Learning Based on Real-Life Projects:
A Model for the Istanbul Science and Arts Center (BILSEM)

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ABSTRACT

One of the earliest examples of educating selected bright and able youth was during the Ottoman Empire between the 15th and 18th centuries in a school called Enderun, the Palace School. Later, the young Turkish Republic would give little emphasis to gifted education. In the 1900s, however, as gifted education became a popular topic in the Western world, both the general public and the Turkish government once again recognized the need for special education for highly able students. Turkey responded by opening two private schools and a government-initiated program attached to a state school in Ankara.

The Rationale

Considering the difficulties of applying various Western models for reaching highly able students in regular schools, the Ministry of National Education (MOE) chose to begin by opening up centers where science- and art-related enrichment activities would serve the needs of the gifted. The first center was in Ankara followed by Istanbul's Science and Art Center (BILSEM). BILSEM developed as a result of the initiative and active involvement of several people at MOE headquarters in Ankara together with a dedicated group of experts, administrators, teachers, and businessmen in Istanbul. The theoretical background and the learning model that was used in organizing, actualizing, and evaluating BILSEM activities are explained in this paper.

A Brief History

The monopoly of the highly centralized educational system in Turkey requires that any and all kinds of teaching/learning activity must have formal permission to begin related activities; and all are subject to MOE supervision. Therefore the first steps before BILSEM could be approved was to prepare rules and regulations related to the foundation, administrative structure, student selection, learning activities, and assessment procedures. The detailed document was approved by the minister himself and published as a booklet. The center, BILSEM, was legally founded in 1997.

The building occupied by BILSEM is located in the Anatolian side of Istanbul in a developing residential area of middle- and upper-middle class families. Because the building needed restoring before it could be used for BILSEM activities, architects and engineers who were voluntarily supporting BILSEM prepared an architectural restoration plan in cooperation with the executive board members and the director of BILSEM. Financial support came from the governor of Istanbul; and the contracting firm completed the building in early 1999.

BILSEM is a public institution under the supervision of MOE's general directorate of special education. It is directed and run by an independent executive board which includes a member from Ankara headquarters, one from the MOE Istanbul office, a representative of businessmen in Istanbul, and a coordinator. The director of BILSEM is an ex officio member and is responsible for carrying out the decisions of an executive board that meets every three months.

In the beginning phase, five teachers were needed to complete the preparations of activities—to set up relations with business firms, contributing individuals, science and arts institutions, and also to get ready for sample projects. A series of in-service education programs were implemented between 1996-1998, and five teachers were chosen and appointed by the MOE as coordinating teachers. Three programs, their aims and actualization, are summarized as follows:

Program 1 - Broad-Based Almus Seminar

Fifty-five people held a 5-day experiential learning seminar in Almus in Tokat, a province in the eastern part of Turkey. The attendees included staff from the MOE Ankara, Istanbul, and Bayburt offices; teachers from Ankara Yasemin Karakaya Science and Arts Center; teachers from Istanbul schools; and a few education experts in the fields of curriculum development, measurement, and counseling. This seminar had two main aims:

1. to observe, evaluate, and choose teachers to be appointed to BILSEM
2. to disseminate and experiment with the learning model proposed for BILSEM

Participants were exposed to experimental activities that helped them get to know one another and discover their social and mental abilities and physical skills, heretofore untapped. They were divided into five groups; each group was asked to develop a project proposal following formats that were prepared beforehand. Groups presented their projects and evaluated one another using evaluation forms. For the overall evaluation of the individual performance, the seminar organizers, that is the coordinator and five assistants, were asked to complete observation and evaluation forms. The feedback was used to finalize the selection of teachers.

Program 2 - Burgazada Seminar on Project Development

MOE representatives, BILSEM staff, a small group of senior students from the science education department at Bogaziçi University, and two representatives from the business world participated in a 3-day seminar in one of the Prince Islands, Burgaz, in Istanbul. The aim of the seminar was to develop concepts of science, systematic thinking, problem solving, project development, planning, effectiveness, and efficiency. Teachers were given a chance to see the costs and benefits of relating science, technology, economics, and education at a macro level.

Program 3 - Istanbul Workshop on Project Implementation

The same group of participants (with the exception of MOE representatives) met once a week for 6 weeks to report on the progress of their small group projects. At the end of the workshop, concrete products resulting from their project work were displayed.

The first seminar was financed by the MOE, whereas the second seminar and the workshop were sponsored by the 3G Foundation in Istanbul.

Student Selection
Learners selected for BILSEM activities were students between the ages of 8 and 18 who were attending public schools in Istanbul. The selection process included the following steps:
- nomination by teachers or by parents
- administration of a screening test in general ability
- administration of various testing instruments used for specific abilities in the following areas:
  - language
  - mathematics
  - social skills
  - science
  - creativity
  - arts
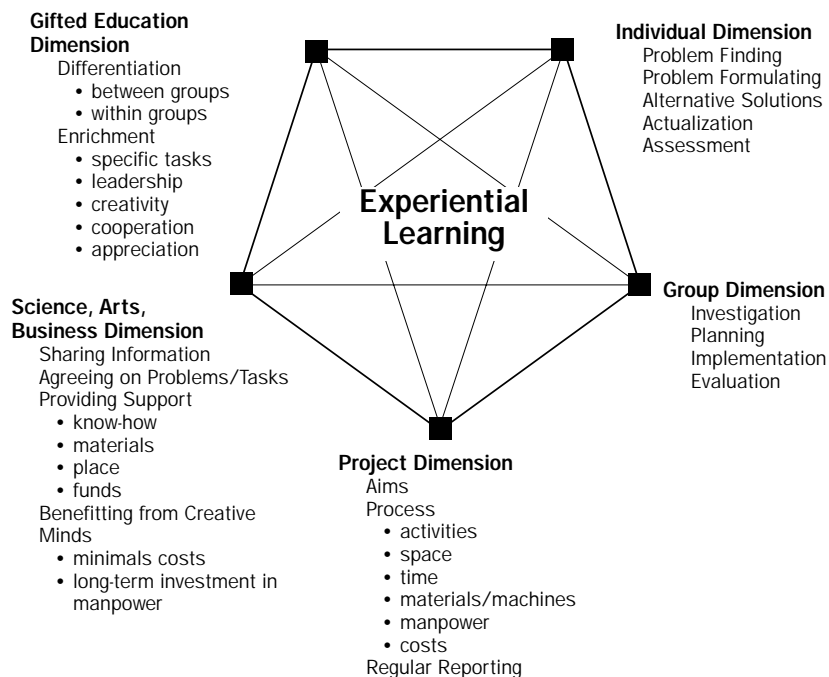 - music
- interviews and observation

Gifted Education Dimension
Differentiation
- between groups
- within groups
Enrichment
- specific tasks
- leadership
- creativity
- cooperation
- appreciation

Science, Arts, Business Dimension
Sharing Information
Agreeing on Problems/Tasks
Providing Support
- know-how
- materials
- place
- funds
Benefitting from Creative Minds
- minimals costs
- long-term investment in manpower

Experiential Learning

Individual Dimension
Problem Finding
Problem Formulating
Alternative Solutions
Actualization
Assessment

Group Dimension
Investigation
Planning
Implementation
Evaluation

Project Dimension
Aims
Process
- activities
- space
- time
- materials/machines
- manpower
- costs
Regular Reporting

Figure 1. BILSEM Learning Model

Operation
Learners are expected to spend a minimum of 6 hours a week and a total of 96 hours (minimum) in a 4-month term for active involvement of BILSEM activities. Once the groups and projects are formed, the learners do not need to spend all of the required time at BILSEM. The above-mentioned hours indicate required time on task.

Group work can be scheduled for any time of the day, week, or month provided that group members comply. Time and place of work is determined by the project and decided by the group. The BILSEM staff is responsible for overall coordination and supervision. Such arrangements are completed at the beginning of the term, announced, and sent in written format to MOE authorities, parents, and related institutions or persons. Students continue their participation until BILSEM staff or the students themselves have reasons to withdraw.

BILSEM Learning Model
The learning model used at BILSEM combines several well-known educational principles in such a way as to minimize present-day constraints of the national education system, while taking into consideration the emerging needs and demands of a global society.

The learning model is experiential. It requires learners to find real-life problems and issues in all domains and to approach them as a work project carried out by a small team which, under the leadership of an adult group leader, organizes and completes all the necessary steps, cooperations, procedures, and activities. The groups consist of between four and eight learners gathered around a common interest. Coordinating teachers at BILSEM are responsible for matching learners, groups, group leaders, institutions, or persons from the larger community. They are also responsible for assessment, intervening when unexpected situations arise, and follow-up activities.

There is no instruction or teaching in the model. When specific learning needs are identified in doing the projects, either BILSEM teachers or outside experts are called upon for tutoring. The main idea is to help learners learn on their own by actually going through all phases of project development, implementation, and evaluation. The center has libraries, labs, performing arts halls, seminar rooms, computer facilities, and equipment needed for the project works. Depending on the requirements of the projects, other work places can also be used.

Issues or problems to be translated into a project format might be related to anything in science, technology, business, management, production, services, fine arts, performing arts, music, literature, or sports. The project group does all the planning, implementation, and reporting on the projects; it also takes partial responsibility in finding funds and financial, technical, and logistic support for the task.

Organizing learning activities in this way helps to serve five distinct purposes called "dimensions" in the BILSEM learning model (see Figure 1).

1. **Individual Dimension:** Learners develop the ability to observe their environment, find issues, difficulties, shortcomings, and errors which might be overcome, and to formulate their ideas as problems. They also look for or create alternative so-

lutions to these issues. The second phase of individual learning leads them to propose their ideas to the group, come to a decision about the group project, and then actively contribute to different aspects of the work as a group member in cooperation with one another or with the other groups. The skills that learners are expected to develop include providing regular feedback to the group, reporting to other parties involved (including BILSEM staff), and making continuous assessment of the progress of the work.

2. **Group Dimension:** The abilities that learners develop in groups include working as a team; cooperating with members and others involved in the projects; taking responsibility as a group; initiating investigation related to the task; and planning, implementation, and evaluation of the project. The by-products of working in learning groups with peers are, discovering strengths and weaknesses of each member, providing a medium for self-support, gaining self-actualization, and making use of synergy.

3. **Project Dimension:** One of the major aims in designing the BILSEM learning model was to enable young learners to think and work in a planned way which seems to be one of the great shortcomings of the Turkish culture. This is why all learning activities are tied to the "real-life projects" concept. Learners are expected to state the aims and objectives of the project clearly and operationally, then prepare an activity plan which includes time, place, materials, machines, equipment, labor needs, and realistic cost estimations. Regular reporting of the progress of the work, devising quality control instruments, collecting data and evidence needed for reporting, and writing a final evaluation document are among the skills highly desired.

4. **Science, Arts, Business Dimension:** Young people with talents and high abilities are an asset to every society. Sharing information and inviting creative talent to contribute to the overall development of the country will help scientists, artists, managers, businessmen, and institutions. This also is a good investment for future employment of talented people. With minimum costs, the business world is expected to benefit from creative and problem-solving abilities of BILSEM learners. This, in turn, is an opportunity for the learners to gain experience in how things are done in real-life situations rather than trying to get experience in simulated school-like environments.

   The support from outside persons or institutions can be in the form of providing know-how, materials, equipment, facilities, transportation, food, accommodation or, in more general terms, funds and sponsorship.

5. **Gifted Education Dimension:** The model enables the MOE and educators to reach a relatively large group of gifted learners without making any changes in the current, highly rigid education system which tries to embrace 12 million school-age children. This model leaves most of the work to the learners, including a large proportion of organizational activities. Differentiation can be made in the choice of issues or projects and in the processes and procedures to be followed. Enrichment in learning is provided by specific knowledge and skills, leadership opportunities, creativity, by cooperative experiences, and, appreciation for what is

being done, and how it is done, as well as the final output. Once equipped with abilities, skills, and experience, gifted learners are expected to continue their own development as well as contribute to their environment.

Counseling the Gifted

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ABSTRACT

As based on a literature review, this paper highlights the unique characteristics of gifted and talented children and youth as they relate to their personal adjustment. Identification of typical social, emotional, and behavioral features of this population is important in providing effective psychological services, particularly individual and group counseling. The current paper summarizes common issues of gifted and talented children as well as characteristics of counseling services that can better serve them. An alarming lack of empirical studies in this area indicates that future researchers need to focus on counseling issues of gifted and talented children who, too often, seem to have been accepted as self-sufficient.

Introduction

Information provided in this paper was drawn from a review of related literature. It is organized in three sections. First, some of the characteristics of gifted and talented children are briefly listed to support an understanding of their psychological states as they relate to counseling. Second, common issues of gifted and talented children that could be brought to counseling are summarized. And last, unique features of counseling this population are highlighted. It is hoped that this paper will help the interested reader to better understand the counseling needs of gifted and talented children so that they may be better served.

Common Characteristics of Gifted and Talented Children

Gifted and talented children and youth do not constitute a homogeneous group of individuals; they differ among themselves. Their variability could be due to the nature and degree of their gifts, interest levels, and personal and demographic characteristics (Robinson, 1996). Thus all gifted and talented children do not necessarily share the characteristics mentioned in this paper.

As the degree of capacity increases, so does the uneven development (i.e., different levels of development in different domains). This in itself leads to adjustment difficulties because the child is compatible with different age levels in different areas, which result in confusions and complications in educational arrangements. Silverman (1993) noted findings that vulnerability is directly related to developmental differences.

Robinson (1996) stated that one of the shared feelings of gifted and talented children is their differentness or lack of fit with their environment. Silverman (1993) called this characteristic "asynchrony" (out of sync), being out of stage (above their age), out of phase (alienated), and out of sync (feeling misfit). She points to the fact that "it is painful to be different in a society that derides differences" (p. 3). Considering their heightened sensitivity, emotional intensity, reactivity, perceptiveness, and extreme responsibility (Lovecky, 1993), and their psychomotor, sensual, imaginational, intellectual and/or emotional overexcitabilities (Silverman, 1993), this differentness becomes a serious issue. Alienation that characterizes their interpersonal relations (Kline & Meckstroth, 1985) may be simply because they can not relate to their age mates. They feel that they need to downplay themselves to prevent isolation. Colangelo and Peterson (1993) stated that these children might deliberately underachieve to gain peer acceptance. Girls, especially, tend to discount their success (Kline & Meckstroth, 1985).

Among the personality characteristics of gifted and talented children, Silverman (1993) included insightfulness, need to understand (curiosity), need for mental stimulation, perfectionism, need for precision/logic, excellent sense of humor, sensitivity/empathy, intensity, perseverance, acute self-awareness, nonconformity, questioning of rules/authority, and tendency toward introversion.

Intensity, sensitivity, overexcitibilities, high energy levels, low tolerance for frustration, pressure to meet internal and external expectations, and perfectionism are among the characteristics of gifted children (Moon, Kelly & Feldhusen, 1997). These children have tremendous potentials and impressive assets like problem solving, capacity for insight, making connections, and employing adult language; their quest to learn and need to be challenged are striking (Silverman, 1996). Kline and Meckstroth (1985) stated that gifted children are focused internally on creating their own meaning. Their potential also puts them at risk for personal sadness, depression, sensitivity (everything gets through), and awareness of inequity or injustice. Kline and Meckstroth added that gifted children suffer ambivalence in separation due to mixed messages received from the environment, particularly overinvestment of parents, yet high expectations for independence. Their entelechy (i.e., having goals, self-determination, and inner spirit) could be a problem in dealing with insecure adults (Lovecky, 1993). Engaging and inspiring these children is a real challenge for most teachers (Kline & Meckstroth, 1985).

Issues Relevant to Counseling

Contrary to what one might expect, Silverman (1993) observed that even the most obvious needs of gifted children are not met in schools, since people assume that these children can take care of themselves.

Robinson (1996) discussed the following as issues that are common among gifted and talented youth: (a) feelings of isolation or essential loneliness; (b) a belief that differentness is wrong; (c) pressure of high expectations given the assumption that intelligence is an entity rather than incremental, their success is perceived as coming easily; (d) daily irritations with low levels of stimulation (boredom); (e) multipotentiality leading the risk of becoming fence-sitters; and (f) difficulty in establishing independence in child-centered and overinvesting families.

Silverman (1993) noted an indication of a greater risk for suicide among gifted individuals. This risk is understandable since they experience existential depression,

fear of failure, and lack of understanding from others, and since they have incredible perceptiveness and sensitivity.

Moon, Kelly, and Feldhusen (1997) conducted a survey to identify the needs of gifted youth as perceived by professionals and parents and found that their leading needs were for peer relationships, emotional and social adjustment, and stress management. Adolescence was the age group that had the greatest need for counseling in this survey.

Lovecky (1993) stressed that an internal negative self-image due to receiving little validation is common among divergent thinkers, thus adults who would listen to and validate their creative selves are essential. Self-control or regulation could be an issue for excitable gifted children while limits of personal responsibility need to be brought up with perceptive and sensitive gifted children.

Delisle (1983) pointed out that these children need to know what giftedness means so that they can set appropriate expectations. They need self-concept enhancement (nothing is wrong with giftedness) and need to learn not to equate success with production but focus on process.

Unique Features of Counseling the Gifted
Counselor
Counselors need to be knowledgeable about giftedness; otherwise they may tend to see perfectionism of the gifted and talented child as neurotic. They may perceive their intellectual honesty and peculiarity as being elitist and believe that parents who advocate for extended services are simply being pushy (Robinson, 1996).

Counselors need to be more supportive and less directive (Culross, 1995). Silverman (1993) also stated that too little direction is better than too much direction. In addition, counselors need to be honest about the complexity of issues and about the difficulty in understanding divergent thinkers, since accurate empathy can be difficult to establish (Lovecky, 1993).

Literature to understand the counseling process could be provided for mental stimulation. However, Silverman (1993) cautioned the counselor against insightful gifted clients who can turn sessions into intellectual exercises and suggested that feelings and actions should be the focus. Counselors need to remember a gifted child's capacity for abstract thinking and need for in-depth understanding, yet balance their approach by including concrete behaviors. The pace of sessions could be quickened with the gifted client.

Goals
Kline and Meckstroth (1985) identified that counseling goals for the gifted are to discover the unique patterns of individual characteristics, to relate them to opportunity and development, and to access an ideal self-concept.

A major stressor for the gifted is the environment that seeks to normalize them, and thus counseling should aim to provide proactive program flexibility and stress management (Kline & Meckstroth, 1985).

Silverman (1993) stated that "the therapist can (1) help the client come to terms with his or her differences; (2) help the person realize the potent developmental forces fueling the struggle to become; (3) engage the client in a dialogue to refine his or her personal philosophy; (4) focus the client's energies on reaching aspirations; (5) support attempts to change attitudes and behaviors; and (6) monitor progress and applaud successes" (p. 74).

Approach
Cognitive, psychoanalytic, person-centered, self-directed, and insight-oriented approaches that involve the child and stress intrinsic or internal standards for evaluation are appropriate for gifted children and youth (Culross, 1995).

Kline and Meckstroth (1985) claimed that receptive dialogue that consists of reflective listening and Socratic questioning in mutual self-exploration would be effective. The approach should deliver autonomy, judgment, and a practiced sense of internal control to the child by involving the child in the decision making. Setting small and attainable goals would help in modifying perfectionist tendencies, reducing stress, and encouraging creativity.

Counseling groups are better if they are homogeneous in terms of mental age, since in heterogeneous groups, children may not have the emotional safety for disclosing their true feelings and sharing experiences (Silverman, 1993). Colangelo and Peterson (1993) suggested mixed-gender groups that are kept focused in content but flexible in structure so that there can be a spontaneous flow in discussions (Colangelo & Peterson, 1993).

Silverman (1993) suggested that following Dabrowski's "positive maladjustment," the counselor can help the gifted child with a positive approach to inner conflicts and problematic consequences of nonconformity and questioning authority. This way, new energies are mobilized to cope with difficult periods.

Approaches need to be developmental and preventive rather than remedial. Gifted children and youth need to be brought together and taught to master the system by using systemic perspectives (Culross, 1995), and consultations with parents and staff need to be an integral part of such an approach. Indeed, Mood and his colleagues (1997) found that interdisciplinary cooperation was needed to provide services for gifted populations.

Consultation with adults is important since they tend to perceive their role as controlling, shaping, and managing the lives of these children to gratify their own views of what the child should be; and teachers simply give "more" work rather than to provide adequate stimulation (Kline & Meckstroth, 1985).

Parents need to become advocates for their child's appropriate school experiences, provide enrichment that schools lack, and enlighten educators to recognize the characteristics and needs of their children. They need assistance to find a comfort zone between encouragement and pressure in relating to their children (Kline & Meckstroth, 1985).

Programs
For Delisle (1983) "any intervention done in the name of educational equality is a

form of counseling, for an appropriately challenging curriculum is the best prevention for school-related problems" (p. 21). Academic counseling of the gifted and talented could probably not have a more important role than to provide an adequate curriculum.

Buescher (1987) suggested a curriculum model to explore key facets of their lives through classic and popular literature, expository and creative writing, focused lectures and discussions, independent research, and informal sharing of life experiences.

Bibliotherapy is useful to help divergent thinkers realize that they are not alone. Relaxation and self-control techniques would help the overaroused and excitable gifted child (Lovecky, 1993). Silverman (1993) suggested that vicarious approaches without real-life consequences could be used with gifted children, like a therapeutic reading program which not only involves a selective set of reading, but also an opportunity for discussions and sharing insights. Movies, videotapes, computer games, and simulations could be used with similar purposes.

Academic and career counseling regarding the available options and opportunities are among the other services to be provided, particularly for gifted children with multiple potentials or underachievement problems. Creative self-expression in at least one mode of fine arts; reading biographies of creative, accomplished people; individualized instruction; accelerated programs; and opportunities to display ability and compete were recommended by Kline and Meckstroth (1985).

Silverman (1993) cited Hollingworth's "emotional education" where among the stimulation and appropriate curriculum, children were provided with social skills (e.g., developing patience, tact, and arguing and disagreeing positively). Silverman noted the importance of forming support groups, of networking for community resources, and providing opportunities for the gifted to interact with mentors and mental age mates. Silverman also stated that gifted individuals need emotional support to resist internalizing the negative labels attached to them.

Ending Remarks

There is a general lack of empirical research in serving the needs of gifted and talented children and youth. This lack is even more observable in counseling the gifted. Psychological services at crisis and remedial levels that tend to focus on populations with severe problems, especially the ones that bother the environment (e.g., externalizing), dominate the current state of practice. Thus it would not be an overstatement to note that gifted and talented children and youth are not only being understudied, but also underserved.

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Mastering Creativity for Education in the 21st Century

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I am very pleased to be here, and I would like to express my thanks to my colleagues from the World Council, Dr. Barbara Clark and Dr. Klaus Urban, for the invitation to speak at this conference. I am specially delighted by this opportunity to share some thoughts and insights about creativity and approaches, which may help the accomplishment of the creative potential.

To start speaking about creativity, I would like to remember the words of a Chinese philosopher Kwan Tsu, who in the third century before Christ, stated that:

"If we plan for a year, we have to plant cereals;
if we plan for a decade, we have to plant trees;
if we plan for a life, we have to instruct and to educate man."

In the process of instructing and educating man for the 21st century, new behaviors and attitudes are extremely necessary. The reality today is deeply different from the reality when these words were registered. It is also very different from the reality of the beginning of this century and even from the beginning of the present decade. We are living in a world characterized by an accelerated rate of change, which is predicted to increase more and more. According to the World Future Society, in its VIII General Assembly,

The content of change from 1980 to 1995 is less than 10% of the total change, which is going to occur from 1996 to 2020. If the totality of knowledge in the world today doubles each 2 years, in the next 10 or 15 years it will double each 80 days. (Viana, 1997, p. 6)

It should be remembered that the era of turbulence is just beginning. In this scenario, the capacity to create is of unquestionable value and our most precious resource to face the challenges that characterize present times. To succeed in this rapidly changing world, with its complexity, uncertainty, and instability, the capacity for innovation to solve new problems is of foremost importance. A new profile of man is necessary, as pointed out by Katusya Hosotani:

The ideal profile of a man, in modern society, changed from an 'walking encyclopedia' to a man prepared to solve new problems. It is possible to say that the value of the human being is in his creativity and ability to solve problems and to solve them with cooperation. (cited in Alencar, 1996, p. 3)

The importance of creativity has been increasingly recognized, even by politicians such as Tony Blair who prophesized that "In the 21st century we are going to see the world economy dominated by the exploitation of creative minds" (cited in Fletcher, 1997, p. 12). Nevertheless, it is observed that schools are not nurturing creativity. Scholars (Alencar, 1994; 1995a; Cohen, 1997; Furman, 1998; Necka, 1994; Sternberg, 1991; Toren, 1993) from different parts of the world are criticizing education and the culture of learning which prevails in many countries due to a lack of conditions more conducive to the nurturance of creativity.

Fuhrman (1998), from Czechoslovakia, for example, pointed out that "Teachers and researchers alike have been critical of Czecho-Slovakian education for its lack of freedom and creativity in the classroom teaching and learning situation" (p. 258). Toren (1993), in the Netherlands, noted the urge for transforming education, describing a program at the university level that led in this direction. Toren pointed out the collision of learning cultures which resulted from the introduction of a student-centered program that aimed at the development of the capacity to be creative and reflective. Similarly, Cohen (1997), in an article about education in Singapore, refers to a survey by the Singapore Ministry of Education that found that many students, while competent, lacked creative and innovative thoughts. This author refers to Singapore's government, which is aware of the need to expand education in order to prepare students to be more resourceful and innovative.

Also Necka (1994) in Poland, Sternberg (1991) in the United States, and Alencar (1995a) in Brazil highlighted several characteristics of the educational context which are detrimental to the development of creative talent. These scholars go further and suggest necessary changes which are urgently needed in the learning culture.

Necka (1994) recalls, for example, that the typical school is not prepared to nourish creativity. It is a conservative institution by nature. According to him, several principles need to be incorporated in the school practice to make school compatible with the dynamic, changing world where the school might function. One is the principle of diversity—to teach students to embrace divergent ideas, approaches, and points of view. Another is the opening principle—to be tolerant to unknown situations, to be receptive to the unknown. Necka also speaks of the principle of self-awareness—the need for students to know what is good and bad for their own creativity, identifying the main obstacles that impair the expression of new ideas.

In the United States, Sternberg (1991), among many other scholars, pointed out the fact that teachers typically structure their classes in ways unfavorable to sparking creative ideas. He goes further and outlines the necessary changes in schools to promote better conditions for the recognition and development of creative potential:

Schools could change. They could let students define problems rather than almost always doing it for the students. They could put more emphasis on ill-structured rather than well-structured problems….They could provide assignments that encourage students to see things in new ways. They could teach knowledge for use, rather than for exams, and could emphasize flexibility in using knowledge rather than mere recall of that knowledge. They could encourage risk-taking and the other personality attributes associated with creativity, and they could put more emphasis on motivating children intrinsically rather than through grades. Finally, they could reward creativity in all its forms, rather than ignoring or even punishing it. (p 40)

Similarly, for researchers and educators from other countries, we have been worrying about the enormous waste of talent, which is common in our society. We are frequently concerned about the practices adverse to allowing new ideas to flourish. We are concerned about the prevalence of a learning culture that sets limits well below the practically unlimited possibilities of the human being's creative potential. We are especially interested in contributing to the development of a school, more significant and whole to everyone, with more possibilities for the expression of various talents—a school where the pleasure to learn is constant, and, therefore, different, actually very different, from the image that many students have of their current schools. The following illustration shows responses collected from a variety of different kinds of schools:

My school is like…
- a disguised prison
- a part-time prison
- a jail from which I can escape
- a precipice
- the purgatory
- the most boring place in the world
- a book that you are obliged to read, even if you don't like it

Inhibiting Practices to the Nurturance of Creativity in Schools

An analysis of contempory educational systems suggests that they present several weaknesses. Inhibiting practices to creativity are common. Let us examine five such practices:

1. Emphasis on the correct response, teaching students that they cannot make mistakes, reinforcing their fear of making errors, the fear of failure.
In several studies (Alencar, Fleith, & Virgolim, 1995; Alencar & Mitjáns, 1998), we have observed that the fear of making mistakes is one of the most frequent obstacles to the expression of the student's own creative potential; this is true among university students as well as professionals from the field of education. When students, teachers, and other members of the school staff were requested to complete the sentence, *I would be more creative if…*, very common responses were: *if I were not so afraid of making mistakes,* or, *if I were not so afraid of failure.* This kind of response is probably a reflection of the educational practices of punishing mistakes and curbing risk-taking behavior—practices which prevail in the home and school settings.

In our studies, we found that it was also common for respondents to point to conditions in their family and school environment that also blocked their creative potential, as might be observed in the following responses:

"I would be more creative if I had opportunities to explore my potential. I always enjoyed creating and innovating, but, since very early, I was blocked at home, at school, and even in my own society."

"I would be more creative if during my childhood I would have been stimu-

lated, if I had teachers and an environment that stimulated me."

2. Exaggerated emphasis on reproduction of knowledge, overloading the students' memory with irrelevant or out-of-context information.
Several of our studies (Alencar, 1994, 1995a, 1995b, 1997a) have pointed out the practice of requiring from students the reproduction of knowledge and memorization, even requiring the reproduction of obsolete knowledge. This was observed, for example, in an analysis of the content of tests and exams at the elementary school and at the university level. To reproduce the content of books or the information given in class by teachers has been common in educational practice.

At the university level, we (Alencar, 1997a) studied students' perception of the extent to which different aspects related to creativity were being stimulated by their teachers. This study indicated the lack of appropriate conditions for nurturing the students' capacity for being creative and reflective. More than 450 students completed an inventory that included several items such as the following:

My university teachers in general…
- give time to students to think and to develop new ideas
- ask challenging questions in class
- provide an environment of respect to students' new ideas
- use tests and exam questions that require only the reproduction of content given in class or presented in the textbooks (reverse scored)

According to the students' responses, teachers do not provide the time, opportunities, and encouragement for creative ideas. Teachers do not display behaviors that influence students' creative expression positively.

An analysis of more than 20,000 items and exercises in science textbooks adopted in Brazilian elementary schools also indicated that the great majority of the questions and exercises required only the reproduction of information. Less than 1% required the search for new information or the use of imagination. No items required the production of several answers to a question (Alencar, 1989).

3. Low expectations about the students' creative potential on the part of teachers who call attention much more to the students' ignorance and incapacity, than to their competencies.
For over a decade, I was responsible for teaching School Psychology and Therapeutic Pedagogy at the Institute of Psychology, University of Brasilia. During that period, I took my students to observe classrooms as part of their preparation to work in the educational system. On those occasions, we frequently observed teachers who insisted on pointing out mistakes or emphasizing the students' ignorance more often than searching for talents, capitalizing on the students' experiences and knowledge, or instilling confidence in their ability to learn and to question.

4. Placing emphasis on the students' obedience and passivity instead of reinforcing personality characteristics that are fundamental to a better develop-

ment and expression of the students' potentialities.

Personality characteristics such as curiosity, self-confidence, and independent thinking are not encouraged by teachers in the classroom, as we observed in our study about the ideal student (Alencar & Rodrigues, 1978). Einstein's (1981) observation that "It is just a miracle that the modern teaching methods did not destroy completely the sacred curiosity which mobilizes investigation," is still part of the reality of our schools. The courage to experiment and to explore the unknown with opportunities to identify problems is not stimulated in the classroom.

5. Lack of consideration of fantasy and imagination as important aspects to be taken into account.

When we observe children's lives all over the world, we find many reasons to be perplexed. First, the life conditions of millions of children make them obliged to work in adverse environments, from the beginning to the end of each day, with no time to play, no time to dream. But there is also the reality of millions of middle-class children who are obliged to study harder and harder, adding many other classes and activities to their regular classes, stealing time to play and to exercise their imagination. Furthermore, in Brazil, where children spend a half-day in school, the quantity of homework exercises middle-class children have to do is impressive. *This contributes to transformation of the process of learning into an aversive and boring experience.*

All of this possibly contributed to the decision by the United Nations Fund for Children (UNICEF) to spread all over the world a poster listing children's rights, including the right to fantasize. This is undoubtedly a right of all human beings, independent of age, sex, or social condition. The role of imagination and fantasy in the lives of creative individuals was also observed in our study of creative scientists (Alencar, Neves-Pereira, Ribeiro, & Brandão, 1998). According to these scientists, imagination was one of the attributes that contributed most to their achievement as scientists. Similarly, Csikszentmihalyi (1995), in his study with high creative individuals, observed that this group alternates between imagination and fantasy at one end, and a rooted sense of reality at the other. Csikszentmihalyi also stressed that "great art and great science involve a leap of imagination into a world that is different from the present" (p. 63).

Hints for Transforming Children's Education

During the last few years, we have been developing several studies in education with implications for creativity. One of these studies was conducted with a sample of the most brilliant Brazilian scientists (Alencar, 1997b; Alencar, Neves-Pereira, Ribeiro, & Brandão, 1998; Alencar, Neves-Pereira, Ribeiro, & Brandão, in press). Among the investigated aspects were (1) facilitating factors to their creative achievement, (2) their personality characteristics, (3) persons who contributed most to their professional choices.

The important role of family and teachers was the first aspect observed in this sample. Several of the scientists remembered their parents having a strong influence in shaping their interests. Others made reference to teachers who were responsible for awaking their interest in science and in becoming a scientist.

Dedication to work, enthusiasm, independence of thinking and action, initiative, perseverance, and imagination were the attributes identified by this sample as those which most contributed to their outstanding achievement as scientists. The following response illustrates one of these characteristics:

"I turned 73-years-of-age, with the same interest, with the same curiosity that I had when I was 7 years old. I look at the microscope with the same enthusiasm. I have the same hopes."

Among the facilitating factors to creative production mentioned by these scientists were: to have pleasure in work; possibly to dedicate oneself totally to work; to have interaction with colleagues from the same field; to have permanent access to relevant information; to have solid preparation, a good working environment, enthusiasm and self-confidence; and to be a good observer. The following are typical responses:

"It is necessary to love what you do. To work effectively in a laboratory, it is necessary to like it, and to have pleasure."

"The person cannot lose the enthusiasm. The most important factor is not to lose the enthusiasm. You have to be cheerful. You have to be eroticized with your work. I see a relationship between this dimension of eroticism in life and the dimension of the creative work. You have to be eroticized, enthusiastic, excited."

"It is important to have the domain of the technique, of the language, and the knowledge—plus imagination."

We also investigated the profile of teachers who typically facilitate students' creative development (Alencar, 1999). Graduate students from different fields were asked to select from among all their present and past teachers the one who promoted the best conditions for creativity and its development in students. The sample was asked to describe typical behaviors of the chosen teacher in the classroom, how this teacher interacts with students in the classroom and outside, the degree of interest toward the disciplines under his or her responsibility, and any other data about the chosen teacher.

It was observed that the several aspects that characterized the facilitating teachers, according to these students, were the following:
- good preparation and high content domain
- high interest in both their discipline and the students
- ability to stimulate students to produce ideas and to look for new knowledge
- respect for the students
- varied instructional techniques, used without being trapped in the traditional method
- always flexibility—offered choices and options to students, open to criticisms,

suggestions, and students' ideas
- belief in the value of students' ideas

Several of these facilitators' characteristics are in accordance with the components of our model to develop creativity presented in Figure 1.

According to this model—one that has guided our work in promoting facilitating conditions for creativity in educational and organizational environments—it is relevant that teachers:
- use activities that permit students to exercise their creative potential
- strengthen personality traits such as self-confidence, curiosity, perseverance, independence of thinking, and courage to explore new situations and to handle the unknown
- help students overcome emotional blockages, inferiority feelings, insecurity, the fear of making mistakes, and the fear of being criticized
- prepare students to use techniques of production of ideas and creative problem solving
- propitiate a psychological climate in class that reflects strong values of support to creativity

Among the several principles which express this support are:
- validation of the student as a person
- confidence in the students' capacity and competence
- incentive promotion to new ideas
- implementation of activities that constitute a permanent invitation to creative actions
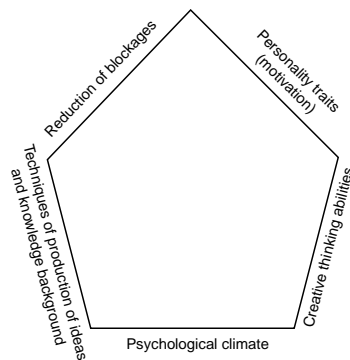

Figure 1. Model for the Development of Creativity (Alencar, 1996)

Our experience has demonstrated that implementing this model in the classroom is not an easy task. It implies breaking with teaching practices strongly rooted in the culture, educational philosophy, and routine that is currently prevalent in school. However, as educators, we cannot escape our greatest mission, that is to propitiate environments that maximize opportunities for the development of various competencies,

abilities, and talents. This is the route to help our children become successful in the complex 21st century—a century that we anticipate will be so full of challenges.

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The Evaluation of Gifted and Talented Education in Turkey

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Introduction

If we take an historical view, Turkey was one of the leading countries in gifted and talented education. During the Ottoman era and early foundation period of the Turkish Republic some pioneer steps took place in gifted and talented education.

While the first special education services were being started for the handicapped, only a few pilot projects were in place for gifted education at the elementary school level. Looking back, it was during the Ottoman Empire (especially while Mehmet II was on throne) that Enderun (The Palace School) was established and functioned for more than 600 years; its purpose was to educate the highly accomplished. According to Western sources (Hildreth, 1966; Kirk, 1960; Sumption, 1980), the major reason the Ottoman Empire lasted for more than 600 years was the selection of talented children who were trained for long periods of time and then appointed to the high positions in the army and state. Numerous talented artists, statesmen, and theologists were trained with great care in the Enderun. Another important decision aimed at educating talented students in the Turkish education system was Legislation No. 6660, dated 1948, which covers talents in music and fine arts. However this legislation has not been applied since 1980. There were very few educational opportunities for gifted and talented students other than these two implementations aimed at their education. Unfortunately within the Turkish educational system these applications could not find a way to continue.

Ankara Science Lyceé opened in 1964 for students with talent in mathematics and science. The main objective of this school was to prepare students to be researchers and scientists. For this reason, experts were invited from the Bronx Science High School in New York. Together the Americans developed programs with their Turkish colleagues for Ankara Science Lyceé. In the meantime, elementary school teachers and administrators began to employ acceleration.

During 1980 administrators of the office of the Minister of Education (MOE) opened some special schools for the gifted and talented children at the secondary education level where the emphasis was on music and fine arts. At the same time, members of the private sector realized that early education is very important for the gifted, and they began to establish primary schools for gifted and talented children. I should also mention that our host school, New Horizons, is one of the most distinguished institutions for gifted children.

During the last decade, some private schools began to change their school programs and teaching methods to employ Gardner's Multiple Intelligences, whereas public school systems still insisted on traditional instruction methods and programs. In the last academic year of 1998/1999, however, we started a project for which I am

the director. Using a new administrative and instructional approach for all students, we have placed children in one of the public elementary schools in Ankara without labeling them. In this school in the coming academic year, we will adopt Renzulli's Revolving Door Enrichment program described later in this paper.

Evaluation of Gifted and Talented Education in Turkey

Enderun (The Palace School)

One of the most remarkable educational institutions of any time in world history, was the Enderun, which functioned for more than 6 centuries. Enderun operated according to rules laid down by Mehmet II. During its first 2 centuries, the majority of officers for the regular cavalry, the navy, and the chiefs of the Yeniceri Corps, were trained in this school. In the second half of the 17th century, the government's slave system ended. The school continued for another century and a-half to recruit and train slaves in considerable numbers for government service. The graduates were appointed directly to some of the most important posts in the empire. As a result of the reforms of Mahmut II, the Enderun had ceased to be a state institution. It lingered for almost a century as a training school for court functionaries and domestics. After the abolishment of the Sultanate in 1922 the Turkish Republic finally closed Enderun (Miller, 1931-1941, Akkutay, 1984). One of the preparatory schools, the Galata Saray, which was founded only a generation later than Enderun and reorganized as a lyceé in the middle of the 19th century, still exists today (Mumcu, 1976; Oksuzoglu, 1986).

Legislation No. 6660

Legislation No. 6660, which addresses talents in music and fine arts, was implemented in 1948 to cover very special persons, world-renown musicians. The first artist was Idil Biret, a genius piano virtuoso, and the second artist was violinist Suna Kan. When they were very young, the Turkish National Assembly voted a special Legislation No. 5245 for these two talented women. Until 1957 only these two genius students were under the state's protection for their music education. After 1957 legislators realized that there were a number of talented children who expected to be taken into consideration. So the government extended the content of the legislation to protect children with talent in fine arts. This law is still valid, however it hasn't been applied since 1980. From 1948 to 1980, 22 artists were trained under this legislation. Five of those artists dropped out after 1 to 6 years of coverage.

The system began with the parents' application form which contained information about their sons' or daughters' talent in music or fine arts. These were submitted to the appropriate department in the office of the Minister of Education. There was no public announcement for this application, therefore only interested parents were aware of these facilities. For acceptance in music, the applicants must have been under 12 years of age; for composition and fine arts, the applicant must have been less than 14 years of age.

Special Classes and Ability Grouping Classes

Next to be implemented were special classes and ability grouping classes. In 1960 special classes opened in Ankara's several public elementary schools. First of all, specialists from the Central Evaluation and Testing Bureau used a test to determine the children's ability levels. They did not inform parents, teachers, or even school administrators about the new implementations they were applying to the children. After the selection, they put the children into the special programs. A few years later, rumors began among the parents and teachers. Discussions took place about the validity of the application, and the authorities in the office of the Minister of Education decided to stop the program. Meanwhile, in some major cities, such as, Istanbul, Izmir, and Eskisehir, ability grouping classes opened at the same period of time. The same procedures were followed one after the other. By 1972 all these classes were eventually closed (Enc, 1973).

The Ankara Science Lyceé

In 1964 Ankara Science Lyceé began its mission in the Turkish Education System. One of its missions was to serve as a laboratory school for developing modern science and mathematics programs. Its second mission was to prepare students as researchers and scientists (Ataman, 1976). The next high school to open came 18 years later in Istanbul. According to data from the Minister of Education, in the coming 1999/ 2000 academic year, the number of these schools will be 41. This year, statistics show that of the total number of students being educated in these schools 88% of the students are girls and 71% are boys. Ataman's doctoral research about Ankara Science Lyceé (1976) shows that this school's main objective has not been realized. Graduates of Ankara Science Lyceé have preferred to study applied sciences in their university education instead of basic sciences which would lead them to be researchers or scientists.

All students that graduate from these schools are enrolled in popular and prestigious programs at the universities after gaining high scores on the university entrance exam. This result was astonishing for everybody in the society. Every parent wished their children to pass entrance exams for the science high school, and the increase in the demand to attend this school became apparent. Meanwhile the Ford Foundation, which was one of the major supporters of the project, stopped paying extra salary to the project teachers because their obligations had been completed according to the contract regulations that they signed. This situation prompted speculators to make an offer to teachers to change their position from the public to the private sector. After this began, Ankara Science High School began losing its well-educated, highly qualified teachers.

In the beginning, the entrance examination had two stages. The aim of the first stage was to select students according to their abilities; 10% of these nominees were then chosen to participate in the second stage. The aim of the second stage was to determine students' knowledge. According to the test results, the top 1% of students could enter this school. After 1989, they began to use general knowledge tests. Nowadays, the science high schools are special schools for selected children talented in mathematics and science. In my opinion they are ordinary high schools as shown by their students' low performance on the university entrance exam. Ac-

cording to the 1998 university entrance exam results, the Ankara Science High School success score only reached 79%, and the rest of the science high schools were 67%. The reason for this disparity is a lack of lab equipment and shortage of qualified teachers.

The Music and Fine Arts Schools
In 1989 in Istanbul, and in 1990 in Ankara, two special high schools were opened for students with talent in music and the fine arts. Now the number of these schools has reached 22. The duration of education is 4 years; the first year is for preparation. The school's programs are divided into two parts. The first part is similar to the ordinary high school program; the second part is especially designed to develop artistic abilities (Ataman, 1998). The graduates of these schools are now attending the departments of music and arts in the universities. During the 1998-1999 academic year, the total population of these schools was 2,831. Of this total, 73% of the students were girls, and 27% were boys. There has been no comprehensive research about these schools.

The student population in science and art schools are totally different from each other in terms of sex. Among the parents there is a tendency to force their sons toward science (of the total enrollment of science schools, 71% are boys) and to push their daughters toward art (73% are girls). These indications show that most Turkish families are patriarchal.

The Anatolian High Schools
The Anatolian High Schools are designed for selected children and are one example of an indirect implementation for gifted and talented children. In these schools education is in French, English, and German, except for courses in Turkish literature, history, and geography. In 1955 the first Anatolian High School was opened for students who were selected by a central exam. There are now a total of 412 schools. They are well-known public high schools all over Turkey. The total number of students is 10,795, of which 44% are girls and 56% are boys. This proportion is meaningful for Turkish parents and students.

All of these are direct and indirect implementations mainly dependent on segregation of gifted and talented children. In spite of the applications of developed countries, the Minister of Education still insists on segregated secondary education for general intellectual levels. It is difficult to understand this insistence since the private sector has begun to change its attitude toward the gifted and the talented. In this context we examine two private schools.

The New Horizons School and Inanc High School
The New Horizons School (our host school) opened in 1991. Students are enrolled in kindergarten by ability tests. After 1 year of careful observation, those who can, start the first year curriculum. Class size is 16 for each subject; according to regulations this is stable. Besides education in Turkish and English, American teachers give classes in art, music, sports, drama, and creativity.

The second private school is Inanc High School. The Inanc Foundation established this boarding secondary school in 1993 for gifted children who come from poverty. The school has a four-step selection system. All expenses are covered by the foundation. There is great similarity between the curriculum of Inanc and the Science High Schools with their differentiated programs and individualized teaching methods. The education covers 7 years. The academic calendar is divided into three 12-week semesters to gain the flexibility of student's progress. Compulsory classes for all students include the Turkish language, foreign languages, mathematics, science, computer, social sciences, fine arts, music, and sports. All of these should be taken before junior high classes. No student has graduated from this school yet; and that leaves two unanswered questions: (1) into what faculty programs are these specially selected and educated students going to enroll? and (2), how are they going to adapt to their families and social life after spending 7 years in isolation?

A New Project in Gifted Education
In the special education department at Gazi University, under my direction, a comprehensive project for gifted education in the public elementary schools of Ankara has been developed. In a briefing to the governor of Ankara, we stressed (1) the importance of early intervention for gifted and talented children, and (2) the kinds of educational implementations that are suitable for Turkey. The project has been approved; a contract has been signed, and a task force and enrichment team has been selected. This project will affect all 605 students in Ankara's public elementry schools during the 1998/1999 academic year.

The Pilot School Selection
The project school was chosen because of its special facilities, such as laboratories specially equipped for music and fine arts classes. The total population of the school is 605. Of that total 45% of the students are girls and 55% are boys.
1. The school's working manual was prepared by the task force and signed by the governor. This manual contains student registration rules, working regulations for teachers, and general working conditions of the school.
2. The school's superintendents, administrators, and teachers are informed about the project. The teachers' competencies were evaluated, and 2-week inservice teacher-training courses were designed according to the results.
3. To identify the talent pool, a test battery was prepared. In the assessment procedure, psychometric information was derived from traditional tests of intelligence, aptitude, and achievement. Developmental information was obtained through the use of teacher, parent, and academic self-concept scales. Sociometric information was derived from peer nominations and ratings; and performance information was derived from music, fine arts, and a sports criterion referenced test. After this assessment, 120 students of the 605 were chosen for the talent pool. The evaluation team met with specialists from universities and experts from the office of the Minister of Education. All students were evaluated according to Howard Gardner's Multiple Intelligence Theory's principles (Lazear, 1991).

4. All of the students' academic records in Turkish, mathematics, social science, fine arts, music, and sports courses were evaluated.

5. The students will be grouped according to their learning aptitude, and all students will be part of the project.

Now we have reached the training level of the project. According to Renzulli, (1986) in the Triad-Revolving Door program, after identification procedures are complete, compacting and enrichment procedures must take place. The Project Enrichment Team will begin these procedures in the coming academic year.

Conclusion

There is a group of academic personnel, parents, teachers, and speculators who realize that gifted and talented children should be given an opportunity for accelerated education as early in their schooling as possible. Currently our most important goal is the successful completion of this project. And our utmost hope is that it will not be terminated prematurely as were previous projects.

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Discovering Different Faces of Giftedness: A Challenge for the New Millennium

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ABSTRACT

The many ways in which giftedness can be recognized have stimulated much discussion and controversy within the fields of psychology and education. The first questions continue to be, What is giftedness? Is it inherited or acquired? Is it a rare characteristic in a chosen few, or is it present in all human beings? These questions are being recognized as important ones to be answered and verified in the new millennium. The massive case studies of giftedness, shown in different populations and in different ways, have made a strong case for recognizing the many different faces of giftedness. As Willard-Holt (1994) has stated, "recognizing intellectual talent in these children and subsequently developing it can enrich our lives as well as theirs….Gaining a new perspective of giftedness and its many forms of expression will thus help educators to broaden their perspective and seek to develop the talents of more of our children" (p. ix).

