specific academic aptitude and creative thought processes. The possibility of including additional categories will be reviewed in future planning.

An efficient and effective procedure for identification of these areas of giftedness has been established which utilizes multiple sources of information. It also makes a provision for not only demonstrated achievements and exhibited talents but also for potential development of such (see appendix B).

Initial Screening of Entire Student Population

A. Procedures
1. General Intellectual Ability

The Otis-Lennon School Ability Test which is a group intelligence test will be administered to all students in grades one through eight.

2. Specific Academic Aptitude

The Stanford Achievement Test battery, which is a group achievement test, will be administered to all students in grades two through eight. The Metropolitan Readiness Test will be given to first grade students.

3. Creative Thought Processes

All students in grades one through eight will complete a Peer Identification of Creativity Survey which accommodates all four cognitive factors of creative thinking (see appendix B). All students will also be given the short form of the figural portion of the Torrence Test of Creativity.

4. Teacher Identification

A classroom teacher survey form will be completed by each classroom teacher and will be utilized as an additional means of identification (see appendix B).

5. Cumulative Records

Teachers will annually review cumulative records in an endeavor to discover evidence of high achievement or creativity.

B. Selection Criteria

Local norms will be established for all criteria. Students ranking in the top 5% of the student population in any one area or in the top 8% of two or more areas will be selected for individual identification procedures.

C. Committee Review

Complete results of initial screening procedures will be compiled in matrix form for each student falling within established percentages (see appendix B). This data will be considered by a staff committee for recommendation for possible placement. The data included in the identification matrix is intended to be used by the review committee for comparison purposes and not as an exact student profile. Assuming an exact measure of student ability from a single test score is exceeding the limits of the assessment instru-
ment. Test scores included in the identification matrix should be viewed as falling within a range of that score but not as an exact measurement. Subjective data included in the screening process must be considered as well as objective test scores to indicate if further consideration for placement in a gifted program is merited. All students recommended by the review committee for possible placement will receive further individual evaluation.

Selection and Placement Procedures

A. Parental Permission for Individual Testing

Parents will be notified of the intent to conduct an individual evaluation on their child and advised as to their rights concerning such an evaluation. A signed parental approval form must be received by the school before an evaluation is begun (see appendix B).

B. Testing Procedures

1. General Intellectual Ability

The Slosson Intelligence Test will be administered individually.

2. Higher Level Cognitive Processes

The Ross Test of Higher Cognitive Processes will be administered to students in grades four and above.

3. Creative Thought Processes

The Figural and Verbal Tests of the Torrance Tests of Creative Thinking will be given.

4. Learning Style

The Smith-Renzulli Learning Styles Inventory will be completed by each student.

C. Nominations

1. Classroom Teacher

The classroom teacher will complete the Renzulli/Hartman Scale for Rating Behavioral Characteristics of Superior Students and the Williams Scale for Rating Thinking and Feeling Behaviors Characteristic of Gifted, Talented and Creative Children for each child referred by the committee.
2. Student

Each student will complete a Self-Evaluation Form (see appendix B) and The Renzulli Interest-A-Lyzer.

3. Parent

Parents of each referred student will complete a Parent Inventory (see appendix B) and a Renzulli/Hartman Scale for Rating Behavioral Characteristics of Superior Students.

D. Placement

Upon completion of the individual evaluation, a staffing will be scheduled. This staffing should include:

- Parent
- Student
- Classroom Teacher
- Gifted Program Instructor
- Administrator (if desired)

The staffing will consist of a general description of the available program, presentation of the student's strengths, interests, needs and the development of long-term objectives. All members of the staffing must collectively agree that placement is suitable.

Identification Instruments

The Otis-Lennon School Ability Test is a group intelligence test which measures general intellectual ability. Test items measure broad reasoning abilities involving manipulation of ideas and student's ability to cope successfully with school learning tasks. No reading is required in the lower three levels of the test. Minimal competency in reading ability is required for other test levels.

The Stanford Achievement Test Battery is a group achievement test series in five levels. Each level includes subtests in specific subject areas. Focus is on measuring achievement in fundamental skills and traditional content areas. Data from this instrument was

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available as the school district has adopted this battery as a means of annually assessing student achievement.

The intent of Torrance Tests of Creative Thinking is to identify process abilities necessary for operating creatively. The test is divided into verbal and figural subtests. Creativity is measured in terms of fluency, flexibility, originality and elaboration.

The Slosson Intelligence Test is a brief individual test of intelligence which gives a ratio IQ score. Content includes mathematical reasoning, vocabulary, auditory memory and specific information. Validity as a measure for assessing general intelligence is based on high correlations with other more extensive individual intelligence tests. The brevity of administration and scoring were also factors which made it a feasible instrument to use.

Ross Test of Higher Cognitive Processes is an instrument for assessing the higher level thinking skills of students in intermediate grades. Processes measured are analysis, synthesis, and evaluation. The test is capable of identifying students who may be academically or intellectually advanced. When used on a pre- and post-test basis it may be used to determine whether a student's higher-level thinking skills have changed over a period of time.

The Smith-Renzulli Learning Styles Inventory consists of sixty-six classroom situations which the student ranks as unpleasant, neutral or pleasant. Scores are calculated in categories such as discussion, peer teaching, recitation, lecture and independent study. Student preferences for types of learning situations or natural styles are revealed.
The Renzulli/Hartman Scale for Rating Behavioral Characteristics of Superior Students and the Williams Scale for Rating Thinking and Feeling Behaviors Characteristic of Gifted, Talented and Creative Children are both designed to obtain the classroom teacher's estimate of an individual child's characteristics. The Renzulli/Hartman scale assesses learning, motivational, creativity and leadership characteristics. The Williams scale considers the process of fluency, flexibility, originality and elaboration. Scores obtained from separate scales are not summed as each measures relatively different sets of behaviors.

Curriculum Plan

Component Processes

The review of related research and literature which was conducted at the onset of this study discussed various thinking and feeling processes and learning skills considered essential to being an independent learner. For this reason, the following processes have been selected to be developed within the curriculum of the model: 1) the cognitive processes of Bloom's Taxonomy, 2) the affective processes of Kratwohl's Taxonomy, 3) the divergent cognitive and affective processes defined by the Williams model as creative thinking skills, 4) the problem solving skills developed in the Creative Problem Solving Process, and 5) selected research and reference usage skills as listed in the taxonomy developed by Renzulli and Reis. A listing of individual processes and skills is as follows:

Bloom's Taxonomy of the Cognitive Domain
Knowledge: information gathering
Comprehension: confirming, explaining
Application: demonstrates, constructs
Analysis: classifying
Synthesis: putting together, creating
Evaluation: predicting, judging

Kratwohl's Taxonomy of the Affective Domain
Receiving: sensitive, aware
Responding: willingness, satisfaction
Valuing: appreciation, commitment
Conceptualizing: organize a value system
Internalizing: characteristic way of life

William's Model - Dimension Three

Divergent Cognitive and Affective Processes

Cognitive Processes
fluent thinking: quantity
flexible thinking: change, adapt
original thinking: unusual, unique
elaborative thinking: expand, enrich

Affective Processes
curiosity: wonder, inquire
risk-taking: experiment, explore
complexity: improve, intricate
imagination: fantasize, visualize
Creative Problem Solving Process

Interest Finding: brainstorming ideas
Fact Finding: organize the information
Problem Finding: define the problem
Idea Finding: investigate the problem
Solution Finding: try various solutions
Acceptance: evaluate, choose one selection and support it

Taxonomy of Type II Enrichment Processes

Section III Using Advanced Research and Reference Materials

Part B. Library Skills:

Specialized Information:
- encyclopedias, dictionaries, indexes,
- atlases, manuals, periodicals, almanacs

Non-book Materials:
- tapes, records, films, models

Part C. Community Resources:

Identifying Community Resources:
- people, agencies, organizations, museums, galleries

Hierarchical Taxonomy of Learning Activities

Models described in the literature as systems for organizing process development into a curriculum structure were drawn from as references. Rather than adhering strictly to any one of these models to the exclusion of the others, a blending of the three along a continuum seems a more workable model for successfully meeting individual student needs.
The plan adopted for systematically integrating these processes into a curriculum format providing scope and sequence is envisioned as consisting of a three-tiered hierarchy of learning experiences. Each of the three levels would develop each of the component categories of processes and skills at increasing levels of complexity.