Although definitive answers to the questions above will not be finally determined, we must ask how we can significantly bring this untapped source to the attention of those in the field. These untapped abilities are often masked by physical, social, and/or economic challenges. It is also important that the mask be lifted from those working with the identification and programming processes used in programs for the gifted.

Much of the controversy surrounding IQ and giftedness during the 20th century centered on the assumptions that intelligence is an inherited, unitary, measurable quality. From the middle of the century, theorists have debated the singularity versus plurality of intelligence. In particular, theorists have differed on whether or not there is a "g" factor in intelligence as proposed by Charles Spearman (1929). The "g" specifies the abstract reasoning power a person has and is consistent across all domains. Following Spearman's work, Louis Thurstone (1938) proposed that intelligence was not unitary but multidimensional and was comprised of seven relatively independent capacities or "primary mental abilities." J. P. Guilford (1967) went even further in hypothesizing his "structure-of-intellect" model that included 150 separate ability factors.

Since the 1970s, theories of intelligence have multiplied, and although they have different emphases, they highlight a broader conceptualization of the nature of intelligence. Two influential theories have been Gardner's (1983) theory of "multiple intelligences" and the triarchic theory posited by Sternberg (1985). The latter emerges from the information-processing perspective on human learning and contains three subtheories that seek to specify the precise mechanisms and processes involved in

intelligence. Gardner's theory also calls for a more pluralistic account of intelligence. He defined intelligence as the ability to solve problems or to create products that are valued within one or more cultural settings (Gardner, 1983). In a controversial approach to the topic, Gardner has suggested that all individuals possess at least seven relatively discrete intelligences—these include linguistic, logical-mathematical, spatial, musical, bodily kinesthetic, interpersonal, and intrapersonal intelligences. Although there are numerous differences among Gardner's multiple intelligences theory, Sternberg's triarchic theory, and Guilford's structure-of-intellect model, they all challenge traditional formulations of intelligence as follows:

- Intelligence is not a single or fixed trait.
- Intelligence is teachable.
- Intelligence is culture-dependent.
- Intelligence involves both internal and external factors. In other words, the individual's inherited intellectual potential is activated, enhanced, or hindered by interaction with the environment.

Intelligence and Giftedness

The relationship of giftedness and intelligence varied throughout the 20th century. Early in the century the terms were used to indicate a certain score on an IQ test; during the latter part of the century there was a move to a position where the construct of giftedness was expanded to encompass fields of endeavor beyond the scope of traditional views of intelligence. There has been a struggle to accept and to more clearly define giftedness beyond the number as designated by the IQ score. The process is a slow one, but the new millennium will certainly bring about renewed vigor in the pursuit of a more equitable and realistic definition of giftedness, and the processes by which it can be nurtured.

Case Studies

The case studies mentioned in this presentation have been taken from a recent text titled, *The Many Faces of Giftedness: Lifting the Mask,* edited by Baldwin & Vialle (1999). These authors point out why there must be another perspective on giftedness during the new millennium.

Social and Cultural Challenges

African-Americans, Hispanic Americans, aboriginal populations from Australia, Native Americans, and many non-English speaking populations that migrate to countries with different languages experience a lack of recognition of their innate abilities. The historical background of African-Americans is related to the societal and often economic impact that has placed these students in an unequal position of recognition within the programs for the gifted. Quite often, individuals and the societal mores create within the child the feeling that he or she is not accepted as an equal in the new society. This produces a negative self-concept that can interfere with the child's ability to be successful in his or her schoolwork. This lack of understanding of the environmental influences on a child's mental growth is quite evident in the writ-

ings of Herrnstein and Murray (1994) in their book titled *The Bell Curve Intelligence and Class Structure in American Life.* The conclusions of these two authors are based on heritability and the hierarchy of cultures and race differences. They have used statistical data secured from test scores in an attempt to predict a future that places those students who come from diverse backgrounds at the bottom of the scale. The research and conclusions of these authors heightens the necessity for the development of a new paradigm.

In research by Baldwin and Start (1987) on reaction time, the Button Box (Jensen, et al. 1981) was used along with the Raven's Standard Progressive Matrices (SPM). One purpose was to determine whether there was any relationship between scores received by children selected or not selected for the advanced classes and the SPM. A second purpose was to determine whether there was any correlation between the means of the SPM scores and the speed of processing information as judged by Response Time/Movement Time (RT/MT). The third question was whether there was any correlation between the selected IQ and achievement test scores (commonly used in this school district) and the SPM.

The subjects who served as the sample group were inner-city students of African-American and Hispanic backgrounds. Five of the 50 students of this study scored within the 80 to 99 percentile range on the SPM. Two of these students had not been included in the gifted program; both had high SPM scores and average RT/MT scores but low Otis IQ and CAT scores. This more recent case mirrors the earlier case of a group of African-American students who represented an experiment in selecting processes for programs for the gifted. It was found that these students excelled in their program and subsequent achievement tests, verifying the importance of looking beyond IQ tests alone (Baldwin, 1977).

Vygotsky's general law of cultural development indicates that every attempt to analyze children's development starts with an analysis of the "social situation of development" of the particular child because, by default, none of the individual abilities can appear by themselves without first existing as a social collective activity. In other words, Vygotsky believed that the individual's abilities begin in the social environment, inside of the social situation. Only by internalizing what one observes on the outside can the abilities be transformed to the inside and become part of one's psyche. The societal and economic status of the individual must be a consideration as we fashion new ideas for identification.

Learning Disability: The Mysterious Mask

Students who demonstrate negative school behaviors or whose learning deficits severely affect academic achievement are more likely to be referred to the school's child-study team for evaluation. Unfortunately, most gifted, learning disabled (GLD) students experience some type of failure either academically or socially before they are referred to experts for evaluation as gifted and learning disabled.

Gary came to school already reading but was unable to master holding and using the pencil correctly. He could not grasp basic math facts or concepts and had difficulty establishing friendships with his classmates. Once he was identified as learn-

ing disabled, the process was one of remediation and trying to "fix" the child. When there isn't any attention given to the area of the child's giftedness, he or she (as Gary) can become frustrated, angry, and nonproductive. An emphasis on the disability makes the child feel defective or dumb because otherwise he or she would be able to compete academically with the other students. Meisgeier, Meisgeier, and Werblo (1978) noted that studies conducted at the University of Houston showed that "gifted children with some kind of learning problem or other handicap have disengaged to such a degree that they are discovered in special education classes limping along with very little evidence of the giftedness being manifested" (p. 85).

Sensory and Physical Challenges: the Hidden Mask

The deaf, visually impaired, and those students suffering from motor problems such as cerebral palsy, are a group often overlooked because our usual identification instruments are unable to assess their ability levels. It is interesting to compare the educational attainments of deaf students and other minority groups whose "depressed" academic performances have been more visible to the general populace. It was found that deaf students, because of their lack of visibility in society, were lagging behind other minorities in educational attainment levels.

Alice, as referred to by Vialle and Paterson (1997, pp. 554-555), is a young woman who describes herself as a third-generation deaf person. Although she enjoyed the socialization she experienced at a school for the deaf, the lessons were unchallenging and unextended. Less was expected from the deaf students than from hearing students. Alice had a supportive family that encouraged conversation and open discussions, and this helped her succeed. Alice was born with gifted potential, but factors related to the masks that made those around her consider her unable to succeed at the highest levels hampered the development of these abilities. Alice is now a university graduate and working with the deaf community. Her outstanding abilities were in the area of English.

Susie, who was visually impaired, exhibited musical abilities. She played the piano beautifully by ear. She was also found to be above average on the verbal portion of the WISC-R. Without the support of her parents who pursued Susie's recognition in school, she would have been left to languish in boring classrooms. She is now a successful runner and has set Australian records. She is preparing for the university and has, on her own, outlined the many support options the university will give her. She plans to study law, but like so many gifted students, she is also thinking about sociology, social work, or physiotherapy. She is an example of a bright student who could have been lost in the system if not for her parents' diligence.

Katerina, who suffered from cerebral palsy, was found early to have exceptional mental abilities although her physical abilities were delayed. Katerina experienced harassment by larger and smaller students and became more and more isolated. In spite of this, she was ranked the highest student in her year-8 in school. Katerina is a gifted child according to the traditional standardized ability testing criteria. According to multiple intelligences theory, she could be described as gifted in areas of language, logical thinking, and music. She displays many of the qualities of gifted students—

she has perseverance with tasks in which she is interested, shows high achievement in a variety of areas, and exhibits an unusually high vocabulary at a young age. She is easily bored with routine tasks, needs little external motivation, and is often self-assertive. Katerina made it through the system but would not have been considered gifted by the usual standards set.

Attention must be given to students with these disabilities by finding ways to adequately identify and plan programs for them.

Autism: The Silent Mask

Autism is a silent mask that is often overlooked when considering classes for the gifted.

Temple Grandin is an extraordinary individual who today is a Doctor of Philosophy using her high-ability levels as assistant professor of animal science at Colorado State University. But as a child, Temple displayed many of the classic signs of infantile autism. She used all of the typical behaviors that allowed her to shut the world out. The autistic child withdraws because sensory stimulation—touches and sound—hurts. Of course this withdrawal does not allow the brain to work. Therefore, it is important to keep the child connected but not overloaded. An individualized test showed that Temple had an IQ score of 137. As in all the cases mentioned here, Temple had a very caring and supporting environment where she was encouraged in spite of her many unacceptable behaviors. Her mother and teacher collaborated. They talked with Temple's classmates asking for their help and understanding. Temple could have easily been written off and referred to an institution where all of her abilities would have been lost.

Recommendations for the New Millennium

- Teacher training must lead to a better understanding of the behaviors that might signal those interfering variables discussed in the preceding pages.
- Identification processes must be more inclusive.
- New concepts of identification must be developed to supplant the rhetoric that was proposed during the latter part of the 20th century.
- Intervening activities such as counseling with parents and teachers must be a priority.
- Design of curriculum must meet the needs of students, using a wide range of materials that are drawn from their cultures.
- For children with physical and mental disabilities, collaboration is needed with various state and local agencies to design appropriate treatment of gifted students within their care.
- Review of the construct of giftedness will be needed to make it more in tune with the human abilities that are not being tapped.

In conclusion I agree with Hunsaker's (1995) discussion of the gifted metaphor in which he indicated that the distribution of gifts (according to his historical presentation of the role culture plays in designating giftedness) is dependent upon society's cultural connection with this phenomena. Hunsaker writes:

This problem that we ourselves have not dealt with adequately. We continue to be burdened with a political struggle between excellence and equity. While progress has been made, gifted programs continue to be filled with students from middle-class, and mainstream backgrounds. The implication is clear that we must conceive of giftedness in a more global, inclusive way, focusing perhaps more on performance than on status indicators such as IQ test scores. (p. 264)

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The German Vocational Training Program for the Highly Talented

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ABSTRACT

In 1991 the German Federal Government decided to establish the Vocational Training Program for the Highly Talented as a necessary complement to the support programs that had long existed in schools and higher education institutions. After 8 years, a review of the program shows that the desired goals are largely being met. The program supports continuing education of talented, young employed people who have completed dual system vocational training. The grant recipients receive support of up to DM 3,000 annually, for up to 3 years, to defray the costs of continuing education pursued along with continuing employment. Grant recipients use these funds to expand their general knowledge, such as knowledge of foreign languages, or to acquire additional qualifications that will provide them with additional opportunities. As a consequence, the attractiveness of dual vocational training is increased, and a contribution is made to the equivalence of general and vocational education.

Vocational Training in Germany

Vocational education has a long tradition in Germany. Master craftsmen in the guilds of the Middle Ages were men of repute who enjoyed social recognition and a comfortable income. By and large, this is not very different today. And it explains why both private enterprise and government in Germany are prepared to invest so much money in vocational education. Job-related theory and practice enjoy high standing. Against this background there is a consensus in Germany about the equivalence of general and vocational education. Similarly, there is no disagreement about the promotion of the gifted in both areas. Our system for the promotion of the gifted in vocational education is able to build on vocational training leading to a high-level qualification, which is, of course, a prerequisite for the promotion of the gifted at the level of continuing education. Let us make a few basic remarks about the system of dual vocational training in Germany.

Since the Middle Ages the training contract on which the master craftsman and the apprentice shook hands has been the focus of vocational training. That handshake has now been replaced by a written training contract between the training company

and the apprentice. From the outset, responsibility for efficient vocational education and training lies in the main with private industry, which offers training contracts and thus pays for vocational training in the company. The system would not work if industry were not prepared to shoulder this responsibility and pay for it. In Germany private enterprise accepts this responsibility because it regards the cost of vocational training as a profitable long-term investment.

The chief role of government is to support the system by assuring quality and providing complementary schooling. The high standard of vocational education in Germany is guaranteed by official training regulations, which are agreed to in a complicated consensus-forming procedure between government, industry, the trade unions, and vocational training research institutions. As the content of vocational training is today dominated increasingly by theory, the company is supported by part-time vocational schools. Vocational schools are provided and funded by the government. The young people attend vocational school 1 or 2 days each week and spend the 3 or 4 remaining days in the company, which is why the system is referred to as dual vocational training. About two thirds of every age group participate in this system of vocational qualification; many of them do so after previously acquiring higher education entrance qualifications.

Training Program

Training under the dual system is not directed at a specific job or a specific company, but at a trade. Let us take the example of the building trade. The training consists of three periods of 12 months each. During the first 12 months, job-related practice and theory build on a broad general basis. The acquisition of key qualifications that are not directly related to the specific job is becoming increasingly important. Such qualifications include style of work and work planning, communication and cooperation, the application of learning techniques, self-reliance and responsibility, and the ability to work under pressure. We admit that these are ambitious goals and that we are only gradually moving forward in this respect.

In vocational training, we must lay the foundations for an individual to be willing and able to engage in lifelong learning. Part-time vocational school, which accompanies training all along, plays an important role in this process. The curriculum includes foreign languages and an advanced general education. This indicates clearly that vocational training is far more than training on the job and that it creates the basis for a skilled work force, which is indispensable in the modern production process. The dual system is frequently referred to as a model, not least because qualified training protects people against unemployment. The training contract is an employment contract. During their training, the young people are already part of the company. Five years after the final examination, only 1% of the graduates of the system remain unemployed.

At the end of training, the candidate must pass an examination set by the Chamber of Crafts or the Chamber of Industry and Commerce. This final examination which consists of a written and an oral part is difficult. Grades have to be earned, they are not given away. The result is a broad range of proficiency between the candidates, the best grade achievable being 1.0. For acceptance into the Program for the Highly Talented, an average grade of at least 1.9 is required. This grade covers knowledge and skills in job-related practice and theory. Nevertheless, it is fair to ask whether it is really possible to select the most able and the most motivated in this way. Put in a nutshell, vocational talent for us means outstanding job-related, practical and theoretical ability coupled with a high level of individual motivation and achievement. Vocational education scientists, quite naturally, differentiate more than this. Professor Holling (1995), of the University of Münster, describes the dimensions of vocational talent on the basis of extensive empirical surveys.

According to Holling, the dimensions of vocational talent include:
• social competence/pursuit of interests
• social competence/cooperation
• motivation (work discipline, initiative, personal standards)
• verbal skills/communication skills
• problem-solving ability
• self-confidence
• commitment/initiative
• creativity
• contribution to group performance

We asked Professor Holling and his staff to apply his findings in practice for us, and to compare the results of his method with the results of our selection in accordance with the final examination grade. Professor Holling's team ran a major assessment center in a representative district (in this case Hamburg) using various questionnaires specially developed and pretested for the purpose. In addition, the method relied on role-play, a group discussion, group assignments, an individual presentation, an interview, and, last but not least, the IST 70 intelligence test. The researchers found that while selection by grades could be improved further by the assessment center, no major differences existed between the selection method by grades and selection by an assessment center (both systems achieved 90% identical results). This confirms our system of selection by grades. An assessment center for selecting 13,000 grant recipients would be impossible to fund and, according to the results, is not absolutely necessary.

At present, 278 of the 13,000 grant recipients are foreigners. The dual system of vocational education in Germany is also popular among young people who do not have a German passport. Any one of them can, of course, be accepted into the promotion program, provided they achieve an average of 1.9 or better in the final examination. Because of their minority status, young foreigners have many problems, not least with the language. The grade average we require is demanding, and we do not give foreigners any bonus points. I would therefore like to emphasize that we currently have 83 young grant recipients with Turkish passports in the vocational training program. Each has met all the entrance requirements.

The Program at a Glance

Who is eligible for the German vocational training Program for the Highly Talented (since 1991)?

- talented graduates of dual vocational training
- new in 1999: talented graduates from health-sector occupations
- qualification, as a rule, proven by final examination grade of "better than good"
- younger than 25 years when first entering the program (initial grant)

What is being funded?

- demanding, continuing training alongside gainful employment (e.g., upgrading training, IT skills, intensive language courses)

The funding program in practice

- handled locally by the Chambers of Crafts and the Chambers of Industry and Commerce
- thirteen thousand grant recipients from almost 200 training occupations
- program period of 3 years; amount of funding up to DM 3,000 per annum per recipient
- funding rate: 0.94% of graduates of dual system vocational training
- funding in 1999: DM 26 million

Percentage of women

- forty-four percent, compared to a proportion of 43% of women among all graduates (i.e., women are slightly overrepresented)

Advisory body

- advisory body of the ministry: three representatives each of the employers, the employees, the Länder, and the scientific community

The Vocational Training Program for the Highly Talented is supported by ongoing evaluation research which studies three main questions:

- Who gets a grant? (social structure of the grant recipients)
- What do we give grants for? (structure of continuing training programs included in the program)
- What becomes of former grant recipients in working life? (the question of efficiency as a long-term study)

Social Data Relating to the Grant Recipients

There are three features which are particularly interesting in this context of social data: training occupation, gender, and school education.

The first result

The funding program is balanced in terms of occupations. This means that if the 360 or so occupations for which training is available in Germany were to be categorized into four large occupational areas, the proportion of grant recipients in each area would correspond approximately to the proportion of training graduates in the same area.

- Of all those who completed training in 1997, 3% trained in an agricultural occupation. Three percent of new grant recipients in 1998 worked in agriculture.
- Three percent of graduates trained in a technical occupation. There are slightly more grant recipients (4%) who have trained in this area.
- Forty-three percent of the grant recipients have trained in a manufacturing occupation as a mechanic, a textile worker, or an electrician, for example. The proportion of training graduates in this occupational area is the same.
- Finally, 51% of all those completing training matches the 50% of grant recipients trained in a service-sector occupation such as bank clerk, hotel clerk, bookseller, or filling-station operator.

The second result

There is a slightly higher proportion of young women participating in the Program for the Highly Talented than women who are still undergoing training. Forty-four percent of new grant recipients in 1998 were women. Of those who completed training in the previous year, however, only 43% were female. In previous years the proportion of women participating in the funding program has also been higher than the total proportion of women completing training.

The third result

Young employees with a school-leaving certificate from a secondary-level general school (Hauptschule) are underrepresented in the Program for the Highly Talented, while an above-average proportion of those with a university entrance qualification (Abitur) receive grants under the program.

The Subjects of Continuing Training

We would like to start with a few general comments about the further education system in Germany so that our research findings are easier to understand. Further education can be divided into the following three categories: general education, vocational training, and personal training. Continuing vocational training may have one of two goals: updating or upgrading training. Updating training means acquiring or developing occupation-specific or general knowledge and skills, or updating them in response to technical developments. Upgrading training also means improving career prospects either with a view to promotion or to become self-employed.

The grant recipients under the Program for the Highly Talented can use the grant not only for occupation-related training but also for general or personal training. In the area of continuing vocational training, they can choose between occupation-specific or general updating training or decide in favor of upgrading training. The grant recipients' training preferences have remained stable for many years.

- The most popular courses are those which improve occupation-specific skills in a skilled trade/technical field. One in four grant applications in 1998 was related to this option.

- The second most popular courses are those with commercial relevance.
- Interestingly, foreign language courses are slightly less popular than occupation-specific and commercial courses. This is interesting because language skills can be used for work in many different fields and are thereby among the transferable qualifications. By contrast, further qualifications in the other two subject areas are mainly for use in a specific occupation.
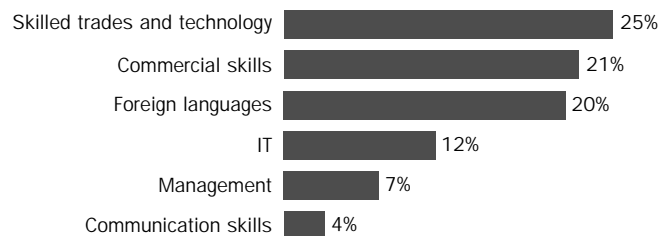

Skilled trades and technology	25%
Commercial skills	21%
Foreign languages	20%
IT	12%
Management	7%
Communication skills	4%

Figure 1. Subjects of Continuing Training 1998 (Remaining 11%: Other subjects)

Upgrading training is becoming more popular with grant recipients each year. In 1996 it accounted for 27% of all grant applications; in 1997, 30%; and in 1998 the figure had risen to 31%.

Finally, we would like to add some details about the language courses. Three out of four language courses are in English; about 10% each are in Spanish and French. Two thirds of intensive language courses take place abroad. The USA is now the favorite destination accounting for 24% of all courses abroad, followed by the UK (17%, and Malta (13%).

Because the language courses are nearly always intensive courses taking place in the country where the relevant language is spoken, the grant recipients are not only able to improve their language skills but also to gain an impression of the political and social environment in the host country. This means that intensive language courses also help to make the grant recipients more internationally minded and to improve their "intercultural skills."

Professional and Personal Benefits of Continuing Training

Let us now consider the opinion of 3,000 or so former grant recipients. What did they feel were the overall benefits of continuing training financed under the Program for the Highly Talented? The result is clear. Over half of those surveyed gave top marks, describing the training as "very useful," and nearly two fifths found the funding "useful." Only 2% of grant recipients felt that the continuing training had been more or less superfluous.

The question relating to the particular effects of the funding program revealed that its special attraction appears to be that it gives equal support to both vocational and general continuing training. This broad framework provides great scope for choosing continuing training subjects. The grant recipients make good use of this opportunity and see considerable benefits. Shortly after they had completed the training, most former grant recipients saw the continuing training as an investment in their future careers. But many of them also gained considerably from the program in terms of their personal development and general education. These effects are seen as more important than the value of continuing training relating to current occupational work.

It is therefore characteristic of the Program for the Highly Talented that it promotes mainly vocational qualifications with a view to future needs, preparing grant recipients for future challenges in their occupations. Grant recipients also reported considerable positive effects on their current working life. It would not be an exaggeration to say that without the additional qualification made possible by the Program for the Highly Talented, most former grant recipients would not have reached their current stage of career development. The following statistics round out the picture:
- For only 20% of grant recipients, the newly acquired knowledge and skills had not yet paid off.
- More than 40% reported that the training had (positive) effects on the type of work they did, but that these were not (yet) reflected by a higher level of income or a higher position.
- More than one third were able to improve their occupational status or income. These improvements were usually accompanied by clear changes in the type of work carried out.
- In order to evaluate these results, it is important to know that factors relating to the content of work, such as varied activities, demanding activities, or responsible activities, are at least as important to the grant recipients as career prospects. Against this background, it can be seen as a good result when, straight after the funding program, more than 40% of grant recipients report positive changes in their work and more than one third report financial and/or status improvements as a result of the program.

Finally, the Program for the Highly Talented had positive effects on young people's motivation to undergo continuing training. Following completion of the funded training, former grant recipients attended continuing training courses more than twice as often than did other people of their age in employment. The funding program therefore provides an important impetus for independent lifelong learning.

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Spatial-Temporal Intelligence: Original Thinking Processes of Gifted Inventors

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ABSTRACT

This phenomenological research discusses a theory of cognition explaining how gifted inventors produce original three-dimensional inventions. Seven constituents including cognitive, motivational, affective, and psycho-kinesthetic factors are described. Spatial intelligence and imagery research are reviewed. Because space-time is perceived and mentally manipulated as an inseparable whole by inventors, a renaming of spatial intelligence to spatial-temporal intelligence is suggested. Spatial-temporal intelligence is theorized as an abstract, non-dual mode of cognition functioning through intuitive and rational modes of logic. Dynamic cognitive imagery and dialog are described as accessing multidimensional/multidirectional space-time. Implications for education suggest spatial-temporal intelligence is complementary to linguistic-mathematical modes of understanding.

Literature Review and Theoretical Rationale

The nature of giftedness is concerned with intelligence. Intelligence has been investigated since the beginning of the century by researchers who experimentally differentiated two modes of intellectual functioning. More recently, scientists have described these modes of intelligence as either verbal, logical, and rational; or as nonverbal, visuo-spatial, and intuitive (Springer & Deutsch, 1985, p. 136). Present research defines spatial intelligence as linked to the concrete world (Gardner, 1985) and composed of the following skills:grasping the whole of a problem; maintaining orientation within space; pattern seeking, recognition, retention and recall; perceiving figures as wholes, generating a whole image from a fragment; understanding spatial relationships from multiperspectives and among internal movement of parts; visualizing imagery; and mentally manipulating shapes within two- or three-dimensional space (Gardner, 1985; Hermelin & O'Connor, 1986; Koussy 1935; McFarlane, 1925; McGee, 1979; Piaget & Inhelder, 1967; Thurstone, 1938). This research departs from presently held views on spatial intelligence and redefines it by introducing the aspect of time—space-time—opening up new theoretical insights.

Methodology and Subjects

This human science research used the phenomenological descriptive approach. Nationally recognized gifted inventors were interviewed for their thinking processes. The research question was: "Please describe for me how you went about creating this three-dimensional project (invention)." Follow up questions were generated from the inventor's answers. Each interview was scientifically analyzed for psychological meaning units arriving at a systematic relationship of meaning within the phenomenon. The findings include seven constituents which form the theoretical basis explaining how spatial-temporal intelligence produces original concepts and products.

Results

First, those with spatial-temporal intelligence are motivated to challenge the boundaries of reality: to capture and essentialize unknown, future patterns of possibilities into original, practical inventions.

Second, spatial-temporal intelligence is experienced psychokinesthetically as the bridging of the conscious, subconscious, and unconscious mind.

Third, spatial-temporal intelligence employs the reasoning tools of dynamic cognitive imagery and dynamic cognitive dialog allowing for access and translation of multidimensional/multidirectional space-time.

Fourth, the logic of spatial-temporal intelligence functions as simultaneous, unpredictable whole/part/whole reasoning.

Fifth, spatial-temporal intelligence is directed at actual and imaginal space-time as a unified whole.

Sixth, spatial-temporal intelligence is a non-dual mode of intelligence with the primary emphasis on the intuitive mode of reasoning.

Seventh, personality traits power the cognitive processes of spatial-temporal intelligence .

Based on the assumption that reality exists as a whole within space-time (Bohm, 1980; Capra, 1976; Einstein, 1954; Hawking, 1988; Kant, 1929), this paper contends that spatial thinkers not only mentally manipulate space but time as a simultaneous whole, hence the renaming to spatial-temporal intelligence and a redefinition. Spatial-temporal intelligence is the cognitive capacity to abstract within a continuum of imaginal/actual space-time for the purpose of producing an original 4-space (space-time) whole—concept or product.

Implications for Education

This research addresses a little understood aspect of intelligence, one necessary to produce original thinking in both science and the humanities. By introducing the aspect of time, it opens up new theoretical insights and implies a rethinking of educational assumptions on how we teach gifted children. Recommendations include developing holistic curriculum, which emphasizes a rational/intuitive development of cognition, lessons that are both verbal and nonverbally oriented such as imagery, and guided lessons requiring hands-on three-dimensional construction. For example in science, botany can be taught by first having students take "mental snapshots" of a tree's properties (colors, shapes, textures, sizes, patterns of bark, twig shapes, spring buds, new leaves, blooms, seed structures and sproutings, colored autumn leaves, the disintegration of leaves into soil, all sense impressions such as listening to the different sounds the wind makes in different leaves, plus the interrelationships with other biological systems) placing these images on their internal TV screens, and then having the students "play the internal video of imagery" back over their minds. From

a lesson that includes dynamic cognitive imagery/dialog, students use more of their minds and gain at many levels. First, a connectedness with nature occurs from sharp observation; second, a complex knowledge basis of factual information is stored in memory; next and importantly, students grasp the flow, the process, of how the world operates scientifically; fourth, they develop complex imagination which is accurate and grounded in concrete reality with the potential for affecting future change; fifth, the potential to develop an inner locus of control over motivational and affective needs is practiced; last, an appreciation of the world as aesthetically meaningful exposes students to the principals of beauty as basic to the human condition.

In sum, this research systematically explains how gifted spatial-temporal thinkers make meaning of a multidimensional (space) and multidirectional (time) reality.

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Enhancing Creativity—An Important Problem in Turkish Education: A Comparative Study

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ABSTRACT

The purpose of this research is to compare the creativity and self-esteem scores of students attending Yeni Ufuklar College (New Horizons College-NHC) with the scores of students from other private and state schools. To identify the subjects of above intelligence level, Raven's Standard Progressive Matrices (SPM) was administered. NHC whose teachers had inservice training on creativity was selected as an experimental school and others as control schools. To compare the creativity and self-esteem scores, Test for Creative Thinking-Drawing Production (TCT-DP) and Culture-Free Self-Esteem Inventories (CFSEI-2) were used respectively. All subjects were attending grade 5. NHC students had significantly higher scores on creativity and lower scores on self-esteem.

Introduction

To prepare today's children for the uncertain demands of the next millennium, the promotion of creativity is very important. To be successful in the business life of tomorrow, children should be raised as individuals who are capable of generating new ideas (Isenberg & Jamorgo, 1993) and who have such qualities as "resilience and flexibility, a creative and integrative way of thinking..." (Minuchin, 1987, p.254).

Unfortunately, in the Turkish educational system insufficient importance has been given to the training of creativity. In the author's previous study (Davaslıgil, 1994), although subjects were an intellectually select group of students, their creativity scores were within the normal or mostly the below normal range as compared to American norms. However, it is very well known that creativity can be enhanced by training. For Turkey this point is very important to fill the gap in this field.

A substantial portion of the research on creativity has examined correlates of creativity, which are personality characteristics necessary to be successful in life. Creative individuals tend to be self-accepting and show little concern about the opinions of other people (Dellas & Gaier, l970). They are independent in their judgments, autonomous, self-confident, and lack inhibition (Barron & Harrington, 1981). Low originality is more common in children who exhibit high anxiety and a right-answer orientation (Braber & Moran, 1988). In Yau's (1991) analysis of personality characteristics shared by productive creative individuals and individuals possessing high self-esteem, we can see many commonalities, including openness to experience, self-confidence, greater freedom from inhibitions, internal locus of evaluation, and self-acceptance. Correlation analysis in Kemple, David, and Wang's (1996) study, indicated a positive relation between self-esteem and creativity.

In 1975, Wright, Fox, and Noppe stated that there was a paucity of literature regarding a possible interrelationship between the two concepts. The same is true today although the literature offers a few contradictory findings (Schubert & Biondi, 1977). Kris (1952), Coopersmith (1967), and Maslow (1968) confirm the relationship between creativity and self-esteem. On the other hand, the investigation by Williams (1971) failed to link creativity and self-esteem. However, although the results of the research of Wright et al. (1975) showed that self-esteem did not correlate significantly with any of the scores on the creativity measure, a significant but relatively low positive correlation ($r = .25$, $p < .05$) was found between the creative self-concept and the more general self-esteem scale. A positive relation was seen in Goldsmith and Matherly's (1988) research. They correlated scores on three self-report measures of creativity and three self-report measures of self-esteem. The analysis of their data with Pearson correlation coefficients and by a confirmatory factor analysis, showed that the two constructs are positively related.

In summary, although there are a few contradictory results, the literature review suggests that children who exhibit creative potential are likely to possess high self-esteem, so the investigation of self-esteem is also included in this research.

Purpose

The purpose of this study is to determine whether there is a correlation between creativity and self-esteem scores of fifth-grade subjects, intellectually in the above-normal range, and also to determine whether there is a difference between the creativity and self-esteem scores of subjects attending NHC and of those subjects attending other private and state schools in Istanbul.

Method
Subjects

The sample consists of 119 fifth-grade subjects whose Standard Progressive Matrices scores are on the 85th percentile or above. The subjects attend three different kinds of schools in Istanbul. Fifty subjects (17 girls. 33 boys) with a mean age of 10;6 (4), were from the elementary school of NHC, a school for intellectually above-normal students. It is the experimental school. The teachers of NHC students had inservice training on the techniques of creativity: brainstorming, synectics, creative problem solving, future problem solving, and scenario writing. They were also trained to stimulate higher thinking skills of the students. For this purpose, they were trained mostly by the author to use Bloom's taxonomy, Taylor's Multiple Talents, Gardner's Multiple Intelligences, and DeBono's Six Thinking Hats in teaching the curriculum. Additionally, the students generally had a period each week for creativity training and for acquiring systematic thinking skills.

The other subjects were from private and state schools, chosen randomly. These schools were control schools. Forty-four students (22 girls, 22 boys) with a mean age of 10;9(20), were from private schools. The administration of the creativity test and self-esteem inventory took place in 1997. At that time the main goal of schools was to train children to be successful in the entrance exams of the secondary schools, which gave great importance to the teaching of a foreign language. The teachers of the schools included in the study did not have inservice training for creativity. The main differences between private schools and state schools were as follows: private schools had fewer students (25-30) in a class, had many club activities to develop talents like music, drama, ceramics, art, and chess, and also taught a foreign language, mostly English.

The other 23 students (9 girls, 14 boys) were from state schools. Their mean age was 10;11(8). State school classes were very crowded (40-75) with very few club activities and no second-language training.

Instrumentation
Raven's Standard Progressive Matrices (SPM)

To identify subjects as gifted or as subjects having above normal intelligence, Raven's Standard Progressive Matrices (SPM), was used. By itself, it is not a test of "general intelligence." It is a test of a person's capacity at the time of the test to understand the relations between meaningless figures. The SPM scale consists of 60 items, divided into five sets of 12 problems. Sets A to E are designed to assess a person's maximum capacity to form comparisons and reason by analogy. In summary, they assess developed capacity for coherent perception and orderly judgment.

Test for Creative Thinking-Drawing Production (KCT-DP)

To assess the creativity level of the subjects, the Test for Creative Thinking—Drawing Production (TCT-DP) developed by Urban and Jellen was used. It is a screening instrument that allows for a simple and economic assessment of a person's creative potential. Because it uses the modality of drawing, it has the possibility of guaranteeing a high degree of culture fairness. On the test sheet some figural fragments are given to stimulate further drawing in a free and open way. The product is evaluated and scored by means of 14 criteria. The total score gives a rough assessment figure of creative potential.

Culture-Free Self-Esteem Inventories (CFSEI-2)

To evaluate the self-esteem of the subjects, Form A for Children from James Battle's Culture-Free Self-Esteem Inventories (CFSEI -2) was administered. It has 60 items and the following five subtests:

1. General self-esteem (20 items) refers to individuals' overall perceptions of their worth.
2. Social Self-Esteem (10 items) refers to individuals' perceptions of the quality of their relationships with peers.
3. Academic Self-Esteem (ie., school-related self-esteem, 10 items) refers to individuals' perceptions of their ability to succeed academically.
4. Parent-Related Self-Esteem (10 items) refers to individuals' perceptions of their status at home—including their subjective perceptions of how their parents view them.
5. Lie subtest (10 items) refers to items that indicate defensiveness and is not included in the Total Score.

The items in the instrument are divided into two groups: those that indicate high self-esteem and those that indicate low self-esteem. Responses are of the forced-choice variety in which the individual must check each item either "yes" or "no."

Procedure

This research is a part of a longitudinal study concerning the prediction of math achievement at a younger age. In 1994 SPM was administered to 629 students in the second grade from three different types of schools. In state and private schools, TCT-DP and CFSEI-2 were administered to the selected group in 1997. At NHC, the administration of SPM to the new classes continued until 1996 and TCT-DP and CFSEI-2 until 1999.

Data Analysis

The correlations between the variables are calculated with the Pearson Correlation Matrix. For comparisons t-test and variance analysis were used. Analysis was carried out at two levels: above-normal intelligence—85th percentile and above; gifted—95th percentile and above.

Results and Discussion

Pearson Correlation Matrix

To determine correlations between variables, a Pearson Correlation Matrix was calculated. In the above-normal group, there are no significant correlations between creativity and self-esteem scores except a low positive correlation between TCT-DP A and Lie (r = 0.21, p < .05). In the gifted group, besides a low positive correlation between TCT-DP A and Lie (r = 0.26, p < .05), there is also a significant positive correlation between the total mean score of TCT-DP and Lie (r = 0.26, p < .05).

The Lie subtest measures defensiveness. It comprises items related to matters of a socially undesirable nature. Individuals who respond defensively to Lie items, refuse to ascribe to themselves characteristics of a generally valid, but socially unacceptable nature. For example, one of the items of the Lie subtest is "I always tell the truth." Although not telling the truth is an undesirable behavior, some of the time it is a social convention. Thus the individual who would deny this common social convention, would tend to be more defensive than the person who would admit it and would receive no point by choosing "yes." On the other hand the individual who would choose "no," would admit this common fault despite being socially unacceptable (Battle, 1992).

Creative individuals are persons who can express themselves freely even though they think their thoughts may not be accepted by others. So the common characteristic of a nondefensive and a creative person is feeling free to express thoughts without being influenced by the probability of creating a negative effect on others.

Gender T-test Results

On TCT-DP no significant gender difference was found in intellectually above-normal and gifted groups. Although the total mean score of boys (m = 59.04) is slightly higher than the girls' mean score (m = 52.83), the difference does not reach the significance level.

In most of the research conducted in Turkey, like in Davaslıgil (1994), Sungur (1988), Sandwith (1978), Dinçer (1993) except on Figural-Elaboration, and Aslan (1994), no significant gender difference was found. In a broader literature review, we see results in this direction, like in the studies of Wallach & Kogans (1965), Ward (1968), Hargreaves & Bolton (1972), and in Bhavnani and Hutt (1972).

In the literature, there are very few contrary results pertaining to this matter. Torrance and Alliotti (1969) put forward that boys gain significantly higher scores than girls on the originality dimension and they state that this is due to the reinforcement of boys' creativity by society. Canel (1993) also has a result in this direction. The results of Raina's (1969) research on 180 Indian adolescents shows that on all items of the Torrance Creative Thinking Test the scores of boys were higher than the scores of girls, but the difference reached the significance level on only the Fluency and Elaboration dimensions. According to Raina, this result is due to the gender-role expectations in Indian culture: women in India are generally discouraged by the society to think originally and creatively. But in Istanbul, one of the biggest cities in Turkey, parents are generally ambitious to educate their daughters as well as their sons, unless they are living in slum areas. Perhaps because of this reason, no significant difference appeared between the creativity scores of girls and boys in this research.

In both groups, the total (above-normal: girls m = 62.02, - boys: m = 50.20, t = 2.32, p < .05; gifted: girls m = 66.34, - boys: m = 50.00, t = 2.28, p <.05) and general self-esteem mean scores (above-normal: girls m = 60.71 - boys: m = 48.52, t = 2.35, p < .01. Gifted girls: m = 64.43 - boys: m = 47.90, t = 2.30, p < .05) of girls are significantly higher than the mean scores of boys. Only in the gifted group, on social dimension of self-esteem the mean score (girls m = 66.31, s = 31.28 - boys: m = 50.42, t = 2.18, p < .05) of girls is significantly higher than the mean score of boys.

Gifted girls have greater aptitude for social adaptability than gifted boys. They have enhanced abilities to perceive social cues (Levy, 1982, cited in Silverman, 1997). From the early years, they are conditioned about the importance of social acceptance (Silverman, 1997). While gifted boys have difficulty hiding their abilities (Silverman, 1993; VanTassel-Baska, 1998). From the early years on, girls are taught to be passive, accepting, nurturing. They are more emphatic, express concern for the welfare of the group, cooperate, and compromise. (Crandall, Katkovsky & Preston, 1962, cited in Clark, 1997). Males expect to do better than females and set higher levels of aspiration for themselves.

There appear to be three critical periods in the development of gifted girls: preschool/kindergarten, third/fourth grade, and seventh/eighth grade (Silverman, 1997). Girls past the second critical period at ages 10 or 11 have self-esteem scores that are not lower but higher than the scores of boys. In high school their self-esteem scores drop.

Again, in both groups the mean lie score of girls is lower than the mean Lie score of boys, but this difference is significant only in the above-normal group (girls m =

43.69 - boys: $m = 51.64$, $t = -1.70$, $p < .05$). Compared to boys, girls who are intellectually in the above-normal range tend more often to refuse to ascribe to themselves characteristics of a generally valid but socially unacceptable nature. This result may be due to girls' social sensitivity in interpreting social conditions.

Variance Analysis for TCT-DP Form A, Form B and Total

In above-normal and gifted groups, the mean scores on TCT-DP Form A, B, and Total scores of students attending NHC are significantly higher than the mean scores of subjects attending private and state schools. The results of TCT-DP Total are given in Tables 1-A, 1-B (above normal) and 2-A, 2-B (gifted). These results confirm the positive effect of creativity training.

According to German norms, the scores are distributed into the seven groups. When we compare the mean scores of NHC with German norms, their mean scores of A & B Forms take place in group D (percentile ranks 76-90, Above Average) and their mean Total Score in group E (91-97.5, Far Above Average). 40% of NHC students' total scores are in group F (97.5-100, Extremely high above average) and 15% of NHC students' total scores are in group G (Beyond upper limit of norm-sample, Phenomenal). On the other hand, in private schools no student places above group D, and in state schools only one student is above group C.

Table 1-A. Variance Analysis for TCT-DP Total (above-normal)

	n	μ	s
N = 170			
State	23	35.17	12.59
Private	44	43.43	16.07
Yeni Ufuklar	50	78.04	17.90
Total	117	56.60	24.82

df1	df2	F	p
2	114	77.49	$p < .01$

Table 1 -B. t-test Results for TCT-DP Total (above-normal)

	State	Private	Yeni Ufuklar
State	$\mu = 35.17$	$t = 2.27$	$t = 11.57$
Private	$p < .05$	$\mu = 43.43$	$t = 9.77$
Yeni Ufuklar	$p < .01$	$p < .01$	$\mu = 78.04$

Table 2-A. Variance Analysis for TCT-DP Total (gifted)

	n	μ	s
N = 82			
State	8	38.12	15.92
Private	23	43.65	13.79
Yeni Ufuklar	30	74.63	18.67
Total	61	58.16	23.19

df1	df2	F	p
2	58	29.22	$p < .01$

Table 2-B. t-test Results for TCT-DP Total (gifted)

	State	Private	Yeni Ufuklar
State	$\mu = 38.12$	$t = 0.82$	$t = 5.26$
Private	-	$\mu = 43.65$	$t = 6.81$
Yeni Ufuklar	$p < .01$	$p < .01$	$\mu = 74.63$

Variance Analysis for CFSEI-Total (above-normal)

For the above-normal group, the mean score of NHC students is lower than the scores of the state and private school students and the differences are significant (Table 3-A, 3-B).

Table 3-A. Variance Analysis for CFSEI Total (above-normal)

	n	μ	s
N = 170			
Yeni Ufuklar	50	47.17	31.04
Private	55	58.91	28.03
State	27	63.46	26.47
Total	132	55.39	29.46

df1	df2	F	p
2	129	3.48	$p < .05$

Table 3-B. t-test Results for CFSEI Total (above-normal)

	Yeni Ufuklar	Private	State
Yeni Ufuklar	$\mu = 47.17$	$t = 2.01$	$t = 2.39$
Private	$p < .05$	$\mu = 58.91$	$t = 0.71$
State	$p < .05$	-	$\mu = 63.46$

Variance Analysis for CFSEI-Total (gifted)

The mean total score of gifted students attending NHC is lower than the mean score of students attending the other two types of schools, but only the difference between the scores of NHC students ($m = 46.64$) and Private School students ($m = 65.85$) is significant ($t = 2.53$) at $p < .05$ level (df1 = 2, df2 = 62, F = 3.60).

Because NHC students were a selected and more homogeneous group, to be successful and prominent in that group is not as easy as in a heterogenous group like the students in state and private schools. If we take into consideration the perfectionistic characteristics of gifted children, the lower mean self-esteem score of NHC students is not surprising.

In the longitudinal research, a math achievement test was also administered to the same subjects. The mean score of NHC students was higher than the mean scores of students from the other two types of schools. In the above-normal group the difference between the scores of NHC and state school students was significant. There was no significant difference between the scores of private and state schools.

These results are in a way similar to the results of research by Delcourt and others (1994, 1996). In this learning-outcome study of a 2-year investigation, four popular types of grouping arrangements for gifted students in grades 2 and 3 in 14 school districts in 10 states were evaluated. Within-class, pull-out, separate class, and special school were the instructional arrangements compared in the study. Achievement and self-perception were among the areas on which the analysis focused.

In terms of achievement, like NHC students' achievement in math, gifted children attending special programs performed better than gifted peers not in the programs. Students from the gifted comparison group, or in within-class or pull-out programs had higher perceptions of their scholastic abilities than did children in separate classes, or special school programs. This result somewhat resembles the low self-esteem scores of students in NHC, which is a special school for children of above normal intelligence.

Conclusion

The important gap between the mean creativity scores of NHC students and the scores of private and state school students may show that substantial changes in teaching methods of the Turkish educational system are needed to make students more productive.

NHC students' having lower self-esteem scores than the scores of the private and state school students, may also suggest that the research on self-esteem of gifted students in different types of grouping arrangements should continue in order to find the best way to fully address all the psychological and emotional needs of gifted students. Sufficient importance should also be given to the development of high esteem in gifted children.

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Motivation & Metacognition: Taking the Fear Out of Failure

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ABSTRACT

The gifted child is viewed as a dynamic and interactive constellation of attributes, operating in a frame of reference in which environmental, cultural, temporal, and issues of personality and temperament serve as vehicles of communication impacting on the developing self. The gifted self emerges from the interplay of these factors against a background of cognitive, behavioral, and spiritual issues. Of current significance is the need to understand gifted children in terms of their diversity and difference, with the corresponding research focusing on patterns of giftedness rather than an amorphous concept of giftedness divested of individual difference. Earlier papers (Eckhaus, 1996, 1997) have identified predominate patterns of responding by gifted children. These patterns reflect an intuitive feeling and perceiving style contrasted with a sensing feeling and perceiving style. Complemented by the additional variable dimension of extraversion/introversion, alternative patterns of responding are evident. These serve to aid identification of emergent management issues in the areas of achievement and motivation.

This paper addresses three interrelated themes: motivation, achievement, metacognition, and discusses their impact on gifted children with a view to maximizing learning opportunities. A concern expressed here is that the concept of motivation is used with gifted children in a very limited fashion. Its narrow target tends to be achievement, which may be part of the process, but does not explain the whole process.

Dealing with constructs such as motivation and achievement emphasizes a pivotal issue inherent in research dealing with complex issues. For example, the way we speak and the manner in which we practice research tends to deal with issues such as emotion and cognition as separate and discrete entities, yet they are not separate in reality. There are substantive domains where this interactive dimension is observable, for example,

At the physiological level:
- the action of the immune system
- hormone secretions
- natural opiates

At the psychological level:
- the fundamental development of individual identity
- concepts of self
- attitudes, beliefs, and values
- attributions and expectations
- interpersonal relationships

In the educational arena:
- classroom ambience
- attending and listening skills
- decision making
- goal-directed behavior
- attitudes to learning
- achievement orientation and values
- learning styles and response sets
- beliefs about learning outcomes

The gifted tend to demonstrate these attributes more readily as a continuum of interaction. This interaction pattern is evident in concepts of motivation. Following the principles of General Semantics (Korzybski, 1976), to deal with these concepts separately is to be elemental which is to "split with words, what we cannot be split in nature" (Johnson, 1972). For example Einstein recognized the "oneness" of space and time as Dabrowkiski (Piechowski, 1986) has identified the heightened emotional intensity contiguous with high intellectual potential of gifted children. Clark (1992, p. 326) considers that "emotions are the gateway triggering mechanism for higher cognitive functions" and that "the brain makes special use of feeling and emotions in the learning process." Hence, any commentary on gifted children must take into account this cognitive-emotional interactive dimension and any assessment must provide a profile, not just a score. This profile should explore all contiguous aspects in the gifted child's frame of reference. Such a profile should account for James' notion that:

> Individuality is founded in feeling; and the recesses of feeling, the darker, blinder strata of character, are the only places in the world in which we catch real fact in the making, and directly perceive how events happen and how work is actually done (1977, p. 478).

A significant issue incorporated in this profile is the steps toward the development of individual identity. Although it is beyond the purview of this paper, it is the self-view, and the attributes and values of the self, that determine how an individual is oriented to, and how they manage the environment. Kelly's (1963) model of personal constructs seeks to identify what constructs individuals develop to propel them toward growth and negotiate their existence. This concept of an interactive continuum, self and environment, also incorporates the axiomatic role of verbal language as a mediating influence.

Motivation

Motivation is a hypothetical construct inferred from individual performance. As such it carries intense value judgments, because if performance is successful then motivation was clearly present and sufficiently energizing to the individual. If, on the

other hand, performance does not match some objective criteria, and is deemed a failure, a lack of motivation may be one of the reasons ascribed to this diminished or unacceptable standard.

There is a welter of terms used to describe motivation, each similarly abstract and each without clearly definable or consistent behavioral correlates. Derived from the Latin "movere," meaning "to move," the concept of motivation implies an inner force that can direct or channel individual behavior. Such a force may arise as a consequence of some specific need, drive, or expectancy and is considered to have both directionality and specific goals. Conversely, motivation can also be considered to operate outside the level of individual conscious awareness, for example, as in the case of defense mechanisms and other symbolic behavior. Motivation can also be a generalized state of arousal without either goal or direction.

In the field of education considerable effort has been directed toward identifying the "energizing" source of the motivation. This "lodestone of learning," is believed to arise either externally to the individual as a consequence of some action on, or observation directed toward, the individual, usually by the teacher. It may also be generated internally as a consequence of the individual's own self-system.

There are two basic reference points for motivation used here. The first is that motivation arises from some deprivation, that the individual needs something. The commonality of basic and intermediate needs, as described by Maslow (1968, 1976) lies in that they are considered to be generated as a consequence of some individual deficit. Their different forms arise because they may be either physiological or psychologically based and vary in the degree of abstractness for the individual. Maslow's hierarchy of needs reflects these differences with basic physiological needs requiring satisfaction before the increasingly abstract needs of safety, love and belonging, and esteem. The highest level reflects the self-actualizing individual.

The second context of motivation used here is that it can be purposive in that the individual seeks to develop or enhance something already present. This would be reflected in the individual actively and rapidly moving through developmental stages struggling with the concept of self and the satisfaction of needs. As such, an individual is propelled toward the enlightenment of a self-actualizing individual. Reaching this level means that the individual has moved through the basic and intermediate needs, and the needs that now become significant for the individual are superordinate needs. The needs at this level are termed "metaneeds," and a major difficulty in achieving these is that they are largely psychological, self-driven, and lack direct behavioral correlates.

Metaneeds reflect a higher level of abstraction than basic needs and will impact on individual growth and development if there is (1) an awareness of the attributes of the need and (2) the individual has the "angst" to engage with the need demands. These metaneeds range through issues such as the need for beauty, for virtue to be rewarded, to seek self-improvement, to actively fight lies, to not need to be loved by everyone, and to take pleasure in philanthropy (Maslow, 1976, p. 298-299). These metaneeds reflect the Dabrowski concept of "the struggle toward the emancipation of the individual sense of self" (cited in Piechowski, 1986). These metaneeds, as iden-

tified by Maslow, may reflect the wellspring of Dabrowskian intensity and the inner-drive of the gifted child with intellectual, emotional, and imaginational over-excitabilities. As Piechowski states "without some degree of intensity in these areas talent is mere technical facility lacking heart and fire"(1986, p. 191).

The satisfaction of individual needs is presented as a sequential, all-or-nothing approach. In this vein Maslow argues that as long as D (deficiency) needs exist, the individual is not free to seek out other needs. However, adopting an open-systems view would indicate that there is much more dynamic interplay between individual needs and the environment. It is plausible to consider that there can be for some individuals a "needs contiguity." Such an individual may seek to satisfy needs simultaneously, not hierarchically. It is even plausible to consider that under considerable psychological pressure some individuals will focus solely on higher order needs overlooking more basic deficit needs. This view would be reflected in Frankl's (1984) experience of seeking to actualize himself while subject to the degradation of the concentration camp or in Nelson Mandela's quest for justice while seemingly interminably confined to prison.

It is suggested here that this contiguity of needs may also be a facet of giftedness. There are those gifted children who do not feel safe in the standard school context because they exist in a constant state of anxiety or because they are ostracized and bullied. There are those who struggle with the concepts of image and the need for self-validation, yet, in spite of their environmental limitations, seem to be able to express a preference for, and actively seek the satisfaction of, metaneeds such as justice, truth, and altruism in human relations.

For the gifted child this view of motivation may be more satisfactorily viewed as a striving for competence (White, 1959), with the first stage expressed as the development of basic trust and the meeting of social and skill needs.

The second stage can be seen as the time when competence can be attained through the development of concepts contiguous with the "self-managed learner" and with issues of responsibility and accountability. Deci and Ryan (1991) reinforce this when they imply that a key to motivation is knowing how to meet individual learner needs for competence, control, and belonging. The journey continues with this theme of increasing self-awareness, personal responsibility, and meaningful engagement with the broader community. For the gifted child, ambiguities in behavior can often be understood as the expression of needs contiguity, rather than individual dysfunction.

Developmental Model of Motivation

This alternative model of motivation establishes these needs as a development series reflecting an individual's strive toward competence. Clearly, the implication is that gifted children would:
- move through this developmental stage more rapidly than other children
- be expressing contiguous needs, that is, working on several levels of development simultaneously
- demonstrate an interlink of emotional and cognitive issues

A core issue driving development is the gradual growth of an integrated value system mitigated by the environment, one's temperament, experience, and maturation. Values are a core attribute in decision making for many gifted children. They reflect the nature of gifted children in their capacity to spontaneously demonstrate a hypothesis-testing approach and in their drive to develop their own personal constructs as explanatory devices and guidelines for their own behavior. Values reflect not only the symbolic concepts and cognitive constructs of an individual but also the valency or intensity of emotion with which such a value is held. As such, they contain evaluative components; and a defining feature of values is that they are matched against some standard, either internal or external to the individual, and can be organized into idiosyncratic value systems. "A value system is an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance" (Rokeach, 1973, p. 5).

To some extent all values must be derived as a consequence of interaction with the environment. However, it is the individual who, having once acquired a value, will determine the extent to which it will impact his or her existence. It is suggested here that the point at which values become both an organized system of operation and impact fully on conscious decisions as a behavioral gyroscope is a product of development. Such development necessarily entails the ability to examine and integrate abstract concepts, to have a global perception of the world around, and the capacity to question perceived differences. These qualities are some of the defining qualities of many gifted children, and hence the presence of giftedness is likely to indicate precocious development in the production of these life-governing rules.

Initially, in this model of motivation, it is factors or features in the environment that serve to meet the basic physiological needs and safety needs of the individual. As a development model, this stage reflects a child's earliest experiences, and so the initial need-reducing agents would generally be parents or significant others. The gifted child needs to feel safe, nourished, and protected, and it is recognized that for many a gifted child the first school experiences, or visit to the sandbox, is a violation of these basic needs. The emergent features here for the child are a rudimentary sense of their place in the world coupled with an incomplete expectation and experience of how the world responds to, or values, them.

At the second developmental stage, functional needs such as the need to be loved and the need to belong interact with the gifted child's temperament and personality variables. Competence emerges as an awareness of the gifted child's ability to master and complete tasks, to achieve and develop a fulfilled sense of being loved and belonging. Neither of these processes is easy for all gifted children. Many with a faulty sense of trust find the needs for belonging to be a desert of despair, and this heightened sense of inadequacy feeds into achievement limitations. At this stage, rudimentary values emerge which impel the gifted child toward the third stage of development.

The third stage of this development process sees the child moving toward some realization of his or her individual potential. This is the growth stage where experience and maturation combine with an integrated value system to direct and energize development. At this stage the concept of Maslow's metaneeds is the motivational focus of individuals moving toward their potential. These reflect, among others, needs for truth, justice, delight in stopping cruelty, the need to love and improve the world, to seek peace and not to seek flattery, status, honors, prestige, or money.

Aspects of the Development of a Gifted Child
The second stage of development impacts heavily on relationship issues for the gifted child, and in the vulnerable child the "gifted child relationship paradox" emerges. Parents and teachers are baffled by the gifted child who is manifestly distressed by an apparent bully or other individual who is unkind to them and against whom they appear unable to defend themselves. There is a sense of disbelief, and children are often asked, "If you're so smart why do you believe such rubbish?" The answer is reflected in the child's developmental profile. Individual identity is developed through interaction and the reflected appraisals of others. A gifted child brings to any interaction a strong sense of values, a focus on the metaneeds of truth and honesty, and a belief in the efficacy of the spoken word. When these factors combine, the gifted child will believe the unpleasant spoken message, accepting it as "truth" and will not look beyond it to evaluate the accompanying nonverbal cues. These qualities are more pronounced in introverted, intuitive gifted children because they lose the harmonizing and regulating aspect of feedback from, and interaction with, others. Their preference for solitary pursuits and need for a trusted friend tests the safety aspects of their environment dramatically. The irony for people who work with gifted children is that, in the face of gross exploitation of their basic needs, gifted children will still affirm their need for metaneeds, notably justice and fairness.

The difficulty for a gifted child experiencing the regular violation of their basic needs is that their developmental profile is likely to be thwarted in ways that impact all facets of their life and for lengthy periods. Depending on the severity and frequency of the assaults, their impact may be felt for a lifetime and the child emerges as invalidated with a "victim mentality." Such children are characterized by a range of behaviors which act as inhibitions to achievement:
- the child becomes a "pathological critic," with the most vicious condemnations reserved for the self
- the development of catastrophizing thought patterns which inhibit behavior, learning, and achievement
- a generalized fearfulness which impacts on decision making and the ability to engage in any task, the outcome of which is ambiguous
- inability to accept less than perfection which interprets as an inability to comprehend that mistakes are part of learning, which may be understood as a fear of failure
- deep sense of shame expressed for even minor transgressions
- diminished predictive ability as everything is filtered negatively, including success, hence success is denied
- presence of emotional turmoil that can lead to depression, or worse
- sense of difference and separation from others through violation of basic trust which is negative and alienating

- an inability to distinguish levels of responsibility
- generalized neediness, coupled with rejecting behaviors
- the emergence of nonspecific physiological disorders
- the development of "victim mentality"

Achievement

It is abundantly evident in education that even an awareness of individual needs, even in caring, loving, and supportive environments does not consistently lead to achievement. It is suggested here that neither the often-nominated issue of bad/poor parenting (Rimm, 1993) nor the single issue of risk-taking behavior (Neihart, 1999) can account for limitations in achievement. It is more appropriate to consider the lack of awareness of the role and impact of individual values in the learning process as values serve to guide and direct behavior in a far-reaching manner. As Clark suggests, "the view of self determines achievement and enhances or limits the development of a person's potential" (1992, p.123). For example it may be asked, do children value learning? As adults we tend to be immensely dismissive of children's capacity to estimate worth in education, or elsewhere; yet it has been suggested (Clark & Clark, 1950) that by 8 years of age children have reached conclusions about their relationship to education and their learning outcomes! An unfortunate corollary to this model of thinking is that we do not consider that there should be any overt teaching of values or teaching the decision-making strategies that can accompany them.

Consequently, a central aspect of this process is the individual's view of himself or herself as a learner. For example, some children see the current educational model as subversive and, when able, opt for education in less formal arenas or none at all. Other significant reasons for a lack of achievement among gifted children are:
- skills (physical, psychological or educational) inadequate for the demands of the task
- acceleration without appropriate monitoring and assistance
- no intuitive knowledge of the requirements of the learning process
- weak organizational skills
- inappropriate parenting
- inadequate teaching
- severe restriction of resources or limitations in access to resources
- inadequate academic planning for the child—"butterfly learning"
- failure to recognize or celebrate success
- a physical, psychological, or learning disability
- absence of "hunger" to succeed
- a lack of interest in the values of achievement or academic pursuits

In addition, there tends to be an enduring assumption that high intellectual potential is interchangeable with an innate capacity to learn, presumably without the benefit of instruction. Further, that the outcome of high intellectual potential should always be high-end achievement. The corollary to these modes of thinking is that a failure to achieve to some arbitrary standard reflects an inadequacy in the child, that perhaps "they are not really gifted." A more rational view would suggest that the responsibility of a child's failure to achieve would at best reside only marginally with the child. A more holistic approach should engage not only an examination of the child's personal constructs but also any relevant environmental issues, including school, parents, teachers, and mental age of the curriculum.

For gifted children, it is apparent that many educational aspects of their life reflect both attractive and repelling goals. They can see and value the benefits of enquiry, yet teacher/parent/self-expectations can make the fear of failure (the fear of making mistakes and the consequent shame) a reason to avoid achievement. In order to manage such a conflicting learning situation, they seek escape by devaluing the learning process (it's boring) and/or avoiding it altogether. There is also the inherent difficulty of achieving a personal best in an intellectual environment that demands adherence to norms favoring the progress of the group over that of the individual.

There are several fundamental aspects to learning that appear to direct and focus academic achievement. They are as follows:
- the need for a learning environment in which the child feels safe recognition and acceptance of the emotional content of learning
- a willingness to overcome personal limitations
- an awareness of self
- wide reading
- sufficient skills of research to engage in in-depth study
- the acquisition of organizational skills
- consistent development of all the verbal skills and the use of verbal mediation in learning tasks
- an awareness of the principles of learning and systems of instruction
- sufficient humor to be able to deal with frustration
- willingness to delay gratification
- hunger to achieve
- effort and persistence

A core concept in the assessment of giftedness is the high level of abstraction of a gifted child's thought processes. The tendency, particularly in the intuitive gifted child, is to engage in a broad brush of concepts that interlink and elaborate a theme. The strength and weakness of this archetype is the tendency to remain removed from any sensory basis and to engage in circular thinking or dead-level abstracting (Hayakawa, 1971). This kind of thinking may leave gifted children floundering, unable to organize and focus their thoughts. Topics may simply become "too big" to manage the entire range of intellectual permutations and combinations.

For a gifted child then, the model of achievement that is used for assessment should be considered as an elaborated and interlinked series of aspects of achievement moving toward a specific goal of learning, rather than simply a score on a single test. Consequently, where appropriate, we need to review the methods of assessing achievement in light of what the child is motivated to achieve. The tendency is for the child to enter schooling with a developmental orientation that determines the sig-

nificance and relevance of issues in achievement on the basis of his or her personal socially constructed values. This combination of an elaborated value system and a series of significant metaneeds motivating behavior can lead to patterned thinking that, although "high-level," is unable to direct the child to ways in which more basic achievement needs would be appropriately satisfied. This conflict is significant because it is at the level of the basic need for esteem that the need for achievement initially emerges.

Metacognition

This focus on extensive and elaborated styles of thinking leads to a reexamination of the role of metacognition. Metacognition has often been cited as "higher order thinking skills," and identified as planning, monitoring, modifying (Pintrich & de Groot, 1990), awareness of thinking (Flavell, 1979), or self-determination (Deci & Ryan, 1991). It incorporates the dialectical model of thesis, antithesis, and synthesis as well as evaluation and discrimination.

Feeling better about you, that is, improving one's estimate of worth (self-esteem) by itself, will not motivate gifted children toward achievement. They need the skills that will provide the opportunity for success as well as the concrete experience of actual achievement. Only by reviewing existing operational strategies and skill levels can achievement in a child be directed or facilitated. Consequently, where the "natural" is to think in a more elaborated conceptual manner, it would be appropriate to actively teach skills of metacognition. This will alert the gifted child as to alternative strategies and approaches and would facilitate achievement. It encourages an awareness of limitations in an environment in which limitations should be the first step on the ladder of the next experience of individual success. For example, a series of metacognitive strategies could harness the gifted child's striving for perfection and difficulties with the concept of error by teaching them techniques in which they:
- expose error; look for disadvantages
- identify alternative ideas and optional outcomes
- explore alternative strategies
- practice making mistakes
- search/research for evidence
- explore contradictory consequences
- identify patterned thinking, dead-level abstracting, faulty logic, irrational beliefs
- develop questions/develop proofs
- develop organizational skills
- examine principles of learning, transfer, and generalizing skills
- seek the ridiculous, reject the accepted, explore assumptions underlying humor
- adopt a heuristic style of thinking and ask, what if?

It is rarely because of task difficulty that individuals are "burned out," or unmotivated. It can be more specifically accounted for by their sense of personal impotence, as they think that neither they, nor their work, is valued or appreciated. It may well be a case of competence denied, degraded, or disillusioned. Consequently, re-

fining thinking skills and teaching or challenging existing values may be a necessary prerequisite for enhancing motivation. However, unless the strategies taught also serve to increase personal awareness and orient the child toward effective action, achievement may still not be facilitated.

Facilitating Achievement Motivation

The proper role of metacognition is to reconcile polarized ways of knowing. An example of such polarization would be emotion and cognition. Clark suggests that: "When learning becomes separated the persons involved are alienated from each other and themselves" (1992, p. 327).

A constant theme of both schools and parents is the belief that improving a child's global measure of worth (self-esteem) will automatically improve another measure of worth—academic performance. Unfortunately, this belief directs attention to only one aspect of the issues. To move a gifted child from potential to performance requires management skills and a partnership between parents and teachers. It requires an understanding of the constructs by which the gifted child operates and the direct teaching of values and metacognitive skills.

In conclusion, the basic motivation-movers are those that work with individual strengths and seek to understand the individual's value system in order to select appropriate strategies and containable consequences. Motivation is also encouraged by developing positive policies of reinforcement and rewards such that the individual is sufficiently fearless to take risks because he or she is sufficiently able to reasonably predict the consequences of an action. Such techniques allow for the development of the self-directed learner and apply equally to teachers and the children in their care.

A suggested "check list for change" follows:
- create a safe environment
- determine your own teaching values
- clarify a child's values
- examine learning constructs
- design value-based projects
- value difference
- establish a classroom that values and rewards personal bests
- use achievement models, model achievement yourself, and show respect for achievement
- teach, practice, and refine metacogntive skills
- tell students that if they are not making mistakes, they're not learning
- chart individual change process with the child
- establish plans of action
- program time for reflection and review
- direct opportunities for insight learning and personal growth
- explore the process of learning using relevant content, and provide meaningful tasks
- select appropriate challenges

- deal with creative and aesthetic tasks
- journey with the child

Challenge for the New Millennium

The challenges ahead are simply the plains of our past blurred by images of globalization. Currently, education goals are conflicted between the long-term pursuit of excellence and the short-term need to produce results and sustain a rushed and superficial brush with excellence. The achievement debate has difficulty distinguishing between the concept of potential and the demands for performance. We are hamstrung by educational policies that reflect an obsession with lock step and leglengths as accurate discriminators of mental age. We push cognition as if it were the panacea of the gods and overlook the effect of affective learning. The real challenge is to sustain vibrancy in individual intellectual lives. In short, the question emerges, do we want our gifted children to be winners? or wonderers?

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Identification of Nontraditional Potentially Gifted Students

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ABSTRACT

Many researchers feel that the criteria used to identify gifted students are discriminating to new immigrants, students from second language or minority background, and students who come from low socioeconomic background. Conscious of this, and conscious of its philosophy to educate each student to his or her potential, the Toronto Catholic District School Board (TCDSB), in 1996, embarked on a pilot project to make the gifted program more representative of the school population it serves. The new approach, which included new tools and heightened teacher awareness, resulted in the identification of students who were formerly never even considered for admission to the gifted program. The retention rate of about 60% in the first 2 years of the program is extremely encouraging. One of the reasons for the success of the program is the fact that students who are identified in the "nontraditional" manner are integrated with the "regularly" identified gifted and the expectations of the teachers are never lowered.

"How do I live my values more fully in my practice?" (Whitehead, 1995). This is an extremely apt question that each teacher should grapple with in his or her daily work. This has led me along the path where I felt committed enough to challenge existing practices.

The Toronto Catholic District School Board (formerly the Metropolitan Toronto Separate School Board) is a Catholic public board. The board's clientele is representative of all socioeconomic groups and all ethnic groups that make up the multicultural web of metropolitan Toronto, which, according to the United Nations' study (1995-1996), is the most multicultural city in the world. Unfortunately the composition of the gifted program, in 1995/96, within the TCDSB did not boast the same ethnic and socioeconomic mix. In fact it fell short of the ideal.

Discrepancy in Representation

In a study carried out over 2 scholastic years, 1995/96 and 1996/97, 22 (11.9%) out of 185 schools had no representation in grades 5–8 that the gifted program covered. Moreover, 44 schools (23.8%) had a token representation of one or two students in the program; while in one particular school there were as many as 52 students in the program. Overall 63 schools (34%) had two or fewer, or no students at all, in the program. There had to be something amiss when more than a third of the schools were hardly represented, considering that, overall, about 4% of the population is identified each year. As well, looking at the numbers of students attending the gifted pro-

gram from each school, it was easy to guess in which areas of the city the schools were located. Suffice it to say that the school with 52 students in the gifted program is situated in an area where the upwardly mobile upper middle class strive to buy homes.

Table 1. Representation of Students in the Gifted Program by School

Scholastic Year	No students	Students in one grade	Students in two grade	Students in three grade	Students in four grades	1 or 2 students only
1995/96	22 schools	36 schools	52 schools	50 schools	25 schools	44 schools
1996/97	22 schools	25 schools	47 schools	51 schools	40 schools	41 schools

Figure 1. Representation of Schools

Figure 2. Schools with 2 or Fewer Students

Questions to Ponder

The TCDSB, being a Catholic board, prides itself in being nonelitist. Why is there such a discrepancy in representation of the various ethnic and socioeconomic groups in the gifted program? Is it the fault of the principals and teachers who are averse to the gifted program? The majority is fully supportive of the identification of students with other special needs, so why are they reluctant to identify the needs of gifted students? Is it a question of the perception of elitism? Are we doing a good job of advocating for these students, or are we so engrossed with servicing these students and trying to keep the program viable that we have forgotten the need of generating good will in the public? Is the problem one of inner-city schools? Are the schools in question located in poor areas of the city? Is the problem one of predominant English as a Second Language (ESL) population? Or is it the fault of the testing procedures and instruments whereby we are only picking up students who are verbally gifted? Is the great number of ESL learners or the socioeconomic status of the families the root of the problem? One fact is certain: both the Canadian Cognitive Abilities Test (CCAT) and the Wechsler Intelligence Test for Children Third Edition (WISC III) have not been normed on the population mix that is pres-

ent in metropolitan Toronto as we see it today.

Is this only a problem with TCDSB schools or is it more widespread than we would like to admit? How have coterminous public boards, that are much better funded than TCDSB, tackled the problem? What have other school boards in North America and particularly in the U.S., which may be facing similar difficulties, done to address the problem? What can the TCDSB do to try to rectify the situation? This paper addresses the last question, What can the TCDSB do to try to rectify the situation?

Need for Gifted Programs

According to Szabo (1996),

Educational programs for the gifted are not part of a plot for the elite to take over the world but rather a desperate attempt on the part of the parents and caring educators to try and create a better learning environment for these students. Unfortunately we are so concerned about being nonelitist that we overlook the value of being different.

If we provide classes for the gifted how are we going to choose students for them? Do we have to label the students who attend enhanced or gifted (call it what you will) programming?

Labeling

Ring and Shaughnessy (1993) warn that "It is not easy to be different, even in a positive way and the gift of high intelligence has its own special difficulties." However, Cross, Coleman, and Stewart contend that even if the students are not labeled by administration, they are readily identified by peers. The students who adjusted best to the label "gifted" were those whose parents refrained from using the term "gifted." These enjoyed higher peer status, more positive self-concept, and lower anxiety levels.

Do I believe that every child who needs differentiated programming is receiving appropriate programming? No. Do I believe that students who come from immigrant families, small minorities, and low socioeconomic areas are receiving their fair share of programming possibilities in the TCDSB? Of course not!

There has been a lot of research that highlights the problem of underidentification of nontraditional gifted students and the need to address this problem. Torrance (cited in Mills & Tissot, 1995) in the 1970s commented that "there is a great deal of giftedness among the culturally different and the waste or under use of these resources is tragic." Silverman (1986) asserted that "it is necessary for the field of gifted education to avoid parochialism and to embrace pluralism."

Therefore the TCDSB, which is committed to provide equal opportunities to all students and to educate every child to its full potential, had to come up with a plan to make sure that, at the least, the schools that traditionally had no representation in the gifted program were included in this differentiated programming.

Identifying Students in Need of Gifted Programming

No two students are alike. All learn in different ways, and all have different talents and gifts. We all acknowledge that some gifted students are easy to spot while others are much more difficult to recognize. However we have a mandate to provide for the needs of all students. But how do we go about finding these students? Gardner (1993) comments that unless we expand our views of what giftedness means we will not be able to devise ways of assessing it. Richert and Tannenbaum assert that at different times different cultures have needed or valued diverse intellectual abilities. Frasier (1989) however, cites "high cut off scores on I.Q. tests, low socioeconomic environment and our inability to conceive that every group has its own gifted students" as reasons why there are so few representatives in our programs. Baldwin (1987) asserted that the most embarrassing aspect of current identification practices for gifted students has been the low rate of children from minority groups who are eligible for special school programs using conventional standards. Callaghan and McIntire (1994) affirmed that "the challenge for public schools is to recognize alternative culturally relevant indicators of outstanding talent that will be translated into effective assessment strategies…for children not from the dominant culture."

TCDSB "Regular" Gifted Identification Procedures

The "regular" process for identification in the TCDSB is as follows:

- **Teacher nomination prior to the publishing of CCAT results.** The Canadian Cognitive Achievement Test is administered to all TCDSB grade 4 students and used as a screening mechanism for the gifted program. Through board research, it has been established that prior teacher nomination and a very high (96th percentile) score on the CCAT highly correlates with a score of 130 on the WISC III.
- **Parental nomination.** Parents can nominate students for the gifted program and are asked to fill out a nomination form and a questionnaire about their sons or daughters.
- **CCAT screening.** Cut-off scores have been established to determine whether or not the student will proceed to the next step of testing—the Wechsler Intelligence Test for Children (WISC III). However, at the School-Based Support Team meeting all students whom the school thinks are promising candidates for the program are discussed. Sometimes students who do not make the cut-off score are still presented for the next step.
- **WISC III.** This is an individual intelligence test that is administered by teacher practitioners or by psychologists or psychometrists.
- **Teacher of the gifted interview as needed.** This interview is used as further information especially when the objective scores are not that clear and there are doubts as to whether or not the student will thrive in the gifted program.
- **Product evaluation.** Teachers are encouraged to grade the product according to the class performance on the same product and not on a "mythical" level.

The Identification, Placement and Review Committee (IPRC) decision rests on all of the above while such factors as second language and other special education designations (such as: LD, HI, VI, etc.) are taken into consideration.

Changes to the Identification Procedures for the Nontraditional Potentially Gifted Student Pilot Project

Changes were made to make sure that nonverbal problem solving and nonverbal reasoning become the main part of the identification process rather than the verbal. The new method of identification in the first year, 1996/97, was as follows:
- RAVEN cut-off - 75%
- Teacher checklist
- Interview with teacher of the gifted

1996/97

In the first year of the pilot project only one school, St. Francis de Sales, was introduced to the program. This school housed a gifted withdrawal program, and yet, no students from that school had attended the program for at least 4 years prior to 1996. The school is located in a very needy area of the city.

In September 1996 four students were put into the program as a result of this testing. By the end of November, two students had dropped out of the program because they felt they could not cope with both the regular school program and the gifted one-day-a-week withdrawal program. Two other students from a neighboring school replaced these two students. All four students persevered in the program and are now going into grade 8. All four were identified as gifted in June 1998. Therefore, out of the first group of six students, four were very successful, making the success rate at 67%. An excellent start!

At the end of the first year of the program, the regular classroom teachers of these four students were interviewed, and the following comments were taken from their interview. The teachers said that the students had difficulty relating to school before they were admitted to the gifted program, but the one day a week in the gifted class and the incentive to work with students they looked up to, made them eager to come to school. In fact their comment was that now the students were "turned on" to school. The teachers felt that these students were more self-confident because they themselves saw that the difference in their work was remarkable. The teachers felt that these students were assets to the class.

As I mentioned before, the bulk of the identification process was based on nonverbal reasoning and on nonverbal problem solving. June Maker (1992) pointed out that "the key element in giftedness or high competence is the ability to solve the most complex problems in the most efficient, effective or economical ways and gifted, or highly competent individuals, are capable of solving simple problems in the most efficient, effective or economical ways."

Raven Progressive Matrices

The Raven Progressive Matrices was chosen because, when compared to other tests purporting to measure intellectual ability, the Raven Progressive Matrices are:
- predominantly nonverbal
- have content that appears to be culture- and gender-neutral
- may include a learning factor
- are easy to administer and score

The apparent "cultural fairness" of the Raven Progressive Matrices makes it an easy alternative for testing students from minority and economically disadvantaged groups, while the nonverbal nature of the test also makes it potentially useful for linguistically diverse or limited-English proficiency students. (Mills & Tissor, 1995)

September 1997/June 1999

Emboldened by the success of the first four students, in September 1997 this pilot project was widened to incorporate eight schools—two each from the north, south, east, and west of metropolitan Toronto. The schools chosen met the following criteria:
- These schools were located in areas where there were lots of government-subsidized housing projects
- For the previous 4 years these schools had no representation in the gifted program

Preparations

Preparations for the selection process started early and consisted of:
- Inservicing of the assessment and programming teachers assigned to these schools who are responsible for administering the testing necessary for this identification process
- Inservicing of principals of the selected schools
- Inservicing of grades 3 and 4 teachers in the selected schools. These teachers were given resources to be able to instruct students in problem-solving techniques to discern which students would make the best candidates for the gifted program. They were also introduced to the teacher profile that was to be filled out for each student nominated. The third important thing that was thoroughly explained was the nomination process.
- Teachers of the gifted were in-serviced in interviewing techniques. Two types of interviews were discussed—the group interview and the individual interview. Since our hypothesis was that these students' weakest point would be the verbal component, great emphasis was put on the hands-on group interview.

Procedure of Identification of Students

The procedure for the identification of these students was as follows both in 1997 and 1998.

Teacher nomination

Students nominated to participate in this program should fall into at least two of the following categories:
- ESL student, a new immigrant (2 years or less) from a country with limited exposure to standard English
- Interruption of normal learning development

- Non-English background (even if born in Canada)
- Economic hardship in the home
- Limited literacy opportunity
- Experiences which put the child at a disadvantage

Teacher Checklist
The teacher checklist is divided into five different categories:
- intellectual
- aptitude for learning
- creativity and problem solving
- motivation
- leadership abilities

It also covers the six traits from Barbara Clark (1997)
- alertness and curiosity
- initiative, eagerness
- imagination in thinking
- flexibility in approach to problems
- originality and creativity in thinking
- ability to solve problems by ingenious methods.

After months of discussion it was decided that the teacher, the principal, and the SBS teacher should use this checklist as a discussion platform when deciding whom to nominate for the testing.

The names of students selected are forwarded to the assessment and programming teacher for further testing.
- The Raven and the Computer Administered Aptitude Battery (CAAB) were administered to the students. Both these tests can be given as group testing. The CAAB was a test in the process of being normed. Our students were given the test, which yielded both a verbal and a nonverbal score, and the students were ranked as a TCDSB group.
- Teacher of the gifted interview (group and/or individual; hands-on problem solving) was conducted
- At the final selection meeting (the interdisciplinary team meeting) the classroom teacher was asked to rank the student by need. Schools have the hardest time with this last ranking. What exactly do we mean by need? Lynne Beal, chief psychologist of the Toronto District School Board, in her unpublished work, says the following qualities and/or circumstances will constitute need for a placement in a gifted program or differentiated program if such a program does not exist.
  - Student shows sparks of great problem-solving skills irrespective of his/her lack of English skills
  - Student surpasses level of classroom performance, with no equals
  - Student takes a teaching role with classmates
  - Classmates turn to the student for help in understanding and completing their work

- Teacher must instruct the student individually in several core curriculum areas because the student's functional level surpasses that of classmates
- Student lacks motivation to do the work in major academic area, despite adequate skill
- Student is socially isolated, possibly both in class and outside school
- Student has no friends with similar interests
- Student is frequently alone doing academic pursuits
- Students seek considerable teacher attention to satisfy their perfectionist tendencies and assure themselves of accuracy and adequacy
- Students are bored with the routine classroom tasks and hand in slipshod work even though the teacher knows that they are far more capable than they are letting on
- Student's functional level surpasses the level of enriched activity
- Teacher would need to devote significant proportion of class time to modify the program for, and deliver the curriculum to, the student
- Student could achieve at a high level on curriculum from higher grade levels, but has no peers to share that instruction
- Student shows disinterest in a major academic area
- Student does not participate in peer group activities involving sports or other areas in which student does not achieve
- Student is emotionally vulnerable due to family upheaval or tragedy
- No resource teacher available to assist teacher with program modifications
- Class has a high proportion of high-needs students who function below or just at grade level, leaving little opportunity for the student to receive enrichment programming, particularly with other children
- Student's interests are beyond the range and scope of instructional materials and expertise available in the class or in the school
- Student's home environment cannot provide enriching experiences to the student

Establishing Who Attends the Program
During the final IDT meeting these students are ranked in five categories—three objective tests (CCAT, CAAB, Raven) and two subjective rankings (need and teacher of the gifted interview). It should also be borne in mind that the classroom teacher had already chosen the group from the others in class. The rankings are added, and the lowest scores will indicate the students who will attend the program. In the schools we are targeting, there are usually no students from any other class attending the gifted program, thus we make sure to choose at least two students to attend rather than one. Consequently, teachers are encouraged to nominate at least four students initially to make sure there is a true selection.

The 1997/98 and 1998/99 students were put in the program under the above criteria. The students who qualified for the program attended one of the existing one-day-a-week withdrawal gifted programs that are currently running in the TCDSB. I believe that it is imperative to give these students the opportunity to attend a first-

class program and not a program that is diluted in any way, shape, or form. That is why the students attend the programs that are already running and not a special program just for these newly identified students.

Evaluation

The students attended the program regularly for 2 years during which time portfolio assessments were done every term. The assessments were carried out "blind"; that is, all the portfolios of the students in the pilot project were assessed with an adequate number of portfolios of students who were identified "in the regular way." The students received the same report cards home twice a year. At the end of the first year, a review (IPRC) was conducted for all students. The committee decided whether or not the student should continue with the program. At the end of the second year, if the student was performing as well as others who had been "regularly" identified in the program, then the IPRC decision was that the students be identified as "gifted." The IPR committee may also decide that the student should remain in the program for another year before a final decision is taken. Or the committee may decide that it is in the best interest of the child that he or she returns to the regular class "full-time" as soon as possible. This rarely happens, because, usually, it is the students themselves who feel that they cannot cope with the two programs and volunteer to withdraw from the program far earlier than at this point in time.

Results

As for success in the program, so far 55% of the students who started participating in the gifted program in September 1997 have been identified as gifted and are still in the program while about 3% to 4% are still in the program, but have not been yet identified.

1999/2000

This year, 12 schools form part of the pilot project, and it is hoped that as early as next scholastic year this pilot project will become a regular feature in the identification of students for the gifted program.

The change that took place this year is that the Naglieri Nonverbal Abilities Test (NNAT) has replaced the CAAB test. With shrinking resources, we always try to make the best use of the existing pool of money, and the NNAT promises to be a good source of information with a minimum outlay of personnel time.

NNAT

According to the literature, Harcourt Brace (1997), the NNAT is a measure of general ability and a predictor of scholastic achievement for children in all grades. It can be used to identify gifted and talented students with high-reasoning and problem-solving abilities and it may also be used as an aid in identifying students who have learning problems when used in conjunction with achievement test results.

What is also of utmost importance to the TCDSB is that the NNAT is an appropriate tool to test students from diverse cultural and language backgrounds, including students whose school performance may be poor because of limited proficiency in English. It is similarly appropriate for testing gifted and talented students who are either non-English speakers or are just learning English. It is also designed for fair assessment of socially or economically disadvantaged students; it is fair and appropriate for use with students with hearing, language, or motor impairment, and it is unbiased for children with impaired color vision.

Conclusion

At the beginning of this project my goal was that if this program helped at least one child, I would conclude that the exercise has been worthwhile. Obviously many more than one student have benefited from the program, and comments from students, teachers, and parents affirm the value of such a program.

To relate this to the greater society, Rosa Mena Gallagher stated,
To give a fair chance to potential creativity is a matter of life and death for any society. The outstanding creative ability of a fairly small percentage of the population is mankind's ultimate asset and the only one with which only man has been endowed.

Acknowledgements

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Vocational Maturity of Gifted High School Students: A Descriptive Study

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ABSTRACT

Even though there are many studies about giftedness, these researchers were unable to find any study about vocational counseling with gifted adolescents. Therefore, this study intends to explore the development of the vocational understanding of gifted lycée students, based on Ginzberg's Vocational Development Theory. The researchers hypothesize that gifted students achieve the realistic self-perception period earlier than Ginzberg's theory suggests. The sample of our research consists of 60 gifted lycée students of the same SES level and age, ranging from 15 to 17 years. The instrument that will be used in the study is the Self-Evaluation Inventory of Yildiz Kuzgun with a test-retest reliability of 0.59 for the creativity subtest and 0.87 for the mechanical subtests. The construct validity of the research for 23 subtests are between -0.24 and 0.75; norms are based on 1,905 lycée students.

Introduction

The area of vocational counseling was developed because of the lack of occupational guidance provided in schools. The studies in this area consist of theoretical work enriched with evaluation tests and inventories that emphasize the developmental process of career choice. The main concern of vocational counseling had been to provide vocational guidance to enable individuals to achieve an occupation of their choice. Although there is a great amount of research about the gifted and talented, the same concern of vocational guidance has not been considered. Around the world, especially in the United States, the gifted individual is thought to be an intellectual power for society, and there exists ongoing program development for the gifted (Tannenbaum, 1992). The researchers conclude from the recent work in both of these areas that vocational guidance for gifted and talented students should be studied in depth, and the aim of this research would be to provide counselors, parents, and other researchers with information in the area of vocational maturity of gifted high school students.

Clark (1983) suggests that gifted individuals have a better understanding of themselves and the environment. The vocational development theories of Ginzberg and Super (1952) rely on the self-understanding of the individual and claim that the realistic period in which vocational choice becomes more precise begins at the age of 17 years. Referring to the definition of the gifted and talented, the theories of vocational development, and the role of self-understanding in career choice, the researchers ask the following question: Do gifted students reach the realistic state in Ginzberg's theory of vocational development earlier than age 17 years as Ginzberg

suggested? The literature was investigated to develop a background for this study and a possible answer for the research question. This review consisted of visions from counseling, self-awareness, and giftedness.

Counseling

Although there is no definite and precise definition of counseling, it could be viewed from different perspectives. Feltham (1995) describes counseling as a relationship between the counselor and the client where communication skills and psychological theories are involved, and where the counselor is willing to listen to the clients' problems and concerns and suggest helpful alternatives. Kuzgun (1986) similarly states that counseling is not showing clients a definite, right way they must follow, but rather discussing the advantages and disadvantages of several alternatives and helping them choose the most appropriate way for them. She also draws four main goals for counseling: (1) to help clients acquire self-awareness, (2) to help clients see the available opportunities in their environments, (3) to help in developing the clients' potential, and (4) to help clients adapt to the environment.

In this manner, it can be concluded that counseling is an interpersonal relationship between client and counselor to help the client cope with the social environment. This help is not directing or leading to the best way assumed, but showing the alternate ways and facilitating the choice of the most appropriate way by the client.

Brown and Brooks (1990) describe vocational counseling as the process of helping individuals discover themselves and make the most appropriate choice for their occupation. Another definition suggested by Herr and Cramer (1972) refers to vocational counseling as a "fusion of educational and vocational concerns for assisting students to locate themselves vocationally in the future and at the same time to make effective use of present educational experiences connected to such further choices." These definitions base vocational counseling on general counseling and use the same methods and applications. From Kuzgun's (1986) goals for counseling, vocational counseling is closest to the second goal which is to help the clients see available opportunities in their environment

The previous theories of vocational counseling were meant to formulate and explain the career development process and help individuals choose appropriate careers. Herring (1998) in his book *Career Counseling in Schools,* explains the main theories under Personality Based, Development, and Social Learning Categories. One of the earliest theories of vocational guidance, the Trait and Factor theory, suggests that vocational guidance can be most efficiently done in three basic steps: identifying the individual, gaining information about occupations, and matching the most appropriate occupation with the individuals. Roe's Theory of Career Choice, however, was based on the personality of the student and argued that students' career choices depend on their orientation toward people. Holland's Typology Approach, similar to the Trait and Factor theory, suggests the existence of six occupation groups, but includes the role of personality as well. Krumboltz's Social Learning theory expands the previous career development process theories by combining the factors that the career choice demands. Tiedeman, Tiedeman, O'Hara, and Miller-Tiedeman, unlike the previously

described theories, emphasize the importance of self-awareness in career development in their theory of Individualistic Development Perspective of Decision Making. Another theory that emphasizes the concept of self-awareness is Gottfredson's Model of Occupational Aspirations.

Ginzberg's Vocational Development theory is supported by Super (1952). Super's theory is being used widely by counselors and has influenced many researchers such as Isaacson and Brown. The researchers suggest that the vocational development theory of Ginzberg and Super provides more sophisticated and detailed information about career development and a better understanding of the adolescent's career choice. These theories have been used as the source of this research. Super, in his research article, discusses Ginzberg's vocational development in four elements.

1. Occupational choice is a career development process typically lasting for a period of 10 years. Vocational development occurs in a time range during which the person experiences the changes in his or her life that affects the occupational choice.
2. The process is irreversible, because Ginzberg's vocational development process emphasizes the importance of experience and the effect of experience cannot be excluded.
3. The occupational choice of an individual is formed by his or her interests, capacities, values, and opportunities.
4. Occupational choice consists of three periods, which are Fantasy, Tentative, and Realistic. The fantasy period extends through the ages of 4 and 11 years when a child is influenced by adults in his or her environment and desires to be like one of them. These preferences don't usually include any realistic elements and don't necessarily refer to the interests and abilities of the child because he or she doesn't have any self-understanding at this stage. From 11 to 17 years the child gains a self-perception about his or her abilities, interests and values, and the ideal occupations are changed greatly because of this knowledge. However the most realistic ideas about occupational choice develop in the realistic state, which is between the ages of 17 and 21 years.

Taking the outline of the theory proposed by Ginzberg, Super (1952) extended the vocational development stages to the entire life span, categorized the process in more detail, and changed the periods that Ginzberg had stated. Figure 1 presents the theories in time perspective used by Super in his research article.

Ginzberg describes the ages of the tentative period—the time when individuals explore their interests, capacities, and values as they are introduced to the functioning of real life. Adolescents at this stage don't structure the occupational choice considering the realistic limitations of life and their potential. So the individual's self-understanding is not yet developed to make a reasonable occupational choice. Ginzberg claims that 17 years is the transition age to the realistic stage which begins at the age of 18. Super extends the tentative period and specifies a transition age even later than 17 years, and states that the specialization of the occupational choice can be accomplished after the age of 25 years. The researchers conclude from the infor-

mation provided by the two theories that all individuals need to have a clear and accurate self-understanding before they can decide on a final specific occupation, and an accurate self-understanding cannot be accomplished until the early 20's.

GROWTH		Age		FANTASY

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                        Age

GROWTH                   0
                         4
             Fantasy                          FANTASY

             Interest   11      Interest
             Capacity           Capacity      TENTATIVE
                        15      Value
                        17  →   Transition
             Transition         Crystallization   REALISTIC

                      ─ 21      Specification
EXPLORATION  Trial   │

                     │
                     ─ 25
ESTABLISHMENT  Specialization
                        45

MAINTENANCE

                        65
             Deceleration
DECLINE      Retirement


        [SUPER]                      [GINZBERG]
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Figure 1. Stages of Vocational Development

Kidd's (1996) model of vocational counseling is characterized by four stages: (1) building the relationship, (2) enabling the client's self-understanding, (3) exploring new perspectives, and (3) forming strategies and plans. Each stage includes key activities. The researchers' aim is to focus on the second stage of the model where Kidd discusses the main task of helping clients deepen their understanding and their insight into their situation. The key task of this stage is the assessment of career-relevant attributes, such as aptitudes, interests, and values, which is very similar to what Kuzgun (1989) points out about self-understanding.

Once the clients' self-understanding is enabled, the clients become familiar with conceptual frameworks to organize their knowledge of self and situations that will lead to better vocational choices. Therefore, gaining self-understanding is one of the key factors of vocational maturity (Kidd, 1996).

Self-awareness
At adolescence the difficulty in self-understanding necessitates vocational counseling in high schools and colleges. Having just started to explore the concept of self, adolescents need counseling in order to turn the unclear, uncertain questions, and lack of awareness of abilities, interests, or dislikes into internal knowledge.

Twentieth century psychologists have developed many new psychometric measures. Tests of self-understanding give individual information about aptitudes, achievements, interests, values, and personality. Aptitude tests suggest the possible level of ability the client will have performing a future task. Achievement tests can be specialized into three different types: academic accomplishment usually measured in grades, accomplishment in work, achievement for joining into a social event (Kuzgun, 1982; Sharf, 1992). Interests are usually measured by interest inventories and are most commonly used in occupational selection. Values tests are the most neglected because of the difficulties in their assessment. However they are very helpful to aid the client in finding a peaceful environment. The traits assessed in personality tests conceptualize a client who is trying to make career-selection decisions.

Even through there are many psychometric measures to strengthen clients' self-awareness there are still many problems in choosing the area where most help is needed. To meet this need, vocational self-evaluation inventories assess the self-perception of a client. These inventories present information about views of self while they also help the client gain self-understanding. Similar to Sharf, Kuzgun (1982) states that self-understanding has three dimensions: aptitude, values, and interests. Even though Kuzgun's definition of aptitude resembles Sharf's, Kuzgun assesses it in a different way. In her Self-Evaluation Inventory, designed to assess aptitude, self-perception of the testee was used, while Sharf supported the idea of assessing aptitude by aptitude tests. Kuzgun (1989) alleges that aptitude is an individual's self-perception assessed by a sincere evaluation of performed achievement such as grades. She does not differentiate achievement and aptitude as in Sharf's theory. It is observed that in this study self-understanding has two dimensions: (1) aptitude self-perception, and (2) performed achievement and performed aptitude.

Therefore, the researchers suggest that the more performed achievement and perceived aptitude overlap, the more self-understanding and maturity in vocational choice is possessed. They used Kuzgun's (1989) *Self-Evaluation Inventory*, which involves perceived aptitude and school grades (performed achievement) to question the clients' realistic vision. This application is nearer to what Kuzgun states in her theory.

Giftedness
Giftedness is defined by many researchers as high ability in one or more areas. Gowan

and Bruch (1971) defined giftedness in terms of the performance on an IQ test. Some others define it as high performance and capabilities in different areas (Heward & Orlansky, 1984). Meanwhile other researchers point out the emotional aspects of giftedness (Gerouse, 1989; Terrassier, 1985). Giftedness may be conceptualized as high ability which is observable in the performance of individuals who are sensitive to their environment. For Clark (1983) the gifted individual is psychologically and biologically ready for the challenges of adolescence. She claims that gifted adolescents are able to conceptualize, to see alternatives, to seek diverse patterns and relationships, and to express themselves better than their norm group. As Clark pointed out, gifted adolescents are well equipped with cognitive and affective structures that help them to have a better understanding of themselves as well as the environment. Sharf (1992), Kidd (1996), and Kuzgun (1989) also suggested that the vocational preferences, self-understanding, and understanding of environmental conditions are crucial. Therefore it may be concluded that gifted adolescents are able to make realistic preferences at earlier periods of adolescence in comparison to their norm group.

In summary, vocational counseling, as a part of counseling, is trying to guide adolescents to effective vocational choices in which self-perception and self-understanding are considered important (Kidd, 1996; Kuzgun, 1989; Sharf 1992). On the other hand, Clark (1983) points out that the gifted have a better understanding of self and the environment. When these two views on vocational counseling and giftedness are considered, we may expect to see gifted students use their high self-understanding to make more efficient vocational choices, because, as Clark states, high self-understanding in gifted adolescents leads to early maturation and early maturation will allow the gifted to make more efficient vocational choices, thus, leading to the researchers' hypothesis.

The Method
The researchers hypothesized that there is no significant difference between perceived verbal and mathematical aptitudes and achievement in verbal and mathematical areas.

The sample for the research was formed by the selection of 57 gifted Turkish high school students who scored over 130 on the WISC-R intelligence test. The subjects were between the ages of 15 and 17 years and included 22 girls and 35 boys. All of the students were in a full-boarding school and have been in the same school environment for 6 years.

Self-Evaluation Inventory (Kuzgun, 1989) aims to help students who are making decisions on their career choices and has three traits: aptitude, interests, and values. Aptitude can be explained as learning potential or the potential that enables students to have a certain education. It can be discussed in three ways: social sciences, natural sciences, and spatial aptitude. Kuzgun describes the social sciences aptitude as learning potential of verbal concepts and natural sciences aptitude as learning potential of numerical concepts. "Interests" suggest the idea of an individual accomplishing a job or attempting an event without any prizes or requirements, whereas "value" is the satisfaction gained by the career environment or the awards provided by the en-

vironment. The academic grades for social and natural sciences have been used as achievement scores.

The realism of a student is defined as the significance of the variation between the inventory aptitude scores and achievement scores. Since Kuzgun (1989) in her *Self Evaluation Inventory* states the similarity of the terms "aptitude" and "achievement" as they are used in her test, the findings of this research from the aptitude scores should be comparable with actual academic achievement.

Test-retest reliability is 0.58 for the creativity subtest and 0.87 for the mechanical subtests. The construct validity of the 23 subtests of the research used is between -0.24 and 0.75 and the 1,905 lycée students comprise the sample tested.