The first level consists of basic skill building activities conducted in conjunction with exploratory activities of general student interests. As competency is gained in basic skills and general interests, increasingly complex processes and problem solving strategies would be employed at the second level. Research skills would also need to be advanced to correspond with increased self-direction of studies. Limited and intermediate problem solving would proceed third tier full-scale investigations. All process building and skill development would, while building on previous experiences, move towards increasingly complex situations in a developmental procedure culminating in the attainment of the goal of being a self-actualized learner.
### I. PROCESS ORIENTED CONTENT

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<thead>
<tr>
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<th>AFFECTIVE</th>
<th>RESOURCE USAGE</th>
<th>CPS</th>
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<tr>
<td>Knowledge</td>
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<td>Dictionaries</td>
<td>Interest Finding</td>
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<td>Memory</td>
<td>Responding</td>
<td>Encyclopedias</td>
<td>Fact Finding</td>
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<td>Fluency</td>
<td>Curiosity</td>
<td>People</td>
<td>Problem Finding</td>
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<td>Flexibility</td>
<td>Intuition</td>
<td>Tapes, records</td>
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<td>Originality</td>
<td>Risk-taking</td>
<td>Indices</td>
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<td>Elaboration</td>
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### II. COMPLEX PROCESS DEVELOPMENT

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### III. REAL CHALLENGES OR PROBLEM SOLVING

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<th>RESOURCE USAGE</th>
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<td>Self-Directed</td>
<td>Self-Motivated</td>
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**SELF-ACTUALIZATION**

**INDEPENDENT LEARNER**

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Evaluation Procedures

The evaluation procedures included in this model are not to be regarded as a test which must be passed or a final judgement of the model but rather as a means of collecting information which will be valuable in refining and improving the model. Both formative and summative procedures have been included to provide both on-going and periodic data. Evaluative information is obtained pertaining to both student progress and program effectiveness.

Student Progress

With consideration given to the characteristics of gifted students and their highly individualized educational objectives, students' progress will be evaluated individually, comparable only to their own past achievements.

The evaluation procedures of the Gifted and Talented Program will provide the following information with regard to student progress.

1. Provide continuous feedback on the student's progress throughout the school term.

2. Provide year-end data on student progress for comparison with entry level competencies.

3. Reveal to what degree the Learner Goals and Objectives of the program are being fulfilled.

Evaluation of student progress will utilize both objective and subjective data. The following sources and instruments will be used in obtaining information.

1. Student...
a. Individual Project Rating Scale (see appendix C) for each completed project,
b. Student Self-Evaluation Questionaire (see appendix C),
c. Work folder containing dated student products.

2. Gifted and Talented Program Instructor
   a. Individualized Educational Programming Guide (see appendix C),
   b. Evaluation of Student Growth Form (see appendix C) for each completed project,
   c. Dated anecdotal records of improved performance or competent usage of skills and processes,
   d. Appraisal of Student's Competency Using Creative Problem Solving Processes (see appendix C),
   e. Student Ability to Use Resources Rating Scale (see appendix C),
   f. Teacher Evaluation of Student Project Scale (see appendix C).

3. Regular Classroom Teacher
   a. Teacher Evaluation of Student Progress (see appendix C),
   b. Dated anecdotal records of improved performance or competent usage of skills and processes indicated on student Individual Educational Program.

4. Parent
   a. Parent Evaluation of Pupil Progress Rating Scale (see appendix C),
   b. Verbal Feedback.
5. Test Scores
   a. Pre- and post-test scores on Ross Test of Higher Cognitive Processes,
   b. Pre- and post-test scores on Torrence Test of Creative Thinking,
   c. Stanford Achievement Test scores from successive years.

Following the collection of data, the information will be assembled in matrix form for each individual.

Program Effectiveness

The evaluation procedure of the Gifted and Talented Program will provide the following information with regard to program effectiveness:

1. Provide continuous feed-back on the program's progress throughout the school term.
2. Reveal to what degree the operational and instructional goals and objectives of the program are being fulfilled.
3. Gather data which suggests viable alternatives for program modification and improvement.

Evaluation procedures will obtain process, product and presage data. The following sources will be used in obtaining evaluative information:

1. Student
   a. Class Activities Questionaire (see appendix C)
   b. Student Interview
2. Gifted and Talented Program Instructor
   a. Lesson plans and daily log
b. Class Activities Questionaire (see appendix C)
c. Learning Style Communicator completed for each student
d. Compiled results for Student Progress Evaluations

3. Classroom Teachers
   a. Teacher Evaluation of Program Survey (see appendix C)

4. Administrator
   a. Administrator's Evaluation Questionaire (see appendix C)

5. Selection Committee
   a. Analysis of Records
   b. Interviews

6. Advisory Committee
   a. Interviews

Following the compilation of the assessment information, program strengths and weaknesses will be determined so that a plan for expansion and/or improvement can follow.

**SUMMARY**

This chapter has described the major components of the model. The interrelatedness of the components, their dependence upon each other and their common derivation from the philosophical foundation provide the underlying strength of the model.
CHAPTER IV

PROCEDURES AND METHODS

Introduction

This chapter explains the procedures and methods used in implementing this model. The chapter is divided into separate sections for each major topic. These sections are: (1) research procedures, (2) scope and size of program, (3) program delivery, (4) personnel, (5) staff development, (6) selection procedures, (7) exit procedures, (8) instructional management procedures, and (9) evaluation procedures.

Research Procedures

Through the search of the literature and related research studies which preceded this study, the researcher gathered information on many aspects of gifted and talented education. This information was categorized and synthesized into a comprehensive, integrated plan to develop a gifted and talented program for implementation in a specific public school setting.

Additional background information was obtained from on-site observations of several operating gifted and talented programs in similar school settings. Types of programs observed were after school enrichment classes, special interest classes, regular classroom based model, part-time pull-out program, resource room based instruction, and resource room pull-out combined with
classroom activities. In addition to information attained through observations, project directors and teachers were interviewed. Decisions regarding model development were made based upon this combination of knowledge and experience.

**Program Scope and Size**

The Somers School Gifted and Talented Program will provide services to students in grades kindergarten through eight. All students in grades one through eight will be included in the initial screening process and in annual screening reviews. Kindergarten students will be evaluated on a referral basis.

Approximately five to seven percent of the total student population will be selected for participation in the program. With the current enrollment of three hundred students, it is anticipated fifteen to twenty students will receive program instruction.

Although six specific categories of giftedness have been defined, at the present time only three of those categories will be addressed by this program. Students will be identified in the following categories: (1) general intellectual ability, (2) specific academic aptitude, and (3) creative or productive thinking. The possibility of including additional categories will be reviewed in future planning.