The achievement score was calculated by taking the mean of the achievement in lessons grouped in two academic areas: verbal and mathematical. The verbal area consisted of the core and elective social studies and language lessons. The mathematical area consisted of mathematics, geometry, and natural sciences lessons. The sample of the research completed the *Self Evaluation Inventory* under the supervision of the school counselor in 45 minutes. Academic achievement and perceived aptitude scores were analyzed using one-way ANOVA.

Results
The researchers had hypothesized that there would be no significant difference between perceived verbal and mathematical aptitudes and achievement in verbal and mathematical areas. However, the hypothesis of the study was not supported. There were significant differences between achievement in verbal and mathematical areas and perceived verbal and mathematical aptitude. ($F = 1.189$, $p > .05$: $F = 1.109$, $p > .05$; Tables 1 and 2).

Table 1. Variance of verbal self-aptitude perception and verbal achievement scores

		Sum of Squares	df	Mean Square	F	Sig.
Verbal Aptitude	Between Groups	43843,291	50	876,866	1,189	,455
	Within Groups	4423,655	6	737,276		
	Total	48266,946	56			

Table 2. Variance of mathematical self-aptitude perception and mathematical achievement

		Sum of Squares	df	Mean Square	F	Sig.
Math Aptitude	Between Groups	24009,085	51	470,766	1,109	,513
	Within Groups	2121,805	5	424,361		
	Total	26130,890	56			

Discussion

The two hypotheses that there would be no significant difference between perceived verbal and mathematical aptitudes and achievement in verbal and mathematical areas are rejected. There is significant difference between the perceived aptitude and performed achievement in social and natural achievement. The two concepts do not overlap. Therefore, in this study it is observed that gifted adolescent students are not inclined to make realistic choices as predicted in Super's (1952) theory. Aptitude and achievement are considered as a part of self-understanding in Kuzgun (1989) and Sharf (1992). Sharf defines them as different concepts; Kuzgun doesn't differentiate between them. The model of this research took aptitude and achievement as the same concepts as in Kuzgun's model, but this is not sufficient to discover the realistic vocational choice of gifted children.

For further research, it is suggested that researchers use aptitude tests to allow the adolescents to make realistic choices.

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Museums, Adventures, Discovery Activities: Gifted Curriculum Intrinsically Differentiated

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ABSTRACT

Children's museums, adventure programs, and discovery activities proliferate because they engage individual interests and promote zest for learning outside of traditional school settings. When adventure and discovery are available, children take charge of their own learning, using play to generate rich insights about both contents and processes. To circumvent superficial interactions in child-chosen activities, scaffolding from wise experts—teachers, parents, or expert peers—is essential. Prompts, cues, and suggestions rather than didactic directions allow children to retain ownership of direction and learning pace. They can select passionately fascinating content, process at individually appropriate intellectual levels, and extend process and outcome as ability levels permit. This presentation will include findings about children and parents in museum contexts; describe multiple contexts in which such participatory approaches can be implemented; demonstrate the nature and necessity of appropriate scaffolding from wise guides; and generate extensions for applicability of this model of differentiatable curriculum for gifted children.

A Forum for Meaningful Learning

A terrarium stood on the shelf at one side of the preschool classroom. In it a tarantula added dimension to the study of insects that the children were engaged in that month. Three-and-a-half-year-old Al sat entranced as he peered into the terrarium, though the other children were all engaged in other activities around the room. He heard the cheeping sound of the cricket that the teacher had just added to the tarantula's temporary home and was fascinated by what the spider would do with it. They had been talking about what insects eat and do, had been tending carefully silk worm caterpillars waiting for the moths that would eventually emerge from the pupa cases, and here was a different type of insect doing different kinds of things.

Al was interested in the cricket's demise, not in a morbid way, but as part of the food chain they had talked about in circle one day. He asked why the spider needed to interact with the cricket in that way. Al remained for at least 20 minutes minutely observing everything about these two creatures, even bringing over a magnifying glass to see the leg structures because the teacher had shown them in circle that insects have three parts to their bodies and he wanted to make some comparisons here. Al continued to make the tarantula's activities his special area of concern for many days after, using them in his artwork and his story telling, talking with his parents about them, and making other leaps of fact and imagination and interdisciplinary connections to other topics discussed in the classroom (Haensly & Lee, 1995, 2000).

Museums, adventures, and discovery activities can become intrinsically differentiated curriculum if the activities are constructed appropriately and viewed in all their possibilities. They can become the right match for learners at many levels of prior knowledge and ability or predominance of participatory preference. This article is designed to demonstrate how that match may exist, delineate necessary conditions, indicate the relationship to differentiated curriculum, and describe appropriate examples in various settings. These may duplicate, extend, or adapt to the children and setting in which you work and teach.

Functions Served

Emotional enjoyment, interest, participation, intellectual development, creative stimulation, idea generation, ideas for other projects, interdisciplinary connecting, and learning for a lifetime were all taking place for Al in this small encounter as adventure and discovery became a reality for him in a Minds Alive classroom. The material invited his participation as he intellectually considered what he was observing and its relationship to other information he had been gathering from the children's thematic lesson on insect life. As he observed the tarantula, Al began to derive some of the short poems that he often created and arrived at images to incorporate in his artwork. What he observed and thought about led to other creative projects such as using the magnifying glass to study the anatomical structure of the tarantula's legs, comparing this information to that about the ants the children had been studying, as well as relating to stories in which such creatures played a role. These important interdisciplinary connections become the foundation for lifetime learning strategies in which Al might eventually take a multitude of directions, guided by experts but initiated by Al himself.

Stakeholders

The concept of stakeholders is useful because it reminds us that individuals differ in the stake or investment that they have in an endeavor. Children become stakeholders in museum programs in so far as the venture captures their attention and commitment for continued involvement. Parents and other educators become stakeholders as they set the stage for children's involvement, construct exhibits and materials for participatory learning, and gently guide without usurping the process. Administrators become stakeholders when they encourage classroom teachers to teach in this way, set policy regarding the ventures, and promote them.

Nature of Interactions

For authentic learning and growth to take place, children's interactions with the content must be so richly envisioned and implemented that the activities consistently generate meaningful processing for a variety of different individuals with different prior experiences, knowledge, and ability levels. Exhibits or adventure plans must have multiple entry points, so that individual children can find the exhibit uniquely "connect-able" within their own zones of proximal development (Vygotsky, 1978).

Play and growth became synonymous in the life histories of the talented youth

whom Bloom (1985) studied. Strong interest and emotional commitment to a particular field, followed by a desire to reach a high level of attainment in that talent field, were among the general qualities in each talent field from music and the arts, to athletics to math and science. What began in the child's mind as play and recreation with the activity led to dedicated work and activity in order to become so highly competent that the activity became a lifelong avocation or career.

Zeal, proposed by Galton in 1869 as integral to giftedness, then resurrected by Renzulli (1978) as task commitment, finds new relevancy in the concept of "flow" (Csikszentmihalyi, 1975, 1991). Flow occurs when powerful concentration brings about such great absorption with the task or activity that one feels completely happy and free from mundane existence. At first seeming somewhat foreign when describing a child, it takes little imagination to realize that Al too was experiencing "flow."

Advocates of the Waldorf approach (see Hutchingson & Hutchingson, 1993) describe how Waldorf teachers are taught techniques to combine these three functions—thinking, feeling, and willing—in every lesson, every day, across a 13-year curriculum. Their curriculum is founded in the belief that when a child becomes excited, curious, or concerned about something, only then will attention be fully engaged. These factors are similarly important to continued engagement and follow-through on school-based projects of adolescents (Delcourt, 1993) and the lifework of creatively productive adults (Haensly & Roberts, 1983). Whatever the setting, engagement begins with some kind of feeling experience, continues through thinking about the experience and content, and is actualized through a willingness to remain engaged.

Other schooling approaches focus on the co-learner role of adults, especially parents, in these activities. Barbour & Shaklee (1998), citing Gandini (1997), describe the role of parents in the Reggio Emilia approach to gifted child education as "equal partner in the education of their children." Ideas come forth and grow when children discuss, dialogue, and debate. Annemarie Roeper emphasizes that successful teaching of gifted children occurs only when we listen to the soul and mind, the child's passions, for those are the foundation of their learning experiences (Roeper, 1997). Friedman and Master (1981) describe a partnership involving their school and a university museum gallery, citing hurdles to overcome to make this partnership work (from scheduling to transportation to oversight staffing for off-campus activity during museum visits) and the necessity to include teaching so that discovery and inquiry take place. Gartenhaus (1991), in museum-literacy directives for teachers, provides resources and ideas for teachers to incorporate and synthesize such experiential learning.

Albert (1992), in his book on genius and eminence, discusses focal relationships and crystallizing experiences as possible outcomes of adventure and exploration. Albert (1992) suggests that both, though different in context, foster in the early life of gifted individuals a "reality-based sense of identity and competence" (p. 15). He describes crystallizing experiences as "unpredictable, intensely insightful episodes of self-discovery" (p. 15), stating that not all gifted children have these experiences. Siegler and Kotovsky (1992) suggest that "some people's biological makeup predispose them to be interested in, and exceptionally skillful at, certain domains if they receive

the right type of experience" (p. 101). Documenting crystallizing experiences in geniuses through retrospective biographical studies, Walters and Gardner (1985) find they are fragile phenomena, occurring only when talent, exposure to particular materials, and self-teaching combine in quite propitious ways.

Unfortunately, museum and adventure contexts have often attracted inadequate interactions for constructive learning. Gardner (1991) describes "one-shot visits to museums" where children "fail to appreciate the meaning and implications of exhibitions encountered" (p. 203), as in many field trips. Avoiding such superficial interaction may be accomplished by incorporating the contextual characteristics described below.

Relationship to Differentiated Curriculum
According to Passow (1982), "differentiating curricula for the gifted/talented is essentially a process of individualizing curricula to better match individual and group learning needs, abilities and styles….Curriculum differentiation aims at eliciting learner responses commensurate with gifts or talents" (p. 6).

Curriculum may be an agenda, an open plan of possibilities for learning provided by a defined set of experiences taking multiple shapes out of the variety of choices differentially made by individual participants possessing individual "learning rates, styles, interests, and abilities" (Passow, 1982, p. 6). Hertzog's examination of open-ended activities concluded that "differentiation occurred by students responding in more depth, with higher level skills, and in ways which were guided by their learning style preferences, and not from the teacher offering something different, more complex, or more abstract" (Hertzog, 1998, p. 223).

On a continuum of degree of learner choice, formal school curriculum usually occurs at one end of the continuum. In the middle of the continuum are Hertzog's open-ended activities (1998) and project approaches (Katz, 1989; Liu & Chien, 1998) using varied instructional approaches. At the far end of the continuum we find the museum and adventure experiences specifically characterized by choices learners make, rather than teachers.

Contextual Characteristics of Museum and Adventure Programs
Even the writings or pictographs on the walls of Anasazi caves in southwestern U.S. represent a form of museum, though formal examples might include, the Louvre and the Houston Museum of Natural Sciences. We focus here, however, on contemporary museums featuring participatory exhibits from hands-on materials to virtual reality experiences. Adventures, exploration, and discovery programs also fit this learning style, sharing contextual characteristics ideal for constructivist learning.

Internal Consistency and Reliability
Conveying the scientific foundation of the undertakings described in this paper, reliability is typically held to be synonymous with "dependability, stability, consistency, predictability, accuracy" (Kerlinger, 1973, p. 422), prized especially as a precondition for validity, a construct that also ensures trustworthiness (Lincoln & Guba,

1985) for claims that an event or action has the power to result in a specific set of outcomes. Only when museum exhibits and activities are appropriately constructed, introduced, managed, guided, and evaluated are these standards upheld. In order to retain internal consistency and reliability, essential criteria must be fulfilled and critical attributes present to ensure desired outcomes.

Essential criteria. Four essential criteria must exist for these forums to be fully dynamic and productive consistently. Activities must be constructed with the idea that learning is an active change process in which thinking complexly is of greater importance than learning about the domain itself. Activities must be so arranged that learners can find ways to take charge of their own learning—becoming agents instead of pawns in the active processing of ideas, fostering self-directedness and responsibility for one's own learning. Wise guides must provide scaffolding for the participant, ensuring that the activity takes the learner to new levels of knowledge and understanding. Finally, activities must be perceived as "fun," a motivational force that keeps participants actively engaged and more likely to continue to pursue such tasks, enhancing their own intellectual development (Gottfried, 1984; Gottfried & Gottfried, 1994).

Fun must, however, be derived from aspects central to the activated learning—through the curiosity, challenge, and delight in the complexity of the activity. Activities considered fun simply because of their novelty and peripheral play may not exhibit other essential criteria. Gifted students' conceptions of academic fun are remarkably similar across age and gender (Middleton, Littlefield, & Lehrer, 1992).

Critical attributes. Pressey (1955), discussing the nature and nurture of genius, states, "At any age, development of any ability is fostered by a favorable immediate environment, expert instruction, frequent and progressive opportunities for exercise of the ability, social facilitation and frequent success experiences" (p. 125). Thus, when Gibson (1982) describes the mutuality between an organism and its context as affordance and effectivity, she is reaffirming the concept of critical attributes embedded in Pressey's nurture of genius when he cites "favorable immediate environment" and "frequent success experiences" as the critical reciprocal interaction.

Scaffolding and Zone of Proximal Development

Scaffolding provides children with a platform to boost their thinking to another level, bridging the gap from what is currently known to a new level of thinking (Rogoff, 1990). Carefully worded prompts, questions, and suggestions allow children to take the initiative in the next step of their thinking, but also "point them" in a productive direction, nudging their thinking so they can construct their own understanding, rather than regurgitating others' thinking. Suggestion of possibilities, rather than telling of outcomes, is critical. "Caregivers need to be aware that they are part of the interactive equation; parental involvement motivates and guides children, and avoids mistaking the museum for a daycare….Caregivers should know the difference between supporting their child's learning and explaining all of the mysteries away" (Burns, 1996).

Scaffolding makes even more sense when we examine Vygotsky's concept of zone of proximal development, "a dynamic region of sensitivity" (Rogoff, 1990, p. 14). Vygotsky (1978) proposed that for all learners there is a limited boundary beyond current competence where the learner can understand at a next level of complexity, but only if scaffolding from a more knowledgeable individual or someone with greater expertise is given.

Expert/Novice Relationships

Boston (1976) described the mentor as a conduit or channel for guidance and wisdom, moving out of the way of the growing competence of the youth and serving as a catalyst for growth in a direction best suited to the youth. Ideal mentorships (Haensly, 1989; Haensly & Parsons, 1993) provide youth with an adult expert who gives guidance and encouragement because of a shared passion for an area of interest and inquiry, and in the relationship becomes a personal advocate for development of the individual's unique template, instead of a model for replication. In so doing, the mentor links the student with life beyond the school setting. Mentors can extend the museum experience immeasurably.

Applying the apprenticeship model, a group of novices (peers) can serve as resources for one another in exploring a new domain (Rogoff, 1990). Lave (1988) states that "apprentices learn to think, argue, act, and interact in increasingly knowledgeable ways with people who do something well, by doing it with them as legitimate, peripheral participants" (p. 2).

Inquiry by nature leads to growth-oriented experiences, facilitating development of both the child's cognitive and social being, quite naturally evolving into projects even when not formally presented as such. Holistic projects in early childhood education became more appealing to teachers as they observed the enthusiasm and receptiveness of children to this mode of learning that is at the heart of the Reggio Emilia approach (Gandini, 1997; Katz, 1994; Katz & Chard, 1989). Projects fit well into the developmentally appropriate practice advocated by the National Association for the Education of Young Children (NAEYC) (Bredekamp, 1987; Hartman, 1995). As an appealing and practical way to involve parents in school-based curriculum, educators in Taiwan found beneficial parental involvement emerging when they initiated a project approach (Liu & Chien, 1998).

Applications of the Museum/Adventure Model

How do we construct such deep processing contexts, for whom, and under what circumstances? Instances of well-conceived applications of the museum/adventure model can help demonstrate additional possibilities for the youth with whom you work and the environments available to you, or which you can modify, gravitate to, or reconstruct for your particular population and specific domain of knowledge and learning. Examples are described in further detail in the full-length paper available from the author.

The Smithsonian Early Enrichment Center (SEEC)

The Smithsonian Early Enrichment Center (SEEC) evolved as Director Sharon

Shaffer created a national model for museum-based education for young children, developing a curriculum called "Museum Magic" (Heyman, 1998). This curriculum connects children's exposure to exhibition objects with unique activities across a variety of disciplines to be experienced in the art galleries, gardens, and National Zoological Park. Using a unifying theme to give connection to the experiences, children are guided through a series of different domains and contexts for learning about the theme.

Heyman's example refers to a theme of communication in which children might examine African art symbols, then create their own symbols using art forms such as sponges and printmaking materials. Next, a visit to Degas' ballet sculptures, prefaced by a discussion of dance as a means of communication, might lead to opportunities for the children to dance and pose as in the sculptures, and then, listening to different kinds of music, imagine and try out dancers' movements. A visit to see lighthouses in the American history maritime exhibit might follow, where light and rhythm sticks are shown to communicate important messages. A culmination of this thematic exploration might involve viewing a Georges Seurat painting of a lighthouse to see how the artist communicated different qualities of light, again with activities for children to try out their own artwork for communication.

Children of multiple ages, types, and ability levels can enter deeply into the activities that interest them most at different points along the sequence of exploring one overarching theme. The theme opens doors to a wealth of other explorations and disciplines in other settings and at other times. Personal choice of content and learning mode, pace or length of time for exploring any one of the activities, and depth of exploration are all variables controlled in great part by the children themselves.

Whatcom County Children's Museum
Many cities have developed children's museums with a variety of exhibits from which innovative parents or teachers can construct unified activities with differentiated curriculum possibilities on the order of that just described for the SEEC. However, not all museums consider the unifying and educational aspects as much as how to create a playful and intriguing entertainment experience.

The key to meaningful and long-lasting learning lies in planning, scaffolding, and readiness of children and parents to take time to explore. Scaffolding directives focus on suggesting ways to prepare for a museum visit, help children interact with exhibits, and extend the experience after the visit (Greene, Magarity, & Toth, 1998). The central intent of museum planners must be to help "children acquire confidence and competency in creating, exploring, and learning…a 'yes' environment" (Erickson, 1997, p. 3).

A second insight regards assistance given to adults accompanying the children. For example, one little boy who appeared quite interested in why he could lift so much weight with the pulley asked his dad for the reason, but his dad turned the question back to him. After pondering the question, the boy still couldn't seem to explain, so his father stated simply that when you pick up something by pulling it with a rope or wire over something else it becomes easier to lift because the weight is distrib-

uted. The boy then stated that he could maybe get some heavy wood up into his tree house that way and his dad agreed that they could test out this idea (Kittleson, 1997). Applying new information to already familiar experiences and finding ways to extend an understanding of a concept by applying it in a new way are important steps in moving a learner from the pseudo-concepts created with simple attribute listing to real conceptual understanding. "Productive activity that concerns practical objects—labor—is the basis of all human cognition" (Davydov, 1990, p. 233).

The third insight has to do with readiness differences of children and parents for museum experiences, with some parents uninvolved and children speeding through exhibits; and others taking time with intriguing activities/tasks, asking questions, exploring answers, and "staying in the museum for hours" (Kittelson, 1997, p. 4).

Mr. Rick's Third-Grade History of Civilization
There are other situations in which the museum concept can be applied, and other ages for which it can be appropriate. Mr. Rick's history of civilization (see Haensly, 1998a) for third graders begins in September with the Stone Age and is completed approximately 9 months later. Divided into six time periods, each era is characterized by major approaches of humans to living based on the extent of that era's technology and environmental demands. Each 6 weeks of inquiry is culminated by a museum exhibition to which other classes, teachers, parents, and community come for a viewing. Students move on to the next grade level well versed in advanced investigative skills, thoughtful conceptualization processes, and creative ideas for illustrating their learning. Differentiated curriculum exists with choices, interest, involvement, and transfer by all participants, no matter what their ability level.

Adventures for Adolescent Learners
Many programs for adolescent learners have arisen in recent years based on the idea that adventure is a context to which adolescents can be drawn, with its discipline content as varied as medicine, marine biology, architecture, water hydrology and environmental stream conservation, theater, or archaeology. The Galveston Island Adventure program, established by Dr. Bill Nash from Texas A&M University, served hundreds of adolescents from around the U.S. in settings connected to the nearby NASA astronaut program, university laboratory hospitals, a rich architectural heritage of Galveston city, or the marine biology life of the Gulf of Mexico.

In a NASA-funded program, 50 American Indian students from several northwestern Indian Nations who were entering grades 10 through 12 focused on geology, environmental science, and aquaculture in the Seaquest Program, doing both classroom studies and science activities in the field. Students set up projects themselves, such as an inventory of coho salmon at the tribal fish hatchery. Fun, hard work out-of-doors, advanced academic skills, and cultural relevance are all characteristics of this program, along with extra high school credits and career paths exploration.

Characteristics of the more effective programs include "fun" high on the list of adjectives applied by participants, specific interests explored in unusual ways, learners led by "turned on" faculty experts who relished the opportunity to work with ado-

lescents, and the challenge of learning concepts and strategies deemed important by the field's experts. Challenge came from tapping zones of proximal development in bright students who had often been only marginally aroused by low expectations for academic response in their regular classrooms. Affordance and effectivity were rampant.

Some participants in Camp Planet Earth, a geo-sciences adventure program for minority adolescents (Haensly & Lehmann, 1998) found career aspiration for fine arts careers, teaching, or business reconfirmed through their geo-sciences adventure experience, having learned much about themselves and about learning itself through the monthlong program.

Conclusions

Stephanie Pace Marshall, founding executive director of the Illinois Mathematics and Science Academy, suggests that the reason why museums and apprenticeships are so powerful for learning is because "they facilitate learning that is both authentic and explicit" (Marshall, 1994, p. 192). In Howard Gardner's words, they create environments which enable students to "naturally link their intuitive ways of knowing with scholastic and disciplinary forms of knowing," building the capacity of learners to "take risks for understanding" (Gardner, 1991, p. 258). Marshall adds, "schools as museums, teachers as master craftsmen, and students as apprentice investigators—these are the educational environmental constructs in the high-stakes learning environment that we must create for our gifted students" (1994, p. 192).

In the meantime, until school universally becomes such an enviable learning environment, parents and other educators may take hope in the idea that an ideal learning environment can exist anywhere that learning is occurring as an exciting, meaningful interaction, and that such environments can be made available in places other than school. We need only to become aware of them, prepare to use them effectively, and enjoy them, whether we are children, parents, or other co-learning adults!

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Adolescent Perception of Musical Ability

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ABSTRACT

Little recent literature emanating from New Zealand has examined the identification or needs of the musically gifted student. This paper considers factors which may effect the development of musical gifts and talents in New Zealand secondary schools. The study explores how a sample of music students ascertain their musical ability and on what value basis they measure their giftedness. This is effected though comparing their perceived musical abilities with standardized test results for musical ability. An analysis of their responses to a questionnaire on factors influencing their musical self-perception ratings was also made. The findings suggest that the cultural bias of Western musical traditions may be a factor that affects students' self-perception ratings and optimum musical development. Other factors, such as societal influences and extrinsic and intrinsic motivators also appear to play a part.

Introduction

"Human abilities, particularly exceptional ones, are vital resources for the well-being of all cultures" (Howe, 1990, p 1).

To date, very little New Zealand research has attempted to identify musically gifted students or the educational needs of the musically gifted child. This is a concern to those educators wishing to nurture and develop giftedness in music. The present study sought to address this concern. In particular, the study explored how music students evaluate their musical ability, and on what value-basis they assess their giftedness. For example:

1. Do they measure themselves against a performance standard dictated by peer group, parents, or media image?
2. Do they measure themselves against their innate musicality in some way?
3. Do they measure themselves on the western tradition of ability to read music?

The study also investigated whether the students' self-concepts reflected a cultural bias that influenced their attitudes and motivation to learning and achieving in music.

Method

Data were collected from 18 students (mainly 14-year-olds) who were taking an optional music course in a male, single-sex secondary school. This school was chosen because the students represented a mix of ethnic backgrounds. Of the 18 students, 9 were European New Zealanders, 4 were Maori New Zealanders, 3 were Pacific Islanders, and 2 were Indians. All students were either learning an instrument or taking vocal lessons as part of their music program. During two separate 1-hour periods, the students (1) filled in a questionnaire concerning self-perceptions of musical ability, and (2) were administered the standardized Bentley Music Test which identifies and measures music ability through aural processes.

Results and Discussions

The Maori, Pacific Island, and Indian students comprised the majority of students who scored high to very high on the innate musical ability test, which suggests that these students operate well within an aural tradition. This concurs with ethnomusicological findings.

Only a small proportion of the students' self-perceptions matched their innate ability scores. Most of these perceptions were by Maori and Polynesian students, which suggests that they may be more able than European New Zealanders to perceive their musical ability accurately. Overall, however, the results showed that students rate their competence below their actual ability. It is particularly significant that none of the students who scored very high on the Bentley test perceived their ability accurately.

Another interesting finding was that many of the students did not rate aural skills, such as playing by ear, to be of particular importance when rating musical competence. Rather they considered musical performance to be the most important criteria. Performance, of course, is often used as a key measurement tool because it is visible, so perhaps the students accepted without question this "message" from their social environment. What is clear in the study is that musical self-perception ratings based on performance are not necessarily an accurate measure of finite musical talent and potential.

The above issues, and others raised by the study, have implications for curriculum developers. The move to include performance in the current prescription is obviously sound, judging by what appears to be the most relevant goal for the musical youth subculture of today. However, rather than having some students turned off by difficulties with traditional notational methods, there is perhaps good reason to broaden the syllabus to include retrieval skills most appropriate to the genre in which the students are performing. This would mean traditional notation for Western composition retrieval, but aural/technological retrieval and manipulation for the contemporary commercial scene.

These implications would mean reeducating music educators who presently can think only within the confines of the dominant culture's western notation system. Aural retrieval methods need valuing in their own right. Long term, this could have a significant impact on music education at the secondary level. It could also mean that a wider group of versatile musicians with skills adaptable to the musical world of today's adolescents may be eligible to train for specialist music teaching.

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Self-Esteem and Self-Discipline:
The Essential Connection

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ABSTRACT

Albert Einstein, Vincent van Gogh, Eleanor Roosevelt, Franklin D. Roosevelt, Helen Keller, Christopher Reeve, and Mustafa Ataturk are extraordinarily successful people who overcame extraordinary adversity in their lives. These people, along with many others in the world, fit the profile of survivability in an otherwise daunting environment. They were successful, not in spite of the stresses and challenges in their lives, but because of them. They knew the extent of their abilities. They knew how to stretch themselves. They knew how to fail and they knew how to learn from their failure. They had confidence that they could face difficulties and succeed. And succeed, they did!

Shaking the Tree

The following story illustrates the concept. I was a guest at a hotel and could not get to sleep one night. While walking along the inside balcony of a huge indoor atrium of the hotel where palm trees were growing, I noticed a man shaking one of the palm trees. Wondering what was happening and why this man was attacking the palm tree, I went downstairs to inquire. The man shaking the tree responded that he was an employee of the hotel and one of his jobs was to shake each young palm tree. As they were growing this was needed so that the trunk of the tree would grow strong. Since they were not subjected to the outside stress of the winds and storms, they needed to be shaken, or they eventually would lie down and die. The added stress was essential to their early growth. It gave them the necessary resiliency to survive. Children also need stress to grow and survive well in this world. It is our obligation as parents and educators to ensure that they have carefully balanced stressors, with appropriate corollary support.

Spare the Prod—Spoil the Child

Research and literature support the thesis that children need stress to grow as resilient, strong, successful adults. The director, William Durden, of the Johns Hopkins Center 3-week summer program for gifted children, said that stress is not something negative (Machan, 1991). In fact stress and competition are essential for educational advancement. It is the belief of the Johns Hopkins Center that underchallenging our youth will not only be a loss for the child but a loss of potential leadership for our country. Every summer, gifted children ages 11 to 17 years old are pushed to their limit and given challenges of learning that are extremely demanding. Classes in math, history, writing, and chemistry are compacted into a rapid learning experience. A full year of chemistry is taught in 15 days. The students feel overwhelmed and overworked and the usual response is that they love it. They may for the first time in their lives receive criticism for their schoolwork and are thankful for that, even if it in some cases brings tears. One student commented that it was the first time she had ever experienced constructive criticism. Another stated that the summer program was finally a place he could have an intelligent conversation. They wanted to be intellectually stretched and challenged. In their own schools they sometimes felt like weightlifters who had been given 10-pound weights to lift, rather than the 100-pound weights they had experienced during the summer. Many dreaded going back to regular classrooms.

The question gifted children are asking is, who am I, really? How much can I learn and do? Where are my limits? They will never know the answer, nor will their parents unless they have been given challenges that afford them the opportunity to stretch and to fail. The children who grow up not having that experience will not know what to do when the inevitable failure comes. Many gifted children who have always succeeded because everything was easy for them crash emotionally when at some point later in their lives they do not succeed in a relationship, school, or career venture.

Resiliency

One positive result of stress can be resiliency. Resiliency is the ability to be flexible, to maintain stability in the midst of turmoil, and to rebound after failing. Resiliency is gained through a personal history with a balance of stress and nurture. In 1955 on the Hawaiian island of Kauai, a study was begun in which 698 children were tracked over the first 30 years of their lives (Werner, 1989). The goal of the study was to find out the developmental effects of prenatal and perinatal stress and adverse home conditions in the early years of life. The lives of these children were followed in many different ways. The mothers were interviewed. The interactions of parents with their children in the homes were observed. Pediatricians and psychologists examined the children. Achievement and personality tests were given to them. Their teachers evaluated them. Finally the subjects were themselves interviewed. Two hundred and one of the children were considered high-risk children. These children had experienced four or more major stresses in their early life. These stresses included moderate or severe reproductive stress, poverty, parents with an eighth-grade education or less, major discord in the family, divorced parents, parental alcoholism, and parental mental illness. It would have been expected that all of these children would have had developmental problems. However, more than one third of these children grew up to be adults with healthy personalities, stable careers, and excellent interpersonal relationships. They had a sense of purpose and control over their lives.

The question was raised as to how this had happened for these high-risk children. When the data was analyzed, it was found that there were certain factors that were the same in the lives of the successful high-risk youth. One was that they had one adult in their lives who accepted them unconditionally and to whom they could go to for

nurturing and encouragement. This was not necessarily a parent. Often it was a grandparent, aunt, uncle, teacher, or babysitter. Also many times this person changed over the course of the child's development. That did not seem to matter as long as there was that one special person. They also had primary adults in their lives who encouraged their independence, taught them self-help skills, taught them assertiveness skills, and showed them how to be caring people. These essential skills were not just taught but they were modeled. They had responsibilities for family tasks. The children had a network of neighbors and friends that they could count on in times of crisis. The children made school a home away from home.

Additionally, the children had internal traits that elicited positive responses from the people around them. They had a high-activity level, a high degree of sociability, and a low degree of excitability. They knew how to ask for help when needed, and they used and shared their talents and abilities well. They learned how to have some control over their environment and themselves, and they gained a positive self-esteem and the quality of resiliency. They had a purpose in their lives and the knowledge that they could face adversity successfully.

At age 30, personal interviews revealed that compared with their low-risk peers, a higher percentage of the successful high-risk subjects said that they were happy. The adversity had actually contributed positively to their development. It was obvious that it was not the amount of stress that was the essential factor but the fact that stress was balanced by the teaching and caring of primary adults and by the innate qualities and resourcefulness of the child.

Asset Building
In further pursuing our premise that developing resilience is not only possible, but also likely, we looked to the Asset Building research of the Search Institute of Minneapolis (Polston, 1998). In their efforts to answer the question of what makes some youth able to resist drugs, alcohol, and other problems, the Search Institute started with what was right with youth rather then what problems existed. What they report is that young people who documented happy, healthy, drug-free and positive behavior were those who were fortified with developmental assets, had been presented with challenging opportunities in home, youth programs, or church, had one or more adults they held in high esteem, and/or had created a useful role for themselves rather then having been given one. Many of these factors overlap the resiliency data from other studies including those cited in this article.

The Search Institute then separated the essential key factors into two categories: Positive external experiences (such as supportive families, adult role models, involvement in creative, academic, or religious programs), and internal characteristics (such as personal integrity, talent, honesty, restraint, responsibility, and a sense of person control in their destiny). These pilot study factors were then field tested in a survey of 46,000 American youth, ages 11 to 18. Then, when confident of the variables, both internal and external, the full study of more than 250,000 youth was commenced. In this final study, the relationship between each youth's behavior, positive or negative, was compared with the number of assets that the youth possessed. Across the entire study, it was found that the young people with greater assets from both external experiences and internal characteristics, experienced a higher level of positive behavior as demonstrated by such criteria as success in school, good health, getting along with peers and adults, and lower levels of risk behaviors such as substance abuse, violence, and early or ill-advised sexual activity. Likewise, the reverse was true of youth who had fewer assets. What was concluded was that the number of assets required for adequate inoculation in today's youth was possession of a total of 31 or more asset markers. However, the problematic reality revealed that the average number of possessed assets was only 16. This is barely one half of the minimum required.

Why is it that so many youth have so few of the necessary personal assets required for minimal success?
1. An alarming number of youth today do not have a single positive relationship with even one adult.
2. Opportunities for youth to develop social skills or decision-making abilities have become very rare.
3. The family structure has been weakened. For example, most families do not eat meals together; often, those who do, do not make it an uplifting experience.
4. There has been a decrease in extracurricular and educational funding providing success opportunities for youth (Polston, 1998).

These are only a few of the losses. What are parents to do? Provide their children with all of the necessary ingredients and opportunities that will further asset enrichment. For parents of the gifted, this task, while daunting, will yield huge rewards of responsiveness in their children. Again, what gifted children need in this area, *all* children need to one degree or another as well.

Finally, the Search Institute documented for us the clear fact that enrichments or deficiencies in environmental supports to youth affect all children regardless of age, gender, geography, race, religion, ethnicity, or intellectual acuity. All children respond to the opportunities provided to them, or the lack thereof. What does this have to do with resiliency, shaking the tree, and challenging our gifted youth? Everything! Each child needs to be challenged in order to stretch and grow. The following are suggestions for "shaking the tree" of challenge for our youth.

Increasing Positive Family Communication
Parents
- Be accessible to your child for conversation. If it is not possible to talk when they want to talk, set a time to do so as soon as possible.
- Always listen more than you talk (two ears, one mouth: used in that proportion).
- Do not criticize or ridicule a child's opinions or feelings.
- Positively encourage and reward your child's communication efforts.
- Inquire about your child's day, what they are doing and what their plans are. Tell them the same about you.
- Give individual time to each child every week.
- Declare as few subjects as possible off limits. Be willing to look up answers to

your child's questions that you do not know.
- Seek an opinion from your child on something important.
- Obtain help from professionals to round out your own skills.

Educators
- Educate for character. Teach specific aspects of personal empathy and responsibility.
- Make assignments that will require communication of the students with their parents. For example, ask them to find out their parent's opinion about a current political issue.
- Give literature to parents that will assist them in answering difficult questions such as those about HIV/AIDS, teen pregnancy, alcohol and drug abuse.
- Teach students how to express their feelings. Give them words that they can use to describe their feelings. If they can name their feelings and emotions, they can begin to control them.

Community members
- Organize activities that include both parents and their children. Plan time for family communication.
- Sponsor workshops on issues that concern the community. Find speakers who have expertise in teaching ways to communicate with youth (Polston, 1998).

Increasing a Sense of Worth in the Community
Parents
- Allow your children to participate in family decisions. Take seriously and value their opinions, talents, and interests.
- Request help from your child in planning family and neighborhood activities.
- Give your child the opportunity to teach you something, a song, or a skill, for example.

Educators
- Educate for character. Teach specific aspects of leadership.
- Encourage youth to influence their community in a positive way. Teach them skills that will assist them in this, such as telephoning, networking, and giving speeches.
- Grant the student council real power over decisions in significant school issues.
- Allow students to be active participants in planning their own education, including choosing independent study projects.
- Give youth the chance to learn how to teach others through tutoring and mentoring experiences with younger students. Offer school credit for that.

Community members
- Place youth on community and neighborhood boards and councils. Give them leadership roles and decision-making power.
- Have jobs available for youth in settings that are appropriate.
- Advertise volunteer opportunities for youth (Polston, 1998).

In summary, resilience is fostered by the careful balance of parenting, education, and community support that is not too demanding or harsh, or lenient and accept-

ing. With our gifted children and youth, a more careful assessment of the proper balance is required because of the multitalented and gifted nature of many bright youth. A strong challenge in academics may be appropriate for a child, but a much milder challenge may be in order in the area of social interaction or athletics. All are important. The proper balance of challenge versus support is an absolute requirement.

Meaningful Contact with a Caring Adult
A study of the Big Brothers/Big Sisters of America program completed in 1995 by Public/Private Ventures (Bernard, 1998) added more support to the importance of positive adult connections in the lives of our youth. Almost one thousand 10 to 16 year olds were in the study (Bernard, 1998). It revealed that the program was effective in positively affecting the behavior of youth in relation to drug and alcohol use, violence, and school attendance. A regular, meaningful contact with a caring adult made a big difference in the behavior of the child. After relating to a big brother or sister through this program for 18 months, the children were 46% less likely to use illegal drugs, 27% less likely to drink, 33% less likely to hit, and 50% less likely to skip school than their peers who were not part of the program.

Peak Points of Vulnerability
Research studies of gifted children, grades 1 through 12, have revealed that the most susceptible developmental time for emotional vulnerability was different for gifted boys than it was for gifted girls (Kline & Short, 1991). For girls it was the senior high school years and for boys it was the junior high years. The data indicated a significant decrease in the self-regard and self-confidence of gifted girls throughout their school development. Likewise, levels of perfectionism and discouragement rose, and relationships with parents declined. By the high school years the level of inner courage and self-assurance was at a low point for the gifted girls. By contrast the gifted boys in the study indicated that they were significantly more discouraged and felt more hopeless during grades 5 through 8 than during the senior high school years. By senior high, gifted boys had identified the goals of obtaining a career and making a successful living. School provided a means and encouragement for them to fulfill those goals. Gifted girls, however, reported themselves in a conflict between using their abilities for a career and establishing a significant relationship. The two often seemed incompatible to them. At the respective points of greatest vulnerability for gifted boys and girls, both challenge and supportive nurturing are especially needed from parents, educators, and other mentors.

Highest Standards of Learning
Another vivid example of resiliency and self-worth coming from adversity is the experience of 200 missionary children imprisoned during World War II (Previte, 1994). The children were attending a missionary school in China. Then in 1945, they and their teachers were captured by the Japanese and taken to a concentration camp in China for the duration of the war. They were surrounded by barbed wire and separated from their parents for 5 years. The teachers and the children had access only

to the most primitive living and schooling conditions. They ate animal feed for breakfast. They had no chairs, desks, or books. However, their teachers held the children to the highest standards of conduct and learning in the midst of the other chaos. The answer to the turmoil of the world around them was a world inside the camp of rules and high expectations. They were expected to have table manners worthy of princes and princesses even though they were eating animal feed. They were expected to learn as much or more than they would in a regular school classroom. The fact is that almost every child in the concentration camp passed the Oxford preparatory exams upon leaving at the conclusion of the war. Looking back on this experience, these children, when grown, considered it an extraordinarily positive experience, one of the best in their lives. The children in the concentration camp had been shaken like the trees in the hotel. They were stronger, more resilient, and more capable individuals because of their experience when they were young.

Assessment of Resiliency

In the assessment and evaluation of children and adults, it is very important to look for stressors and their corollary balance of resiliency factors. What is the best way to test for resiliency? There needs to be a careful interview with the parent regarding themes of upbringing and how much the child has encountered stressful situations and what reactions the child has had to them. Traditionally red flags have been noted when a child has had much stress. However, we believe that if we do not find a history of successful resiliency to stress, then *that* becomes a red flag for concern. If a child has not been challenged like shaking of the tree, then the child needs to be introduced to appropriate challenges. If you are an adult who has not experienced the challenging, stretching, stressful circumstances of life, then you, likewise, could do well to seek challenges that will push you beyond your comfort zone.

If your child has not had maximum exposure to life's challenges while still under your care, guidance and nurture, you may not have accomplished what you need to do as a parent. If you accept this premise, your challenge as a parent is to prepare your child for a life of stress, a life of challenge. Clearing the path ahead of them, running interference, greasing the slide, and prenegotiating will be a disservice of the highest order if that is all that you do. Each of those features is important some of the time because they help to maximize opportunity. If, however, in maximizing opportunity you have limited exposure to stress, you have also limited your child's exposure to personal growth. They need to be challenged like the trees, so that their character will become strong enough to withstand the inevitable storms of life.

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Evaluation of the Teaching Model for Gifted English Education

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ABSTRACT

English is one of the major courses in the special program for gifted and talented children. The target of English education for gifted children is to promote their psychological, emotional development in English learning and to provide them with a solid foundation in the knowledge and application of English. This knowledge will prepare gifted learners to absorb up-to-date global information in their future study and work and support them in career success.

Acceleration, combined with high efficiency and a shortened school year, is the principle of gifted education at the Beijing No. 8 Middle School. To adhere to this principle an English-teaching model was developed with consideration of the characteristics and special needs of gifted and talented children. The model is composed of challenging and feasible educational objectives, a fundamental program design, and the teaching mode.

This paper describes the structure and assessment of the developed English-teaching model. The model was assessed for its fitness and efficacy in the aspects of children's emotional development toward English learning and their English level in both basic knowledge and application abilities. The children's emotional development was demonstrated by a set of observable behaviors toward English learning and the children's English capabilities were assessed quantitatively by statistical data from English tests and communication practice.

Principles for Creating the Teaching Model
Entirety

In China most middle schools consist of junior and senior divisions, each 3 years in length. The junior division is provided for every child while the senior division can only be provided for part of the students of the junior division. Because of limited seats only some students can continue to study at the senior division, chosen through competitive examination. The junior and senior divisions have separate targets with fewer links.

A special provision for the gifted and talented children at Beijing No. 8 Middle School is that the children continuously complete junior and senior schooling within 4 years following the acceleration and school-year shortening policies to drive them towards a unique target. In this aspect their 4-year study is taken as a whole with no obvious junior or senior distinctions. The teaching programs are organized from a view of entirety and continuity to provide the children with a systematic study.

Emphasis

The programs, based on the children's psychological and cognitive progress, were organized in four steps designed out of the whole and each step was emphasized for a specific aim. The aims of the four steps were assigned to nurture the students' interest in English learning, develop their basic knowledge, develop their basic skills, and enhance their English application capabilities.

Repetition

In organizing the curriculum and teaching material, attention was paid to the reappearance or recurrence of the vocabulary, phrases, grammar, and sentences to facilitate their acquisition and retention.

Diversity

The curriculum consisted of not only textbooks, but a variety of materials including reading materials, reference books, audio and video tapes or discs, listening and speaking activities, performance, games, camping, and so on.

Challenge

To meet the special needs of the gifted children and to comply with the policy of school-year shortening, it was necessary to provide the children with challenging opportunities and enrichment materials featuring depth in difficulty, variety, and uniqueness in knowledge to enhance their competence in English reading and listening.

Suitability

Programs and materials are organized to adapt to high efficiency and school-year shortening policies and accommodate to the level of the psychological development of the gifted children. Considerations in selecting materials are: (1) difficult but understandable, (2) broad in knowledge and interest in English, (3) free from the grammar advent sequence, (4) supportive of children's psychological development, (5) able to improve the children's competence in English, (6) able to widen the children's knowledge of American and European culture.

Fundamentals and Teaching Modes of the Model
Relating age characteristics of gifted children and the acquisition of a foreign language

Research showed that within real-language circumstances children can naturally acquire a foreign language at the critical period from age 12 to 14 as they acquire their mother language. The children in our special classes for gifted enroll in special education at age 9 or 10 and finish at age 13 or 15. They are at the right critical-age period. It is important to create and provide a real-language environment to promote their natural absorption of English.

Mobilizing children's nonintellectual characteristics

Psychological and emotional factors play an important role in language acquisition.

Krashen (1981, 1982) indicated that motivation, confidence, and ease have a direct effect on the acquisition of a language. When those factors are negatively active, they will form a psychological block that stops the language message from reaching the portion of a child's brain where it is stored. It is therefore significant to mobilize the children's nonintellectual characteristics positively. The measures taken were: (1) making a challenging target for them, (2) highlighting their interests in English learning, (3) encouraging them to learn independently, (4) instilling confidence for success in children who fall behind, (5) encouraging them to use English to communicate without fear of making mistakes.

Stressing basic training in English knowledge and skills
A stable and solid foundation in English knowledge and skills is one of the variables of self-learning for gifted children. Pronunciation, intonation, vocabulary, sentence models, and grammar are the basic training aspects.

Implementing an acceleration strategy
Acceleration is a widely used strategy in gifted education. The school-year shortening policy of our special classes for gifted children demands acceleration which not only fits the teaching objectives but accommodates the gifted children's cognitive progress, their psychological development, and matches their capabilities.

Enriching the curriculum
Knowledge from textbooks provided for average school students is finite for gifted children. Research showed that there will be no obvious significance for gifted children if acceleration is not combined with curriculum enrichment. Students' capabilities in using a language depend greatly on the amount and variety of the curriculum materials. Teachers should provide gifted and talented students with diverse extracurriculum materials and organize a variety of in-depth activities that provide gifted children with more complete and sophisticated information than found in the regular classroom. These are beneficial to the development of their basic knowledge and skills.

Utilizing original English materials
Communication methodology insists on the importance of using original materials such as books, newspapers, news media, audio and video programs as well as other sources from the countries where the language is spoken. Also, the materials should be organized regardless of the grammar advent sequence. This appears to be more significant for the children in our gifted classes who are in the critical period of naturally acquiring a foreign language. During this period they establish in their brains the image of real-English language in both sound and structure.

Developing speaking and writing capabilities through extensive reading and listening practices
The purpose of learning a language is to use it. The ability of an individual to use a foreign language is mainly expressed by his or her speaking and writing comprehension. Acquisition theory indicates that speaking and writing competence is gained through receiving and absorbing the inputs of extensive reading and listening.

Encouraging and nurturing gifted children to become individuals who are able to study independently
The acquisition of the competence of independent study relies on three factors: having high-level intelligence, having stable basic knowledge, being competent in learning.

It is clear that gifted children have a superiority in the competence of self-study and that the self-study policy is more applicable to the gifted for they are exceptional individuals characterized by earlier physical and psychological development, steady attention and interests, decisive towards an objective, and advantage in self-control.

Scientific instructions should be given to the children to facilitate them to acquire competence of independent study. The PQ4R method was introduced. The PQ4R is briefly described as: P-Preview, Q-Question, 1R-Read, 2R-Reflect, 3R-Recite, 4R-Review.

Assessment of the Teaching Model
The English teaching model for gifted needs to be assessed for its fitness and efficacy in contrast with the education target. The assessment focused on two aspects: the children's emotional development towards English learning and their English level in both basic knowledge and application abilities.

1. Children's emotional development towards English learning
Research showed that the emotional development of a learner is closely related to his or her cognitive process. The evidence that exhibits positive emotional development of a learner towards a subject are considered to be having interest in, and confidence with that subject and an ardent desire to learn more. A student with enthusiasm will learn with more ease and faster than a student with less enthusiasm and confidence who is frequently worried.

The emotional development towards English learning of the children can be demonstrated by a set of visual behaviors as follows:
- Retain a clear objective and confidence towards English learning
- Be interested in English and love to attend English classes
- In class, concentrate on the teacher's explanation and answer, ask, and dispute questions actively
- Finish homework on time and be active in after-class enrichment activities
- Read textbooks and other materials bravely and loudly
- Seek extra reading and listening materials beside textbooks
- Be fully absorbed while reading
- Always try to speak and communicate in English
- Show calm and confidence towards tests

2. Development of children's English competence

The conceptual words such as master, grasp, acquire, apprehend, or comprehend were often used to assess the students' English abilities. But these conceptual words can not visually label the degree of the children's development in their English abilities. It is suggested in this model that the children's English capabilities be assessed quantitatively by the statistical data from English tests and communication practice to visually demonstrate their development.

A) Development of children's basic English knowledge

Basic English knowledge consists of pronunciation, vocabulary, phrases and grammar. The basic English knowledge development of the children was checked by Table 1 in which the targeted level that children were expected to reach was listed.

B) Development of children's capabilities of using English

Retaining the basic knowledge of English does not mean that children have attained the capabilities of using the language. They must be capable of using the basic knowledge to communicate with people, such as making statements, asking and answering questions, giving explanations and analysis, drawing conclusions, and writing letters and papers. It is the capabilities of using a language that indicates one's actual knowledge level in that language. The targeted capability level demonstrated by the percent correct when using English for the gifted and talented children is listed in Table 2.