**Program Delivery**

In recognition of the importance of providing the opportunity for gifted students to communicate with their gifted peers while maintaining a minimum of separation from their age group peers, a
part-time pull-out design was selected. Identified gifted and talented students will participate in a part-time resource room based pull-out program one-half day each week. Students in grades kindergarten through four will attend the morning session and students in grades five through eight will attend the afternoon session.

Learning activities will be facilitated by the gifted and talented program instructor and will consist of development of cognitive and affective processes, problem solving skills, special interest seminars and management of independent study projects.

Concurrently, in-service training of all staff members will be conducted so that eventually each teacher will have the special skills necessary to teach gifted and talented students within the regular classroom. As these skills are acquired, programming will expand to include a classroom based cluster-grouped model. As staff in-service training is completed, management of gifted and talented students by classroom teachers will be a major emphasis of the program as well as the resource room. This will not replace but will be coupled with the resource room part-time pull-out program.

**Personnel**

**Organizational Design**

The district board of trustees maintain the authority to make decisions regarding the gifted and talented program policies and standards. The responsibility for overseeing the program is delegated to the superintendent (see appendix D).
The gifted and talented program instructor will be directly under the administrator's supervision and will be responsible for student instruction and program development, including selection procedures and advisory committees. A cooperative working relationship must also be maintained with classroom teachers and other specialized instructors.

Advisory Committee

To ensure that the proposed program will be accepted by and adopted into the existing educational structure, it is important to work with this structure. A committee composed of the superintendent, the gifted and talented program instructor, three classroom teachers, three parents, and two school board members will serve as the Gifted and Talented Advisory Committee. The responsibilities of this committee will be:

1. To review and evaluate all aspects of program progress and provide input in relationship to how the program can be modified to the advantage of the students.

2. To verify and approve the recommended placement of students in the program.

3. To assist in public relations, advancing community awareness of the various aspects of the gifted and talented program and to promote a positive feeling about such.

4. To develop an organization for parents of students participating in the gifted and talented program for the purposes of sharing ideas and concerns for
parenting a gifted child, discussing resources for the children, promoting program development, and planning assistance with transportation and activities outside of school hours.

Role of the Administrator

Administrative commitment plays a vital role in the success of the program. Such commitment is exhibited by an administrator who:

1. is knowledgeable of the unique needs of gifted and talented children,
2. participates in identification and placement procedures,
3. regards a gifted program as an integral part of the total functioning school system,
4. encourages teachers to provide qualitatively differentiated activities for gifted and talented students in their classrooms,
5. monitors the progress of students participating in the program,
6. observes and evaluates the operations and instructional procedures of the program.

Role of Classroom Teachers of Gifted and Talented Students

Regular classroom teachers of gifted and talented students need to be sensitive, tolerant, flexible people willing to take on educational challenges. They should be knowledgeable, confident professionals who are willing:
1. to attend in-service training in gifted and talented education,

2. to plan individualized learning activities for gifted and talented students within the classroom setting,

3. to offer a compacted version of the regular curriculum to gifted and talented students providing more time for enriching learning experiences,

4. to work closely with the gifted and talented program instructor to ensure a total educational plan for each student,

5. to monitor student progress and provide information regarding program effectiveness.

Role of Teacher of the Gifted and Talented Program

The teacher of the gifted and talented program shall assume the role of a facilitator of access to appropriate learning opportunities rather than an instructor of these activities. As facilitator of learning experiences, the teacher will have these major responsibilities:

1. to assist students in analyzing and focusing their interests, then translating these interests into solvable problems,

2. to provide students with skills and tools of inquiry that will enable them to deal with new problems and situations by developing generalized strategies for problem solving,

3. to help students communicate the results of their
investigative work in a realistic and meaningful manner,

4. to encourage, assist and support students in their
development of self-direction and self-motivation.

**Role of the Gifted and Talented Program Coordinator**

The responsibility for program development is assigned to the Gifted and Talented Program Coordinator. This position may be filled by the program teacher in addition to student instruction or delegated to an administrative assistant. Responsibilities of this person include:

1. conduct screening and identification procedures and oversee committee review,

2. provide leadership in identification and placement of students,

3. assist in providing and coordinating in-service training in gifted and talented education for the school district,

4. maintain active and cooperative working relationship with classroom teachers of participating students and other specialized teachers,

5. select appropriate curriculum and resource materials to be purchased for the program,

6. provide leadership and assistance to the Gifted and Talented Program Advisory Committee,

7. make periodic progress reports to the superintendent and board of trustees,

8. maintain active involvement in regional and state gifted and talented education organizations,
9. attend available in-service training in gifted and talented education,

10. monitor student progress and program effectiveness and provide feedback for modification and future plans.

Staff Development

In-service instruction in gifted and talented education is essential to upgrading teacher skills and knowledge both for reasons of professional competency and in anticipation of legislative action mandating gifted programming. Provisions have been made for the gifted and talented program instructor, regular classroom teachers, and the administrator to receive such training.

Administrators and classroom teachers will receive in-service training on identification of gifted children, teaching strategies for gifted learners, and creative thinking skills from qualified professionals in the field of gifted education. The gifted and talented program instructor will also receive this training and in addition will receive in-depth training in cognitive and affective process development, learning and teaching styles, and creative problem solving. Parent sessions will be provided on the nature of giftedness and parenting a gifted child. Teachers, parents, administrators and board members will be encouraged to attend regional and state conferences and workshops on gifted education.
Selection Process

Initial student selection will take place as described in the program model. Student scores from each screening instrument will be ranked separately. An individual evaluation matrix will be completed for each student scoring in the top five percent of the student population on any single instrument or in the top eight percent on any two or more instruments.

Completed matrices will be reviewed by the selection committee which is comprised of four classroom teachers, the gifted and talented program instructor, the music teacher and the administrator. To ensure balanced input on all grade levels, one teacher must be from the first or second grade, one from the third or fourth grade, one from the fifth or sixth grade, and one from the seventh or eighth grade. The music teacher provides instruction at all grade levels so has specialized knowledge of all students. Continuity is provided by having classroom teachers participate for a three year term with terms revolving on a staggered schedule so that only one or two teachers on the committee change each year.

Once the model has become operative, identification and placement will be on-going procedures. The same instruments and format will be used as in the initial selection. Guidelines for on-going identification are as follows:

1. The entire first grade class will be screened annually. The rest of the school population will be reviewed annually for possible initial identification.

2. No standardized testing is done at the kindergarten
level. Should the teacher feel there are kindergarten students who would benefit from and are in need of a differentiated curriculum, these referrals would be tested individually.

3. Students new to the system will be screened as they enter.

4. Students transferring from another gifted program may transfer directly into the program if entrance criteria are sufficiently similar between programs and if the student's needs can be met through the existing program. If entrance criteria are not similar, retesting may be required.

5. Teachers and other school personnel may refer students for evaluation if they believe the program would meet the needs of the child. Students have the option of self-referral. Parents have the option of student referral. These referrals should be submitted to the school administrator.

6. Once placement in the program is made, the student's progress will be evaluated within the program but testing will not be repeated.

**Exit Procedures**

If at any time during a student's participation in the program, it becomes apparent that the needs of the student are not being met, that student may be temporarily placed on an Inactive Status or may be phased out of the program completely. Either of these shall be done through a child study team process in which there is consensus.
among the members that the proposed status change is in the child's best educational interest.

**Instructional Management Procedures**

An individual education program developed at the placement staffing will give direction to a student's program. The gifted program teacher will facilitate learning experiences which will provide desired process development within the student's interest areas.

The model curriculum format progresses from basic skills in each area to original research. It can be entered at any level in any area and adapted to any content area. The activities are independent of each other and don't have to be completed in any order or in entirety. The level of complexity and depth of study are determined by the individual's need to develop processes at a particular level. While options are provided for alternative methods of approaching a task and for producing a variety of products, the activities are keyed to processes and skills within the taxonomy. This process lends itself to efficient record keeping of student progress in developing desired skills as well as providing style differentiated instruction.

Management plans are developed for individual projects. The evaluation which occurs upon project completion serves as the diagnostic step for succeeding project development. An individual file is maintained for each student including management plans, project evaluations and a current individualized educational plan which denotes level of student competency functioning in each skill
or process.

**Evaluation**

The types of evaluative data to be collected and the sources from which it is to be obtained are clearly listed in the program model. This data will be systematically collected and analyzed according to the following schedule.

Evaluation of student progress is a continuous procedure occurring through observation of student performance and assessment of projects. Anecdotal recording, maintaining a work folder of student products, updating educational plans, recording verbal feedback, keeping lesson plans and a program journal are all ongoing procedures from which evaluative data is obtained.

Other data will be periodically collected throughout the program year. Appropriate sources for this type of data collection are Individual Project Rating Scales, Evaluation of Student Growth Forms, Appraisal of Creative Problem Solving Profficiencies, Resource Usage Rating Scale, Learning Style Communicator and Selection and Advisory Committee interviews.

Other sources of information lend themselves best to year-end data collection. These sources are Student Self-Evaluation, Classroom Teacher Evaluation of Student Progress, Classroom Teacher Evaluation of Program Effectiveness, Parent Evaluation of Student Success, post-test scores from standardized tests, the Administration Evaluation and the Class Activities Questionnaire.
Summary

This chapter has described the data gathering research procedures which served as the foundation for decision making in formulating the design of the program. Procedures and processes relating to implementing the model were described and their relationship to successful functioning of the model were noted.
Chapter V

FINDINGS, SUMMARY, CONCLUSIONS, RECOMMENDATIONS

The purpose of this study was to develop a model for a gifted and talented program containing a selection process, an instructional curriculum and an evaluation system which could be implemented in Somers Elementary School. To achieve this purpose, seven research questions were posed. This chapter includes the major findings which emerged from research procedures, a summary of the model program developed, and conclusions which seem warranted based on the findings. In addition, recommendations for future program development are presented.

Findings

The unique abilities evidenced by gifted students set them apart from the rest of the school as a distinct population. Identification and selection procedures must use techniques that will measure these unique characteristics. Instructional programs developed for gifted students must be differentiated from the regular curriculum in the same manner as the students they are comprised of differ from regular students.

Gifted and talented students are capable of studying a subject in more depth, consuming greater amounts of material, processing information at higher levels of thinking, and responding in more varied, creative, and original ways than regular students. Due to these unique capabilities, gifted students must be identified and
provided with learning experiences which extend beyond the level appropriate for regular students which are qualitatively differentiated in respect to depth, breadth, quantity and optional responses.

The ultimate concern in developing a curriculum for gifted learners is that the knowledge of content and processes of learning become useful in the real world. For this reason, learning processes have priority over content mastery. As students acquire competency in using processes as learning tools, they can facilitate their own learning. Allowance must also be made for a child-centered curriculum in which the unique needs of the individual child take precedence over subject curriculum. To ensure the most complete and successful learning experience possible, activities are pursued in the students' own natural learning style. A program based on the above rationale can go beyond textbooks, reveal hidden talents, awaken potential and strengthen self-concepts.

Inclusion of both cognitive and affective processes has been verified. While each domain is important by itself, it is the integration of the two which enhances learning and gives full self-actualization. In both domains, competency is developed in lower level skill building processes but a majority of time is devoted to higher level processes which gifted students find more challenging.

While remaining flexible enough to accommodate individually determined learner objectives, all learning experiences which exist within the curriculum must be content related, process oriented and
require active involvement of the learner. It is only through internalization that transfer of learning is assured and the student is directed towards becoming an independent learner.

Integrating these processes into a systematic and sequential approach to learning provides a framework for the curriculum. Determining a student's functioning level within this framework gives direction to planning an organized sequential program and alleviates the piecemeal activities which often occur in gifted programs.

Tying these principles together into a statement of philosophy, provides the solid foundation upon which a gifted program is constructed. All aspects of program development stem from this foundation. From this frame of reference, program goals and objectives are developed, instructional curriculum is dictated and evaluative data is determined.

While gifted students need to be provided opportunities to associate with their gifted peers, they also need to develop relationships with their age group peers. The program design selected must reflect this need. It must also insure a total educational program for each student by integrating the gifted and talented program into the existing educational program with a positive, reciprocal relationship.

**Summary of Model**

Based upon a statement of need, reflecting the community's values and justification provided in terms of student needs, a statement of philosophy was developed for a gifted program. All
components of the program are derived from this philosophy. All are intertwined and interact with each other when operating successfully. Within the statement it is recognized there are gifted and talented students in need of qualitatively differentiated programming which will aid them in becoming self-directed learners.

Based on this guiding principle, goals and objectives were developed as the means of implementing the model. Program operational goals and objectives deal with developing identification procedures, providing an appropriate curriculum, evaluating effectiveness and continuation of the program. Instructional goals and objectives specify more explicitly provisions for process development, qualitatively differentiated activities, learning style, self-development, and a total educational plan for each student. Learner objectives clarify specific cognitive and affective processes to be developed within the model.

Identification procedures are preceded by the adopted definition of giftedness and categories of giftedness selected to be served within the model. The progression through screening procedures and selection and placement procedures is detailed including instruments to be used.

The curriculum plan reviews the processes included and then presents an integrated hierarchical taxonomy of those processes to serve as the framework for program instruction. Processes to be developed are the higher cognitive and affective processes, divergent creative thinking skills, problem solving skills, and reference usage skills. A three tiered hierarchy provides scope and sequence to
learning experiences. A student enters the taxonomy at his present level of functioning in any area. As competency increases the student moves upward to increasingly complex processes, problem solving strategies and specific interests. All skill and process development converge on the upper tier of the self-motivated independent learner.

Evaluation procedures are used as means to measure effectiveness, to refine and improve the model rather than to judge it. Information is collected relevant to student progress and to overall program effectiveness.

Conclusions

The following conclusions were derived from the findings of this study:

1. Gifted and talented students possess unique abilities which set them apart from other students. It is these identifying characteristics which selection procedures for gifted programs must attempt to measure.

2. Gifted and talented students require learning opportunities which are qualitatively differentiated with respect to depth and breadth of study, degree of processing required and range of acceptable responses.

3. In programs for gifted students, development of learning processes as tools has priority over specific content mastery. However, care must be taken not to promote process development as the end in itself, but rather as the means to the end, i.e., knowledge.
4. The ultimate concern is that knowledge of content and processes of learning become useful in the real world.

5. Both cognitive and affective processes must be developed because neither really exists without the other and it is in the integration of the two domains that self-fulfillment occurs.

6. The gifted and talented program must be integrated with the regular school curriculum to provide each child's total educational program.

7. A program design which provides for part-time association with gifted peers and part-time association with age group peers meets the needs of the students and works within the limits of the existing school system.

8. Continued in-service training in gifted education is necessary due to teacher turn-over and different students with different needs.

Recommendations for Future Studies

As this model is refined through feedback from evaluative data, its operation will continue to progress more smoothly and successfully. Several possible options could be considered for program expansion.