Table 1. Targeted Level of Basic English Knowledge Development

Kn	Items	Targeted Level							
		1-1	1-2	2-1	2-2	3-1	3-2	4-1	4-2
Pronunciation	Phonetics	T	T	T	T	T	T	T	T
	Syllables	T	T	T	T	T	T	T	T
	Pronouncing of linked alphabets	T	T	T	T	T	T	T	T
	Word pronouncing	T	T	T	T	T	T	T	T
	Sound stress of a word	T	T	T	T	T	T	T	T
	Intonation	T	T	T	T	T	T	T	T
Vocabulary	Word spelling	T	T	T	T	T	T	T	T
	Word classification and meaning	T	T	T	T	T	T	T	T
	Phrases	T	T	T	T	T	T	T	T
	Amount of remembered words	550	1000	1500	1800	2200	2800	3500	4500
Grammar	Plural form of nouns	T	T	T	T	T	T	T	T
	Possessive cases of nouns	T	T	T	T	T	T	T	T
	Cases of pronouns	T	T	T	T	T	T	T	T
	Countable and uncountable nouns	T	T	T	T	T	T	T	T
	Classification of the verbs	-	T	T	T	T	T	T	T
	Irregular verbs	-	T	T	T	T	T	T	T
	Personal changes of verbs	P	T	T	T	T	T	T	T
	General tenses of verbs	P	P	T	T	T	T	T	T
	Present continue tense of verbs	P	P	T	T	T	T	T	T
	Perfect tense of verbs	-	-	P	T	T	T	T	T
	Passive voice of verbs	-	-	P	T	T	T	T	T
	Degree of adjectives	-	T	T	T	T	T	T	T
	Degree of adverbs	-	T	T	T	T	T	T	T
	Declarative sentences	T	T	T	T	T	T	T	T
	Simple interrogative sentences	T	T	T	T	T	T	T	T
	Special interrogative sentences	T	T	T	T	T	T	T	T
	Positive and negative patterns	T	T	T	T	T	T	T	T
	Imperative sentences	T	T	T	T	T	T	T	T
	Special interrogative sentences	T	T	T	T	T	T	T	T
	Positive and negative patterns	T	T	T	T	T	T	T	T
	Imperative sentences	T	T	T	T	T	T	T	T
	Exclamatory sentences	-	P	T	T	T	T	T	T
	Construction analysis of a sentence	-	T	T	T	T	T	T	T
	Direct and indirect citing	-	-	P	T	T	T	T	T

1-1: The first term of year one	1-2: The second term of year one
2-1: The first term of year two	2-2: The second term of year two
3-1: The first term of year three	3-2: The second term of year three
4-1: The first term of year four	4-2: The second term of year four

T: 90% or more of the children retain that knowledge
P: 60% or more of the children retain that knowledge
Blank: Knowledge item has not been learned

Table 2. Targeted Level of Capabilities in using English for Gifted and Talented

Items to be examined	Average correctness rate (%)
Word dictation	100
Sentence dictation	100
Listening comprehension on single sentence (MC)	90
Listening comprehension on dialogues (MC)	85
Listening comprehension on short passages (MC)	85
Guess the meaning of a unknown word occurred in a passage (MC)	90
Chose an equivalent word or term to an underlined word or term in a passage (MC)	80
Fill in the blanks with the proper form of a given word	90
Pattern changes of sentences	100
Fill in the blanks with a proper word	100
Make a sentence using given words and phrases	100
Chose a partner question, answer or statement from a given set of clauses corresponding to that of another set of clauses	100
Fill in the blanks to complete a sentence or a dialogue (MC)	100
Chose the correct meaning for a underlined word or phrase (MC)	100
Explanation of a sentence (MC)	100
Multiple choice in grammar and construction (MC)	90
Reading comprehension (MC)	85
Fill in the blanks with a proper word or phrase to complete a passage (MC)	75
Mistake finding and correcting for a single sentence (MC)	75
Mistake finding and correcting for a passage (MC)	75
Translate a single Chinese sentence into English	80
Translate a single English sentence into Chinese	90
Composition writing by a given topic	25 (full mark: 30)

Note: MC-Multiple Choice

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A Research Study: Acceleration of Gifted Students

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ABSTRACT

Gifted education in Australia has been an issue of strong interest and debate for many years. Key topics that continue to be vigorously debated include definitions, identification and assessment, and appropriate educational and instructional approaches. One of the most contentious issues surrounds the use of acceleration procedures for gifted students. The purpose of this research was to investigate the opinions of teachers and parents on the educational acceleration of gifted students. The study was conducted in Melbourne, Australia and supervised by the University of Melbourne.

Introduction

Gifted education has a relatively short history in Australia, although the education of gifted and talented students in the United States has been an issue of strong interest since the early 1920s. However, many topics continue to be vigorously debated including definitions, identification and assessment, and appropriate educational and instructional approaches. One of the most contentious issues surrounds the use of acceleration procedures for gifted students.

A review of the literature revealed that despite positive research evidence concerning the appropriateness and associated benefits of educational acceleration, it is not a popular or widely practiced procedure for gifted students. A barrier to the wider acceptance of acceleration procedures would appear to be the general apprehensiveness or negative attitudes of teachers and parents.

In this study the opinions of teachers and parents, with direct experience of educational acceleration, were explored using a questionnaire designed exclusively for the study.

In general, teachers and parents held very similar opinions on acceleration. While both groups expressed positive views about certain aspects of acceleration, they also shared several negative opinions. Teachers were found to be more uncertain about the social and emotional/behavioral benefits of acceleration and were generally less supportive of acceleration than parents. These findings are in general agreement with the results of previous research.

It was concluded that teachers would benefit from professional development programs on gifted education, especially the efficacy and positive benefits of educational acceleration, to enable them to meet the exciting challenge of educating gifted students in the next millennium with confidence and success.

Research on Acceleration Practices for Gifted Students

Reviews of the efficacy of accelerative practices with gifted students have appeared regularly in the literature for more than 3 decades (Benbow, 1991; Brown, 1993; Cronbach, 1996; Feldhusen, 1996; Gallagher, 1969; Gallagher, 1996; Gross 1992; Johnson & Ryser, 1996; Kulik & Kulik, 1984, 1992; Kulik, 1992; Passow, 1996; Reynolds, Birch, & Tuseth, 1962; Southern & Jones, 1991; VanTassel-Baska, 1986, 1992a; White, 1995).

Acceleration, as an educational arrangement for the gifted student, has proven to be overwhelmingly beneficial on both academic and psychosocial grounds. It reportedly improves the motivation, scholarship, and confidence of gifted students without adversely affecting their social and emotional development (Rogers, 1990).

Strong, positive endorsement for accelerative practices also comes from gifted students and their parents (Benbow, 1983, 1991; Janos, Robinson, & Lunneborg, 1989; Merlin, 1995; Rogers, 1991; Silverman, 1993; Winner, 1996).

Despite evidence supporting acceleration, widespread resistance to both the concept and practice still exists among teachers and educational administrators (Southern & Jones, 1991; Townsend & Patrick, 1993; Vialle, Ashton, Carlon, & Rankin, 1997).

Studies Investigating Educational Outcomes

Positive educational benefits of acceleration have been noted in most reviews. For example, academic achievement is generally reported to be equal or better than that of nonaccelerated, similar-ability peers, with no discernible negative effects from acceleration (Benbow, 1991; Feldhusen & Moon, 1992; Lynch, 1994; Southern & Jones, 1991; VanTassel-Baska, 1992a, 1992b; White, 1995). Writing in 1991, Benbow stated that she was unable to find a single research study showing acceleration to be educationally detrimental.

Successful programs of acceleration, most notably resulting from the Study of Mathematically Precocious Youth (SMPY) founded by Stanley and others in the 1970s, have demonstrated a significant positive impact on the learning of gifted students (Benbow & Lubinski, 1997; Benbow & Stanley, 1983; Brody & Benbow, 1987; Brody & Stanley, 1991; Kulik & Kulik, 1984; Stanley, 1979; Stanley & Benbow, 1982; Robinson & Janos, 1986; Swaitek & Benbow, 1991).

VanTassel-Baska (1986) reported additional advantages of acceleration including improved motivation, confidence, and scholarship; prevention of lazy mental habits; early completion of professional training; and reduction of the cost of education. Kulik and Kulik (1992) concluded from their meta-analyses of research that gifted students from accelerated classes outperformed nonaccelerated students of the same age and IQ by almost one full year on achievement tests.

Barnett and Durden (1993) studied students who had taken special academic advanced courses from the Center for Talented Youth at Johns Hopkins University and found that they undertook more advanced college courses at an earlier age and enrolled in more college courses than a comparable group of students who did not attend such courses. Recent investigations continue to report positive educational outcomes from acceleration (McCluskey, Massey, & Baker, 1997; Sayler, 1996; White, 1995).

Attempts to identify which type of acceleration or what component of an acceleration program has the largest positive effect(s) on students' learning appear to be very limited, although Kulik (1992) reported that the most effective programs involved substantial curriculum adjustment.

There is increasing agreement that, in addition to acceleration provisions, the curriculum for gifted students should be differentiated from that offered to other students, according to the characteristics of gifted learners (precocity, intensity, and complexity) and their special cognitive and learning needs (e.g., concept-based curriculum, higher-order thinking skills, and a focus on major issues, themes, and ideas). Curriculum approaches such as the Integrated Curriculum Model (ICM) for gifted learners outlined by VanTassel-Baska (1992b, 1993, 1997) allows for a broad-based response to their needs. Other additional program provisions include mentorships, diversity in teaching and learning experiences, and counseling.

Studies Investigating Social and/or Emotional-Behavioral Outcomes
In America, researchers have been interested in the influence that acceleration has on the socioemotional development of gifted students. Nearly 2 decades ago, Daurio (1979) stated that preconceived opinions, rather than facts or personal experiences, formed the basis of most of the social and emotional objections to acceleration.

In a similar vein, Southern, Jones, and Fiscus (1989) contended that the arguments advanced by opponents of acceleration on social and emotional grounds are often based, not on empirical evidence, but on vague generalities and half-truths. Swiatek (1993) described longitudinal studies on three cohorts of students accelerated academically as part of the SMPY. Results showed positive psychosocial outcomes and high levels of participation satisfaction. These findings confirm those of Richardson and Benbow (1990) and Swiatek and Benbow (1992).

In addition, Sayler and Brookshire (1993) reported that current research on potential social and emotional adjustment difficulties has suffered from severe experimental design problems. They argued that much of the research on acceleration lacked cross-sectional or longitudinal perspectives and often failed to include other reference or control groups.

In their extensive study, Sayler and Brookshire (1993) attempted to address many of the experimental weaknesses of previous studies. They found that accelerated students had better perceptions of their social relations and emotional development and fewer behavioral problems than did regular students. The accelerated eighth-graders who entered school early or skipped elementary grades did not report social isolation, emotional difficulties, or behavioral problems. The authors concluded that the concern that acceleration usually or invariably leads to academic, social, or emotional maladjustment was not supported.

In Australia, few published research studies were located that addressed the socioemotional consequences of educational acceleration. Gross (1992) examined the school histories of five exceptionally gifted children who were radically accelerated in Australian schools. Gross concluded that acceleration resulted in more intellectual stimulation, closer and more productive social relationships, and healthier levels of self-esteem. Vialle et al. (1997) found that gifted students in Australia were happier, socially and emotionally, after their acceleration. They also reported a greater feeling of fulfillment and self-confidence.

Studies Investigating Teachers' Opinions on Acceleration
Educational practitioners surveyed by Southern and Jones (1991) believed that there was a wide range of potential socioemotional problems for students who were accelerated. Rogers and Kimpston (1992) reported that teachers have markedly negative perceptions of the efficacy of acceleration.

Townsend and Patrick (1993) studied the attitude toward acceleration for gifted children in a group of primary school teachers and a group of teacher trainees in New Zealand. The respondents were moderately positive but conservative in their views of acceleration and expressed greater concern about the social and emotional effects than about the educational effects. The authors concluded that the apprehensions of the teachers and teacher trainees, although based on well-intentioned common sense beliefs, appear unfounded in terms of recent research.

Vialle et al. (1997) reported that educational practitioners in Australia were resistant to the positive evidence in favor of acceleration and campaigned actively against allowing gifted students to be placed in this educational option. The authors found that, overwhelmingly, principals rejected applications for early school entry. The most common reason for rejection related to the social and emotional development of the child. Many of the principals also stated that the child's general immaturity and physical size were reasons for nonenrollment.

Studies Investigating Parents' Opinions on Acceleration
There appears to have been little attention given to the experience and opinions of parents on acceleration procedures. Rimm and Lovance (1992) interviewed the parents of 14 gifted children who had skipped subjects or grades in the past 7 years. All respondents were satisfied with their decision to accelerate their children and would have done so again. Five parents indicated that they should have decided to accelerate sooner.

Sayler and Brookshire (1993) surveyed the parents of gifted students enrolled in acceleration programs and reported that there was no significant difference in the gifted and regular group of students regarding receiving warnings about behavioral problems. Merlin (1995) wrote on a mother's views of her daughter's acceleration experiences. Positive outcomes were reported and advice was offered to parents who are considering acceleration for their child. Sayler (1996) found that parental involvement was a key aspect in the healthy adjustment of accelerants.

Heinbokel (1997) investigated parents' opinions of acceleration in Germany. The parents overwhelmingly agreed that grade skipping was a successful procedure for their gifted children. Positive educational, social, and emotional benefits were reported. These studies generally indicated that parents viewed educational acceleration in a positive light.

A Study Investigating Both Teachers' and Parents' Opinions on Acceleration

Taplin and White (1998) aimed to explore the extent to which teachers and parents of gifted children share similar views on different forms of educational provision for gifted students. The results indicated that teachers and parents preferred provisions that enabled students to remain in the regular classroom and that this preference was basically linked to concerns about the children's social development. Both groups ranked enrichment in the regular classroom as their highest preference, while acceleration received a low ranking from both teachers and parents. Specific comments about the acceleration of gifted students were offered by11% of parents and 8% of teachers. Their comments were negative and centered on possible social maladjustment of the children.

In a recent study, Vialle et al. (1997) identified the importance of supportive adults and peers for the emotional well-being of the accelerants. The students commented on the importance of a belief in themselves, to their sense of achievement, and their happiness at school. The children also highlighted the role that some teachers, parents, and peers played in helping them accept their own abilities. Parents and teachers acted as advocates in seeking appropriate educational options for them. Noble, Robinson, and Gunderson (1993) also concluded that both adult and peer support are essential for accelerants to adjust successfully to the educational changes.

Summary of Research

A careful examination of the research methods employed in key studies on acceleration indicated that while the generic term "acceleration practices" is frequently used, most evidence has been obtained from basically two types: early school entry and grade skipping or advancement. Hence, caution should be taken not to overgeneralize the positive outcomes reported for these two options to all types of accelerative practices.

Most of the research evidence on acceleration has been obtained from studies that have measured the effects of acceleration procedures on the academic, cognitive, social, and emotional development of gifted students. In comparison, very few studies have actually surveyed the opinions of people who have been involved in the practice of acceleration, including educational administrators, teachers, parents, and their gifted children.

The current situation is well summarized by White (1995) who reviewed the research findings concerning the long-term academic, social and emotional effects of acceleration as well as the results of nonacceleration on gifted children. The review resulted in the following conclusions:

- academic outcomes of acceleration are positive
- no carefully executed research has been conducted that found negative social and/or emotional outcomes of acceleration of gifted children
- gifted children who are not intellectually stimulated and challenged may become underachievers and not fulfill their potential
- acceleration is not widely used in Canada or the United States

In spite of evidence supporting the efficacy of acceleration for gifted students, wide-spread resistance to the concept and practice exists among educational administrators and teachers. The current organizational structure of most schools caters to average students, with few provisions for the gifted. Teachers and administrators are generally reluctant to allow or create variances for individual students. In Victoria, government policy encourages mixed ability classrooms, and, consequently, it is the common form of educational arrangement in most schools.

Research has consistently highlighted that teachers are frequently concerned about possible detrimental social and emotional effects of acceleration practices on gifted students. Furthermore, teachers have expressed a belief that acceleration could be responsible for creating skill gaps in core curriculum areas.

While very few studies were found that surveyed the opinions of parents towards the acceleration of their gifted children, their comments were predominantly positive.

Rationale for the Study

The literature search and review revealed that there has been a paucity of studies that have surveyed the opinions of teachers and parents toward acceleration as a procedure for gifted students. In fact, only two studies were identified that gathered information from both teachers and parents. In their study, Vialle et al. (1997) provided case studies on five accelerants and gathered comments from their teachers and parents. Taplin and White (1998) surveyed the perceptions of parents and teachers who had direct experiences with educational acceleration.

Teachers and parents appear to play critical roles in successful acceleration programs, yet their opinions have been grossly underresearched. An extensive study that investigated the opinions and attitudes of teachers and parents on key aspects of acceleration appeared warranted.

Purpose of the Study

The purpose of the study was to investigate the opinions of teachers and parents of gifted primary school students concerning the educational acceleration practice of grade skipping.

Aims of the Study

The specific aims of the study were as follows:

Procedural Aims

- to review the relevant literature and research on giftedness and educational procedures with a special focus on acceleration
- to construct a questionnaire for teachers and parents to determine their opinions of acceleration

Research Aims

To investigate the attitudes and opinions of teachers and parents on the acceleration practice of grade skipping in order to:

- determine any overall difference between the opinions of teachers and parents
- determine any specific differences between the opinions of teachers and parents
- provide recommendations for further research
- provide educational recommendations as a result of the findings of the study

Methodology

To study the opinions of teachers and parents, it was determined that a survey research design was appropriate (Campbell & Stanley, 1963; Kerlinger, 1965). The method used to gather information was a specially prepared mail questionnaire.

The Sample

The sample was comprised of teachers and parents who had experiences with educational acceleration. Twenty-six teachers and 23 parents agreed to participate in the study and returned completed questionnaires.

Preparation of the Questionnaire

The specially prepared questionnaire has two components:
- scale items (A Likert-type 5-point scale was used)
- several open-ended questions

Twenty-six scaled questions addressed three major aspects of acceleration—policy, practice, and outcomes. Seven open-ended questions were included at the end of the scaled questions to enable the respondents to provide additional information

Analysis of the Data

An item analysis of the questions on the Likert-type rating scale and overall differences between the comparison groups in the study were investigated using QUEST— An Interactive Test Analysis System (Adams & Khoo, 1996; Izard, 1995). QUEST provides a comprehensive test and questionnaire analysis system using a data analysis based on the most recent developments in Rasch measurement theory, as well as a range of traditional analysis procedures. The Rasch analysis provides item estimates, case (person) estimates, and fit statistics. Results from this analysis can be accessed through a variety of informative tables and maps. Additional analyses report counts, percentages, and point-biserial correlations for each possible response to each item. A variety of reliability indices is also available.

Using QUEST, the following analyses were undertaken:
- an item analysis of the questions on the questionnaire to determine their psychometric properties and appropriateness for the study
- analysis of the responses of the comparison groups to determine any different overall response patterns

To determine if there were any differences between the responses of the comparison groups on individual questions, two approaches were used. The first approach considered the size or magnitude of the effect expressed in standard deviation units, and

in the second approach Chi-square tests were applied.

Summary of Results

In summary, statistical analyses of the data indicated that there was no statistically significant difference between the global responses of teachers and parents on the 26 questions.
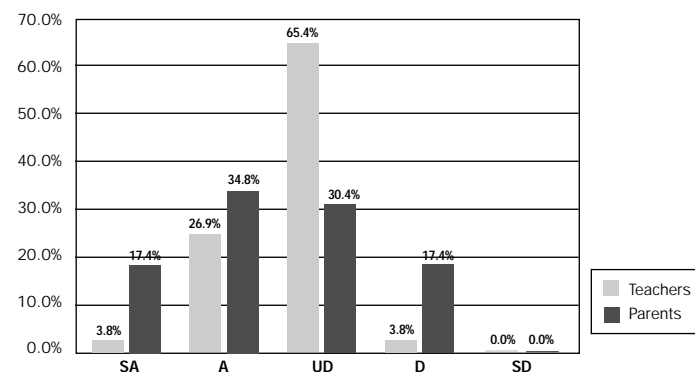
Figure 1. Question 8d. Acceleration—Leads to positive emotional/behavioral outcomes?

Note:
Chi-square=6.86, falls above the critical value and is therefore significant.

27% of teachers and 35% of parents agree
65% of teachers and 30% of parents undecided

Overall, very similar outcomes were obtained on this question to those on the previous question. About one fourth of teachers agreed, while approximately one-third of parents had the same opinion. Again, "undecided" was the highest response choice of the teachers and over twice as popular a choice among teachers as it was for parents. This percentage difference of 35 points was the largest response difference between teachers and parents on all of the 26 questions.

When the responses of teachers and parents on each of the 26 questions were analyzed separately, one question produced a statistically significant result. On Question 8d, "Acceleration—Leads to positive emotional/behavioral outcomes?" the pattern of responses of the groups was found to be significantly different. The major difference in the response scores being a much higher "undecided" score from the teachers.

A further investigation of the data revealed the following major trends and additional substantive similarities and differences in the responses of the teachers and parents:
- different analyses of the data confirmed the finding of substantial similarity in the opinions of teachers and parents on most issues
- both groups held qualified support for acceleration policy and practice
- teachers demonstrated a higher consensus of opinions

- teachers and parents held very similar opinions on the following issues—
  - decisions should involve teachers, parents, and the gifted student
  - acceleration leads to positive intellectual and educational outcomes
  - acceleration should be practiced in primary and secondary schools
  - acceleration is not suitable for all gifted students
  - acceleration should not be mandatory school policy
- teachers appeared more undecided on several issues, especially the benefits of acceleration
- parents were, understandably, more undecided on questions relating to information about the Australian scene and the level of support given by the Victorian government and the school community
- parents were more positive concerning social, emotional/behavior outcomes

These findings basically confirm the results of previous studies. Most studies found that teachers did not favor acceleration as the preferred educational option for gifted students and were apprehensive about any positive social, emotional, and behavioral benefits (Southern & Jones, 1992; Taplin & White, 1998; Townsend & Patrick, 1993; Vialle et al. 1997).

What is interesting is the finding that teachers recorded a high level of "undecided" rather than a high level of direct opposition to acceleration. This suggests that teachers need to be informed about research findings. Professional development programs would be a useful avenue for such information.

The findings indicating that parents were generally more supportive of acceleration than teachers accords with the outcomes of other research (Heinbokel, 1997; Merlin, 1995; Rimm & Lovance, 1992; Sayler & Brookshire, 1993). While Taplin and White (1998) found that some parents were concerned about possible negative social outcomes resulting from acceleration, over 50% of the cohort in the present study had positive views concerning social, emotional/behavioral outcomes. About a third of the parents, however, were undecided about the social and emotional/behavioral benefits of acceleration, with only a small percentage indicating a concern.

The additional comments made by the teachers and parents were very similar and closely correspond to the positive and negative opinions and experiences that are often raised in the literature on acceleration. The most frequently raised comments by parents and teachers were as follows:

Positive points
- more appropriate and challenging curriculum
- more positive attitude to school and learning by student
- greater motivation to learn shown by student
- greater opportunity to learn with "like-minded" children
- expression of "boredom" by student minimized
- happier, less frustrated parents
- happier student who felt less different
- fewer behavioral problems with student

- less learning frustration expressed by student
- higher self-esteem noted in student
- more positive teachers
- less threatened teachers

Negative points
- negative attitude and comments from some teachers and children
- negative attitude from some of the parents
- contact with previous classmates lost by student
- great expectations on student for a successful outcome
- pressure on student to succeed in all areas of the curriculum
- difference from others felt by student
- resentment shown by other students
- teasing seen by students in previous class
- some social difficulties experienced by student
- concerns shown about emotional maturity when student approaches puberty
- smaller physical size of student presents problems in sports
- fine-motor skills underdeveloped in student and can cause handwriting difficulties
- less opportunity for student to assume leadership role
- risk of student feeling a failure for the first time
- parents viewed as being "pushy"
- increased parental anxiety about appropriateness of the decision evident
- important "chunks" of the basic curriculum can be missed by student
- physical exhaustion may occur by the end of the week

Conclusions and Recommendations

The results of the study indicated the need to increase the knowledge of teachers about the practice and consequences of educational acceleration. While the literature clearly and consistently indicated the efficacy and positive benefits of acceleration options and enthusiastically advocates its use, teachers are either unaware or remain unconvinced of the research findings.

Teacher education courses in Australia, especially preservice courses, devote little or no attention to gifted education. Although a few post-initial, special diplomas, or degrees are available in the field, very few regular classroom teachers enroll in such classes and are consequently not aware of the trends in the literature or the research findings.

It would seem important to make all teachers aware of the basic issues in gifted education, particularly the most appropriate educational approaches. The inclusion of such information in basic teacher education degrees is strongly recommended. In addition, inservice courses should be more readily available to all teachers. Information, such as that contained in the Bright Futures material (Department of Education-Victoria) would be an excellent starting point for professional development courses.

Teachers were of the opinion, which is frequently mentioned in the literature, that acceleration is not necessarily appropriate for all gifted students. Information is

necessary to assist teachers knowing what factors are critical in deciding if early entry or grade skipping is the most appropriate option for a particular gifted student.

Perhaps teachers find it difficult to locate the information on gifted education, especially research findings, which are frequently contained within special, rather difficult to procure journals. Important and current research findings could be summarized and distributed to all classroom teachers by the respective education offices. It is highly likely that educators and parents will be more impressed with research that identifies individual student responses to acceleration options rather than broad generalizations about group outcomes.

With the emphasis on mixed-ability classes, teachers are increasingly responsible for students with a greater range of abilities than in the past. The integration program for students with disabilities and impairments (Department of Education-Victoria) and other special programs, such as the Bright Futures program for gifted students, demand that teachers be aware of the learning and instructional needs of a broad and diverse group of students.

Parents of gifted children will also need to have a general appreciation of the appropriateness of different educational options. Parents have the opportunity to join interest groups and associations that focus on gifted education and discuss important issues, such as acceleration. However, parents will still be very dependent on the knowledge and experience of their children's teachers in making decisions about their gifted children.

While the literature has promoted the positive benefits of educational acceleration, it should be stressed that acceleration alone will not necessarily lead to improved learning outcomes and other associated benefits. In its narrowest form, acceleration can be viewed as a placement decision rather than a program decision. Early entry or grade skipping is, in a sense, an easy organizational or administrative arrangement. To maximize the educational benefits of acceleration, it is essential that the curriculum be differentiated for the gifted student. Such modification of the curriculum and changes in teaching style and instructional procedures to ensure that the special needs of gifted students are catered to, is a challenging and demanding task for teachers.

Gifted children are a nation's most precious and richest resource. Therefore, every effort should be made to assist teachers gain the knowledge, experience, and professional support they need to enable them to meet the exciting challenge of educating gifted students in the next millennium, with confidence and success.

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Early School Entry: An Option Worth Considering

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ABSTRACT

Acceleration and early school entry often receive "bad press" from teachers. However, the present longitudinal program, along with much of the literature in the field, suggest that it may be a mistake to dismiss such alternatives out-of-hand. In rating the performance of children who were admitted early into kindergarten over a 24-year span, educators in a Canadian school district found that the majority fared very well. Performance also improved over time. Specifically, an analysis of the longitudinal data indicated that early entrants received significantly higher ratings after their grade 5 year than they had at the end of kindergarten.

The debate concerning acceleration and early admission to kindergarten seems never-ending. It would appear that most early childhood educators in school districts take the "let-the-children-be-children" perspective, and argue that we should not destroy the joy of childhood by putting on too much pressure too early (cf. Heinbokel, 1997; Southern & Jones, 1992). Many supporters of this point of view, in almost evangelical fashion, cite the work of David Elkind—look at the damage that can result if we "hurry" children!

However, professionals ought to base decisions upon fact, rather than myth (Feldhusen, Proctor, & Black, 1986). And the notion that acceleration and early school entry are usually harmful may well be a popular misconception. For one thing, Elkind was never opposed to moving students ahead on the basis of their achievement and ability level. On the contrary, he has emphasized that acceleration, including early entrance, can have positive outcomes for some bright children (Elkind, 1987). In *The Hurried Child,* Elkind (1981) was cautioning against pushing "average" children too hard, not those with special talents or gifts. Others hold similar opinions. Feldhusen (1992), for example, observed that talented children are typically accelerated as quickly as possible in music and the arts. Young athletes, as well, are often encouraged to move along extremely rapidly. (Would it have been helpful to insist that Tiger Woods, during his childhood, be allowed to practice only "age-appropriate" golf shots?) Yet, in school, high-ability children are frequently trapped in a lock-step, pass-one-grade-get-to-go-to-another system. Can a reasoned case be made for more flexibility?

What the Literature Says

Certainly, the literature suggests that acceleration and early admission can be a real advantage for many individuals. Hobson (1979), in comparing 550 early entrants with close to 4,000 "regular" classmates, concluded that early starters were, in general, stronger academically in the elementary grades, and that this superiority continued

in high school. Following the progress of mathematically precocious students over many decades, Stanley and his co-workers discovered that those who were allowed to move ahead were more productive and better adjusted than those who were not given accelerated learning opportunities (Stanley, George, & Solano, 1977). Several other investigators have also indicated that acceleration can be a plus for bright children (cf. Southern & Jones, 1991).

Substantive reviews of the research tend to draw the same conclusion. Reynolds (1962) showed that the preponderance of evidence, in terms of both social adjustment and academic achievement, supported the benefits of early admission. In her review, VanTassel-Baska (1986) noted that academic acceleration boosted the motivation, achievement, and confidence of superior students, protected against mental laziness, and encouraged completion of professional training. Similarly, after reviewing 21 studies, Proctor, Black, and Feldhusen (1986) found that early entrants performed well compared to their classmates, and in fact often surpassed them. Interestingly, in several studies, there are signs that behavior problems surface if high-ability children are not allowed to proceed at a quicker rate. This observation adds an oft-neglected dimension to the debate, suggesting that the social risks may actually be as great or greater for talented students who are compelled to "march in place" as for those who are fast-tracked through the system (Burroughs, 1979; Gross, 1993).

A Longitudinal Look at One Program
The Lord Selkirk School Division in Manitoba, Canada had an early entrance policy in place from 1971 through 1994, so it was possible to gather considerable longitudinal information from that source. For 24 years, a clinical team—made up of psychologists, reading clinicians, speech/language pathologists, and social workers—attempted to determine the kindergarten readiness of 4-year-olds. Children who demonstrated exceptional ability were admitted early, on a 6-week trial basis. If no problems arose during that time, the youngsters became "regular" students.

It goes without saying that it was necessary to gather some concrete information about the children during the screening process. On the other hand, since there was no need to treat 4-year-olds as if they were applying for admission to graduate school at a major university, assessments were conducted in a very friendly, informal atmosphere. To keep sessions shorter than 45 minutes, clinicians ran only segments of early childhood screening inventories. Using a variety of instruments over the years, the goal was to obtain some measure of receptive and expressive language, cognitive ability, and readiness skills (such as drawing, counting, reciting the alphabet, and recognizing numbers and letters). Personnel took care to observe whether children could play independently during breaks, leave their parents without making a fuss, and the like. To obtain further information about attitudes, motivation, and developmental milestones, a parental interview became part of the process as well.

To judge student performance for each of the 24 years, "current educators" (principals, resource teachers, and/or classroom teachers) rated the progress of each early entrant. Ratings of B+ to A+ were designated as Excellent, C to B Acceptable, and D and lower Poor. Because the performance review was done in June, 1995, early

entrants who entered in September, 1994 were rated at the end of their kindergarten year, those admitted in 1993 at the end of grade 1, and so on. Students admitted in 1982 were judged at the completion of high school. For those admitted prior to 1982, ratings were based on their final year of formal education—GPAs were used for individuals who had gone on to postsecondary programs.

Findings and Discussion
Although the intent here is not to be overly empirical, at this point it is worth taking a quick look at some of the "hard" data. A more detailed review of the performance of early entrants over the 24-year life of the Lord Selkirk program is offered elsewhere (McCluskey, Baker, & Massey, 1996).

Since 1971, 63 children were accepted for early kindergarten entry. It was possible to track 54 of these students. The performance ratings for those 54, presented in 4-year intervals in Table 1, showed that 22 (41%) performed excellently, 21 (39%) acceptably, and 11 (20%) poorly. While there are no magic indicators of success in a complex situation affected by many parental, personal, and educational variables, the results were generally supportive of permitting high-ability children to enter school early. In the Lord Selkirk setting, flexible school entry seemed to provide a chance for a number of students to develop their talent and potential.

Table 1. Performance of Early Entrance Students Admitted from 1971 through 1994

	1971-74	1975-78	1979-82	1983-86	1987-90	1991-94	Total
Excellent	4	5	6	0	3	4	22/54 (41%)
Acceptable	1	8	3	5	1	3	21/54 (39%)
Poor	5	4	0	1	0	1	11/54 (20%)

Table 1. Mean Performance Ratings, by 4-Year Intervals, for Early Entrance Students at the End of Kindergarten and the End of Grade 5

Year Admitted	Ratings After Kindergarten	Ratings After Grade 5
1971-74	2.10	3.05
1975-78	2.76	3.29
1979-82	3.72	3.89
1983-86	1.83	2.42
1987-90	3.50	4.00

After scrutinizing the data more closely, another interesting trend emerged: Early entrants were rated lower at the end of kindergarten than they were several years later

(i.e., at the end of grade 5). To put it another way, their grade 5 teachers felt significantly better about their performance than had their kindergarten teachers.

This trend, which held for each of the 4-year time periods examined, is shown in Table 2, and discussed in more depth in an earlier paper (McCluskey, Massey, & Baker, 1997). For present purposes, it is enough to note that the data were analyzed with Ratings (2 levels) as a within-subjects variable and Time (5 levels) as a between-subjects variable. The analysis showed that the difference in performance ratings between the early entrants' grade 5 and kindergarten years was indeed statistically significant [F (1, 41) = 15.5, $p < .01$, $MSe = 0.35$].

Since this early entrance program was created as an educational initiative and not a research project, this study is rather "loose" in many respects. For one thing, procedures, diagnostic tools, and personnel changed over time. As well, because of the "time displacement" factor, long-term ratings of students entering in the 1970s were compared with short-term judgments of those admitted more recently. However, as indicated earlier, one cannot really expect absolute measures when dealing with complex human behavior and a multiplicity of personality and situational variables.

There can be no guarantees: some early entrants didn't do well at all. On balance, though, the results at hand are supportive of flexible admission policies—80% of the individuals allowed into kindergarten early in Lord Selkirk held their own or fared exceedingly well. The program appeared to offer an opportunity for some students who needed it, and many responded positively, enthusiastically, and successfully.

One explanation that might account for the rise in early entrants' performance ratings from kindergarten to grade 5 is that these students learned to channel their abilities more effectively with age. Like tall children who become less awkward physically as they "grow into" their bodies, precocious students may find that their talents "fit" more comfortably as they mature.

There is an alternative possibility, however, which might also partially explain the finding. In some cases, kindergarten teachers—accepting the widely publicized view that it is best to have all children move from grade to grade with their agemates — may unwittingly harm early entrants by allowing negative expectations to take hold. Many educators, with the best will in the world, seem prepared to allow their charges to progress at their own pace, as long as it's not too fast.

Even worse, a few teachers are blatantly hostile toward early entrance – a policy that, after all, means more students and more work. Although early years' educators are, for the most part, caring, supportive, and flexible, a minority do actually go out of their way to sabotage the proceedings. Unfortunately, during this study's information-gathering stage, it wasn't all that unusual to find comments, written boldly on student records, such as: "Look out! Early entrance student. Immature!"

Where To From Here?

In the absence of perfect predictors, educators interested in early entrance will need to develop a great tolerance for ambiguity. Acceleration should not be viewed as an either-or issue (Sisk, 1979). Some high-ability children undoubtedly prefer moving through school in the prescribed manner, others respond best to in-class enrichment, still others benefit most from acceleration or early entrance, and in many cases a combination of approaches may do the trick.

For districts and educators who are thinking about establishing an early entrance program, it might be helpful to revisit some suggestions my colleagues and I have made in an earlier paper (McCluskey, Baker, & Massey, 1997). Specifically:

1. Look at each candidate individually, for no two children or situations are the same. Not all early entrance students will "fly," and it can definitely be a mistake to push certain youngsters. However, many talented children require and ought to be given the chance to move more quickly through our educational system.
2. Be prepared for "hassles," for some parents push and pressure their children mercilessly. Certain parents in Lord Selkirk used early entrance to feed their own egos. Others tried to access it merely as a babysitting service. There were many annoying "transgressions": forged birth certificates, letters of recommendation written on stationery stolen from the local pediatrician, children "smuggled in" after having been denied, and other pressure tactics galore. However, to provide a path for legitimate candidates, it is worthwhile putting up with this sort of aggravation.
3. Don't make spur-of-the-moment decisions or give up too soon on the early entrants. Several placements that at first looked like failures turned out to be success stories over the long haul. Review and evaluation of early admission programs must be done objectively, systematically, and longitudinally.
4. Employ a multidisciplinary team to choose candidates. "Eyeballing" the data informally, it appeared that information about receptive and expressive vocabulary development was particularly relevant for accurate selection. Obviously, then, it is critical that speech/language pathologists not be left out of the mix.
5. Involve kindergarten teachers themselves in the selection process. If early entrance is to become a viable program in a district, these people must be on your side. Their expertise can be invaluable, and many battles can be defused by opening up dialogue, reviewing literature, seeking support, and giving them a voice. If kindergarten teachers buy into early entrance and become participants in selection, programming, and evaluation, meaningful opportunities will be created for many talented children.

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The Importance of a New Assessment According to the Triarchic Theory

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Introduction

The Study of Human Intelligence According to Sternberg

R. J. Sternberg (1995) calls attention to the need for specifying the points of human intelligence by analyzing how these points operate when they generate intelligent behavior. It would be like trying to visualize the products of intelligence or intelligence itself in production. He also focuses on the issue of individuals and their relations with their inside and outside worlds and the experiences that relate these two worlds.

Sternberg's Triarchic Theory, briefly described below, requires three sub-theories to understand and explain human intelligence: (1) Componential sub-theory (related to the individual's inside medium); (2) Contextual sub-theory, as its own name shows, uses the context, that is, the individual's outside medium; (3) Experiential sub-theory, which refers to the relationship of these two aspects, inside medium and outside medium.

Purpose

The purpose of this study is to present a view of human intelligence and to propose a new practice of educational evaluation starting with Sternberg's Triarchic Theory. From this point of view, it is necessary to narrow the relationship between regular education and special education because in the New Brazilian Educational Law (LDB), the lives of all students will be affected by the inclusion process. The issue of educational evaluation should be revised to include new structures well beyond academic knowledge and cognition, such as creation, sensibility, and emotion (Mettrau, 1995).

Development

We will briefly examine the three aspects and their relation to issues of educational evaluation. Componential sub-theory (subject's inside medium) specifies the mental mechanisms that guide intelligent performance and their relationship with a person's inside medium. This sub-theory would explain the elaboration and the organization of the information through components. The process of elementary information operates on inside representations of objects and symbols of components (Oliveira, 1998). Thus, these components relate to the inside world and are essential in the process of elaborating information.

Each component has three properties: duration, difficulty, and possibility of achievement. These components will have diversified influences on different kinds of people because, although they work independently and intensely in each one's functioning, the processes and results will appear in different forms in different subjects.

For example, a difficult task for one person can cause that person to invest more energy on inside strivings to resolve the task more quickly. On the other hand, this same task may paralyze another kind of person causing great difficulty in finding the resolution. That person may consume more time or not manage to resolve the task because of the level of difficulty that neutralizes any attempts.

The components are also classified according to their functions and levels of use:
- metacomponents
- achievement components
- knowledge acquiring components

By describing the action of each component it can be seen that the metacomponents are achievement processes of a higher order, that is, they are related with the inside mechanisms of planning, controlling, and making decisions to achieve each task. The metacomponents are, therefore, involved in the achievement of plans organized by the metacomponents. The knowledge acquiring components are, exactly, those processes involved in learning new information.

The information already used enables the person to produce metacognition. We can, therefore, understand that metacomponents are the products that result from several components already acquired by each one of us.

Metacognition refers to the awareness of the subject about how, and which steps and strategies to use to generalize new learnings successfully. It is worthwhile recalling the concept of metacognition. The term was coined in 1075 by Flawell and referred to the subject's knowledge and awareness of his or her own cognitive processes. In other words, the subject not only recognizes how he or she dominates the strategies used to resolve issues or to conduct thoughts in a certain direction, he or she would also know how to use them at other moments for generalizing.

The specific aspect of intelligence known as metacognition is the capacity of self-regulating one's own learning, or in other words, planning which strategies should be used for each learning situation, applying them, controlling the utilization process, evaluating it to check any mistakes that may have been committed, and then changing to the new action (Martin & Marchesi, 1995). With the support of the authors, it can be perceived that the metacognitive capacity directed to one's own learning is one of the relevant aspects of human learning. Sternberg (1995) calls them higher order or controlling cognitive processes.

The metacognitive processes can usually be seen as an integrated and dynamic set of two cognitive action levels. The first level refers to one's own cognitive processes (how I think). The second refers to the correct management of reasoning (what strategies I use) (Shore & Dower, 1987).

In spite of the positive and interesting aspects related to metacognition, there are authors who are still skeptical of the issue (Oliveira, 1985). Oliveira's considerations, beginning with field studies regarding the building of solutions for mathematical problems, reveal the limitation of this approach (Mathias, 1997) especially for reasons of interest and weakly emphasized motivation which are currently greatly valued in human intelligence studies as well as the subject's everyday achievements.

Sternberg (1995) identified an additional seven components in intellectual functioning. The components of a lower order are related to practical situations and require immediate resolution. The components of a higher order involve the practical situations mentioned above as well as the more complex ones, that require improvement and the use of more specific knowledge, as for example, analogies, abstractions, and connections.

If we relate everyday life to the components studied by Sternberg in his triarchic theory, we soon perceive the importance of three units to control the solution and resolution of a problem: (1) the data of the problem; (2) what is happening at the moment; and (3) what is yet to happen. This enables us to check if the path projected up to the solution is, or is not, being followed to solve the problem. In case it is not being followed, it would be necessary to analyze the progress and the failures existing in its path to check which of the units described contains the trouble. The ability to understand all this analysis through outside feedback facilitates the successful achievement of this activity leading to the solution of any problematic situation.

Considering our own lives, we can perceive with certain clearness that some people perform very well intellectually or academically, but not so well in other aspects because, "one certain component may resolve successfully one kind of representation but not others. The speed and the quality (exactness) of intelligent achievement can be positively or negatively related or not even correlated." (Sternberg, 1990).

It is important to emphasize that the myth of speed and exactness leaves an open space with the preceding affirmation, pointing to several styles of differentiated performance among people. It presents, therefore, another chance to respect and recognize individual differences in each one's intellectual performance. This affirmation brings implications to educational evaluation, and that is why we intend to approach this issue in this study as well as make all efforts to better clarify the several aspects of intellectual performance.

Recording the experiential sub-theory, Sternberg says there are two abilities in human performance:
- the ability to face new missions and situational demands
- the ability to automize and organize information

Both will certainly involve aspects of everyday educational evaluation.

Sternberg also suggests that the best method to measure intelligence would be, certainly, to face a new situation that would need forms of elaboration beyond the usual person's experience, that is, unknown new situations. This ability to face new situations, and the subject's reaction to them, is relevant in the issue of human intelligence. Therefore we should organize our educational system on new foundations to try to analyze the results in the view of this mode of verification that is very different from the more traditional modes currently in use.

Insight

Another quite interesting criterion for the study of human intelligence proposed by this author is insight. It would be a different process in relation to the usual processes

of information since it would result from unaware leaps involving thoughts derived from very quick mental processes like the functioning of a short circuit in the usual reasoning processes. Insight implies, in the terms of the process, sifting relevant information from irrelevant information and gathering these parts in a whole.

Finally we will address the third aspect of Sternberg's three sub-theories. The contextual sub-theory explains the performance of intelligence in everyday situations, discovering how cognitive accomplishment influences these issues day after day. This author's contribution to the field of high abilities can be clearly seen here. He says that the exceptionally intelligent subject's behavior is characterized by high efficiency when facing new missions and situational demands. He recommends studying insight as the element to understand talent, explaining that great scientific discoveries and new inventions have always involved intellectual insight.

We perceive that Sternberg points to an exit from the vicious circle that we have faced in exclusively quantitative aspects regarding the subject's cognitive issues. Besides that, his contextual focus points to emphasis on the relation of outside and inside components. Through this approach, he shows the need to study human intelligence, narrowing the relationship with the behavior that the subject shows in the real context. This would promote a new conception in the field of educational evaluation.

Sternberg's Triarchic Theory shows us the study and the understanding of human intelligence in the wide global mode calling attention to the complexity that involves not only the theme but also the concept of intelligence itself.

Implications of Educational Evaluation

There are three indicators regarding evaluation that would be very helpful every day in the educational system:
- identify the nature of the problem
- select the goals and strategies for its solution
- relate it to the inside medium (other types of knowledge and experience) to acquire information for its solution

Although this mode of organizing and analyzing is different and laborious, it will possibly help us in a new educational perspective through planning, controlling, and evaluating achievements, thus reaching the best possible solution using the greatest number of resources and already-known situations.

We have sought to describe the mental processes used to effectuate cognitive tasks and to resolve problems. We have tried to discover and understand how the subject decodifies the information, processes it (classifies, understands, relates), answers and resolves the problem (Mettrau, 1995).

Sternberg's model, also known as componential analysis of intelligence, presents the study of cognitive processes that the subjects use to resolve problems, how such processes can help to understand their answers, and the steps to the solutions, whether they be mathematical or of any other order. The model points to a more comprehensive rather than quantitative knowledge, and perhaps this could become a new

path to the current focus on the studies of human intelligence, extrapolating general and abstract concepts. It is possible to view new perspectives to understand the different performance of each subject, bringing new contributions to be applied in the complex issue of evaluation whether it be psychological or educational.

Practical Intelligence and Tactical Knowledge: Recognizing and Using It in the Educational System

Neisser in 1976 was one of the first scholars to make a distinction between practical and academic intelligence. This author describes a difference between the type and model of tacit knowledge from academic knowledge.

Tacit Knowledge

Tacit knowledge is different from academic knowledge and presents the following characteristics:
- it is not explicitly formulated, or it is incomplete in its formulation
- it is of personal interest
- it presents a deficiency or lack of information necessary for solution
- it is related to everyday experiences
- it is precariously defined and with insufficient data
- many times it is characterized by multiple solutions and by innumerable methods to seek a solution for the problematic situation

Academic Knowledge

Knowledge of the academic type has the following characteristics:
- it is presented by others
- it presents lack of intrinsic interest, and it is detached from the individual's usual experience
- it is generally well-defined
- it presents an answer that is considered more correct and related to only one method of obtaining the correct solution

Starting from this organization, Sternberg (1995) emphasizes that tacit knowledge is guided and directly assimilated by the subject with no need of third-party help. One of the proofs that these types of knowledge clearly exist is the acknowledgement of academically successful people (at school) who do not show successful performance in their everyday lives, while others have never had the chance to go to school but show successful performance in their everyday lives.

Research that dissociates academic development and success outside the school (Cornelius, Caspi & Scribner, 1981; Sternberg, 1995; Sternberg & Wagner, 1985, 1994; Sternberg, Wagner & Okagaki, 1993) characterize such differences and help us reach tacit knowledge, a type of knowledge that is not always explicit, but is always perceptible. Tacit knowledge is very useful in Brazilian everyday life, where, unfortunately, many people do not go to school, or may not even complete elementary school.

Tacit knowledge is related to a natural process and is relevant in directing personal goals. It is not always verbalized; it is implicit. Frequently it must be inferred or perceived through actions and affirmations (Oliveira, 1996). This type of knowledge is many times related to what students bring with their culture, and it is not understood or respected. It does not get credit from a great number of people or from educational professionals who do not take advantage or use this practical reality that many students have in their life experiences. They give merit only to traditional academic knowledge while many times students find trouble making a correlation between these two modes of knowledge.

Tacit knowledge is assimilated through everyday practice and in a natural mode without systematic studies. It represents another form of understanding, responding, and resolving problematic situations. It extends, therefore, beyond a single form of measuring and verifying the learning of students. The conceptualizing of practical intelligence (derived from this type of knowledge) would be successful application of real-world tasks, regardless of previous knowledge of such tasks or problem situations. Research findings (Sternberg, 1995) indicate that tacit knowledge is more intimately related to the resolution of everyday problems than to traditionally evaluated abilities and is related more to success in practical issues than to academic issues.

The relevance of tacit knowledge for new modes of evaluation in the educational system is great because the student does not always express all reasoning through the written or spoken language usually used in our educational system. Besides that, stiff attitudes, preestablished tests, and examinations in traditional models obstruct the complete development of the student. It is evident that a wide discussion regarding other types of knowledge beyond academic knowledge should be opened to all those involved in the awakening of awareness in the process of reasoning and not only for answers whether they are correct or not.

The Model of Research

The model chosen for the development of this study will be the action-research model because new and unknown situations are intended to be offered to follow the mode or achieving model produced by the students in their work places. Some of the general principles of the methodology chosen emphasize the reasoning, arguments, and dialog between the researcher and the representative members of the situation that is to be investigated. So, it is an issue of asking new educational evaluation forms starting with academic and nonacademic data (tacit knowledge) to achieve a feasible change in the situation observed (Theollent, 1994).

Subjects

The research will be conducted in eight resource rooms for high-ability students belonging to the Municipal Secretary of Rio de Janeiro State, distributed in several different suburbs. Each of these eight rooms have 8 to 12 students of various ages and one teacher. These students attend special classes in a regular school twice a week for a total of 8 hours per week during the academic year.

Sample

The sample will be composed of all students who systematically attend the eight resource rooms of the Municipal Secretary of Education, their parents, and their teachers. Tools, questionnaires, and semi-structured interviews will be used to develop this research. It is proposed that parents be asked how their children resolve daily problem situations that occur outside school. It is proposed, in a similar way, to ask the teachers what types of tasks and/or problem situations are presented to these students in the resource rooms, how and in what way students do or do not resolve the problems. They will be asked if there is a predominance of success or failure and if the students make many or few efforts to reach a solution. Additionally, direct observations will be carried out to closely follow up the reasoning process leading to the success or failure in the tasks and achievements.

Instruments

Questionnaires will be administered to the teachers, parents and students in order to probe school, academic and nonacademic aspects. The processes of solving problems or new tasks in their schools and resource rooms will be directly observed. Also included will be observations and direct interaction with students in the resource rooms to structure and design unfamiliar problem situations that require solutions in order to determine the mental and affective processes that they use.

Methodology

Bardin's (1994) speech analysis will be used because we believe it is a rich source of interpretation of the data obtained through this mode of research.

The research will begin in August 1999 with the first experimental module completed in August 2000. All of the assessments obtained, related to the answers of the three modes of instruments (parent, teacher, and student questionnaires), will be collected, analyzed, interpreted, and assembled for substantiation and recording. We will also give a description of the results, the actual questions, and types of difficulties and/or facilities presented by the students while constructing and resolving their problem situations.

Method

A method of content analysis will be used that, according to Bardin (1994), is produces data from a set of diversified methodological instruments that can be interpreted with oscillations between the exactness of objectivity and subjectivity. Bardin's (1994) three steps will be carried out: (1) reading the data and conducting a joint survey with the students; (2) postulate what has been defined in the preanalysis step, that is, the characteristics which will be worked out; (3) identify the contents to be worked out from those that have been perceived or revealed in the subject's speech (students, parents, and teachers).

Finally, a wider modality of educational evaluation will be presented to gradually substitute or complement the current evaluation, where the students rarely present any contribution. This would enable the formation of citizenship and value several

cultural and social aspects that usually have been wasted or even rejected.

Analysis of Data

The analysis of data will be conducted from September through November using qualitative and explanatory evaluations appropriate to the items and instruments applied.

The conclusion of the research is foreseen at the end of 2000 when the data will be disseminated and a proposition will be made for an experimental period yet to be defined with the Secretary of Education, the Helena Antipoff Institute, and the teachers involved from the Municipal Public Schools. The new evaluation model will be in effect during a transitional phase, along with the more traditional, academic evaluatiion model currently in force.

A handbook will be organized in this first period containing necessary explanations and defending the new model and also building it on Sternberg's model using tacit knowledge.

Wide knowledge of this theory and its most immediate implications is expected after the year 2000. Tacit knowledge studies and new evaluation models will be developed beyond 2000 as well as the production of publications that prove the qualitative gains of these models can improve evaluation. The issue of educational evaluation will not only be reviewed, but also linked to new practices and knowledge developed and suggested here.

Product of the Research

Sternberg is expected to publish new information regarding human intelligence. Objective propositions for the improvement and modification of educational evaluation that will complement and modify the evaluation in effect will be offered. Currently these are usually poor and restricted to the vision of the teacher that often omits the qualitative aspects that are so much more important. The results will enrich current methods of traditional educational evaluation.

Conclusion

This research is justified because it puts into focus three basic aspects related to everyday teaching practice and to new issues in the study of human intelligence:
- practical and social intelligence
- tacit knowledge originating from nonacademic knowledge, but that can be and must be respected as part of the prospect of change in the educational evaluation.

A Case Study of a New Mode of Evaluation: Role-Playing Game (RPG)

Sternberg makes a proposition for a new model of educational evaluation that shows other aspects of human intelligence. According to this author, the capacity of successfully resolving problems in new, unfamiliar situations is one of these indicators. In his new evaluation model, those who are able to resolve problems correctly—offhand, immediately, in the context, without previous knowledge of the problem situation offered are to be valued.

With the support of this theory, we proposed a game workshop to a 13-year-old student in the 6th elementary grade in public school. He accepted the challenge and chose the Role-Playing Game (RPG). Our student, R, and his mother have been receiving guidance and advice at the Brazilian Association for the Gifted since June, and they have already had three meetings with the technical staff.

R is an affectionate and curious boy. However, he currently has learning difficulties, especially in mathematics and Portuguese language, in spite of reading intensely since he was very young. His preferred subject is science where he shows high interest and understanding. He reads deeply in anthropology and archeology. He uses, as his base for studies in these fields, books and also the Discovery Channel, which he discusses continuously outside of school. R does not like sports in general and shows no skills in this area. He enjoys classical music, especially Vivaldi.

These different choices have caused some difficulties in R's relationship with colleagues of the same age who mostly like PAGODE (funk music) and football. Because of his choices, he is often called a screwball or even "Vivaldi." This makes R very sad because he is a very friendly, charming, and affectionate boy. R shows strong traits of leadership and multiple interests outside the academic fields customarily offered by schools. The academic curriculum does not appreciate these different tastes and activities and does not help him to choose other fields of study.

The new evaluation proposal, according to Sternberg, is a wider mode of educational evaluation and presumes the participation of everything in the evaluation process. That does not occur in our traditional educational system.

A Case Study

In research carried out by Mettrau and Oliveira (1998) with gifted children from three municipal schools and one private school, the following data were obtained.

Theory of human intelligence. The dialog strategy with the mother as well as with R (our student) was carried out with the intention of demonstrating other successful hits besides those of the academic fields. Further, according to Sternberg, the possibility of measuring practical intelligence in the real world has been very scarce when compared to the high number of intelligence tests of the predominately academic type, because this type of expression (the practical, the contextual, and the social) extends much beyond private exercise classes or school situations.

This author's quest for the understanding of intelligence in a wide and global mode also includes the individual's inside and outside medium. The study of practical intelligence concentrates its major data in the tacit knowledge found in people's everyday lives.

This case study becomes, for researchers like us who believe in the need for a new mode of educational evaluation and the global understanding of each one's intelligence, the certainty that there is a serious shortcoming in educational evaluation when only academic issues are considered.

When a change was offered to student R to resolve other problems of equal difficulty as those found in everyday school life, he accepted the challenge and achieved

the right solutions successfully according to data obtained from the evaluation of his performance on the same date, place, and time where he carried out the workshop.

He did not have previous knowledge of the following data:
- number of children who would come to the workshop
- ages of these children
- each one's level of understanding
- types of groups that he would make up

Once the challenge of resolving this problem was accepted, he imagined the possible strategies (so he adapted the goals of the game to the conditions of the groups according to their ages, 3 to 6 years of age, 7 to 10 years of age). He created a chance for everyone to express him- or herself and play the game according to their interests and possibilities without changing the existing rules that were assimilated and accepted by the other children.

Conclusion

The planning mode with R was totally verbalized including what he would bring to the workshop. He was encouraged to accomplish the task successfully.

The materials he chose and obtained from the technicians were fancy dresses, masks, and dolls. He further received the following information: children from 3 to 8 years of age who would participate in the workshop knew how to read and write, but the activities proposed would have to be adapted to their different ages. At the end, after more than one hour of the workshop, we asked R how he felt. He said, "It was very difficult! Very difficult! But I enjoyed it."

Then we gave him a new challenge: We suggested that he give the same workshop at his school with the young preschool children. He accepted the challenge and promised to report to us if the school administration approved the project. If the school board does not approve it, we intend to play a video of this first experience, as a demonstration of R's multiple possibilities.

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Teaching the Gifted More Effectively

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ABSTRACT

Because high ability and talent are more widespread phenomena than has generally been believed, and because IQ tests and teacher assessments frequently fail to identify many gifted individuals, different models for identification and provision are needed. It is proposed that every elementary, secondary, and high school could make available seven levels of provision, the "pyramid for potential," to meet these needs.

The missing element in many schools that fail to meet the needs of the gifted is the direct teaching of the cognitive developmental curriculum in every classroom by every teacher within their subject content. This is the most fundamental need for all students but particularly the most able. It is also through this method of teaching that teachers can engage in more accurate curriculum-based identification. In a process of triangulation, the gifted and secretly talented can be identified.

Introduction

As we enter the new millennium we also enter a new industrial age of information explosion and the worldwide domination of the knowledge-based industries. The people and workers in this new age will, according to employers, need to have the necessary skills and abilities for their countries to compete in world markets. The workers of the new millennium need to have:

- good communication skills
- problem-solving skills
- creative-thinking abilities
- flexibility
- good listening skills
- ability to learn from experience
- ability to learn from others
- cooperative abilities

The main vehicle for the development of these skills and abilities or competencies in young people is designed to be the school curriculum. In the UK this consists of the National Curriculum (ERA, 1988) of three core subjects, namely, English, mathematics, and science, plus seven further subjects—religious education, physical education, history, geography, art, music, design, and information technology. There are also a number of crosscurricular themes such as personal and social education, equal opportunities, and so on.

Teacher education has also been changed in the UK to prepare for this. It has become a subject-based system with education theory removed from the courses. Much of subject learning and teaching practice now takes place in schools supervised and mentored by teachers. That is, those who have been designated as not-well-enough-trained themselves train new teachers. The National Curriculum has been specified in such detail that the assumptions appear to be that it is simply the job of the teacher to read it up and then tell it in a lively manner to the pupils.

The all-important principle that has been overlooked by the bureaucrats enforcing these changes is that teachers do not "teach subjects"; they teach pupils *how to learn* subjects. This is a much higher-order set of social and cognitive skills and not so easily acquired as a straightforward subject degree. Ten years into the program, we have a cadre of teachers who are educationally illiterate and pupils who are becoming repositories of fact, but lacking the ability to put their knowledge to any useful real-world purpose. In addition, more pupils, particularly the highly able and more creative, are rejecting such "schooling" and are switching off. We now have the situation where the National Curriculum and the methods by which it is taught have not led to a stimulating and educative experience for the gifted and talented and so the U.K. government has set up an advisory group to help solve this problem. In terms of the general school population, more of the same will not and has not led to the creation of workers with the competencies to be successful in the new millennium.

The majority of students arrive at higher education lacking the critical capabilities, study skills, and self-organizing abilities to profit from an advanced education (Montgomery, 1993; Thomas & Augstein, 1975). But in higher education, these competencies are seldom taught; an assumption is made that they already exist or students will somehow learn them. The content-based curriculum and approaches in most degree programs are not capable of inducing critical and creative thinking, according to Stephenson and Weil (1988) and Gibbs (1994, 1995). These writers both launched programs of staff development in the universities to try to counteract these problems in the belief that if they could change higher education this would filter down into schools and companies.

More than 10 years ago, Donald Kennedy (1987, cited in Paul, 1990, p. 19) writing for 36 principals of colleges to 3,000 college and university presidents in the United States warned of a national emergency. He wrote that it would not do for schools to produce a small elite to run the scientific establishment and the rest with basic skills to do the routine work. Workers worldwide had these same basic skills and could do the work more cheaply, so the country must develop workers who could think for a living both critically and imaginatively, and schools on the whole were just not doing this.

Research has shown (Montgomery, 1999; Rogers & Span, 1993; Skilbeck, 1989) that methods of teaching in 90% of classrooms worldwide are formal and didactic. Paul (1990) has described the didactic theory of education as a system in which the student is taught *what* to think but not *how* to think. Students are said to "know" when they can repeat what they have been told and are given the products of other people's thinking. In this model the educated person is merely a data bank. This is characteristic of 19th century learning when what is required is 21st century learning. What Paul

shows that is conspicuously absent from school learning is some systematic and pro-grammed attention to thinking and problem solving in relation to "messy" problems, in other words a "cognitive curriculum" that develops multilogical not monological thinking. A range of researchers have found these thinking-orientated programs to be essential in helping the gifted and talented realize their potential (de Alencar, 1995, 1999; Kok & van Dijk, 1993; Passow, 1990; Poorthuis et al., 1990; Tannenbaum, 1983, 1997). However this is not special to the gifted; evidence shows that all children ben-efit from such cognitively engaging work (Montgomery, 1990, 1998; Tannenbaum, 1983; Watson, 1996).

Some knowledge is essential in this new age when there are vast stores of knowl-edge at the end of a computer terminal. We do not need to be encyclopedic, but we need to learn how to manage and use the information we gain. We also know that where subjects are taught in integrated themes rather than separately, our pupils are able to reach higher levels of understanding and competence. In computer terminology, we have a system without an appropriate set of "applications menus."

Characteristics of Effectively Providing for the Gifted

Passow (1990) concluded that the gifted need: (1) a curriculum that provides addi-tional depth and breadth of coverage, (2) a speeded-up coverage tailored to individ-ual needs, (3) modification of the material to take account of needs and interests, and (4) the development of critical and creative thinking, heuristics and problem solving, and affective interpersonal communication and social skills.

Enrichment materials, according to Poorthuis, et al. (1990), should meet a num-ber of criteria if they are to provide an effective education for the gifted. The authors produced a curriculum analysis tool for that purpose. Enrichment materials:
- should be beneficial to the development and use of higher-order thinking abilities
- ought to provide the possibility to explore continually new knowledge and new information
- should teach and encourage students to select and use sources of information
- should aim in their content at complex, enriching, and in-depth study of important ideas, problems, and subjects, and integrating knowledge between and within subject areas
- should offer the opportunity for increasingly autonomous learning activities

In any consideration of effective teaching there needs also to be a consideration of what makes for effective learning. De Corte (1995) in an extensive review of the literature summarizes the nature of effective learning. His main point is that effec-tive learning is to be found where learning is constructive, cumulative, situated, and collaborative, and where it is self-organized, generally goal-oriented, and individu-ally different. Learning in classrooms seldom complies with these conditions. It is often cumulative in the teaching sequence, but not in learning. Individuals are sel-dom given opportunities to construct their own learning or organize it themselves. They rarely have opportunities to set their own goals or make learning individually different and situated. Classroom learning is situated in the same place; only occa-sionally does the emotional climate vary and embed the learning to make it more mem-orable. Learning may take place in groups, but it is most often the case that students are seated together while doing individual work, not collaborating (Bennett, 1986).

It can be seen that there is some overlap between the conditions for effective learn-ing and the curriculum needs of the gifted. In addition, there is overlap between both of these and what Gibbs (1990) has identified as key elements of "good teaching":
- intrinsic motivation, a need to know and have ownership of knowing
- learner activity rather than passivity, although doing is not enough; we need to reflect and connect present to past learning
- interaction with others so that ideas can be discussed and negotiated or "taught" by students, for the best way to learn something is to teach it to someone else
- a well-structured knowledge base where knowledge is displayed and integrated into meaningful wholes not disparate units; this is best seen in interdisciplinary studies

A key concept here is *intrinsic motivation.* It is not easily induced in ordinary class-rooms. Passow (1990) in a survey of research concluded that there was a lack of knowl-edge about how to induce in the gifted love of learning for its own sake. According to Deci (1988) intrinsic motivation is fostered by a consistent, positive, supportive climate and positive constructive feedback. It is destroyed under a pressure to reach and maintain "standards," a fate often assigned to gifted children. When pupils are exposed to the pressures of extrinsic motivation and have to be "made" to learn, they lose autonomy and self-regulation. Self-regulation and self-monitoring activities consist of planning, predicting outcomes, scheduling time and resources, monitor-ing learning, and evaluating learning outcomes against plans and criteria.

One final distinction needs to be made before looking at methods and models, and that is to clarify the meaning of intellectual versus cognitive skills which sometimes seem to be used as interchangeable terms. It is not uncommon for teachers to believe that they are developing problem-solving and thinking skills when they are not.

Intellectual skills are about knowing "that" and knowing "how." They include con-verting printed words into meaning, fractions into decimals, knowing about classes, groups, and categories, laws of mechanics and genetics, forming sentences and pictures. They enable us to deal with the world "out there." Cognitive skills are internally organized ca-pabilities which we make use of in guiding our attention, learning, thinking, and re-membering. They are executive control processes that activate and direct other learning processes. We use them when we think about our learning. (Gagne, 1973)

It is clear from this that tests that purport to assess cognitive abilities most fre-quently do not. Instead, they are testing what has been learned in the form of intel-lectual skills. Sometimes there is a close link between the two as when we might argue that sequencing and ordering text is a cognitive skill. But when we are sequencing numbers in an IQ test, we are looking at an intellectual skill.

Redefining Models and Methods in Gifted Education

In making more effective provision for the gifted it is necessary to reconsider our mod-

els and methods. The evidence that follows is based on extensive work in teacher education and in schools (Montgomery, 1983, 1985, 1990, 1996). From these studies it was found that if teachers' practices were to be changed, the teachers themselves had to be taught by the methods to which we wished them to change (Montgomery, 1993, 1994). When this was implemented, instead of a small percentage of first-class grades in the final degree exams, it rose to more than 20%; and the whole groups' results (N=72) improved significantly over previous years. Now the data on effectiveness of the methods to be outlined also comes from multiple case studies conducted in many countries with mixed-ability and high-ability groups of pupils. It is undertaken and reported by teachers as part of their work for one of two Distance Learning MA programs with Middlesex University. The teachers in each module are evaluating the techniques with pupils in their own classrooms and in different subject areas.

If we look first at models of differentiation, they can be roughly divided into two main approaches. One that I call "structural" involves a response by the school and a modification of the system of grouping in the cohorts. The second is called "integral" and is more a "way of life within classrooms" model in which the individual teacher modifies the curriculum or teaching method.
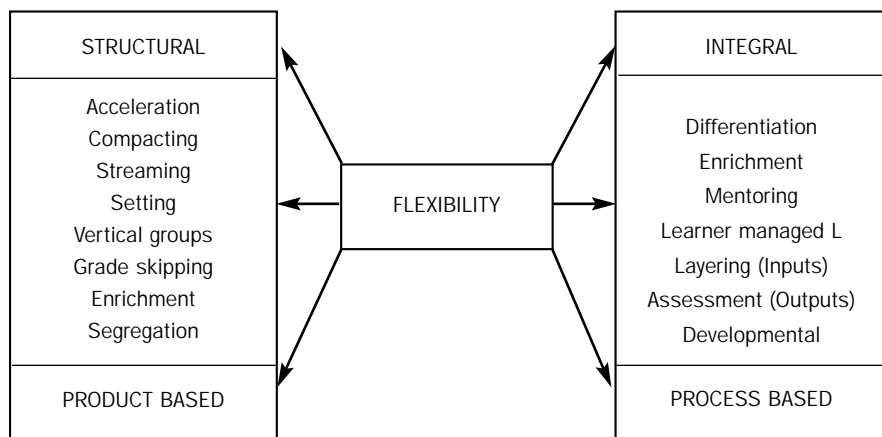
Figure 1. A Model of Types of Differentiation

Briefly, the general approach behind most structural methods, even where "enrichment" appears, is that the able pupils receive accelerated content. That is, content which older students would expect to receive is given to younger ones, and they are often put through it more quickly.

The term "differentiation" in the integral category is often used to symbolize the approach itself. Enrichment here is frequently a bolt-on provision and may consist of extension material. Layering consists in giving the mixed-ability class different levels of the same work after the main introduction. The gifted group receives more of the problem-solving approaches; this can prove divisive, as the gifted students' work

may appear to be more enjoyable. In assessment approaches, it is the teacher again who decides whose work will be marked more harshly although all pupils are set the same task. What has been found over an experimental period of about 20 years in the Learning Difficulties Research Project into which all the results are fed is that the method called "developmental provision" is the most effective for both mixed-ability classes and selective groups. It can also provide scope for both mentoring and learner-managed or self-regulated learning within it.

In essence, developmental differentiation involves the setting of common tasks to which all students can contribute their own inputs and so progress from surface to deep learning. Students are thus enabled to achieve more advanced learning outcomes. Achieving this form of differentiation results not from changing the curriculum itself but by making modest changes in the methods by which it is taught across all subjects. It should be the basis of all class teaching by every teacher. This does not mean that other provisions for the gifted will not be needed. It is essential that schools become more flexible and do not go in for "either acceleration or enrichment" but offer seven levels of provision as follows. This diagram illustrates the seven types of curriculum differentiation that should be offered in every school.
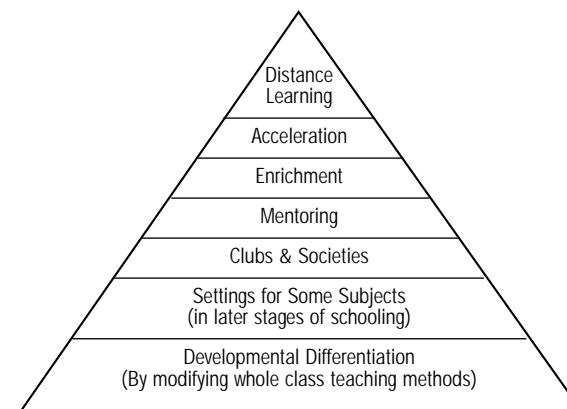

Figure 2. The Pyramid for Potential

It is being recommended that in the new age we need to be creative and imaginative, to be good communicators and problem solvers. However, the traditional method is to teach text or curriculum content with strict adherence to the set book or worksheets. Some teachers use text extension methods, but very few use text thinking approaches. The lesson usually consists of teacher exposition and question and answer followed by "seat work" involving reading, writing, drawing, or performing.

If we consider the school curriculum itself in relation to the needs of the new millennium and developmental differentiation we can see that there are some shortcomings. The School Curriculum consists of (1) The National Curriculum, school subjects, (2) Extra Curricular Activities, (3) Hidden Curriculum, (4) Personal and Social Curriculum (5) Basic Skills Curriculum, reading writing and number, (6) Ethi-

cal and Moral Curriculum, and (7) Cognitive Curriculum. It is the cognitive curriculum on which we could usefully focus to show how it could be linked to the subject and other curricula to achieve differentiation. The Cognitive Curriculum consists of:

- developmental positive cognitive intervention (PCI)
- cognitively challenging questioning—open and problem posing
- deliberate teaching of thinking skills and protocols (Swartz & Parks, 1994)
- creativity training (de Alencar, 1990, 1999)
- cognitive process teaching methods (Montgomery, 1990, 1996)

Developmental PCI (Montgomery, 1984, 1999) consists of the teacher moving to every individual in the class during each lesson and saying something constructive about the work—especially to move it on to a higher level. Cognitive process methods are discussed later.

In a recent review of teaching thinking in classrooms, McGuinness (1999) identified several different teaching approaches as follows:

- **Teaching of thinking.** Direct instruction in thinking in noncurricular contexts. Bolt-on provision.
  - de Bono (1983) CoRT Thinking Program
  - Feuerstein (1980) Instrumental Enrichment
  - Blagg, Ballinger, and Gardner (1993) Somerset Thinking Skills Project
- **Teaching for thinking.** Use of methods that promote thinking in curricular contexts.
  - Adey (1991) Cognitive Acceleration through Science Education—CASE, also CAME and CAGE. Gains in achievements have been demonstrated in these projects (Adey, 1992; Adey & Shayer, 1994) for mixed ability groups.
  - Lipman (1991) Philosophy for children
  - Renzulli (1995) The schoolwide enrichment program and revolving door models
- **Infusion.** Restructuring content lessons for direct instruction in thinking.
  - Swartz and Parks (1994) Infusion techniques and lessons
  - McGuinness (1999) Activating Children's Thinking Skills
- **Cognitive process methods.** Changing teaching methods to permit and promote higher-order thinking and creative skills in the ordinary curriculum. See also
  - Montgomery (1990, 1996) Cognitive process strategies, PCI. These are to be distinguished from process methods (Rawlings, 1996) per se which can be content-free.

All these techniques should be consistent with De Corte's (1995) analysis of what makes for effective learning.

Cognitive Process Strategies

Cognitive process strategies are at the core of developmental differentiation and PCI and they enable them to be achieved. Cognitive process teaching methods are based in critical-thinking theory and are the means by which higher-order thinking and metacognitive skills can be developed through the ordinary curriculum.

Central objectives in teaching need to be redefined as follows: (1) to enable students to think efficiently (within curricular areas and the real world), and (2) to express those thoughts succinctly.

There are six main types of cognitive process strategies or pedagogies.

1. Games and Simulations. In the nonsimulation game, students work in groups and have to know certain facts, perform skills, or demonstrate mastery of specific concepts to win or be successful. The participants agree to objectives, and there are sets of rules to obey. Typical of this form is the card game that can be adapted to educational purposes such as "Phonic Rummy" and Whole-Book games. Simulation games contain the elements of real situations, and students individually or in groups interact with and become part of the reality. Role-playing is often an important feature of the game. Characteristic of all games is that they must be followed by a discussion-debriefing session to discuss what transpired so that emotional, educational, and metacognitive objectives can be achieved.

2. Cognitive Study Skills. The examples can apply to textual, visual, and performance material. Cognitive study skills are a form of self-directed learning. They are higher-order reading and learning skills.

- locating the main points and subordinate ones
- flow charting
- completing and predicting activities
- sequencing
- comparing and contrasting
- drafting and editing
- organizing—tabulating, classifying, ordering, diagramming, categorizing
- drawing inferences and abstractions
- recognizing intent, bias, and propaganda
- identifying text schema

3. Real Problem Solving and Investigative Learning. Human nature is such that if you present a person with an open-ended situation in which the answer is not given, the mind automatically tries to resolve it. Humans are born scientific investigators (Kelly, 1955). Although not everything can be converted into a problem, there is considerable scope for doing so across the curriculum. Characteristic of the approach is that there needs to be plenty of content material around to research, to help develop ideas and strategies, or verify solutions. Because the activities start from the pupil's own ideas and knowledge, each is building up his or her own cognitive structures. The teacher is not only a resource, but is also the manager and facilitator of learning. Real problems are essentially "fuzzy," and time has to be spent in finding the issues. According to Gallagher (1997) there are four elements to fuzzy problems: there is an ill-structured problem, substantial content, student apprenticeship, and self-directed learning. It is better than traditional teaching methods for long-term retention, conceptual understanding, self-directed learning, and intrinsic motivation. Deci (1988) and Gibbs (1990) have both shown that intrinsic motivation (the desire to learn

for its own sake rather than being "made" to) is essential to effective learning and good teaching.

4. Experiential Learning. Experiential learning involves learning by doing or action learning. The learning is not circular, returning the learner to the same point each time. Instead, at each turn, the experience, the talking about the experience, and the reflecting upon the learning and doing, adds to the sum of knowledge and changes the processes and the understanding in an additive way. The result is a learning spiral (Montgomery, 1994) progressing from surface to deep learning (Marton & Saljo, 1984) often with the mediation of the teacher (Feuerstein, 1995).

5. Collaborative Learning. Collaboration means that students work with each other toward the framing and design of problems and strategies as well as in their resolution or solution. Each contributes some part to the whole. Quite often the process is called "cooperative learning." Even when pupils sit in groups, they may be doing individual, not collaborative, work. Collaborative learning facilitates extended language use and thinking and assists in team-building skills. It can be used in both content-free and content-dense situations.

6. Language Experience Methods. These involve the pupils composing and compiling their own textual and study materials. It began as a method of creating reading books for poor readers in which they would discuss topics and experiences with a tutor; then the tutor acted as a scribe and wrote down the story that the pupil told. This would be word processed and used as reading material. Then pairs of pupils can compose narrative and other materials on the word processor and gain the same benefits.

Cognitive Process Learning Spiral

According to Gibbs (1990) the characteristics of surface or superficial learning are (1) a heavy workload, (2) relatively high class-contact hours, (3) an excessive amount of course material, (4) a lack of opportunity to pursue subjects in depth, (5) a lack of choice of subjects, (6) a lack of choice over study methods, (7) a threatening and anxiety-provoking assessment system. Deep learning consists of the reverse of these conditions. Surface learning does not enable the material to be built into the students' internal schemas, or constructs and scripts, and so it remains inert and inaccessible. It is often capable of being repeated "parrot fashion," but without significant understanding. Teachers in their instruction mode give mini-lectures on topics to pupils. When this is well-structured, it gives rise to the condition known as reception learning, similar to surface learning, repeatable in an examination after revision, but it does not become incorporated into the student's conceptual understanding; it does not become part of them, or accommodated in the Piagetian sense. The cognitive learning spiral illustrates the sort of processing which is necessary to move learning to the deep levels. In the first spiral there is discussion about the concrete events in which students explain and expand on what they have just experienced. This may take place with or without mediation help from the teacher. In the next cycle they may receive further related input or experience and then go on to reflect and discuss how they learned and what their thinking was during this activity. This process of thinking about

one's thinking is known as *metacognition* and is a major contributor to increasing a person's intelligence (Flavell, 1979).

SURFACE LEARNING

(Concrete experiences)

Mediation

TALK

Mediation

REFLECTIVE "TALK"
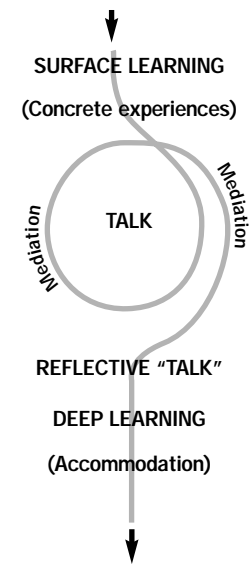
DEEP LEARNING

(Accommodation)

Table 3. Cognitive Process Learning Spiral

Following is a list showing the variety of thinking skills:
• sequencing and ordering
• sorting, classifying, and grouping
• analyzing, identifying parts/wholes
• comparing and contrasting
• distinguishing fact from opinion
• identifying bias and checking evidence
• drawing conclusions and giving reasons
• making predictions, hypothesizing
• relating cause and effect
• designing a fair test
• weighing up pros and cons

Listed here are some important higher-order thinking skills:
• defining and clarifying problems
• thinking up different solutions
• setting priorities, goals, and targets
• testing solutions and evaluating outcomes
• planning and monitoring progress towards goals
• revising plans and managing progress
• making decisions
• real problem solving

- generating new ideas and solutions
- team building (using emotional and social intelligence)
- creative problem solving

Examples of Cognitive Process Strategies

The techniques do not require whole lessons to be given over to them, sometimes an introductory 20 minutes can get the students off on the right foot. On other occasions what they would traditionally be doing is modified. Some examples follow.

Real Problem Solving (RPS) in History

This example involves real problem solving, a simulation game, and collaborative learning. The class is shown an outline map with six potential sites: a plateau, hills, a lake island, a village, land surrounded by marsh, land on a peninsula between rivers. Each group is assigned a site at random. The groups are then given the task of preparing marketing briefs to sell their sites to the aristocratic potential owners who wish to build a castle. The map also shows quarries, marsh, woodland, tracks, and so on. The year is 1250.

No other help is given, but the mixed-ability groups are given 10-15 minutes to discuss the problem and then give a presentation to the buyers, played by the teacher and the rest of the class. Starting a series of lessons on mediaeval castles—why and where they were built and the needs of the people of the time—can prove to be a lot of fun. Pupils as young as 6-years-old will all know something about castles from television and films and can contribute to the group's deliberation. Each student gets an opportunity to talk, question and explain, or merely listen. All can help in the presentation, although one of them will emerge as the lead presenter. After hearing each group's presentation, the teacher can then begin to draw out and systematize the key points with the whole class. By a process of compare and contrast they can be led to classify the advantages and disadvantages of each site and maybe even tabulate them, probing deeper into the issues. At the next stage they can be introduced to pictures and videos of significant castles in the history of different or particular countries and identify their main attributes. This can lead to the stories of those castles and peoples, from which a variety of forms of writing can be derived—descriptive, narrative, personal, and imaginative. Castle development through history can be examined or model making with a limited range of materials can be undertaken for design and technology. Castles can be illustrated in art using a variety of techniques, and pictures of castles in art collections can be collected and studied.

The teacher who first designed the activity on which this simulation and role-play was built actually wrote detailed information on the worksheet such as the following descriptions. However, in doing this, the teacher has taken all the cognitive challenge out of the task even though it was first designed for the highly able. They have been told what to think, rather than first recall and organize and think about what they already know.

Eldon Hills: Good view of countryside. Plenty of stone. Good for water but short of timber for firewood. Good foundations, easy to build. Good for defense.

Lake Island: Excellent for defense on island. Fish in lake good for food. Close to quarry and near village, but hard to build on soft swampy ground.
Eagle Rock: Excellent for defense. Plenty of stone and timber. Water would have to be stored.
Village Site: Close to workmen. Plenty of wood and food from farming. Poor defense, and so on.

There is a wide range of such RPS and games activities that can be designed to introduce all subjects in the curriculum. If we look at the method of experiential learning, a sequence of lessons might begin in some countries with a visit to a nearby castle. An example of experiential learning specific to my local area is a semester of work based around a 5-day sailing trip for groups of 12 students, aged 9 and upwards, (as well as company executives) on a historic 19th century Thames Sailing Barge. Our local barges have the traditional red ochre sails, hammocks, sea chests, and no television. Anchors have to be weighed by the student crew and sails hauled aloft by hand and winch. They learn to sail the ship and the ship's tender, to fish, and to work as teams on all the boat's chores such as provisioning, cooking, and cleaning. History, geography, language and literacy, music, physical education, design and technology, art, and religion can all be pursued under this umbrella project and in a period context. Students live in 19th century time and learn new skills such as rope-work and a whole new vocabulary that includes the meaning of many common sayings such as, "top quality," "sea legs," "make way," and so on.

15 Passwords to Competence

Quite a surprise is that the English language and spelling system can be taught during the semester, and beyond, by reference to 15 topic words. Here for example are 15 passwords to competence:

1. HULL (cvc, cvcc, ccvc, ccvcc) cot, block, deck, winch, sprit, list, wind, wet, lug. cvc & DOUBLING RULE; L-F-S RULE
2. ROPE (cvce) lines, mate, wire, lure, life, made + DROP RULE
3. SAIL (cvvc, cvvcc, ccvvc, ccvvcc) rain, pail, bail, paint, faint, maid, paid, (said), cleats, cheats, meets/meats, wheat, load (TWO VOWELS RULE; & ADD RULE)
4. COOK (cvvc) book, look, took, rook, nook, shook, hook, good (blood) & ADD RULE (oo extra vowel, short)
5. NOON (cvvc) fool, tool, cool, doom, room, school, soon, stool, loose, (food) (oo extra vowel, long)
6. RUDDER (cvc/cvc) (cvc+ c + suffixing rule) running, setting
7. BARGE (vr)(ge) ar and air words large, art, mart, marge. Fair, lair, air, stair.
8. WHEEL (wh ?) wh digraph and question words (only six consonant digraphs - th, th, wh, ph, ch, sh
9. CABIN (cvc in/ic/id) robin, rabid, titanic, manic (mania). Open first syllables: -ba-con, o-pen, spo-ken, to-ken
10. MAST (cvcc/cv-st) master, last, fast, past - dialect change
11. WATER (wa - or) wa - words, war, walk, ward

12. WORK (wo - ir) wo - words, world, work, worst, whorl, word
13. ROUND (ou - diphthong) 'ah-oo' ground, found, mound, hound, sound, confound (consonant prefix)
14. SIGN (cv -gn) silent letters, family words, signal, signing: -igh, ight: kn - knife, knight, knave.
15. PAY (cv-y) + CHANGE RULE paid, said, repaid (and vowel prefix)

The teaching techniques applied to the above can also be based on cognitive process methods, especially problem-solving methods, and the 12 cognitive strategies for the nonspecialist teacher (Montgomery, 1997 a, b). From this it can be seen that any curriculum topic can provide this basic sort of vocabulary list.

Adopting a problem-solving approach to spelling (and handwriting, according to Montgomery, 1997 b, 1998) is particularly important for overcoming learned helplessness which can be common in underachieving gifted students and adults, and it can promote even faster literacy progress in young gifted students.

A different starting point for problem solving and medieval castle building, or part of the project after the initial work, might be the following problem. The students are told:

"It is 1280. You are the master mason for King Edward I. You have been told to design and organize the building of a new castle at David in North Wales."

The following information is given to pairs of pupils:
- labor force details and costs
- materials and equipment costs
- purposes of the build—defense
- site of gatehouse
- bursary for reconnaissance visit
- budget for the whole project

Additional costs to be built-in include:
- price per crenellation
- windows and doors versus slits
- overhang
- accommodation, storage, and armory

After work on this, students could price out a particular castle build as a math project. This can be linked to real-world careers in quantity surveying and architecture. Some students might decide to build the model on the computer.

Cognitive Study Skills

A few examples of cognitive study skills follow. The task is "concept completion" in which pairs of pupils try to reconstruct the original author's meaning. It is not the same as a "cloze procedure" exercise where words are deleted in random cycles, for example, every seventh word.

Under Ground, by James Reeves
In the deep kingdom under ground

There is no light and little _____
Down below the earth's green _____
The rabbit and the mole explore.
The quarrying ants run to and fro
To make their populous empires_____
Do they, as I pass _____

Only part of the verse is repeated here to illustrate the method. After filling in the blanks, pupils can then be questioned as to how they came to the conclusion that it rhymed. There are at least four possibilities to explore here, and students learn more about the meaning of the poem and remember it better than if they merely read it through and were asked comprehension questions.

In "Ultima Ratio Regum," by Stephen Spender, we have an even more difficult example for older students. Again only the first part of the poem is reprinted here:

The guns spell money's ultimate reason
In letters of _____ on the spring hillside.
But the boy lying _____ under the olive trees
Was too young and too _____
To have been notable to their important eye.
He was a better target for a _____ .

The deletion of concepts is frequently applied to prose often as tests in science, for example, but less frequently to poems. It can be a very powerful technique for learning.

Another key technique within study-skill approaches is to get pupils to identify the main and subordinate points in a chapter, article, or poem. This requires applying a range of reading strategies to the text, not just a straightforward reading run as with a novel or newspaper. Once the points are identified, they can be converted onto a flow chart, if desired. For example:

With a food surplus, the Pueblos were able to turn their attention to other activities besides locating or growing food. In one particular area—pottery making— the Pueblos developed a high degree of artistry. Potters became artists and developed individualized techniques, painting fine-lined geometric designs as well as reproductions or life forms on their vessels. Paints were improved and pottery has been found that contains three or four different colors.
(Source: Royce-Adams, 1977, taken from *Columbus to Aquarius*, Dryden Press, 1975).

The assignment is to identify the main point of this extract. Although this was originally designed as a paper and pencil activity for individuals, it has a much more powerful use as a teaching and learning strategy if the pupils work in pairs to read the passage and discuss and justify their answer. Finally in a whole-class interactive teaching session, their responses can be presented and argued through. Following this they can do similar activities on other material in the subject area. What they might learn is that most simple texts contain the main point in the first sentence—very useful

knowledge for scanning activities. Later they could be introduced to paragraph writing patterns, for example, highly able pupils might be asked to try to write the same paragraph in all six forms. Which of the following writing patterns is exemplified in the Pueblo passage?

a. illustration, example
b. definition
c. comparison, contrast
d. sequence of events
e. cause and effect
f. description
g. a mixture—state which

As an extra "brain engage" strategy, the gifted student can be asked to rewrite the Pueblo passage to illustrate each of the different paragraph structures.

Language Experience

In language experience methods, students might write and illustrate their own textbooks in a subject area or they might write stories or texts for a younger group of students, and then try it out with them. The teacher or students might take a chapter or a whole book and devise a game board. When the players land on particular squares, they have to answer a study-skills card question. The questions should reflect both comprehension and problem-solving items.

Some Conclusions

In this paper we have discussed just a few examples of the cognitive process approaches that have been tried on a wide scale with slow learners, remedial, gifted, and mixed-ability groups. What is clear from the studies is that intrinsic motivation is developed by these methods, and children's time on task extends their enjoyment long after the lessons end. Disaffected children remained at school for these lessons, and gifted students recorded such things as, "This is much better than the usual boring stuff we get." They all began to spend extended periods of time on-task, instead of off-task. The quality of the gifted learners' work frequently exceeded all expectations, as did that of the most modest of learners. And there were sometimes the most surprisingly interesting and creative responses from unexpected sources.

In some of the disaffected, disabled, and slow learning groups the responses were especially interesting. There were always one or two pupils who tried to hold back and who in the end, despite themselves, began to participate, some for the first time in years. Others could not at first accept that this was real or proper school learning, as they did not have to copy large tracts from the blackboard or overhead projector. They did not believe at first that they were learning if they were discussing a topic and working together on ideas. Enjoyment and legitimized social interaction were not connected in their minds with school learning, and so at each stage they had to be shown in explicit ways how much they had learned and how their work was improving. Once they made these connections they became avid learners and other teachers began to notice a transformation. Teachers soon commented on the positive changes in student behavior and attitude. It is in these ways that effective teaching methods can be seen to be making a major contribution to classroom management and behavior control (Montgomery, 1999).

It is usual for teachers preparing curriculum enrichment materials and developmental differentiation to use Bloom's (1956) taxonomy of educational objectives as a guideline. This means they try to produce materials and methods, even for 5-year-olds, that tap into Bloom's higher levels of analysis, synthesis, and evaluation. In the LDRP we have examples of mixed-ability groups of 5-year-olds (including one gifted individual) all working at these higher levels. These higher levels of operation need not be reserved until the teen years when vast bodies of content have been learned. Thinking and study skills by then may have dimmed.

In addition to these guidelines we can add a composite checklist or seven-point plan for elementary and secondary teachers to evaluate materials for the gifted, and indeed for all children at the basic level. Similar methods are appropriate at university level (Gibbs, 1994, 1995; Montgomery, 1995, 1996). The checklist asks:

- Are the materials beneficial to the development and use of higher-order thinking abilities?
- Do they enable the exploration of new knowledge and important ideas in breadth and in depth?
- Can they teach and encourage study and research skills in the selection and use of sources?
- Do they offer opportunities to engage in increasingly autonomous learning and induce intrinsic motivation?
- Do the processes help integrate knowledge between and within subjects?
- Are some problems "fuzzy" or open-ended and so promote multilogical, innovative, and creative responses?
- Do the activities promote real collaborative learning and abilities to work in teams?

If all teachers in a school can answer these questions in the affirmative, then we can be assured that we are beginning to work out the "applications programs" for the curriculum. We can agree that we are preparing students to achieve, and nations to succeed, in the new millennium, for we will be teaching the gifted (and all students) more effectively. If there are opportunities for other forms of differentiation, they will not be spoiled by these techniques. It is in the cognitive curriculum that gifted students will identify themselves when tests and checklists may not. Cognitive curriculum is therefore an essential part of identification procedures, and the strategy of triangulation in identification is then complete.

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The Importance of Developing Provisions for Gifted and Talented Students in the Senior Years of High School: The Design of Colloquia as One Such Provision

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ABSTRACT

In Australia, the needs for gifted and talented students are, on the whole, recognized, although this is not always translated into programs within the curriculum. As the tertiary requirements impinge upon curriculum in the final years of schooling, often the types of provisions that are available in the primary and middle school years are nonexistent in the senior years. This paper arose from action research where the researchers sought to address the needs of gifted and talented students (>1000 students) in private schools in Melbourne, Victoria, Australia.

The focus of this paper is on the practical application of a design of a colloquia that cuts across the usually separate domains of science and the humanities. Empirical research on the needs of gifted adolescents, including the relationship between the impact of adolescence on, and the level of alienation among, gifted students led to this particular design. The philosophical tenets of the design incorporate the specific requirements of gifted achieving and underachieving students recognizing the importance of role models and mentors in the senior years of high school, specifically, academics, researchers, and recognized achievers.

Needs of Gifted and Talented Students in Senior High School

Many programs for gifted and talented students have evolved from infant school application to the middle years of schooling. Professional development for teachers in recent years has focused on procedures for identifying students who have intellectual potential and on designing and implementing specific programs to provide for the needs of preprimary, primary, and middle school students within a mainstream school. Negotiated curriculum, acceleration provisions, and compacted curriculum are discussed in many school staff rooms. These concepts are no longer the sole domain of researchers in the field of education for gifted and talented children.

In many countries, including Australia, the transition from secondary education to a tertiary institution depends on the student meeting the particular requirements of a tertiary course. Often, the specific prerequisites of tertiary entrance dictate a

crowded curriculum in the senior years, and teachers have little scope to design programs to specifically cater to the needs of gifted and talented students. Research has indicated several issues for gifted and talented students in the final years of schooling:

- students of high intellectual potential who "drop-out" of school (Egyed, McIntosh, & Bull, 1998)
- intellectually gifted adolescents who respond to the impact that their intelligence has on their acceptance within the group and on their commitment to school (Clasen & Clasen, 1991)
- the belief system regarding the learning process and of knowledge itself as it affects the cognitive effectiveness of the output of the student (Schumacher, Sayler, & Bembry, 1995)

Where are the underachieving gifted students? Are they coasting in the math/science stream, or have they been relegated to the humanities stream where their lateral thinking still allows them some degree of interaction within classroom discussions? Are the achieving gifted students underperforming? Is there enough challenge in the Victorian Certificate of Education (the local secondary certificate) to ensure that gifted students remain motivated to achieve their potential? Why do males not perform as well as females in the final years of schooling? (Colangelo, N., Kerr, B., Christensen, P., & Maxey, J., 1993) The search for answers to these questions prompted the authors to explore avenues which might address the needs of gifted and talented students in their senior years of high school, specifically in two private boys' schools situated in the inner suburbs of Melbourne, Victoria, Australia. The design of the colloquia arose from that search.

A review of the literature regarding the framework within which senior students are placed highlighted many areas that needed to be taken into account prior to designing the colloquium. Of greatest significance was the impact of adolescence and alienation levels.

Issues Impacting on Students in Senior High School

The turbulent adolescent years appear to be even more tumultuous as we approach the millennium. The frequency of students indulging in illegal substances, the alarming increase in youth suicide, and the ever-increasing student attrition rate in senior high school years and early tertiary years offer many challenges to educators. These issues are of even greater concern in relation to gifted and talented students who, with their heightened awareness and sensitivity, may well be more significantly affected.

Impact of Adolescence

The early years of secondary school coincide with the tumultuous years of puberty and adolescence. Erikson (1963) suggests that the turbulence of adolescence is the result of confronting the question, Who am I?, which he sees as the prime consideration in this stage of life between childhood and young adulthood. The adolescent is in the process of building a consistent identity out of self-perceptions and rela-

tionships with others. Elkind (1984) suggests that many adolescents are preoccupied with "imaginary audiences"; they assume that others are aware of their thoughts and feelings. The adolescent is thus regarded as a highly sensitive creature whose perceptions of others and their responses to him or her may well be more symptomatic of an egocentric viewpoint that differs greatly from an adult's view of the situation. Coupled with the adolescent's concern with controlling impressions made on others (Santrock, 1993), adolescence is fraught with introspection. O'Connor & Nikolic (1990) view adolescence as a stage where identity development and adolescent egocentrism merge, while Albert (1994) indicates the importance of ego development in the actualization of potential. Reynold's (1992) study of the internalizing disorders of adolescents found that "social problems" that include "doesn't get along with others," "teased," and "not liked" were high on the students' priority list. The question to be asked is, how does this impact on the student of high intellectual potential in the later years of high school?

The gifted adolescent's search for identity may well be hampered by the pressure of wishing to be accepted by one's peers and, as a consequence, conforming to the group's expectations. Two studies in Australia present findings which teachers of gifted and talented students may well find disturbing. Carrington (1996) replicated Tannenbaum's (1962) exploration of adolescent attitudes toward two groups of students: "brilliant" and "average." It was found that the "average studious student was preferred to the average nonstudious, and the brilliant nonstudious was preferred to the brilliant studious" (p.15). The ideal student, the one who is popular among the adolescent cohort of senior high school, is "the average student who is not diligent at school and is 'good at sports'" (p.15). This peer pressure to not be seen as studious was one of the major concerns of the New South Wales Inquiry into Boys' Education (Fletcher, 1994), where it was noted that "boys did not want to excel except on the sporting field" and that the only mode of leadership boys were willing to show was described as "cool to be a fool" (Fletcher, 1994, p.16). This concurred with Cooper & Farran's (1988) study that postulated that male adolescents appear to experience greater difficulty in adjusting to their social setting.

How, then, could the colloquium be designed to address the issues emerging from the impact of the gifted adolescent's search for identity and acceptance? The student who feels alienated from the school environment is less likely to be motivated to excel. This may well be one of the underlying causes for underachievement of gifted adolescent students. To cater to these students, a review of alienation literature was necessary.

Alienation and Adolescence

Adolescents who are intellectually gifted are by definition not "average" students. Whether or not one defines gifted as two or three standard deviations beyond the norm, the cohort of gifted have greater differences in their intellectual potential than do the majority of students who lie within the bracket of two standard deviations above or below the mean of intellectual ability.