Any of the three remaining categories of defined giftedness could be added. A program component could be added to develop leadership skills, visual or performing arts or psychomotor abilities. As psychomotor abilities are relatively well developed in physical education programs and extra-curricular sports, and as
visual and performing arts frequently require highly specialized instruction not readily available in public schools, it is suggested that leadership abilities be the next category to be developed.

Additional processes and skills could be added to the curricular taxonomy. Among those suggested in the research are the study of the lives and work of creative people through history, developing written and oral communication skills and advanced research skills for organizing data.

Another area of study appropriate for gifted programs is futuristics. Future studies provides unlimited possibilities for problem solving and values studies. Also, because the students in today's gifted programs will be living most of their lives in the next century, they need realistic perspectives and the foresight to anticipate shaping their future.
REFERENCES


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Renzulli, J. S. What we don't know about programs for the gifted and talented. Phi Delta Kappan. May 1980.


APPENDIX A

TEACHING/LEARNING MODEL
Guilford's
Structure of the Intellect
A Model for Implementing Cognitive-Affective Behaviors in the Classroom

\[ D_1 = D_2 - D_3 \]

**Dimension 1**
- **Curriculum (Subject Matter Content)**
  - Mathematics
  - Social Studies
  - Science
  - Music

**Dimension 2**
- **Teacher Behavior (Strategies or Modes of Teaching)**
  - Paradoxes
  - Attributes
  - Analogies
  - Discrepancies
  - Provocative Questions
  - Examples of Change
  - Examples of Habit
  - Organized Random Search
  - Skills of Search
  - Tolerance for Ambiguity
  - Intuitive Expression
  - Adjustment to Development
  - Study Creative People and Process
  - Evaluate Situations
  - Creative Reading Skill
  - Creative Listening Skill
  - Creative Writing Skill
  - Visualization Skill

**Dimension 3**
- **Pupil Behaviors**
  - Fluency Thinking
  - Flexible Thinking
  - Original Thinking
  - Elaborative Thinking
  - Curiosity (Willingness)
  - Risk-Taking (Courage)
  - Complexity (Challenge)
  - Imagination (Intuition)

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CREATIVE PROBLEM SOLVING PROCESS

<table>
<thead>
<tr>
<th>DIVERGENT PHASE</th>
<th>PROBLEM SENSITIVITY</th>
<th>CONVERGENT PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiences, roles and situations are searched for messes... openness to experience, exploring opportunities.</td>
<td>MESS FINDING</td>
<td>Challenge is accepted and systematic efforts undertaken to respond to it.</td>
</tr>
<tr>
<td>Data are gathered; the situation is examined from many different viewpoints; information, impressions, feelings, etc. are collected.</td>
<td>DATA FINDING</td>
<td>Most important data are identified and analyzed.</td>
</tr>
<tr>
<td>Many possible statements of problems and sub-problems are generated.</td>
<td>PROBLEM FINDING</td>
<td>A working problem statement is chosen.</td>
</tr>
<tr>
<td>Many alternatives and possibilities for responding to the problem statement are developed and listed.</td>
<td>IDEA FINDING</td>
<td>Ideas that seem most promising or interesting are selected.</td>
</tr>
<tr>
<td>Many possible criteria are formulated for reviewing and evaluating ideas.</td>
<td>SOLUTION FINDING</td>
<td>Several important criteria are selected to evaluate ideas. Criteria are used to evaluate, strengthen, and refine ideas.</td>
</tr>
<tr>
<td>Possible sources of assistance and resistance are considered; potential implementation steps are identified.</td>
<td>ACCEPTANCE FINDING</td>
<td>Most promising solutions are focused and prepared for action; Specific plans are formulated to implement solution.</td>
</tr>
</tbody>
</table>

NEW CHALLENGES

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a model for encouraging creative learning

Cognitive
Independent inquiry
Self direction
Resource management
Product development
"The practicing professional"

Affective
Internalization of values
Commitment to productive living
Toward self-actualization

Level III
Involvement in Real Challenges

Cognitive
Application
Analysis
Synthesis
Evaluation
Methodological and research skills
Transformations
Metaphor and analogy

Affective
Awareness development
Open to complex feelings, conflict
Relaxation, growth
Values development
Psychological safety in creating
Fantasy, imagery

Level II
Complex Thinking and Feeling Processes

Cognitive
Fluency
Flexibility
Originality
Elaboration
Cognition and memory

Affective
Curiosity
Willingness to respond
Openness to experience
Risk taking
Problem sensitivity
Tolerance for ambiguity
Self-confidence

Level I
Divergent Functions

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THE ENRICHMENT TRIAD MODEL

TYPE I
GENERAL EXPLORATORY ACTIVITIES

TYPE II
GROUP TRAINING ACTIVITIES

TYPE III
INDIVIDUAL & SMALL GROUP INVESTIGATIONS OF REAL PROBLEMS

REGULAR CURRICULUM

ENVIRONMENT IN GENERAL
# THE PURDUE THREE-STAGE ENRICHMENT MODEL

<table>
<thead>
<tr>
<th>STAGE I</th>
<th>STAGE II</th>
<th>STAGE III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developing Divergent and Convergent Thinking Abilities</strong></td>
<td><strong>Developing Creative Thinking and Problem Solving Strategies</strong></td>
<td><strong>Developing Independent Learning Abilities</strong></td>
</tr>
<tr>
<td>Creative thinking exercises</td>
<td>Creative problem solving, brainstorming</td>
<td>Based on students' own interests</td>
</tr>
<tr>
<td>Short span activities</td>
<td>Inquiry, synectics, forced relationships</td>
<td>Work individually or in small groups</td>
</tr>
<tr>
<td>Variety of exercises emphasizing fluency, flexibility, originality, and elaboration</td>
<td>Teacher leads but students take more initiative</td>
<td>Realistic goals with some end product</td>
</tr>
<tr>
<td>Teacher leads</td>
<td></td>
<td>Students take lead, teacher aids or serves as resource person</td>
</tr>
</tbody>
</table>

**Figure 1**
APPENDIX B

IDENTIFICATION PROCESS

Screening

Matrix Review and Recommendations

Committee Review

Individual Evaluation

Nominations

Child Study Team Meeting

Parent Permission

Student Permission

Placement
## IDENTIFICATION MATRIX

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Otis-Lennon School Ability Test</td>
<td>129+</td>
<td>126-128</td>
<td>122-125</td>
<td>120-121</td>
<td>118-119</td>
</tr>
<tr>
<td>2. Stanford Achievement Test Reading Score</td>
<td>98+</td>
<td>96-97%</td>
<td>94-95%</td>
<td>92-93%</td>
<td>90-91%</td>
</tr>
<tr>
<td>3. Stanford Achievement Test Math Score</td>
<td>91+</td>
<td>87-90%</td>
<td>83-86%</td>
<td>79-82%</td>
<td>75-79%</td>
</tr>
<tr>
<td>4. Stanford Achievement Test Specific Subject: (If appropriate)</td>
<td>98+</td>
<td>95-97%</td>
<td>90-94%</td>
<td>85-89%</td>
<td>80-84%</td>
</tr>
<tr>
<td>5. Torrance Test of Creativity Figural-short form</td>
<td>25+</td>
<td>24</td>
<td>22-23</td>
<td>20-21</td>
<td>119</td>
</tr>
<tr>
<td>7. Classroom Teacher Survey</td>
<td>11+</td>
<td>8-10</td>
<td>6-7</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>8. Cumulative Record</td>
<td>Superior</td>
<td>Very Good</td>
<td>Good</td>
<td>Average</td>
<td>Below</td>
</tr>
</tbody>
</table>

Students Name ________________________________

Grade ______________ Age ______________

Recommendation: ________________________________

______________________________

______________________________

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Pretend our class found a puppy on the playground.