Feelings of alienation appear to be common within the gifted cohort, especially

if specific intellectual needs have not been recognized or affirmed. Alienation has been defined as a construct of perceptions of being separated from a unified whole (Newman, 1981). This can be viewed from a structural perspective, such that individuals perceive themselves as separate from an institution, particularly the school. This may arise as a direct result of school values as revealed in the mission statement or the designated role of the individual student, that is a consequence of this set of values. The school, which commonly proclaims equity for all, may not be able to cater to students whose potential is "inequitable." The personal psychological phenomenon of alienation focuses on the perceptions of the individual and the perceptions of his or her role within the institution. Newman argued that a combination of the two perspectives of alienation was more appropriate to its application within the school situation.

Seeman (1975) identified powerlessness, meaninglessness, normlessness, cultural estrangement, self-estrangement, and social isolation as the factors that comprise alienation. In the design of the colloquia, the authors were concerned with addressing each aspect of the alienation process.

- Powerlessness: students would have input into the design and the evolution of the colloquia.
- Meaninglessness: topics were chosen to deal with the essential questions posed through adolescence, that is, what is the role of the individual and the sense of being in a particular field?
- Normlessness: Ethical questions would be central to the colloquia. Students who choose to participate would be prepared via philosophical lessons on perspectives of ethical parameters through an historical perspective.
- Cultural Estrangement: Students would benefit from the selection of students from different cultural and religious backgrounds.
- Self-Estrangement: The colloquium would specifically address issues of students feeling out of place within their social context.
- Social Isolation: Schools involved in the colloquia would be chosen so that there would be a balance of gender, ethnicity, and religious background.

Results from Klein and Zehms (1996) indicated that gifted students in their struggle to be accepted by their peers downplayed their giftedness. "Gifted students of both sexes sometimes attempt to avoid being stigmatized by behaving as though they were less able: they may alter their interactions with peers and teachers so that they will not be perceived as different and then isolated or stigmatized" (p. 30). These results concurred with an earlier study of intellectually gifted adolescents by Kaiser and Berndt (1985) which found that loneliness, depression, and anger were experienced by one in eight students. This study suggested that alienation and cognition of insufficient love, understanding, and social support impacted greatly on adolescents' views of their sense of belonging. The colloquia were designed specifically to ensure that gifted students could be affirmed, as well as offering an opportunity for gifted students to meet like minds within both an intellectual and social context. The colloquia involved lectures, structured discussions, and informal social time that included dinner.

The Australian Context
Australian schools do not have a national curriculum as yet. Each state and territory is responsible for the curriculum for their schools, even though funding comes from both the federal and state governments. Victoria is the state located in the southeast portion of the continent with a population of approximately 4.5 million The capital city is Melbourne, with a population 3.5 million.

Victorian Education
Schools in Victoria can be divided into two categories: private schools and state schools. State schools are nominally free, subsidized by the state government. Private schools are fee-paying schools and differ in their entry requirements, with the majority being affiliated with religious denominations. Private schools are not bound to accept any student who applies for enrollment. Some private schools have particular academic prerequisites for students. Most private schools offer scholarships or bursaries to students who are unable to afford the usually high fees.

St Kevin's College is a Catholic boys' school, and Melbourne Grammar School is an Anglican boys' school. Secondary schools cater to students studying the final 6 years of education. The average entry age of students to secondary schools is 11 years. In Australia the concept of senior secondary schools encompassing the final 2 years of secondary education has led to the emergence of new senior campuses, although this is not the norm in Victoria. The Victorian Certificate of Education (VCE) is designed to be completed in the last 2 years of high school. Students are then ranked according to their certificate study scores on a national basis. These scores form the basis of selection for all Australian tertiary institutions.

Philosophical Tenets for Colloquia Design
It was important that the design of the colloquia address the specific needs of intellectually gifted students in the final years of their secondary schooling. To this end, the authors acknowledged four main philosophical tenets that would underpin the design of the colloquium, irrespective of the content domain:

1. Gifted students in senior high school have specific needs beyond the curriculum. The VCE has been designed to ensure that all students are able to gain a certificate at the end of second year, that is, the final year of schooling. As a result, many senior teachers within the secondary system feel that standards have been lowered. It is interesting to note that this system is currently being reviewed, and changes will begin to be implemented in the year 2000. We, as teachers, need to go beyond the curriculum to provide challenge and motivation for the students.
2. Underachieving gifted students should not be disregarded in senior high school. Entry requirements for specific subjects in the final years of school often dictate particular prerequisites. Students who have been gross underachievers in the middle school years may find themselves stranded by their lack of skills. The motivation required for relearning these skills must be provided. In many cases this is more appropriate if provided outside the schooling environment.
3. Gifted students need to make the connection between their current situation in

their secondary schooling years with the major questions confronting active minds in the world beyond. The links between the challenges experienced by the students and the challenges confronting professionals in their particular fields can be crucial to a student's motivation in specific subject areas. For example, university graduates of all fields, from music to geology, fill senior positions in stock brokerage houses. The acuity of the intellect is more important to the firm than the acquisition of knowledge in a particular field. This can be affirming for gifted students in their senior years of schooling.

4. Gifted students enjoy grappling with ethical questions. Ethical questions reaffirm the importance of a morality base for the students within their social context. The universality of the questions allows the gifted students access to minds and ideas across three millennia. While the social context may change over time, the rights of the individual as opposed to the common good of a society, for example, is still a conundrum.

Design of the Colloquia

The design of the colloquia (see Figure 1) includes key concepts:

- That the colloquium be conducted outside the context of the school, both in terms of premises and "usual" school time
- That specialists in the particular field of the colloquium conduct the sessions
- That these specialists should have certain characteristics—
  - expertise and leadership that is widely recognized within the community
  - the ability to bring a "real-world" perspective to the issues under discussion and are seen to have impact with that context
  - the ability to model original thinking rather than merely rehearsing formulaic responses to ethical issues
  - approachable and willing to encourage students whom some may describe as "difficult"
  - although difficult to define, possessed, at least in some measure, the potential to inspire
- That adults who were passionate about their fields of study would be involved in the design of the colloquium, and, as a corollary, the role of mentor would emerge
- That the colloquium would specifically link the institution with the gifted students' interests, the school, an expanded peer group, and all within an adult "real-world" framework

Philosophical Tenets

The philosophical tenets previously discussed are clearly integral to the design of colloquia. In addition, the design is based on the concept of the importance of the world beyond education.

Figure 2 presents the practical implications of these philosophical tenets. The historical and philosophical perspectives form the background and the parameters of the students' thinking process. This is crucial to the success of colloquia and needs to

be addressed early in their design. The ethical question has a broad, universal, philosophical base, whereas the specific question of the case study is based on a particular circumstance, requiring the application of principles developed from the study of the ethical question. These principles provide the criteria for discussion of the specific issue, for example, respect for autonomy, beneficence, non-maleficence, and justice.
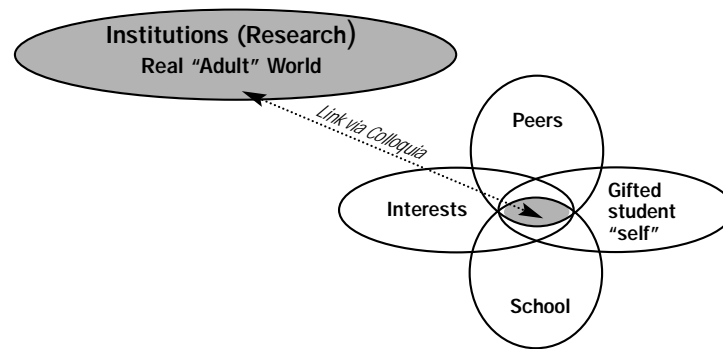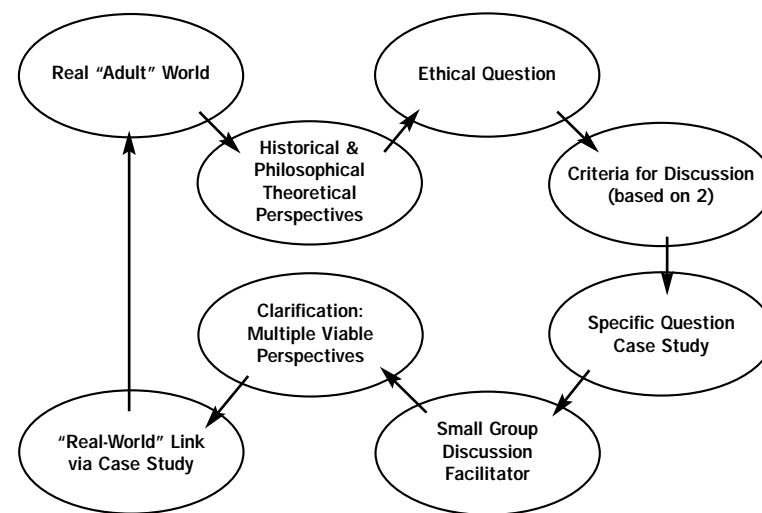

Figure 1. Colloquia: Constructs

Figure 2. Colloquia: Philosophical Outline

Group Facilitation

Small group discussion facilitated by a professional from the institution can enable students who may not feel confident to formulate and express an opinion. The basis for the discussion is enablement; the encouragement of careful, often difficult, thinking. This requires that the group facilitators have some understanding of their important role. Leadership is an art.

The small groups should formulate a response or at least the clear articulation of conflicting responses. These conclusions are put to the entire group at a plenary session and carefully facilitated by senior staff from the institution. The range of viable responses should be acknowledged, even encouraged, and it should be expected that vigorous debate will ensue. This aspect of the colloquium must be carefully managed to enable the formulation of ideas based on clear philosophical principals. The plenary session will conclude with the case studies and the institution's decisions regarding their clients. It is necessary to view those decisions within the framework of ethics and philosophy.

The Importance of Ethical Questions

Ethical questions form the central point of the design of the colloquium. The subject areas identified as of particular interest for students which were conducive to debate on ethical issues and which related in some way to the subjects offered at the VCE level were (1) ethics and genetics, (2) theology, (3) law and ethics, (4) the stock exchange and ethics.

Importance of Evaluation

Evaluation is both the start and the end point of the colloquia. Evaluation of gifted students' interests directs the selection of outside institutions. Evaluation of the colloquium itself is completed by all participants upon completion.

Figure 3, the colloquia design, details the process undertaken to construct the colloquium. The entire gifted cohort within the senior secondary years is first consulted. Selection criteria at this stage should be very inclusive to avoid the possibility of excluding the underachieving gifted. A survey of their interests is compiled, again based on divergent sources of data such as formal surveys, discussions, teacher and parent observations, reading habits, and so on. These data form the basis of discussions with specialist staff within the schools to develop links with the curriculum and to facilitate their interest. A rough concept map design of the colloquium content is developed. This is presented to the relevant institution with which a final negotiation of the ethical discussion points and design details occur.
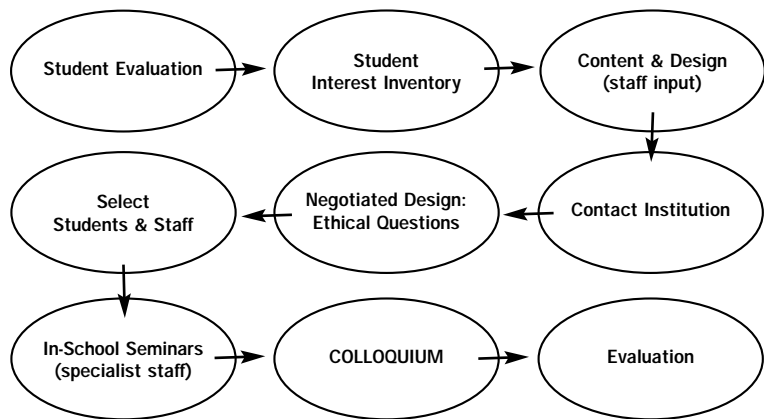

Figure 3. Colloquia: Design Process

Based on the data collected during Stage 1 of the colloquia design, a more discriminating list of students for whom this particular colloquium is appropriate is developed. This smaller group forms the core of an in-school seminar group led by specialist staff from within the school and using material developed by the institution. This material relates to both the large ethical questions and to the specific questions based on real case studies. Study time is negotiated both in school time and in free time. Once the colloquium takes place (importantly, outside of school both in terms of place and time) evaluation then follows, enabling refinement and further programming.

Sample Evaluation of the Colloquium

Evaluation has taken two forms: data collected immediately following each colloquium and long-term follow-up interviews with participants and presenters. The data has indicated a range of practical logistical issues that have needed attention in subsequent colloquia. Of principal concern to both participants and presenters was the issue of time. Many felt that 5 hours was insufficient time to develop some of the complex ethical concepts in relation to particular case studies. Impacting on this concern was the need to have a more than rudimentary understanding of the technical or scientific concepts involved in such case studies. Careful in-school preparation thus became a crucial factor in the success of colloquia. Some of the comments taken from interviews were revealing: "The best thing I've done in school," and "Couldn't we have all our classes like that?"

Conclusion

Developing colloquia is at once complex and easy. The process can become a complex of personal and institutional politics, and yet there is a simplicity and ease that comes, we suspect, from a passion for inquiry. Central to the whole process is the element of intellectual curiosity: what if? and why? Occasionally, sadly, this is diminished in the gifted students with whom we work, but it is the driving force behind colloquia and necessarily becomes a goal of each program. Here there must be a sense of freedom to ask the hard questions and to challenge well-entrenched assumptions. Special people best meet such challenges. The professionals who agree to run a colloquium are themselves absorbed by intellectual inquiry. In addition, they wish to share their passion and are eager to encourage youth to develop sophisticated ideas. We remain indebted to these special people.

Colloquia, as a provision for gifted and talented students in the senior high school, appear to be successful if evaluation data of students, schoolteachers, and professionals is accepted. While the design of colloquia will evolve through planned future colloquia, much in the same way as action research, the fundamentals of the design indicate positive effects for students and schools. Each colloquium should include the aspects that have been acknowledged through the evaluation process as crucial:
- relationships developed between students and professionals
- understanding and experience of "real-world" institutions
- ethical questions which apply to the "real-world"

- facilitators who are experts in their field
- prior tutoring to ensure students are able to find a voice within the context of the colloquium

Teachers need to be confident that they need not be "teachers" of gifted and talented students. Teachers may need to develop their competence as facilitators and negotiators as they develop close relationships between their schools and institutions, and also between their students and prominent professionals. Our experience in designing and conducting colloquia has given us enthusiasm to explore beyond the confines of the boundaries of our schools and the limitations of our intellects.

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Cultivating Creativity to Rise to the Challenge of the 21st Century

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ABSTRACT

Now that we face the 21st century with its emerging knowledge-based economy, education reform and related experiments draw wide concern. The hot issues focus on how to cultivate students with creativity and capability to serve as a new generation of citizens. In particular, the focus of this paper is on what is both feasible and necessary in the education of gifted teenagers.

What is the Intention of Creativeness?

The concept of "new," contrary to "old," is defined in the context of each person. The reference "old" has various concrete meanings in different situations. Therefore, creative intention is actually more reflected as a kind of psychological characteristic. For example, when a person feels discontent about his or her knowledge of a conclusion, interpretation, and theory, as well as his or her skills, and intends to continue more profound study to update knowledge and capability, we may refer to this kind of mental mode as creative intention. Though people may differ in the content and degree of their search, this intention is a common psychological characteristic of humans. It is just such an intention for creativeness and innovation that promotes and sustains the development of human society.

What is the Capability of Creativeness?

Having intention for creativeness means to possess the condition of necessity, namely, thinking in an active and vigorous state. However, creating activity cannot be accomplished successfully without the capability of creativeness. People cannot create with nothing. New knowledge usually grows on the base of old knowledge in regard to nature, laws, and principles. Therefore, the mastery of information forms the groundwork for creativity. First, the ability to collect information is one important component of creative capability. Second, to create, it is important to be able to synthesize and analyze information properly.

In recent years, emphasis has been put on the ability to distinguish between true and false, as well as on the ability to select and screen information. But these activities still involve the study of existing knowledge, or the preparatory phase of creating. They construct another necessary condition for creativity. The crucial indication of creative capability is considered being good at independent design of test experiment.

What is the Role of Education in Intention of Creativeness?

Though everyone possesses intention of creativeness as a psychological character-istic, individuals show a variety of levels influenced by education, culture, and society. There are evident group identities that reflect the differences among regions, categories, and changes in time. In other words, intention of creativeness can be cultivated and promoted by education (in a broad sense) and also by society. Similarly, it can be depressed and distorted by improper use of education and unfavorable social conditions.

It should be noted that education and personal training are characterized by different stages. The requirement for creativeness should be different for specific stages and for specific persons. The target and program of education should be formulated according to this principle.

How Can We Cultivate Creative Intention and Ability in Chemistry Using Dialectics?

Dialectics is a useful tool to analyze and solve problems. Dialectics is verified in chemistry, and becomes a guidance tool for the study and practice of chemistry. For example, the nature of chemistry is interaction—or the relation among different matters. If students can understand this point, they may understand better the nature of chemical reactions and the laws involved in material structure.
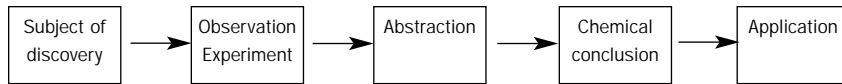
Cognition may lead to feelings, yet feelings may also influence cognition. Hence, it is important to attract students by the beauty of chemistry, to inspire them by chemical application in daily life, and to stimulate them by the virtue and contribution of the greatest chemists in order to encourage their progress in chemistry studies and to cultivate their greater interest in chemistry. These strategies can improve the active study of chemistry and make the study and practice enjoyable.

Science needs a serious and careful attitude. When teachers conduct chemical experiments, they must record the phenomenon and data, but never employ tricks or try to fool students even when certain phenomena are not consistent with known knowledge. For example, phenolphthalein shows an orange color when put into sulfuric acid, yet it is colorless when put into sodium hydroxide. Although these phenomenon do not meet the knowledge taught in high school, we can not make faulty records about the experiment. However, we may help students to find the causes of the "abnormal" phenomena.
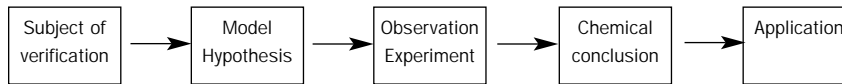
As industry develops and the population grows, the earth's environment becomes worse and worse. Correspondingly, it is the task of a chemistry course to cultivate in students a consciousness of the environment. On the one hand, knowledge about acid rain, greenhouse effect, and so on, should be integrated into the lecture. On the other hand, more attention should be focused on standard operating procedures such as dosage of medicine, improvement of an experimental device, or the importance of using a closed system when an experiment may produce poisonous gas. Discussion on environmental protection can improve consciousness of the students in this respect.

According to the cognitive process in the study of chemistry, we may classify subjects into two types of methods:

The induction method:

Subject of discovery → Observation Experiment → Abstraction → Chemical conclusion → Application

The deduction method:

Subject of verification → Model Hypothesis → Observation Experiment → Chemical conclusion → Application

In study, the scientific method is more stable when compared to scientific knowledge. So it is important that students not confine themselves to scientific knowledge but also pay attention to scientific method, since the scientific method may significantly benefit their creative activities.

Family Influence on Self-Esteem of Preadolescents and Adolescents: A Comparative Study

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ABSTRACT

Self-esteem of students is a rich area of research. In the last decades many research studies on self esteem in the field of gifted education were carried out (Peters, Ma, Mönks, & Ye, 1995). In this study the influence of parents on the self-esteem of gifted preadolescents and adolescents will be investigated. Deeper information about the various environmental influences on the self-esteem of different gifted adolescent age groups will help educators and psychologist direct their attention and resources to the accurate aspects of the problem. Therefore, the researcher is asking which age group of gifted is influenced more from the family structure in terms of their self-esteem. In this way preventative programs can be prepared for the gifted adolescents before a problem occurs.

Conceptual Background
Self-esteem
Self-esteem according to Damon and Hart (1988) is the affective and quantitative dimensions of the self-concept. Self-concept is defined by Markus and Nurious (1987) as the collection of one's knowledge, the way the others think about oneself as well as one's thoughts about self in the past and how the self will be in the future. Similarly Campbell and Lavallee (1993) describe self-concept as an individual's beliefs about him or herself. On the other hand, they describe self-esteem as a self-evaluative process. Rosenberg (1986) also stressed the importance of the influence of other's in the formation of the self-esteem. Briefly self-esteem may be conceptualized as an affective aspect of one's self-evaluations from a person's perspectives.

Adolescence
Adolescence is described as a period of transition between childhood and adulthood (Desjarlais & Rackauskas, 1986; Mönks, 1992). Erikson (1994), on the other hand, considers adolescence the last stage of childhood. He discusses the dynamics of adolescence as a process which "is conclusively complete only when the individual has subordinated his childhood identifications to a new kind of identification, achieved in absorbing sociability and in competitive apprenticeship with and among his age mates." Erikson's definition stresses the importance of mature identification object selection in adolescence. Freud (1998) and Blos (1962) differentiate between preadolescence and adolescence proper by pointing out that for the adolescent's parents, specifically parental ego, are very important as a base of support. Similarly Kohut (1998) stresses the value of parental influence on the formation of the self in child-

hood. In her book Kroger (1989) discusses Blos' conceptualization of adolescence as a staged process of individuation which is repeated after childhood. She stresses that adolescents are differentiating themselves from their parents as Freud and Blos already stated. In contrast to preadolescents who have just started to struggle for identity and differentiation from their parents, adolescents turn to their peers for individuation as a reference point (Blos, 1962; Mönks, 1992).

Review of Related Literature

Preadolescence, according to Desjarlais and Rackquscas (1986), is between the ages of 9 to 12 years. The characteristics of this period given by Blos (1962) are: increase in instinctual sexual and aggressive behaviors, and preference for friends (with boys especially hostile to girls). According to Blos, preadolescent boys live in a very conflicted situation where envy for the female is repressed by reaction formation (aggression). Meanwhile the children's egos need support from their parents. Alternatively, even though preadolescent girls are more "tomboyish" they are more open to interaction with boys. Preadolescence for Freud (1998) includes striving for, but not yet establishing an attachment with other than the parents. According to Freud, even though the preadolescent is harshly opposing parents for his or her individuality, this is in fact the result of a deep attachment to them.

Adolescence occurs after the preadolescent period is completed (Desjarlais & Rackauskas, 1986). For Blos (1962) adolescence is a narcissistic period where the adolescent is more turned towards the self. He explains the dynamics of this narcissism by suggesting that adolescents live in estrangement from the family and turn to the outer world where they have not yet established attachment objects. Attachment to the family is waning during the individuation process (Krauger, 1989) but other attachments are not yet available. The adolescent may then turn to internal resources of the self for support of self-esteem. Blos (1962) also suggests that adolescence is a period of time when the individual is more comfortable with the opposite sex; in fact, this is the process of attachment to objects outside of the family. From a Piagetian point of view Dolle (1991) sees adolescence as a period where the individual is able to see different alternatives, is more concerned with world affairs, and asks more ontologic questions. Therefore it can be suggested that intellectual development in adolescence helps the adolescent to move his or her focus from the family to the world outside.

Clark (1983) describes the gifted adolescent as having more than average adjustment abilities such as being able to see alternatives, to conceptualize, and to seek diversities. Similarly it is suggested that gifted adolescents are emotionally ready at this period having more positive self-esteem than norm group peers (Freeman, 1985; Therrassier, 1985; Hoge & Renzulli, 1993). Ceci (1996) stresses the importance of parental attitudes on the intelligence of the adolescents. On the emotional side of the issue, Mönks (1992) claims that family harmony is also an important variable for the self-esteem of the gifted adolescent. He adds that the self-concept of the gifted student is also influenced from academic success, and suggests more investigation on the family characteristics of the gifted (Mönks, 1992). Within this framework, Sahin

(1995) demonstrated that the self-esteem of the gifted student has a high correlation with academic success and family cohesion (R = 35, p <. 05). He has also suggested that in Turkish culture the family is very important to the self-esteem of the adolescent (Sahin, 1995). Kagitcibasi (1996) has well documented that Turkish culture is a "culture of relatedness" where strong family ties at any age throughout the life of the individual are very important.

Briefly, the family has an important but decreasing influence on the self-esteem of gifted adolescents but it is not clear when the influence most dominates self-perception. For Kagitcibasi (1996) the family in the Turkish culture has an influence on the lives of their offspring throughout their lives. According to Sahin (1995) warm relations in the Turkish family are significantly related to the higher self-esteem of the child (.35, p < .05). Therefore, the researcher is asking if gifted adolescence has stages suggested by Freud (1998) and Blos (1962) that are differently influenced by the family structure.

Hypothesis

The researcher is hypothesizing that:
1. There will be no significant difference between the self-esteem of gifted preadolescents and adolescents with low-perceived family structures.
2. There will be no significant difference between the self-esteem of gifted preadolescents and adolescents with high-perceived family structures.
3. High-family-structure gifted preadolescents will have higher self-esteem than low-family-structure gifted preadolescents.
4. High-family-structure gifted adolescents will have higher self-esteem than low-family-structure gifted adolescents.

Method
Participants

The subjects of this study are 116 gifted students having WISC-R scores of 134-154, from a boarding school exclusively for gifted children. Their age range for preadolescents is between 9 to 11 years and for adolescents 14 to 16 years. Girls form one third of the sample group.

Instruments

The Family Structure Assessment Device (AYDA), developed by Aydan Gülerce (1992) for literate people 12 years and older measures five dimensions of interactions in the family: communication, cohesion, management, efficiency, and emotional context. Interjudge reliability ranged between .58 to .73. Criterion validity with the Beavers-Timberlawn Family Assessment Scale was .78. One month interval test-retest reliability was found through the Pearson Moment Product Correlation coefficient as .79. The split half reliability found though the Stanley Correlation coefficient as .85. The internal consistency by Cronbach alpha for total items was .70. Norms were obtained from 600 families, 595 mothers, 498 fathers, and 395 children.

Piers-Harris Children's Self-concept Scale (WIFAM) is the self report instrument

designed for children between 9- to 16-years-of -age. There are six factors in the scale: behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction. The 2-week interval test-retest reliability of the Turkish form ranged from .72 to .91. The interval consistency of Turkish WIFAM through the Kuder Richardson reliability coefficient was .87. Validity and norms of the scale were not available (Çatakh, 1985). Data analyses will be carried out by a two-way ANOVA.

Procedure
All 116 students received Ayda and WIFAM in a class hour consecutively, after a brief explanation.

Results and Discussion
The first two hypotheses of the study are supported since no significant difference between the self-esteem of gifted adolescents and preadolescents was found (F = 3.240, p > .05). Similarly the third and fourth hypotheses are supported, and it was found that gifted adolescents and preadolescents with higher family structure have higher self-esteem than their gifted peers with low family structure (F = 4.013, p < .05).

As Van Boxtel and Mönks (1992) strongly advised the development of family studies in relation to self-esteem, this research deals with the family structure of gifted adolescents and preadolescents in terms of their self-esteem. The findings suggest that a positive family structure has a positive effect on the self-esteem of gifted preadolescents and adolescents with both age groups not significantly different from each other. Sahin (1996) documented that there were no significant differences between the self-esteem of gifted and nongifted adolescents. Kagitcibasi (1996) suggested that family ties and support are very important in Turkish culture along with family cohesion, and that the self-esteem of the adolescents is related (Sahin, 1996). Blos (1962) and Freud (1998) suggest that attachment to parents is an important aspect of the self-esteem of preadolescents and adolescents. They add that this attachment is decreasing by the time the young individual finds new attachment objects outside of the family. The results of this study show no significant differences between the self-esteem of adolescents and preadolescents in terms of their perception of their family structure. The self-esteem of both groups is influenced by their families in the same way. Being gifted was expected to sustain the individuation process since gifted preadolescents are intellectually advanced compared to their norm group peers; therefore, their search for outer attachment objects may start earlier than the norm group. In fact this is not true. Clark (1983) warns that even though gifted individuals are advanced intellectually, the same emotional advancement can not be expected.

Thus the only suggestible explanation is that the cultural factor is interfering in the lives of the adolescents. As Kagitcibasi (1996) discusses in her book *Family and Human Development Across Cultures,* the western type of individual with a separated self may not be the only healthy personality model. She stresses that in the Turkish culture, even though the family accepts the independence of its offspring, emo-

tional ties are always very close and important. Thus the insignificant difference between the adolescent and the preadolescent in terms of self-esteem may be explained from a cultural perspective. In the Turkish culture strong family ties continue throughout preadolescence and adolescence.

More cross-cultural research is needed in the area of self-esteem of gifted adolescents in terms of their family structure to find the effect of culture as a variable.

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Social and Emotional Development of Gifted Students

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To most educators and parents, being gifted is a special gift that includes certain privileges and responsibilities. Yet in numerous interviews with gifted students, Sisk (1999) found that students view being gifted as painful because society does not value their different characteristics and behaviors. Schools in the United States have developed gifted programs that primarily focus on students' academic or cognitive giftedness and even today, it is not uncommon to hear educators engage in debates on the need for affective education. They discuss giftedness as if it consisted mainly of cognitive substructures and as if affective activities are optional, to be added to address unique emotional needs of gifted students.

However, educators are becoming increasingly more aware that gifted students not only think differently, but they feel differently (Nelson, 1989; Piechowski, 1991; Silverman, 1993; Torrance & Sisk, 1999).

One of the basic characteristics of gifted students is their intensity and an expanded field of subjective experience. The intensity, in particular, must be understood as a qualitatively different characteristic. It is not a matter of degree, but of a different quality of experiencing; vivid, absorbing, penetrating, encompassing, complex, commanding—a way of being quiveringly alive. (Piechowski, 1991)

Terrassier (1985) labeled the pull between the cognitive and affective as dyssynchronicity. In a presentation in Nice, France, he discussed the external and internal aspects of dyssynchronicity. He defined internal dyssynchronicity as uneven rates of development of the various capacities of gifted children and external dyssynchronicity as the resultant behavioral differentiation.

Sisk (1999) offers an example of this unevenness in a case study:

In terms of developmental chronological age, Ralph was 6, yet with an IQ of 170, he had a mental age of 10 1/2. Tying his shoes was difficult for him and his eye-hand coordination was typical of a 6-year-old. He often knocked over chess pieces much to the aggravation of his fellow students. Yet his ability to foresee chess moves was a challenge for the 10-year-olds with whom he frequently competed in the school's chess club. When he lost games, his emotional reactions were at the 6-year-old level including crying and violently knocking the chessboard aside. He was an accomplished pianist and played all of his pieces from memory; developmentally, according to his music teacher, he was equivalent to age 10 musicians.

Ralph was a challenge for his school, but he was fortunate in that the school district employed a supervisor of gifted who understood that manifestation of external

dyssynchronicity would often include a lack of conformity to expectations for 6-year-olds. He was also fortunate to be included in a pilot project for gifted students in which there was an understanding that regardless of the chronological age of gifted children, there were no problems that couldn't be solved relating to uneven development psychosocially and cognitively (Delp, 1960).

Moreloch (1992) summarizes the dilemma of uneven development of gifted children by stating that asynchronous development results in unusual "awareness, perception, emotional responses and life experiences" throughout the individual's life-span (p.14).

Counselors in particular need to be sensitive to the unique internal conditions of gifted students. One theory that is helpful in building an understanding of the emotional development of gifted students is that of Kazimierz Dabrowski (1902-1980). Throughout his life, Dabrowski studied the mental health of intellectually and creatively gifted children and adults. He studied biographies of imminent individuals and found that the values he was personally seeking in his own life and career were identical to the ones imminent people were seeking. He noted the pain that these individuals experienced in life and recognized that their pain was similar to his own when he felt rejected and misunderstood.

In his private practice as a psychologist, Dabrowski continued to work with highly gifted individuals who were having trouble coping and experiencing conflict, self-criticism, anxiety, and feelings of inferiority as they measured themselves toward their high ideals. Colleagues in the medical field referred to these feelings as neurotic and defined the psychologists' role as eliminating these symptoms.

However, Dabrowski (1964), in his work with his patients, began to view these symptoms as an integral part of each person's quest for creativity, and for higher levels of development and performance. He described inner conflict as developmental rather than dysfunctional. From these observations, Dabrowski developed his theory of positive disintegration. He postulated that inner conflict generates tension that moves individuals toward higher levels of functioning. Dabrowski's theory is composed of two parts: (1) five overexcitabilities, and (2) five levels.

Dabrowski (1938) reported that overexcitability was innate and could be observed in infancy. The five overexcitabilities (OEs) include psychomotor, sensual, intellectual, imaginational, and emotional. Dabrowski studied gifted children and youth in Warsaw and found that all of them demonstrated considerable manifestations of the overexcitabilities (Dabrowski, 1972). The five OEs summarized are adapted from Dabrowski and Piechowski (1970) and Piechowski (1979).

Forms and Expressions of Psychic Overexcitability
Psychomotor
Psychomotor OE is defined as a surplus of energy. Specific behaviors include rapid speech, marked excitation, intense physical activity (e.g., fast games and sports), pressure for action (e.g., organization), and marked competitiveness. Psychomotor expression of emotional tension can be manifested in compulsive talking and chattering, impulsive actions, nervous habits (tics, nail biting), workaholism, and acting out.

Sensual
Sensual OE is defined as enhanced sensory and aesthetic pleasure. Specific behaviors include enhanced seeing, smelling, tasting, touching, hearing, and sex; delight in beautiful objects, sounds or words, music, form, color, and balance. Sensual expression of emotional tension can be manifested in overeating, sexual overindulgence, buying sprees, and wanting to be in the limelight.

Intellectual
Intellectual OE is defined as intensified activity of the mind. Specific behaviors include curiosity, concentration, capacity for sustained intellectual effort, avid reading, keen observation, detailed visual recall, and detailed planning. Intellectual OE can be manifested in a search for truth and understanding, forming new concepts, and tenacity in problem solving. Intellectual OE includes a penchant for probing questions and problem solving, reflective thought or thinking about thinking, a love of theory and analysis, preoccupation with logic, moral thinking, introspection (but without self-judgment), conceptual and intuitive integration, and independence of thought (sometimes very critical.)

Imaginational
Imaginational OE is defined as free play of the imagination. Specific behaviors include frequent use of image and metaphor, a facility for invention and fantasy, and a facility for detailed visualization, poetic and dramatic perception, and animistic and magical thinking. Imaginational OEs have intense capacity for living in a world of fantasy that includes a predilection for magic and fairy tales, creation of private worlds, imaginary companions, and dramatization. Spontaneous imagery is an expression of emotional tension including animistic imagery, mixing truth and fiction, elaborate dreams, and illusions.

Emotional
Emotional OE is defined as intensity of feelings and emotions. Specific behaviors include positive feelings, negative feelings, extremes of emotion, complex emotions and feelings, identification with other's feelings, and awareness of a whole range of feelings. Somatic expressions include tense stomach, sinking heart, blushing, flushing, pounding heart, and sweaty palms. Emotional OEs have a strong affective memory, and specific behaviors include fears, anxieties, and feelings of guilt and death. Relationship feelings include inhibition (timidity, shyness); enthusiasm, ecstasy, euphoria, pride, strong affective memory; shame, feelings of unreality, fears and anxieties, depressive and suicidal moods. Emotional OEs have a capacity for strong attachments and deep relationships. These include strong emotional ties to persons, living things, places, animals, difficulty adjusting to new environments, compassion, responsiveness to others, sensitivity in relationships, and loneliness. Emotional OEs have well-differentiated feelings toward self, including self-evaluation and feelings of inadequacy and inferiority.

Levels of Development

Dabrowski identified five levels of development. These include:

Level I: Primary Integration

At this level egocentrism prevails and the individual lacks the capacity for empathy and self-examination. When things go wrong someone else is to blame; self-responsibility is not a Level I characteristic, and individuals at Level I often attain power in society by ruthless means.

Level II: Unilevel Disintegration

At this level individuals are influenced primarily by their social group and by mainstream values. They are moral relativists with no clear-cut set of self-determined values, and inner conflict is horizontal.

Level III: Spontaneous Multi-Level Disintegration

At Level III individuals have developed a hierarchical sense of values, and inner conflict is vertical. There is dissatisfaction with self, including what one could and ought to be. There is an integral struggle between higher and lower that may be accompanied by despair, anxiety, depression, and feelings of dissatisfaction with self.

Level IV: Organized Multi-Level Disintegration

Individuals at Level IV are well on the way to self-actualization. They have mastered a way to reach their own ideals, and they are effective leaders in society. They display levels of responsibility, authenticity, reflective judgment, and empathy for others, autonomy of thought and action, self-awareness, and other attributes associated with self-actualization.

Level V: Secondary Integration

At this level inner conflicts regarding the self have been resolved through actualization. There is integration of the individual's values and ideals with their daily living and being. Life is lived in service to others and according to the highest, most universal, principles of loving, compassionate regard for the worth of the human individual (Nelson, 1989).

In a number of studies of gifted adolescents, Sisk (1997, 1998, 1999) found that gifted students demonstrate an exceptional awareness making them sensible to moral conflicts between "what is" and "what could be" in themselves and in society. The majority of the students participating in the studies described themselves as "out of step" with their peer groups and reportedly had developed a set of hierarchical values placing them at Level III development.

In a follow-up study of gifted adolescents, Sisk (1999) found that after one year of college, the students were more committed to responsibility and service to others, with most of them functioning at Level IV development.

Dabrowski (1972) stated that when emotional, imaginational, and intellectual OEs are higher than sensual OE's and psychomotor OE's in strength, there is potential for high levels of personality development. This pattern emerged in a number of studies (Gallagher 1985; Piechowski & Colangelo, 1984; Schiever, 1985; Sisk, 1997, 1998, 1999). The combination of intellectual, emotional, and imaginational OEs can be noted in the seven student responses that follow:

1. "I derive pleasure from doing something extremely well or perfecting something. Another thing that I find pleasurable is helping someone else excel or succeed in doing something they never dreamed they could do. Last summer, I became involved with the Summer Special Olympics for children with disabilities. We worked hard for weeks and weeks and finally the big day came. I was able to see our hard work pay off. To see this excellence in these special little children's eyes flooded my soul with happiness. I don't think I've ever had a rush quite like that." (Female, age 17)

   This student is at Level IV showing levels of responsibility, empathy for others, and approaching Level V, living a life of service to others. This is an example of emotional overexcitability.

2. "I would first find a pattern and follow it. What goes on in my head would be how would one solve the problem. Second, I would tell myself that I'm not confused. I would think, why do we have to understand this idea? Last, I would find the pattern." (Male, age 16)

   This response reflects intellectual overexcitability; this young man is involved in analysis of his problem-solving search for truth and understanding at Level III.

3. "I love considering paradoxes such as, could God make a rock so heavy that he could not lift it? Questions without answers can start me up. Also wondering about the nature of the universe, the creating God, morality, evolution, revolution, and so forth. Anything worth pondering about gets my mind going." (Female, age 16)

   This student's intellectual overexcitability is reflected in her thinking about thinking, her love of theory and analysis; this puts her at Level III.

4. "All living things have a life of their own, but only animals have some say in their survival. And I believe that all animals have feelings, and I've seen it even in wasps. Two wasps nested in our bird feeder, and we evicted them from it. They still flew around where their nest used to be, so I killed one of them, unable to get the second. And for two days, the second flew around looking for his mate and nest." (Male, age 18)

   This response of animistic thinking is reflected in his imaginational overexcitability response at Level III.

5. "My most intense pleasure comes from doing volunteer work for organizations

that provide relief for others. I worked with a neighborhood center at Christmas passing out food baskets to the homeless and left with the greatest feelings that for a small moment, I was able to show a person that despite all of the hate and discrimination, there are still people that care." (Male, age 16)

Compassion and service is reflected in this student's emotional overexcitability response.

6. "For now I like to see myself as a very caring person who understands people's differences. I am not afraid to say what is on my mind, and usually I try not to go along with everything else society believes is correct." (Male, age 16)

Standing outside the herd and forming hierarchical values (Level III) is reflected in his emotional overexcitability response.

7. "Sometimes I hit the wall of a concept, but then my mind starts racing trying to get around, over, and to poke through. If this isn't working then I start getting frustrated; then I stop, step back and slow down the process. I start reevaluating my known facts and assumptions first, and then I try to link the concept with other concepts, either directly or through metaphors. Bam! I got it!" (Female, age 18)

Her response (intellectual overexcitability) at Level III is thinking about thinking.

The strengths of OEs, combined with talents and special abilities, can be used as a prediction of the developmental potential of individuals (Silverman, 1993). This concept of developmental potential adds an important dimension to the understanding of gifted individuals and reinforces the need for educators to address healthy emotional development as vigorously as academic achievement.

The gifted adolescents surveyed in the research studies conducted by Sisk (1997 1998, 1999) were also participants in a summer leadership program. They enjoyed sharing and discussing their responses, and they were intrigued with Dabrowski's five levels and definitions of overexcitabilites. The majority of the students could be described as compassionate; many already displayed devotion toward a life of service and planned to be physicians, lawyers, and teachers. Most of the students had high intellectual, imaginational, and emotional OE scores at Level III or IV.

The counselors in the summer leadership program encouraged the students to write in journals on a daily basis and to reflect on a variety of questions to elicit Dabrowski's OEs. These responses proved effective in building greater self-understanding and acceptance in the students. Teachers in the summer leadership program's advanced academic seminars (calculus, debate, and legacy of the Founding Fathers, comparative religion, and advanced prose) reported that the students demonstrated considerable growth in their willingness to discuss topics of moral concern. They began to hold higher expectations for themselves and others, and they displayed greater commitment to service.

Self-actualization is an accepted goal for education; however, the theory of Dabrowski has potential to enhance this educational goal by expanding self-actualization to include service to humankind. To achieve this expanded goal, teachers and counselors need to be willing to identify and address the OEs of their students. Helping gifted students see that they have capabilities that are recognized in society is important because this recognition will help them become aware of the myriad possibilities that they have of being "gifted and successful." Educators and counselors have a responsibility in a global society to work toward educational solutions to ensure that this does happen.

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Meta-analytic Findings on Gifted Student's Self-Concept in Taiwan

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ABSTRACT

Research on children's self-concept has been extensive both for gifted students as well as regular students. Meta-analysis, the analysis of analysis, is the methodological procedure used to statistically integrate the findings from individual studies. The purpose of this research is (a) to provide an overview of this research, and (b) to conduct a meta-analytic study investigating the findings on gifted student's self-concept in Taiwan. Fifteen papers yielded 237 effect sizes. The studies showed that the mean effect size was only .05 with very few differences among gifted and regular students. The research concludes with a discussion of research and practical implications.

Introduction

Gifted students project several images to the world. Although gifted students undergo the same developmental processes as do their friends, the way they handle these changes or transformations may be quite different from their age peers. Will gifted students have more positive self-concepts than students of average ability? This paper examines the literature on self-concept of gifted students and conducts a meta-analytic finding on gifted students' self-concept in Taiwan.

The Self-Concept Construct

Self-concept may be defined in very general terms as the image we hold of ourselves. A more specific definition refers to "our attitudes, feelings and knowledge about our abilities, skills, appearance, and social acceptability" (Byrne, 1984, p. 429). According to this definition, there are various dimensions to self-concept, including cognitive, perceptual, affective, and evaluative facets. It is a construct that becomes increasingly multifaceted as the individual moves from infancy to adulthood.

Beyond these very general definitions, there exists considerable controversy regarding the conceptualization and measurement of self-concept. This variability in definition and measurement presents some difficulties in analyzing relations between giftedness and the self-concept.

The Giftedness Construct

A report by the U.S. Office of Education (Marland, 1972) that was influential in shaping programs for gifted and talented students defined six categories of giftedness:

Gifted and talented are those….with demonstrated achievement and/or potential ability in….(a) general intellectual ability, (b) specific academic aptitude, (c) creative or productive thinking, (d) leadership, (e) visual or performing arts,

and (f) psychomotor ability. (p. 3)

While the field of gifted education adhered to this definition for two decades, some modifications have transpired, predominantly in differentiating between definitions of gifted and talented (Feldhusen,1992; Hoge & Renzulli, 1993). The current and newer trend includes attending to the social-emotional needs of the gifted students as well as the academic needs in fostering talents. In the construct of giftedness also exists controversies and ambiguities about the conceptualization and measurement. Definition of this construct varies from those with a narrow focus on highly exceptional intellectual capacities to those based on a broad range of intellectual, creative, leadership, and artistic dimensions. Similarly, considerable variability exists with respects to measurement tools: individual IQ tests are the sole criterion of giftedness in some cases, a broad range of standardized tests are utilized in others, and completely unstandardized subjective criteria are employed in still other situations.

As one might expect, this variability in the definition and measurement of the giftedness construct creates considerable difficulty when it comes to analyzing the relation between giftedness and the self-concept.

Giftedness and Self-Concept

Feldhusen (1986) argued that a positive self-concept is a dynamic and driving force in the actualization of giftedness:

Perhaps the fundamental ingredients of appropriate self-concept in gifted individuals are accurate perception of self as gifted or talented and perception of self as capable of creative or innovative endeavor. These perceptions should interact with motivational states to drive the gifted individual to study and create endeavors. (p. 120)

Research increasingly indicates that self-concept is not a unidimensional construct but, rather, a multifaceted construct (Marsh & Shavelson,1985). In other words, it is better viewed in terms of areas rather than as one overarching dimension. There are different findings on self-concept between gifted students and general students in the USA and Taiwan. The findings can be concluded as the following:

First, a more positive self-concept in the gifted student derives from the labeling. Labeling a student as gifted may normally be expected to communicate a positive image (Cornell,1983; Sapon-Shevin,1984), and this would be expected to have a positive impact on the child's self-esteem. Therefore, several research studies reveal that the gifted students' self-concepts are higher than the general students' self-concepts (Chen, 1978; Chen, 1983; Huang, 1972; Karnes & Wherry, 1981; Wu, 1985).

Second, self-concept in gifted students might be more negative than in general students. It is possible that the high expectations communicated through the labeling process would contribute to feelings of failure; the student fails to meet the expectations (Fults, 1980; Stooper, 1979). On the other hand, gifted students may have positive academic self-concepts but, they may also be rather self-defeating in their actions. Therefore, several research studies reveal that gifted students' self-concepts are lower than general students' self-concepts (Hung, 1982; Kuo, 1979; Liu, 1982; Lu, 1982; Wang, 1985; Wu, 1988).

A third set of findings shows that the self-concept between gifted students and general students are not different (Carter, 1978; Kuo, 1986; Liu, 1982).

Method

The investigation of self-concept among gifted students has become an important dimension in describing gifted students' performance. The burgeoning literature has expanded in a number of directions and, although facets have been selectively reviewed, it would benefit from a comprehensive evaluation. Quantitative research syntheses provide a more generalized picture and enhanced definition for describing the self-concept manifested by gifted students.

Quantitative methods of research synthesis were developed as an alternative to traditional methods of summarizing research (Glass, 1976). Quantitative methods, which have come to be termed meta-analysis, have been well described (Glass, McGaw, & Smith, 1981; Rosenthal, 1984). Meta-analysis has become an accepted means of statistically summarizing a research domain.

The advantage of meta-analysis is to integrate the results of research across studies. The result of meta-analysis is fourfold (Asher, 1991):

1. It provides a much clearer view of the relationships among the variables involved.
2. The theory evolved is much more general than is possible from the results of studies assembled qualitatively.
3. The strength of the treatment effect can be calculated, not merely tested for statistical significance. (These treatment effect differences calculated are called effect sizes.)
4. Hypotheses can be tested about variables that differ among studies that generally would be difficult to test within a study, such as differing grade or age levels, inner city versus suburban school effects, or types of schools.

Selection of Studies

Three methods were used to search the literature: a library search, a computer search, and reports from specialists in the field of gifted education in Taiwan. To be included in the analysis, studies had to directly compare students with giftedness to general students on self-concept. A total of 18 studies were found from 1972 to 1991. Of those studies, three were eliminated due to the exclusion of appropriate statistical information. For example, some studies failed to report mean scores and standard deviation. Table 1 identifies the 15 studies and provides information about the number, grade levels, self-concept measure employed, and the type of comparison provided.

Table 1. Description of Studies Providing Comparisons of Gifted and Average Students

Study	No.	Grade	Measure	Comparison (students)
Huang (1972)	210	7	SCI	gifted special classes vs regular classes
Chen (1978)	320	3	RTSCS	gifted special classes vs regular classes
		4		
Kuo (1979)	1226	3	SCPC	gifted special classes vs regular classes
		4		
		5		
Lu (1982)	884	4	RTSCS	gifted special classes vs regular classes
		6		
		8		
Liu (1982)	491	4	RTSCS	gifted special classes vs regular classes
		5		
		6		
Hung (1982)	240	8	RTSCS	gifted special classes vs regular classes
		9		
Chen (1983)	347	3	RPSCI	gifted special classes vs regular classes
		4		
		5		
		6		
Shiu (1984)	150	7	RTSCS	art gifted special classes vs regular classes
		8		
		9		
Wang (1985)	315	2	SDQ	gifted special classes vs regular classes
				gifted resource classes vs regular classes
Wu, Chen, & Tsai (1985)	525	7	RTSCS	gifted special classes vs regular classes
		8		
		9		
Kuo (1986)	546	7	RTSCS	gifted special classes vs regular classes
		8		gifted resource classes vs regular classes
Su (1986)	68	10	RTSCS	gifted special classes vs regular classes
		11		
		12		
Tzei, Huang, & Tsai (1988)	511	8	RTSCS	gifted special classes vs regular classes
Wu (1988)	630	4	RTSCS	gifted special classes vs regular classes
		6		
Wang (1991)	245	10	RTSCS	gifted special classes vs regular classes
		11		
		12		

Note: SCI=Self-Concept Inventory (Huang, 1972); RTSCS=Revised Tennessee Self-Concept Scale (Liu, 1979; Lin, 1980); SCPC=Self-Concept Profile for Children (Kuo,1972); RPSCI=Revised Purdue Self-Concept Inventory (Chen, 1983); SDQ=Self-Description Questionaire (Yang,1974)

Computation and Analysis of Effect Sizes

The primary statistic in meta-analysis is the Effect Size (ES), which permits quantification and standardization of individual study findings. Several methods are used in meta-analysis that enable estimates to be made about the validity of obtained ES measures (Hedges & Olkin, 1985; Hunter & Schmidt, 1990; Rosenthal, 1984). When appropriate, ES estimates were corrected for either small sample size, violation of parametric assumptions, or artifactual variance (Hedges & Olkin,1985). In this study, ES was calculated by the formula for *g'* proposed by Glass (1976) ; this involved subtracting the mean self-concept scores of average students from the mean for gifted students and dividing by the standard deviation of the scores for the average group. These *g'* values were then converted to *d* values in order to adjust for variation in sample size (Hedges & Olkin,1985).