Which three students would be most likely to think up lots of names for the puppy?

1. __________________________ 2. __________________________ 3. __________________________

Which three would make up the most unusual names?

1. __________________________ 2. __________________________ 3. __________________________

Which three probably would come up with the name we would finally decide on?

1. __________________________ 2. __________________________ 3. __________________________

Which three students would be most likely to write a story about the puppy?

1. __________________________ 2. __________________________ 3. __________________________

Which three students would probably think up different ways to teach the puppy a trick?

1. __________________________ 2. __________________________ 3. __________________________

If we design a collar for our puppy, which three students would probably come up with the most designs for a collar?

1. __________________________ 2. __________________________ 3. __________________________

The fanciest collar?

1. __________________________ 2. __________________________ 3. __________________________

The most unusual collar?

1. __________________________ 2. __________________________ 3. __________________________

Which three students would make the most suggestions of what could be done with the puppy?

1. __________________________ 2. __________________________ 3. __________________________

Which three would give the teacher the most reasons for allowing the dog to come into the classroom?

1. __________________________ 2. __________________________ 3. __________________________
Think about the students in our class. Answer the following questions as completely as possible.

Which three students have the most ideas and solutions to problems?
1. ____________________ 2. ____________________ 3. ____________________

Which three students tell the best stories, whether or not they are true?
1. ____________________ 2. ____________________ 3. ____________________

Which three students have the most fun imagining about situations and things?
1. ____________________ 2. ____________________ 3. ____________________

Which three students like to act things out and be in plays?
1. ____________________ 2. ____________________ 3. ____________________

Which three students are most likely to question things and ask why?
1. ____________________ 2. ____________________ 3. ____________________

Which three students are most likely to make something new from scraps?
1. ____________________ 2. ____________________ 3. ____________________

Which three students most like to draw or paint?
1. ____________________ 2. ____________________ 3. ____________________

Which three students are best at doing puzzles or mazes?
1. ____________________ 2. ____________________ 3. ____________________

Which three students think of ideas that no one else does?
1. ____________________ 2. ____________________ 3. ____________________

Which three students have ideas that are fancy with lots of small parts?
1. ____________________ 2. ____________________ 3. ____________________
Thoughtfully consider all students in your classroom. Then indicate the names of children who strongly exemplify the following characteristics. It is not necessary to list three names for every category. The name listed in the first blank does not have any more importance than names in blanks two and three. All names listed for a single question will be ranked equally.

1. Who seems to remember facts about everything?
   a. ______________ b. ______________ c. ______________

2. Who has an unusually large and advanced vocabulary?
   a. ______________ b. ______________ c. ______________

3. Who reads difficult books?
   a. ______________ b. ______________ c. ______________

4. Who seems to want to know what causes things?
   a. ______________ b. ______________ c. ______________

5. Who is really interested in some topic not studied in school?
   a. ______________ b. ______________ c. ______________

6. Who thinks of ideas that no one else does?
   a. ______________ b. ______________ c. ______________

7. Who sees things in movies or stories that no one else notices?
   a. ______________ b. ______________ c. ______________

8. Who is average in most subjects but really good in one?
   a. ______________ b. ______________ c. ______________

9. Who enjoys drawing, painting or other art activities?
   a. ______________ b. ______________ c. ______________

10. Who day dreams frequently?
    a. ______________ b. ______________ c. ______________
11. Who is especially good at mazes or puzzles?
   a.____________________ b.____________________ c.____________________

12. Who can build amazing things from scraps?
   a.____________________ b.____________________ c.____________________

13. Who has a close friend or friends older than him/herself?
   a.____________________ b.____________________ c.____________________

14. Who frequently displays a sense of humor?
   a.____________________ b.____________________ c.____________________

15. Who notices similarities and differences in things?
   a.____________________ b.____________________ c.____________________

16. Who is best in science?
   a.____________________ b.____________________ c.____________________

17. Who is best in math?
   a.____________________ b.____________________ c.____________________

18. Who is sensitive to the feelings of others?
   a.____________________ b.____________________ c.____________________

19. Who consistently finishes projects?
   a.____________________ b.____________________ c.____________________

20. Who likes to find more than one right answer?
   a.____________________ b.____________________ c.____________________
Intent To Conduct Evaluation

Dear Parents:

Your child, ________________, is being considered for possible placement in the Gifted and Talented Program. In order for us to more completely understand the capabilities and instructional needs of ________________, we would like to conduct an evaluation which would include the use of the following individualized measures:

- Slosson Intelligence Test
- Ross Test of Higher Cognitive Processes
- Torrance Test of Creativity

Results of this evaluation will be used in developing program recommendations for your child.

You have the right to review all records related to evaluation, review the instruments to be used, be fully informed of the results and to refuse to permit the evaluation. Below is a parent permission form which should be completed by you and returned to school.

---

Parental Approval:

_____ Yes, permission is given to conduct the individualized measurement.

_____ No, permission is denied.

______________________________
Signature

______________________________
Date
SELF EVALUATION FORM

Show the way you feel about the way you are:

<table>
<thead>
<tr>
<th>NO</th>
<th>SORT OF</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am a good student.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. I get along with most of my classmates.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. I understand and accept other people.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Other people recognize that I am an intelligent person.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Activities done in gym class are easy for me to do.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I am easy to get along with.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I enjoy working with mechanical and scientific things.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. I enjoy abstract or mathematical problems.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. I like to work independently on special projects.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. I enjoy debating or discussing an idea.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. I enjoy &quot;Losing myself&quot; in a good book or in imagination.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. I have a good sense of humor.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. My work is often quite original.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. I am able to come up with a large number of ideas or solutions to problems.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. I am able to take charge of planning a project.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. I don't mind being different from other people.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. I often use music, art or drama to express my feelings.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. It's easy for me to remember things I've read, seen or heard.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
PARENT INVENTORY

The Information requested on the inventory will be helpful in providing appropriate information concerning your child. Your help in providing the information is appreciated. Please feel free to attach additional sheets if desired.

PUPIL'S NAME ___________________________ DATE _______________
SCHOOL ___________________________ BIRTHDATE _______________ GRADE __________

1. What do you feel are your child's strongest talents or skills?

__________________________________________________________________________
__________________________________________________________________________

2. List any private lessons your child is taking or has taken.

__________________________________________________________________________
__________________________________________________________________________

3. List your child's hobbies or collections: __________________________

__________________________________________________________________________

4. What extra-curricular activities has your child participated in?

__________________________________________________________________________
__________________________________________________________________________

5. To what organizations does your child belong? __________________________

__________________________________________________________________________

6. What problems does your child have? __________________________

__________________________________________________________________________

7. What (if you are aware of any) are your child's educational and/or vocational aspirations at present? __________________________

__________________________________________________________________________

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8. What activities occupy your child's time after school and week-ends? (List hobbies, special lessons, recreation, T.V., etc.)

____________________________________________________________________________________
____________________________________________________________________________________

9. What might your child choose to do with an hour of completely free time?

____________________________________________________________________________________
____________________________________________________________________________________

10. Describe your child:

____________________________________________________________________________________
____________________________________________________________________________________

11. Father's occupation:

____________________________________________________________________________________

12. Father's hobbies/interests:

____________________________________________________________________________________

13. Mother's occupation:

____________________________________________________________________________________

14. Mother's hobbies/interests:

____________________________________________________________________________________

15. What kinds of skills or characteristics would you like to see your child develop through this program?

____________________________________________________________________________________
____________________________________________________________________________________

16. What suggestions do you have for meeting your child's needs in this program?

____________________________________________________________________________________
____________________________________________________________________________________
**APPENDIX C**

**Individual Project Rating Scale**

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATE</th>
</tr>
</thead>
</table>

**PROJECT TOPIC**

**DIRECTIONS:** After completion and sharing of project, please fill out this form. Mark an X on the scale following each criterion to indicate your evaluation of your project.

<table>
<thead>
<tr>
<th>1. Teacher something to others</th>
<th>little</th>
<th>much depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 or 2 ways</td>
<td>6 or more</td>
</tr>
</tbody>
</table>

| 2. Uses thinking skills         | 1 or 2 ways      | 6 or more  |
| Includes creative ideas         | no examples      | 3 or more  examples |
| Activities cause others to think| none             | 5 or more  |
| Uses various display ideas      | 1 or 2           | 6 or more  |
| Used different types of references | 1            | 5 or more  |
| Interesting presentation       | class            | class excited |
| Clear, well organized           | not very         | great |
| Neat and attractive             | so-so            | great |
| Correct language and            | 6 or more        | no mistakes |
| Shows effort                    | not much         | my best |

**What do you like best about this project?**

**What could you improve on?**

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Student Self-Evaluation  
MAP Program  
Somers School

Student's Name _________________________
Grade: ________________________________
Date: _________________________________

Please think of yourself at the present time in comparison to last year. As a result of this year's work, please rate yourself on the following items. Place the letters a, b, c, d, and e on the line following each item according to the scale below.

a-much less, b-less, c-about the same, d-more, e-much more

1. Ability to think things through for yourself . . . . . . . .
2. Knowledge of subject matter areas (science, social studies and others I have taken) . . . . . . . . . . . . . .
3. Interest in school . . . . . . . . . . . . . . . . . . . . . .
4. Ability to see how things go together in a situation . . . .
5. Ability to find information . . . . . . . . . . . . . . . . . .
6. Ability to work well by myself . . . . . . . . . . . . . . .
7. The liking and respect of other pupils for me . . . . . . . .
8. Ability to judge the usefulness of facts . . . . . . . . . . .
9. Ability to get along with my teacher(s) . . . . . . . . . .
10. Enjoyment of learning . . . . . . . . . . . . . . . . . . . .
11. Knowledge of arithmetic, spelling and other basic skills . .
12. Curiosity about learning new things . . . . . . . . . . . .
13. Ability to accept responsibility . . . . . . . . . . . . . .
14. Opportunity to make things, experiment, and use ideas . .
15. Knowledge of my strengths and weaknesses . . . . . . .
16. Willingness to do work as a leader . . . . . . . . . . . .

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Please answer the questions that follow:

17. Has the school year been helpful to you?  
   Yes____  No____  
   Please explain: ________________________________________

18. Has any of the school work this year created any problems for you?  
   Yes____  No____  
   _______________________________________________________

19. Would you like to continue in a group like the one you had this year?  
   Yes____  No____  
   _______________________________________________________

20. What changes, if any, would you suggest?  
   _______________________________________________________
INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE

Strength - A - Lyzer

PREPARED BY: Joseph S. Renzulli
Linda H. Smith

NAME __________________________________________________________

AGE ________ TEACHER(S) _____________________________

SCHOOL ____________________________________________ GRADE ________ PARENT(S) _______________________

INDIVIDUAL CONFERENCE DATES AND PERSONS PARTICIPATING IN PLANNING OF IEP __________________________

ABILITIES

INTELLIGENCE - APPEARANCE - CREATIVITY

In the spaces below, enter the results of standardized test scores and areas of scores above the acceptable percenage.

<table>
<thead>
<tr>
<th>Test</th>
<th>Area</th>
<th>Date</th>
<th>Raw Score</th>
<th>Grade</th>
<th>Eq</th>
<th>%</th>
</tr>
</thead>
<tbody>
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</table>

TEACHER RATINGS

In the spaces below, enter the scores from the Scale for Rating Behavioral Characteristics of Superior Students. Circle unusually high scores.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Score</th>
<th>Group</th>
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<tbody>
<tr>
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</tbody>
</table>

INTERESTS

As a result of student responses in the Interest-A - Lyzer or other interest assessment procedures, indicate the general area(s) in which interests seem to be high, average and low.

<table>
<thead>
<tr>
<th>Area</th>
<th>H</th>
<th>A</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

LEARNING STYLES

Enter the scores from the Learning Styles inventory in the spaces below. Circle the highest area(s).

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>Score</th>
<th>Learning Style</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

SPECIFIC AREAS OF INTEREST

As a result of individual discussions with the student, indicate particular topics, issues, or areas of study in which the student would like to do advanced level work.

<table>
<thead>
<tr>
<th>Area</th>
<th>H</th>
<th>A</th>
<th>L</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

SUMMARY AND RECOMMENDED ACTION BASED ON ASSESSMENT INFORMATION

In the space below summarizes (1) strengths, interests, and learning styles, (2) areas in which remedial work or additional skill building appears to be warranted, and (3) specific higher mental processes and advanced skills that should be developed.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Score</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

REZULLI'S ENRICHMENT TRIAD

□ Check box if additional assessment information is recorded on the reverse side.
# EVALUATION OF STUDENT GROWTH

## NAME ____________________  GRADE ____________

## TEACHER ________________  SCHOOL __________________

### AREAS OF STUDY

<table>
<thead>
<tr>
<th>Check all that apply</th>
<th>Language Arts/Humanities</th>
<th>Science</th>
<th>Social Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Studies</td>
<td>Music</td>
<td>Other (Specify)</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>Art</td>
<td>Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

Brief Description of The Content of The Study

Beginning Date _________ Ending Date _________ Number of Days _________

### OBJECTIVES (List in order of importance)

1. 
2. 
3. 
4. 
5. 

### ACTIVITIES

(Briefly list what the student did to accomplish these objectives. Underline any activity that you consider to be relatively unique)

### RESOURCES (Reference Books, Films, People, Etc.)

### PRODUCT

(Briefly describe any projects, stories, plays, filmstrips, etc. that resulted from this study. Attach samples if available.)
### Teacher's Appraisal of Creative Problem Solving Lesson

**Demonstrator**

**School**

**Observer**

**Date**

**Room Number**

**Grade Level**

---

PLEASE INDICATE WITH AN X THE EXTENT TO WHICH YOU AGREE WITH EACH OF THE FOLLOWING STATEMENTS.

<table>
<thead>
<tr>
<th></th>
<th>Unable to Observe</th>
<th>Little</th>
<th>Somewhat</th>
<th>Much</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you think a problem was structured so as to lead to the discovery of a new concept or understanding?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Were you able to observe a diversity of pupil responses in the initial stages of the problem?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. To what extent do you feel that the pupils drew upon personal past experiences to solve the problem?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. To what extent do you think the teacher &quot;structured&quot; the discussion?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you feel the pupils understood that there is always more than one answer or way to arriving at the solution to a problem?</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Was a classroom climate established whereby each pupil would feel free to contribute to the class discussion?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7. Did pupils contribute most of the information and ideas that were necessary to arrive at a solution to the problem?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Did pupils discover meaningful new relationships between the information and ideas they contributed to the problem?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Were the pupils allowed and encouraged to react to other pupil's responses?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Did pupils vie with each other to answer questions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. Do you feel the majority of the pupils &quot;learned&quot; the concept?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Write any comments you may have concerning the demonstration lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

From: Chicago Public Schools. *In-Service Training Program for the Promotion of Creative Problem-solving* (Second Revised Edition).

---

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STUDENT ABILITY TO USE RESOURCES RATING SCALE

1. The student used the following sections of reference books to locate information:
   a. Table of Contents (YES or NO)
   b. Index (YES or NO)
   c. Appendix (YES or NO)
   d. Bibliography (YES or NO)
   e. Preface (YES or NO)

2. The student used the following references appropriately in locating desired information:
   a. Dictionary (YES or NO)
   b. Encyclopedia (YES or NO)
   c. Atlas (YES or NO)
   d. World Almanac (YES or NO)
   e. Readers' Guide to Periodical Literature (YES or NO)
   f. Dictionary of American Biography (YES or NO)
   g. Manuals (YES or NO)

3. When presented with information in the following forms, the student can interpret it:
   a. Graphs (YES or NO)
   b. Tables (YES or NO)
   c. Maps (YES or NO)
   d. Diagrams (YES or NO)
   e. Flow Charts (YES or NO)

4. The student uses the following sources for obtaining appropriate information:
   a. People (YES or NO)
   b. Tapes or Records (YES or NO)
   c. Film or Models (YES or NO)
   d. Agency or Organization (YES or NO)
   e. Museum or Gallery (YES or NO)
Teacher Evaluation of Student Project

**Directions:** The scale is designed to be used to evaluate a student project that involved gathering information or data and presenting these in the form of a written—or possibly oral—report. The presentation is to be evaluated by the student’s teacher or project director. Each item on the scale is worth five points.

1. To what extent did the student appropriately focus (narrow down, broaden, etc.) the topic being examined?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent

2. To what extent did the student clearly define the topic being examined?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent

3. To what extent has the student used more than a single source of information in gathering data for the project?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent

4. To what extent were the sources of information the student used appropriate for the topic?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent

5. To what extent did the student appropriately paraphrase the information gathering in making the final presentation?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent

6. To what extent has the student appropriately synthesized the data collected and presented it in a meaningful "whole"?

   5 4 3 2 1
   To a great extent Somewhat To a very limited extent
7. To what extent did the student make appropriate generalizations on the basis of the information presented?

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>
To a great extent | Somewhat | Limited extent |

8. To what extent did the student make appropriate interpretations of the information gathered?

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
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<tbody>
<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
To a great extent | Somewhat | Limited extent |

9. To what extent did the student present appropriate concluding or summary statements of the information presented?

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
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<tbody>
<tr>
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</tr>
</tbody>
</table>
To a great extent | Somewhat | Limited extent |

10. To what extent did the product seen to reflect the student's real interest in the topic?

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
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<tr>
<td></td>
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</tbody>
</table>
To a great extent | Somewhat | Limited extent |
Teacher Evaluation of Student Progress

(Student) (Teacher) (Date)

Please evaluate this student by placing the letter a, b, c, d, or e on the line following each item according to the scale below. Think of her/him in relationship to her/his performance at the start of the program.

(a) marked loss
(b) diminishing
(c) about the same
(d) increasing
(e) marked increase

1. Ability to solve problems ........................................
2. Knowledge of subject matter areas ................................
3. Interest in school .............................................
4. Ability to think in terms of the whole and to see parts in relation to the whole ................
5. Research skills ............................................
6. Ability to work independently .........................
7. Status in peer group ............................... 
8. Critical thinking ability  ......................
9. Rapport with teacher ........................................
10. Motivation toward learning .....................
11. Knowledge of basic skills (fundamentals) ...........
12. Intellectual curiosity ................................
13. Ability to accept responsibility ........................
14. Opportunity to create and experiment with ideas and things ................................
15. Self understanding ........................................
16. Acceptance of leadership roles ......................
Parent Evaluation of Pupil

Pupil's Name________________________________

Will you please think of your child at the present time in comparison to last year? Please rate her/him on the following items. Place the letters a, b, c, d, and e on the line following each item according to the scale below. You may have difficulty in responding to some of the items. Please make the best estimate that you can.

(a) Much less (b) Less (c) About the same (d) More (e) Much more

1. Ability to think through for him/herself........................
2. Knowledge of subject matter areas (science, social studies, and others she/he has taken............................
3. Interest in school................................................
4. Ability to see relationships......................................
5. Ability to find information......................................
6. Ability to work well by herself/himself.....................
7. The liking and respect of other pupils for him/her......
8. Ability to judge the usefulness of facts......................
9. Ability to get along well with her/his teacher(s)........
10. Enjoy the learning................................................
11. Knowledge of arithmetic, spelling, and other basic skills...........................................
12. Curiosity about learning new things........................
13. Ability to accept responsibility.............................
14. Opportunity to make things, experiment, and use ideas...
15. Knowledge of his/her strengths and weaknesses...........
16. Willingness to do work as a leader.........................

(Please answer the questions on the following page)
17. Has participation in the study helped him/her?  Yes____ No____
   Please explain: _____________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

18. Has participation created problems for her/him?  Yes____ No____
   Please explain: _____________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

19. Would you like to have his/her participation in the program continued?  Yes____ No____
   Please explain: _____________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

20. What changes, if any, would you suggest? __________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________

Name: __________________________
Address: _________________________
Telephone: _______________________
Date: ___________________________
Class Activities Questionnaire

The following items are examples of the kinds of performance this project emphasizes. Note the progress of the class during this school year. Your views can give us a better idea about what is needing change and what is important to keep.

<table>
<thead>
<tr>
<th>Classroom's Best Features</th>
<th>Features Needing Change</th>
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</thead>
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<tr>
<td>Work on thought-process</td>
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<tr>
<td>Subject-matter coverage</td>
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<tr>
<td>Clarity of teaching</td>
<td></td>
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<tr>
<td>Student motivation</td>
<td></td>
</tr>
<tr>
<td>Relevance to &quot;real world&quot;</td>
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<td>Utility for later schoolwork</td>
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<td>Pace of work scheduling</td>
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<td>Workload</td>
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<td>Chance for self-determination of work</td>
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<td>Facilities, materials</td>
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<td>Administrative support</td>
<td></td>
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<tr>
<td>Community support</td>
<td></td>
</tr>
</tbody>
</table>
Teacher Evaluation of Program

Please complete the following questionnaire regarding your perspective of the gifted and talented program.

____________________ (Teacher) __________________ (Date)

1. Do you believe you have had adequate training for working with the gifted and talented? Yes or No ______. Please Explain.____

__________________________________________________________

2. Do you believe you were able to meet the needs of the identified students in your classroom? Yes or No _____ . Please Explain.____

__________________________________________________________

3. How have you applied the inservice training on gifted education?

__________________________________________________________

4. What, in your opinion, are some of the strengths of the G-T Program? __________________________________________________________

__________________________________________________________

5. What, in your opinion, are some of the weaknesses of the G-T Program? ______________________________________________________

__________________________________________________________

6. Do you have any suggestions for improvement of the program? ___

__________________________________________________________

__________________________________________________________

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Administrator's Evaluation

(Administrator) __________ (Date) __________

1. Have you been satisfied with the gifted and talented program this year? Yes or No _______. Please explain: ______________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. Do you believe the student's participation in this program has helped them? Yes or No _______. Please explain: ______________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

3. Would you like to have the program continued? Yes or No _______. Please explain: ______________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4. What do you consider to be the greatest strengths of the program? ______________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
5. What do you consider to be the greatest weakness of the program?


6. What are the major needs relative to the gifted and talented program that you believe must be addressed in the near future?


7. Do you have any suggestions for changes in the program? Yes or No _____. Please explain:


8. What is your overall impression of the program? _________


9. What applications of teacher inservice training on gifted education have you observed in regular classrooms? _________