An ES may be likened to a *z* score and interpreted to show the level of group differentiation across self-concept. For example, an ES of +1.00 in studies examining the self-concept indicates that gifted and average groups differed by 1 standard deviation, which means that 84% of the gifted group could be differentiated clearly from the average group on their self-concept. In other words, on average, more than 8 out of 10 subjects with gifted students scored below the mean of the average group, the level of depression being about 34 percentile ranks on an outcome assessment.

Results and Discussion
Overall Effects on the Study Outcomes
The 15 studies yielded a total of 237 ESs. The average ES across all analyses was .05 (SD = .35), indicating very few differences among gifted students and average students on self-concept. These findings are similar to Goldring (1990), Vaughn, Feldhusen, & Asher (1991), Kulik & Kulik (1992), Hoge & Renzulli (1993), and Liu (1982).

Effects of the Instrument
As reported in Table 2, the effect of the gifted student compared with the average student on the Revised Tennessee Self-Concept Scale was -.06 to .09. The effect of the gifted student compared with the average student on the Self-Concept Profile for Children was .28 to 1.10. The effect of the gifted student compared with the average student on the Self-Description Questionaire was .34 to .40. The effect of the gifted student compared with the average student on the whole scale was .15. These indicate negative gains self-concept for the subscale of RTSCS and positive gains self-concept for the subscale of SCPC, SDQ, and the whole scale.

Table 2. Mean Effect Sizes According to Instrument

Self-Concept Domain	No. of Effect Sizes	Mean Effect Sizes	Standard Deviation	Percentile
Revised Tennessee Self-Concept Scale				
physical self-concept	22	-.01	.31	50
ethical self-concept	22	-.06	.28	48
psychological self-concept	22	-.05	.37	48
family self-concept	22	.03	.28	51
social self-concept	22	.04	.31	52
self-identity self-concept	24	-.01	.30	50
self-acceptance self-concept	24	-.03	.30	49
self-action self-concept	24	-.01	.39	50
self-criticism self-concept	4	.09	.30	54
Self-Concept Profile for Children				
physical	3	.09	.10	54
ability and achievement	3	1.10	.05	86
personality	3	.50	.15	69
environment	3	.34	.04	63
belief	3	.28	.17	61
Self-Description Questionaire				
self-accept	4	.30	.27	62
self-harmony	4	.41	.33	66
The whole scale				
global self-concept	28	.15	.39	56

Effects of Gender
According to gender (see Table 3), the effect of gifted students compared with average students on male, female was -.01,-.12, respectively. Chen (1983) found that the self-concept of gifted boy students was lower than that of general boy students. But the research found that the self-concept of gifted girl students was lower than that of general girl students. There were no differences in the self-concept between gifted boy students and general students.

Table 3. Mean Effect Sizes According to Gender

Domain	No. of Effect Sizes	Mean Effect Sizes	Standard Deviation	Percentile
Male	77	-.01	.28	50
Female	77	-.12	.31	45

Effects of Grade Level
According to grade level (see Table 4), the effect of gifted students compared with average students in elementary, junior high school, and senior high school was .02, .00, .44, respectively. Across grade level comparisons indicate positive gains for self-concept in senior high school. There were no differences found between elementary and junior high school.

Table 4. Mean Effect Sizes According to Grade Level

Domain	No. of Effect Sizes	Mean Effect Sizes	Standard Deviation	Percentile
Male	77	-.01	.28	50
Elementary	150	.02	.36	51
Jr. High	67	.00	.24	50
Sr. High	20	.44	.38	67

Effects of Education Placement
According to education placement (see Table 5), the effect of gifted students compared with average students in special classes and resource classes was .04, .17, respectively. There was a small positive effect for self-concept. But gifted students in resource classes are higher than those in special classes. Lin (1981) also found that the self-concept of gifted students in resource rooms was higher than that of general students.

Table 5. Mean Effect Sizes According to Education Placement

Domain	No. of Effect Sizes	Mean Effect Sizes	Standard Deviation	Percentile
Special classes	224	.04	.35	52
Resource classes	13	.17	.32	57

Implications of the Research
Research Implications
First, it is important that researchers pay more careful attention to their treatment of the self-concept and giftedness variables. Researchers are advised to utilize specific self-concept scores (e.g., academic self-concept) rather than global or composite in-

dexes. On the other hand, an instrument measuring self-concept should be developed in the future.

With respect to treatment of the giftedness variables, it is important that researchers be explicit about their definition of giftedness. There is room for alternative definitions of giftedness, but it is important that the construct being used in the study be made explicit.

Second, there is also a need in future research to attend more closely to research design. Very generally, there must be more of an effort to sort out the effects on self-concept of the relatively independent variables of (a) exposure to different types of comparison groups, (b) programming, and (c) performance levels.

Third, the samples in this study are elementary, junior high school, and senior high school students. The self-concept of preschool and university students can be explored in the future.

Fourth, a total of 18 studies were found. Of those studies, 3 were eliminated due to the exclusion of appropriate statistical information. For example, some studies failed to report mean scores. In the future the study should present mean scores and SD.

Finally, we note that there is a need for longitudinal studies to explore the changes in the relationship between giftedness and self-concept over the lifespan.

Practical Implications

There are several considerations leading to this conclusion. First, the research reviewed was limited in a number of respects. Therefore, it is not a perfect guide to practice. Second, the results were based largely on group data and those can be somewhat deceptive, often concealing problems in individual cases. Third, there is evidence from clinical sources that exceptional children may be especially vulnerable to certain types of social and emotional problems (McMillan & Loveland, 1984; Schneider, 1987).

In fact, gifted children might be especially susceptible to a number of types of social and emotional problems. These include (a) disrupted or dysfunctional social relations, (b) unrealistic expectations imposed by parents or others, and (c) exceptional academic demands imposed by acceleration or other special programming (Hoge & Renzulli,1993). All of these may impact the child's self-concept and create a need for intervention. Gifted students' contributions to life in the next century are essential, and it is crucial to help them understand themselves in order to reach their high-level potential and live healthy lives. Thus, some intervention programs which have relevance for self-concept problems in the gifted child should be developed.

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Maximizing Achievement of Adolescent Girls

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ABSTRACT

In this manuscript some relevant historical/societal influences are presented as well as a summary of the author's current research (Wilgosh, 1996) on media influences on women and girls. The research framework is then extended to further examine contemporary media influences on young women, including development and application of a tri-dimensional categorization system to examine informational messages impacting on young women and to assist educators and counselors in undoing influences that reinforce underachievement. Consideration will be given to developing innovative educational strategies and approaches to encourage expression of gifts and talents and maximize achievement of adolescent girls and young women.

General Issues and Concerns

Ognibene (1983) discussed how, over the centuries, myths about "True Woman" have perpetuated prejudice against women's work. Although more than half of American women work, marriage and family are still viewed as the ideal for women. These myths "undergird and define the political, economic, social, and personal structures that determine women's working lives" (p. 8). Alpern (1993) also reviewed the 19th and 20th century view of middle- to upper-class women as wives and mothers; "…structural barriers, institutional practices of discrimination, exclusionary laws, and attitudes regarding proper sex roles for upper- and middle-class white women have all had a negative impact on women's advancement into managerial positions" (p. 47). It is Alpern's hope that legislative change and the presence of larger numbers of women in the work force and management may break down barriers against women in management and leadership positions.

Pyke (1997) examined the 19th century view that women's smaller brains confirmed their intellectual inferiority. Pyke discussed reasons put forward historically to justify women's exclusion from postsecondary education, in addition to the view that they were intellectually inferior to men. Intellectual effort was considered injurious to women's health, corrupting their minds. Thus, their education was directed toward the primary role of pleasing men, and consisted of such teachings as needlework and drawing and dancing.

Lack of contemporary gender equity in the workplace is well documented (see Dick & Rallis, 1991). Tomini and Page (1992) cited research showing disadvantages to women and girls in career choice, with women overrepresented in lower-level jobs relative to men and choosing career paths other than science, mathematics, and engineering. Tomini and Page identified factors that contribute to this state, including gender-role conditioning, family and peer influences, fear of success, and media content. Their own research illustrated that counselors' recommendations to students tended to be toward traditionally gender-appropriate careers. Masson and Hornby (1986) also cautioned that girls receive "wrong information" about the importance of education and employment in their lives from poorly informed educators and counselors. Their recommendations included educating counselors about nontraditional occupational choices and labor market needs and developing mentorship programs for girls to inform them of career options.

Finders (1997) explored how popular texts influence and determine the social identities of young women, taking the view that "girls use literacy to control, moderate, and measure their growth into adulthood" (p. 19). Her study involved 1 year of interaction with two groups of seventh-grade girls as they acquired new rules and rituals of adolescence. The "social queens" were middle-class girls whose primary focus was socialization and popularity. "The social queens were becoming exactly what the marketers have trained them to be, consumers and competitors for men's desires..." (p. 128). In contrast, the "tough cookies" (working class) were loners who saw schooling as the key to economic independence and security. Finders' concern was that the "teen zines" set a standard of dress and conduct. The girls "turned to zines to learn culturally specific ways of being a woman...yet the layout and content are orchestrated by marketers to make these young women into a particular kind of female" (p. 59). She called for literacy instruction such that students would come to recognize and challenge the roles available in texts, classrooms, and society.

In recent decades, many adolescent girls have come into therapy with such serious problems as anorexia, the desire to hurt themselves, or as victims of sexual violence, while others have less serious problems such as school refusal or underachievement (Pipher, 1994). Pipher viewed the causes as inherent within the culture, which she called "girl-poisoning" (p. 12). She identified the mixed messages that girls receive: "Be beautiful, but beauty is only skin deep... Be independent, but be nice. Be smart, but not so smart that you threaten boys" (p. 36).

Rubin (1992) noted that, in recent decades, women have been attempting to adapt to a "male" model of thinking, "one which stresses autonomy, initiative, independence and self-sufficiency" (p. 67). When they fail to adapt, or reject those values, they feel less adequate. Rubin's intervention approach has involved working with groups of high-achieving high school girls, discussing issues of female development and how to deal with mixed societal messages to girls. She reported that the girls appeared to be "taking real pleasure in looking at these issues and challenging themselves to problem-solve and not 'buy into' stereotypical behavior" (p. 76). She advocated for the importance of group support to enhance the development of girls, for examining similarities and diversities among young women, and for examining

issues across socioeconomic boundaries.

The Media Research Findings
Wilgosh (1993, 1996) examined media images of women and girls, sampling current local newspapers and news magazines, to raise awareness of counselors and educators to the impact of the media on young people, particularly girls and young women. Articles clustered into eight themes (Wilgosh, 1993), which were validated in a second study (Wilgosh, 1996). The themes from the 1996 study are summarized here.

• Stereotypes of women (Theme 1) emphasize physical beauty; however, the dominant (and confusing) Theme 1 message was that girls and women should be beautiful and tough, but also dependent.
• There is some current emphasis on gender differences, with girls winning the gender competition, at least on some dimensions (Theme 2).
• There continues to be much violence against women (Theme 3), with an undercurrent of women and girls gaining equality by violent acts.
• There is recognition of women's achievements in both traditional and nontraditional occupations (Theme 4), but still much evidence that women are "underdogs" in employment (Theme 5).
• While Theme 4 messages were positive in terms of women's career success, the message from Theme 5 was that women are still second-class in the working world.
• In education of girls (Theme 6), there is evidence of confusion on which models of education—separate schools or classes—to pursue for girls.
• Finally, there continues to be concern about reducing women's disadvantages and increasing women's advantages (Theme 7), but fundamental disadvantages prevail, for example in health care (Theme 8), where the "male" model of health is prevalent.

During the whole of 1998, the writer completed another survey of print media from the same sources as for the earlier (Wilgosh, 1993, 1996) papers. However, the focus was on articles that appeared to demonstrate (1) reporting of positive or affirmative trends/change related to the eight themes, which had been identified and validated earlier (Wilgosh, 1993, 1996), and (2) reporting of negative trends representing setbacks in media coverage within the eight themes. The purpose was to explore for any obvious or possible trends in reporting within the eight themes and to build a larger database preparatory to developing a rating/classification activity (outlined later in the paper). The following discussion will illustrate the positive and negative trends with brief examples.

Theme 1: Women's Image and Stereotypes
Twenty-six stories were selected that appeared to suggest changes in the nature or focus of media coverage, however small. The following examples typify these changes. During 1998, local media coverage featured a trend toward women and girls resisting the image of the tall, thin "ideal" body shape portrayed for women and girls. The author rated the following related stories as positive in coverage: "Large and in charge: Alternate sizing is big business," and "Normal girls don't fit into clothes this tiny." About 50% of the stories were on the negative side: "More Canadian women considering breast implants," and "Women less satisfied with body image (today)." These negative trends in women's behaviors suggest that women are still considering and adopting idealized images and stereotypes, while others are rejecting those ideals.

Theme 2: Gender Differences
Fourteen stories were selected which suggested change in media coverage for women and girls, primarily in a positive direction. Among the positive stories were these: "European women better schooled than men," and "Women winning by (university) degrees, say census results." A negative trend was noted in these: "Women can't park because of a brain defect, he (an author/researcher) says" (apparently due to a small "undeveloped" part of the brain), and "VLTs (gambling machines) lure more women into destructive addiction."

Theme 3: Violence Against/By Women
From a selection of 28 change-related stories, among the positive ones were these: "B.C. fights violence against women," and "Egyptian court bars female mutilation." Negative in tone were these trends: "Violence (increasing) among girls worries experts," and "Violent crimes by females a 'warning sign.'"

Theme 4: Women's Outstanding Accomplishments
The largest number of the 16 selected stories were "firsts," that is, positive gains for women. Here are three such stories: "Canadian woman named to UN's second-highest job," "Woman picked to head WHO (World Health Organization)," and "Full agenda awaits first woman to head Canadian Chamber."

Theme 5: Women and Jobs
Forty-eight stories were selected as indicating a change in women's employment status. Positive stories were: "Single women's salaries almost equal to men's," and "Women make inroads in faculty positions." Offsetting these good-news, positive-trend stories were the following: "U.S. female doctors face growing sexual harassment," and "Study estimates women will need 110 years to reach equity in business."

Theme 6: Education/Achievement of Girls
Of 10 stories selected, the majority was positive: "All-girl school producing good scientific results," and "Egypt's all-girl schools help crack conservative barriers." In a more negative tone was this report of a new study: "Separating girls, boys not seen erasing bias."

Theme 7: Feminism/Affirmation
From 41 selected stories, there were an almost equal number representing positive

and negative gains. Of the former were these examples: "Queen backs equal gender rights for succession," and "African women stand up to (i.e., renounce) an ancient custom (female circumcision)." On the opposite side were these: "Taliban edict raises fears for Afghan women (by closing 100 private girls' schools)," and "$8M in grants given to women's groups unfair, say men."

Theme 8: Women/Gender and Health

Of eight selected stories, the positive trends are represented by this one: "Breast cancer battle being won: Treatment now significantly affecting the disease, say specialists." Negative-trend stories included these: "Steroid use up among U.S. girls," and "Women avoid mammograms after poor survey results" following a report about "shoddy" breast-screening facilities.

To summarize the 1998 trends, it appears that there continues to be strong acceptance of the idealized image/stereotypes (Theme 1). However, growing numbers of young women appear to be buying into alternative images of size and weight. Women and girls continue to do well on some gender comparisons (Theme 2), but there are some very destructive reports, such as that of female brain "undevelopment," reminiscent of 19th century thinking (Pyke, 1997). Growing violence by and among girls is a serious concern (Theme 3). Women are making gains in the workplace, health, and education (Themes 4, 5, 6, and 8), but equity remains a goal. Finally, there are disturbing aspects in the area of feminism/affirmative action (Theme 7). Young women's denial or lack of awareness of inequities is offsetting substantial gains for women; and there is an apparently growing societal backlash against feminism. Thus, it becomes important to reexamine feminist perspectives.

Kimball (1994) has identified two different feminist perspectives on gender differences and similarities, which lead to vastly different social outcomes. Those feminist psychologists who focus on similarities between men and women (similarities tradition) are motivated to promote full participation (i.e., political and social equality) of women in a "male-dominated public world" (p. 388), emphasizing the lack of differences in skills and competencies between the genders and impact of situational variables on gender inequity. By contrast, feminist psychologists who focus on gender differences (differences tradition) have the goal of creating a different world order where women's qualities of caring, connection, and reciprocity, are valued over power, separation, and hierarchy (Kimball, 1994). The differences tradition advocates separate spheres of influence for women, on the basis that positive human qualities have been undervalued because associated with women. Kimball (1994) argues for the necessity of both perspectives (i.e., justice and care) in understanding women's and men's lives.

Wilgosh (1996) classified items within the eight themes as depicting the feminist similarities or differences perspective (Kimball, 1994), or more traditional societal views of women. Wilgosh is in the process of developing a tri-dimensional rating scale/categorizing system, based on the Wilgosh (1996) categories of media messages (both print and audiovisual) that impact on women and girls and to assist educators

and counselors in undoing influences that reinforce underachievement. At a very practical level, the act of classifying and discussing media messages as a group/classroom activity can serve to raise awareness of different messages conveyed by the media and their effects on attitudes and behavior. This alone has the potential of changing social attitudes and perceptions.

Two media messages from the 1998 survey exemplify how such an activity might be directed. A short vignette based on a story about a "woman of steel (body builder)" (Theme 1), and a Theme 7 story about adolescent girls' lack of awareness/concern about gender inequities ("Teens see few skirmishes left...") can be examined from the similarities, differences, and traditional perspectives, to discuss how they might be classified. This might frame ongoing discussions of images/stereotypes (Theme 1), the choices that women and girls can make, and identifying gender inequities/affirmative action options (Theme 7) that are available to young women. This activity could also be used effectively in inservice settings to raise teacher and counselor awareness and promote discussion and awareness of media messages and their impact. This is one more way of potentially bringing about social change at an individual/group level through education.

Issues and Approaches in Educating Girls

A number of writers have dealt directly with the role of teachers and schools in counteracting and overcoming the impact of the media on gender stereotyping. For example, Turnbull (1993) proposed media education using stereotyped portrayals to teach students to question the stereotypes, rather than moving to provide students with only politically correct portrayals. The author's proposed categorizing/discussion project is intended to serve the same purpose.

The themes identified by Wilgosh (1996) are confirmed by counselors' and therapists' experiences with troubled girls (see Mirkin, 1994; Pipher, 1994) and reflected in educators' concerns (see Measor & Sikes, 1992). The range of difficulties that girls experience, particularly in adolescence, extends from underachievement to life-threatening difficulties (Pipher, 1994). With adolescence, Mirkin (1994) affirms that girls learn to deny their knowledge to protect their relationships. Counselors and teachers must respect their relationship needs while helping them to "voice their knowledge" (p. 81). Mirkin expressed the hope that girls will begin to recognize outstanding women in society, counteracting the media forces that work to undermine their identity development. Pipher (1994) encourages girls to trust their sense of self, to observe the culture critically in terms of the messages being delivered, to separate thinking from feeling, to make conscious choices and take responsibility for their lives, and to define their own boundaries and limits. However, she warns that we must also change society. "Our daughters deserve a society in which all their gifts can be developed and appreciated" (Pipher, 1994, p. 13).

Many of the expressed concerns require us to do more than simply provide math and science scholarships for bright girls. We must provide positive classroom and school environments that value girls and boys equally, with guidance and counseling available to help all girls, particularly bright girls who may be at even greater risk

(Pipher, 1994). We must also deal with the underlying concerns and pressures that lead to underachievement. Schlosser (1999) has recommended that self-reliance and leadership skills must be promoted in girls, and that their achievements must be valued and supported, so that they develop responsible career orientations and experience career success. Girls and young women must have appropriate female role models and mentors. And teachers must be prepared to provide appropriate career advice suited to individual ability levels. Curriculum and classrooms must be both "girl friendly" and supportive of all students, providing reasonable preparation for all students for postsecondary opportunities in society. As educators and counselors, we must constantly question the messages that girls (and boys) are being given, not only in the media, but also in other domains in our society, particularly in educational settings over which we can and must assume the greatest amount of responsibility and control.

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A Study of Issues and the Educational Status of Gifted Handicapped Students

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ABSTRACT

People did not pay attention to gifted handicapped students until 1970. Hence, few studies, focusing on this group's educational practice are available. Seven hundred and eighty schools were randomly;selected to participated in this study, including elementary schools, secondary schools, and six special schools for exceptional students. From the 583,464 students who studied at these 780 schools 73 gifted handicapped students were selected. Mail questionnaires and face-to-face interviews were employed in this study. Data analysis showed that most of the gifted handicapped students, the majority of whom were hearing impaired, were placed in regular classes. Positive and negative attributes of these students were noted. The assessed needs of both teachers and students resulted in recommendations to improve the educational practice for gifted students with disabilities.

A Study of Issues and the Educational Status of Gifted Handicapped Students

People did not pay attention to gifted handicapped students until the 1970s. During the past 2 decades, professional literature in the field of the gifted and the handicapped have begun to give serious concerns to this population's educational needs (Johnsen & Corn, 1989). Compared to the history of special education, the history of education for the gifted handicapped student is relatively short. However, it is understandable that the learning problems of these students have existed as early as the beginning of human history. So regrettably, educators failed to find potentially talented students from among handicapped students, much less provide them with educational opportunities.

Gifted handicapped students were not provided with appropriate services mainly because educators did not understand this group of students very well. In order to meet their educational needs, teachers are obligated to understand issues and the educational status of these students. Especially, when traditional instruments of assessment are being criticized, teachers' observation of students' learning is becoming more important.

To investigate the gifted handicapped students, Lu (1995) summarized three findings: (1) Most of the gifted handicapped were students with hearing impairment, and next in number, the gifted students with physical handicaps. (2) The gifted handicapped students usually got good grades in academic or art subjects. Also, they were autonomous learners with exceptional comprehension; and (3) The gifted handicapped students accepted their handicapping conditions and they had high as-

pirations of success. Lee (1990) interviewed 20 successful people who had a physical handicap, and found that they exhibited high achievement motivation, self-concept, self-confidence, and internal control. Other positive characteristics manifested in the gifted handicapped may include: (1) superior memory and use of language; (2) superior creative problem-solving skills; (3) persistence in pursuit of academic tasks; and (4) a keen sense of humor (Whitmore & Maker, 1985; Yewchuk & Lupart, 1993). However, some negative characteristics associated with gifted handicapped individuals include struggles with self-accceptance, fragile self-concept, intense frustration, social difficulties with peers, and academic difficulties in special skill areas (Friedrichs, 1990; Yewchuk & Lupart, 1993). For some gifted handicapped people, the negative characteristics may develop feelings of helplessness and hopelessness, withdrawal, fear of failure, or more dependence, causing avoidance of academic and social involvement.

In educating the gifted handicapped students with desultory duality, teachers' attitudes and knowledge are very important. Wu (1996) found that most of the teachers' attitudes toward the gifted handicapped students were positive. In Wu's study teachers regarded the gifted handicapped students as valuable, reliable, kind, friendly, and not dangerous people. As for educating the gifted handicapped students, school teachers were most concerned about; (1) multidisciplinary diagnoses; (2) the risk of hasty diagnoses or inappropriate tests; (3) continual opportunities to demonstrate the child's potential; (4) a realistic, healthy self-concept and self-esteem, (5) the teacher's and the significant others' confidence regarding the child's abilities, (6) preservice and inservice teacher training; and (7) peer support groups. Whitmore (1981) and Corn and Bishop (1983) indicated that, to educate teachers of the gifted handicapped individual, we must emphasize the skills of writing IEPs. In addition, teachers must help the gifted handicapped child to cope with frustration and to develop realistic self-expectation and goals. Teachers also need to help parents to develop realistic expectations, structure the home environment for learning, and participate in their children's educational program planning.

Method
Subjects
The sample used in this study was composed of 73 gifted handicapped children drawn from 583,464 students, studying at 780 schools, including elementary schools, secondary schools, and six schools for exceptional students.

Instrument
An instrument to obtain data for this study was developed by the researcher. The instrument included three parts: Part A reflected the subjects' demographic information; Part B demonstrated the educational, physical, and psychological status of the gifted handicapped students; and Part C investigated their educational needs. Parts B and C use a Likert-type 5-part scale. The instrument was designed for the teachers of the gifted handicapped students who participated in this study.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to describe, summarize, and simplify the data, and to test the differences among mean scores. Statistical methods such as Frequencies, Mean, Standard Deviation, Mode, and One-way Analysis of Variance (ANOVA) were used in this study.

Results

Demographic Characteristics of the Subjects

There were 73 gifted handicapped students in the study; 56% were male while 44% were female. The majority of the 73 subjects in this group were gifted in general abilities (70%). Among these students, 34 were hearing impaired, 20 were visually impaired, 16 were physically impaired, and 3 were learning disabled. Regarding the degree of disability, 5 out of 10 students were severe, 3 out of 10 were moderate, and the others were mild.

Educational Status

Learning Characteristics. The three most common positive characteristics found in the gifted handicapped students were good comprehension, autonomy, and excellent memory. There were no significant differences among visually impaired (VI), hearing impaired (HI), and physically impaired (PI), (F = 2.72, P > .05).

Academic Adjustment. The three most commonly found positive traits in academic adjustment were attitudes of learning, motivation for learning, and the identification with school. No statistically significant differences were found among VI, HI, and PI, (F = 1.18, P > .05).

Parent Involvement. The highest three traits in the parents' involvement were their concern and support, responsibility, and activity. No difference on the mean scores were found among VI, HI, and PI, (F + 0.53, P > .05).

Physical condition. The top three response statements for physical conditions in terms of mean scores and mode of items were healthy, vigorous, and attention duration. There were statistically significant differences among VI, HI, and PI, (F = 3.78, P < .05).

Psychological Condition. The best three response statements for psychological condition based on mean scores and mode of items were emotional stability, optimism, and independence and self-confidence. No difference on the mean scores was found among the three groups. (F = 1.10, P > .05).

Academic Learning. The best three response statements for academic learning based on mean scores and mode were satisfactory on academic accomplishment, high motivation of achievement, and self-expectation. There were no significant differences among the three groups, (F = 1.02, P > .05).

Interpersonal Relationship. The top three response statements for interpersonal relationship based on mean scores were acceptance by peers, involvement in group activities, and self-openness. A one-way ANOVA revealed that no statistically significant differences were found among the groups, (F = .05, P > .05).

Self-conception. The best three response statements about self-concept based on

mean scores were self-realization, self-esteem, and self-acceptance. There were no significant differences among the three groups, (F = .99, P > .05).

The Needs of Teachers of Gifted Handicapped Students

In answering the question "What were the educators' highest concerns about teaching the gifted handicapped child?" the top five response statements based on mean scores of items were: (1) cooperation of related professional teams (M = 5.0), (2) strategies of counseling (M = 4.4), (3) inservice training (M = 4.4), (4) consultation from professional people, (M = 4.4), and (5) application of teaching strategies (M = 4.2).

The Urgent Needs of Gifted Handicapped Students

In answering the question "What were the urgent needs of the gifted handicapped student?", the following answers were the top five responses from the teachers' point of view in terms of the mean scores of items: (1) flexible and open paths of school entrance (M = 4.4), (2) mentorship (M = 4.3), (3) career planing and guidance (M = 4.2), (4) support from the general public (M = 4.2), and (5) technical aids (M = 3.9).

Discussion

This study explored the educational status and issues of 73 gifted handicapped students from a large, nationally representative sample of students in elementary and secondary school. In contrast with the 583,464 students, the rate of prevalence of the 73 subjects was very low. The majority of these 73 subjects were placed in regular classes. It is understandable that 84.44% of exceptional children are attending regular classes in Taiwan, according to the results of the Second Census of Exceptional Children, the Republic of China. However, most of the researchers recommended that the gifted handicapped should be placed in the programs for the gifted (Lu, 1996; Maker, 1977; Wu, 1995).

In the section of educational status, some positive characteristics of the gifted handicapped are usually associated with those of giftedness, such as superior comprehension and memory, active attitudes and high motivation of learning, and persistence in pursuit of academic tasks (Walberg, 1988; Wu, 1997). Most of the gifted handicapped children have effective, nurturing parents who support and recognize their children's learning thoroughly. Hence, parents' support turned out to be necessary for these students in achieving high levels of accomplishment. Karnes (1984) and Leonard (1978) encouraged parents to join their children's learning activities in programs for the gifted handicapped child.

People may hold the stereotypes that children who look "different" in some ways could perform in a less gifted manner. In other words, they noticed a child's handicaps rather than his or her talents or gifts (Yewchuk & Lupart, 1993). However most of the subjects in this study did not fall in this stereotype. They were in good health, and had high aspirations, independence, and sound interpersonal relationships. They accepted their handicapping conditions and excelled in academic endeavors relative to their peers. The findings on these characteristics are similar to those of Lu (1995) and Lee (1990). However, this study also revealed weak aspects of the sub-

jects such as communication, sense of humor, task duration, tolerance of frustration, and self-confidence.

The question "How to identify and teach the gifted handicapped?" is a challenge. Gallagher (in Whitmore, 1989) inferred that teachers of the gifted student rarely have experience dealing with various handicapped students. Similarly, teachers of the handicapped might feel that they know little or nothing about stimulating potential in gifted and talented students. Educators in regular classes, as a rule, have no formal training in teaching either the handicapped or gifted areas (Karnes & Johnson, 1991). The teachers who participated in this study indicated that there is a need to improve teamwork, consultation, and strategies of counseling and teaching. Both inservice and preservice training are necessary to help professionals obtain the knowledge and skills that they need, so that they can work more effectively with handicapped students who have special gifts and/or talents. Ideally, special education educators should be required to take related courses in the field of gifted education. Also, professionals in the area of gifted education should be required to take related courses in the field of education for the handicapped. And mainstream teachers are encouraged to better understand the needs of the children with handicaps and giftedness.

In this study, teachers of gifted handicapped students were most concerned about flexible and open paths of school entrance for their students. It is unfair to expect handicapped students to demonstrate their potential talents in the same way and at the same level as nonhandicapped students. In Taiwan, the Republic of China, there are some alternative paths of school entrance for handicapped students including: (1) adding a 25% bonus score above the row scores in general examination; (2) taking special examinations; (3) applying to schools through a nonexamination system in which handicapped students' performances can be evaluated. Usually, those who win the first grading of the national campaign for special talents or those who perform above the 8th rank in the international campaign are hopeful of being admitted. In addition, the government has always provided opportunities for them in various aspects. They can go abroad to work for their advanced diploma if they can pass certain examinations prepared for handicapped students. Consequently, we have to take notice of how to set up a system to conduct follow-up guidance in learning and monitoring psychological adaptation, once handicapped students continue to study in an advanced school.

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Gifted Children and Language Teaching

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Foreign language is an important instrument to gain knowledge of culture and science, to obtain information of the world, and to communicate internationally. At the same time that China's open-door policy is carrying out reforms in the economy, politics, and technology, a new technology reformation is taking place throughout the world. To meet this situation, foreign language becomes an important tool.

Gifted children have different natures and characteristics from ordinary children They are the empire builders and the hope of a modernized China. For them, grasping foreign languages will lead to a quicker and more thorough understanding of the international technological development and the society and culture of other nations. This will make a greater contribution to 21st century China.

The Character of Gifted Children and Language Learning
Character of Intelligence
Intelligence is proof of the development of a successful knowing process and a stable psychological synthesis. It includes the ability to watch, observe, think, and remember. It solves the questions of how we know or not, and understand or not. Only those psychological characteristics that help the process of knowing to succeed can contribute to the development of intelligence, such characteristics must be steady. Those that hinder the process and happen by chance do not account for the development of intelligence.

Gifted children have the following five advantages in language learning:
1. Concentration of mind. Concentration is the organizer and maintainer of the mind. The human thinking process, including every psychological process, can only begin to develop and form successfully with the help of concentration. The long and steady concentration of the mind is an important proof of superior action such as thinking and behaving. It is also an important characteristic of high intelligence.
2. Sharp observation and deep understanding. Observation is an important part of intelligence. It is a planned and purposeful perception that lasts over time that is the inception of the knowing process.
3. High ability for understanding. When gifted children solve a problem, they do not tie themselves down to past experience. They like to go beyond the old ways and to think and solve a problem from a new perspective.
4. Rich imaginative understanding. Imagination is a psychological process of the human mind based on facts and is a part of intelligence. It plays an important role in the study, activity, and character of children.
5. Good memory is a mirror of the past. Memory has the ability to store the information of intelligence. All wisdom is rooted in memory. It is a measure of a person's intelligence.

Character of Learning
Gifted children have broad interests and a strong desire to learn. Most gifted children are filled with curiosity regarding phenomena in science and nature. Curiosity drives them to learn and explore. They exhibit stable emotion, concentration, perseverance, and rich knowledge outside of class. Because of their broad interests and strong desire to learn, gifted children increase their knowledge by reading and learning extensively outside of class.

Foreign Language Learning
Foreign language is a very practical subject. The purpose of language learning is to use language correctly and cultivate communication ability. In the teaching process, students should be at the center and active in language learning. Therefore, some useful guidelines are: (1) students should be proactive first, teachers' guidance comes second; (2) guide students to grasp the correct learning methods; (3) help cultivate good learning habits; (4) train students to develop independent study habits.

Cultivate the student's interest, because interest is an important element in learning. Interest is tied to the teaching process; it helps the student complete the study task and determines the development of ability and intelligence. Maintaining interest can improve the quality of study.

Select the right teaching materials for language study. Students will be bored with very long material and cannot learn from dull material. They cannot exercise their ability when studying material that is too simple. The length and complexity of the material must be appropriate. The content must be new and provide wide coverage to news, history, geography, tradition, advertisement, humor, and so on. The style must be varied and include articles that are practical, explanatory, descriptive, and argumentative.

Material needs to be of some depth. Depth does not mean having many big words and being difficult to understand, but having intellectual depth. It should include meaning related to analysis, synthesis, evaluation, and reasoning. It must be well organized and capable of exercising students' potential abilities. Finally, material should develop the students' intellectual ability and enhance their efficiency.

Ways to Train Abilities
Preparation Before Class
Since gifted children have a higher understanding of content, class preparation is an efficient way to develop potential intellectual ability and enhance study efficiency. Class preparation can help students:
- Make the content, important or difficult points, and the purpose of the study clear before class.
- Understand the study contents, and respond more quickly to teacher's questions which helps teaching proceed smoothly and efficiently putting teachers and students in tune with each other.
- Improves self-study ability. Training students' ability is a central task and fundamental purpose of language training. In the process of preparation, students

learn how to use their former knowledge as a foundation on which to build an understanding of new information. Therefore, their self-study ability improves.
- Increases their desire to study. During preparation, doubt and questions encourage students to seek answers from reference books, and this can lead to interesting discussions. Preparation will not only answer their questions, but encourage their desire to study. Such students will concentrate more deeply and participate more actively in class.

Conversation in Language Teaching

Another important step in language teaching is conversation—a strategy that can activate students' reasoning, encourage their study desire, and cultivate their ability to grasp language. Including conversation in teaching lets students meet with the difficulty of how to make a conversation and their own fear of making mistakes. Teachers can guide students to open their mouths and cultivate their interests in the following ways:

- Let students imitate their lessons with the help of a recorder or video camera. Students will exercise their conversation ability and improve their perception of language through imitation. This is the most direct and simplest way to enter a language environment.
- Use sentence patterns and functional sentences that students have grasped to do exercises of oral sentence making and conversation. This kind of oral exercise not only improves students' ability to use sentence patterns, but also helps them with the use of more native and standard ways of communication and expression. This helps students improve their conversational level.
- Prepare illustrations according to the teaching contents, show them to the students, and then ask the students to describe the events. This improves the students' expressive ability.
- Exercise conversational abilities using existing circumstances or arranging an event according to a lesson's contents and purpose, then guide students into the circumstances involved. This increases the students' abilities to think and respond.
- Use skits as practical ways to synthesize conversation. Teachers can write or let students write the skits according to requirements, then let them act it out. Students develop interest, renew their knowledge, and exercise their conversational skills.

Dictation as a Language Teaching Strategy

Dictation is a synthesis of listening and writing. It is necessary training throughout language teaching and an important way to improve students' abilities. Dictation training is efficient in:

- Affecting students' intellectual elements, developing their intelligence, and making their study more effective.
- Cultivating perception and concentration by requiring students to listen carefully, write correctly, and memorize elements that can not be written down immediately. It helps to develop the ability to focus one's attention. In this process, the

student's quality of attention is improved. They gradually obtain the ability to focus and organize attention. Dictation requires quick response.
- Making students' many organs work at the same time efficiently. This function has a favorable effect on students' intellectual development. It helps to improve the perception of language.
- Enriching reasoning and imagination. In language learning, students need to classify, abstract, synthesize, and systematize. In dictation, this thinking process is carried on with high speed. In this analytical reasoning and individual process, listeners' imagination of the sentence, and even the passage, are involved inevitably in order to assure that the understanding process is smooth.
- Strengthening memory. Language learning and language training cannot be separated from memory. Developing language ability requires that students remember certain words, sentence patterns, and language points. In the process of dictation, students' ears, heads, hand, and eyes work at the same time, therefore their abilities to activate, to watch, and to listen grow.

Retelling to Remember

When students retell what they have learned, we see how they have grasped words and sentence patterns. Retelling trains students in the ability of speaking. To retell is not to repeat. Students need to retell the sentences from the text in their own words. This requires the ability to rewrite, change, reduce, and unite on the basis of understanding. At the same time, they need to speak correctly and naturally which requires them to exercise their reading. There are many ways to guide students to retell. Teachers can draw an outline, suggest some questions, present tables, or show some pictures according to the circumstances. Therefore students can get direct routes, and when they retell, they have a route to follow, words to use, things to say. Retelling guides students to think in the foreign language they are learning.

Writing

In the basic practice of listening, speaking, reading, and writing, speaking and writing are the abilities of expressing. Compared to speaking, writing is not limited by time and space, and is used more widely. Writing is an ability that should be developed from the basics; from words to sentence, from sentence to passage, and from passage to text. The training of writing can be developed through writing controlled articles (connect words, make sentences, change patterns) and half-controlled articles (extend, reduce, add, retell, follow the outline). Pay attention to connecting words to make the article well organized. Through this training, students' abilities will be improved and they will write freely and naturally.

Creativity and Personality

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With increasing worldwide competition and the rapid development of science and technology, there has arisen in many countries an urgent need for creative talent. Gifted and talented children are the rich resource to meet that need. They are expected to be the most active and leading members of society in each nation.

Every society has its dark side—wars, crimes, drugs, and other moral problems—that forms a bad environment around gifted and talented children. It is therefore important to provide moral education for gifted children along with their academic learning, to nurture them toward exercising good moral sense, help them recognize goodness and evil, and make them aware of their responsibilities for their society and the world. Gifted and talented children with well-cultivated personalities and high talents will play important roles in the future world.

In most nations, unfortunately, academic education has been dominating school programs while moral education has been disregarded. Being aware of this, China's government has put forward a strategy of "quality education" for students, which is defined as all-around development in intelligence, competence, morality, and physique.

Moral education follows the commonly held belief that "moral values" have certain principles in common. Moral values (1) offer a long-term benefit to both the individual and society, (2) are acceptable anywhere, (3) are intuitive subjectively and objectively, and (4) can be identified by multicultural societies.

Moral education serves to perfect the learner into a person who will exhibit the following characteristics:
- a highly maturated personality
- a well-developed manner of getting along with family members, schoolmates, teachers, and others
- a creative worker who is good at learning, using acquired knowledge, and maximizing his or her potential
- a proper attitude toward nature and properly placing himself or herself within nature

To provide our society with human resources that are highly creative with high-toned personalities, a moral education program was provided for the special classes of gifted and talented children at Beijing No. 8 Middle School. The program was built on the following 10 approaches or principles:

1. Coordination of family education
   Families play an equal role to school in children's moral development. Establishing effective communication between parents and school staff through monthly meetings benefits understandings and the exchange of ideas and techniques of moral education for children.
2. Organization of school activities by the children themselves
   Students were encouraged to select and organize various school activities to enlighten their interests in group activities, nurture their collective attitude and discipline, and develop their abilities of management and communication. In case of disputes between students during school activities, teachers made no judgments, but left the students to settle their issues.
3. Free selection of members of the class committee under the supervision of teachers
   Members of a class committee used to be selected by teachers. In this program they were freely nominated and voted on by students themselves in order to develop their concept of democratic competition.
4. Provisions of multiform opportunities for students to adhere to society and nature
   Multiform outside-school activities were organized for the children to nurture their sentiment and will and to enlighten their love of country, of nature, and their concern for the environment. The children very much love the programs that range from hill climbing, swimming, skating, long walking trips, and tree plantings, to environmental protection.
5. Nurture the humanitarian spirit
   In the literature curriculum, children were nurtured with humanitarian spirit to help them to establish proper attitudes toward life.
6. Encourage assessment of critical and creative thinking
   In science education, the children were encouraged to collect information and process the information independently in order to develop their critical and creative thinking abilities.
7. Acknowledgement of the difference in knowledge structure and competence between the students
   It is a common fact that people differ in their knowledge structure and competence. We must concede the existing differences and provide circumstances to encourage the top students to stand out from the others in order to maximize their potential. Any attempt to receive equal development from students will put a restriction on the quicker learners.
8. Adjustment of students' homework
   The inflexible homework schedule was decreased, while more flexible off-school work was arranged for the gifted students. This liberated them from an overload of homework and gave them more free time to do the activities they enjoy.
9. Evaluation of the students' development based on overall assessment instead of merely on their examination scores
   Students' development used to be evaluated on the basis of their examination scores. This forced the students to put their efforts toward obtaining high scores while impeding their development in other domains. An overall assessment system has been introduced in our special classes to evaluate students' devel-

opment exclusively in the aspects of knowledge level, cognitive comprehension, interests, and individual character. The evaluation should be based on the progress and ambition of the students.

10. Application of flexible schooling length

The schooling length for gifted and talented children in Beijing No. 8 Middle School has been shortened to 4 years from the typical schooling system of 6 years. Four years fits most gifted and talented children. But the length can be flexible between 3 to 6 years depending on the child's development. Some of the children who showed a parallel advance in knowledge, cognitive abilities, and morality completed their study within 3 years and were admitted to China's famous universities. A small number of children whose progress was retarded spent 5 or 6 years in school.

Educators agree that differential provisions are required for students in their academic education to meet the special characteristics, needs, and interests of each student. It is commonly agreed that moral education should be inclusively targeted at, and equally offered to, every student. If teachers and parents merely care for children's progress in intelligence and creativity and not for their moral education, children may become ones who possess only talents but poor personality. Furthermore, those children may try to obtain success at the expense of others and the natural environment.

The modern world with its advanced science and technology and its magnificent arts provides much convenience and more opportunities for school educators to maximize the students' talent potential. But we should remember that one's personality or morality would be the factor determining whether a person will bring benefit or harm to society.

In conclusion, I would like to recall an American school principal, a survivor from a Nazi camp, who saw people killed in gas chambers designed by well-skilled engineers, children killed as experiments by learned doctors and nurses, women and children killed in shootings and burned by educated camp supervisors. He questioned what education could provide for the world. He warned against an education system that provided society with learners of high talent and competence but utterly devoid of humanity. Only when combined with well-nurtured morality can a person's talent and competence be valuable and beneficial to our world, and this should be our goal for gifted and talented education.

How to Enhance Mother Language Teaching for Gifted and Talented Children

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ABSTRACT

One phenomenon of concern in many countries, especially in developed countries, is that the mother language ability of children and teenagers has been declining in past years in contrast to the advancement of science and technology. Investigations show that the level of English of American youth in the 1980s was lower than that of youth in the 1950s. The situation was even worse in China.

The teaching of the Chinese language in schools has diminished for several years. One reason for that decline was believed to be the popularity of television and computers. While children and juveniles practiced less reading and writing, they watched more television and spent too much time on computers, resulting in a decline of their ability to use their mother language. Another reason considered was that in some non-English speaking and underdeveloped countries, many families wished to send their children to study in the most developed English-speaking countries and thus focused on English learning while ignoring their mother language learning. This paper considers four ways to enhance the teaching of the mother language for gifted and talented children

1. Teach children to understand the importance of their mother language.

The first target for our society should be to educate our children to understand the significance of their mother language to our nation's culture, quality, and prosperity. Incapacitation and eventual demise of a nation's language may equate with the nation's ultimate failure and death. Each nation's language has its own cultural features and essences that keep the language alive and developing, as the nation's common language.

China has a long cultural history of more than 5,000 years. During its history there have appeared many great thinkers, writers, historians, and poets like Confucius, Mencius, Laocius, Zhuangcius. Qu-yuan, Li-bai, Du-fu, Bai-juyi, Liu-zongyuan, Lu-you, Li-qingzhao, Gong-zizhen, Kang-youwei, and Zhang-taiyan from whom a large number of monumental works have emerged. These historical contributions should be carried forward for they have formed the essence of Chinese culture that keeps the Chinese nation united, moving forward, and standing tall in the world. We should make our children learn our nation's culture and understand the significance of Chinese language learning in order to enlighten their interest in Chinese linguistic science.

2. Modify the existing teaching concept, changing it to a concept that involves the mother language teaching process as a whole.

A review of Chinese language education in China showed that current teaching pro-

grams have been hampered by the pressure to perform on various examinations. This has lowered the quality of Chinese education in our schools and impeded our nation's cultural development. We would not be able within 4 years (instead of 8 years) to attain appropriate educational goals for the gifted children in our special classes and to meet their special needs if we follow the present concept in Chinese teaching.

Students for our special classes for gifted children were recognized and selected mainly by academic tests and by their thinking abilities while paying less attention to their linguistic level. Most of them did not like Chinese language learning. That fact makes it difficult for teachers to reach the overall target of the 4-year program for gifted children. Therefore, it is necessary to apply a totally new concept to our Chinese teaching. That new concept is to take the mother language teaching process as a whole.

From the day a child is born, the child has been placed in and will always live in a mother language environment unless moved to other countries. The child has to learn and use the mother language every day. Class teaching is not the only way to learn the mother language. Communicating with others, reading books and newspapers, watching television, and listening to radios provide varied practical sources for learning the mother language. Based on this concept, mother language teaching should not be limited to the classroom; students should not be bound by only textbooks and examinations. The current policy of emphasizing competence on various examinations in mother language learning should be replaced by nurturing competence in using the mother language. It is suggested that teachers employ learning strategies that will excite students toward active learning. It is hoped that under the new concept of Chinese teaching, children will show initiative and interest in Chinese learning, become knowledgeable and capable in the Chinese language, as well as prepared for various examinations.

3. Move the focus from language-knowledge teaching to nurturing students' capability to use their language.

Chinese teaching in schools has been oriented to meet the national university matriculation test and, therefore, has focused on knowledge teaching and seeking high scores on national tests. As a result, there are many students with high test scores but low capabilities in the use of the Chinese language. There has been an appeal from society for reforming the current Chinese teaching program.

To change the situation, approaches have been made to gear Chinese education in our special classes for gifted and talented children from mere knowledge teaching toward ability training. Efforts have been focused on the training of speaking, reading, and writing skills, with speaking and reading as the leading skills in promotion of writing skills. Here is an example of this new approach.

Assorted speaking activities were planned to include telling stories and news, telling a joke, reciting fables, briefly outlining and evaluating a literary work, giving a prepared or impromptu speech, presenting a debate on a given topic, and so on. Since the children were very young, most of them at the beginning showed poor oral and verbal abilities. They committed many verbal mistakes, and some were too shy to give

an oral presentation facing the class. As the teacher, I didn't instantly correct their mistakes. Instead I encouraged them to be brave before others and practice without fear of making mistakes. I often brought challenging questions to the class to direct students to think and discuss. Sometimes I purposely brought them controversial topics which they hotly debated. All these measures were fruitful for developing children's interest in Chinese language learning and improving their oral and verbal capabilities. As for reading skill training, sufficient time was allotted for students to read varied materials in class which reduced homework time.

To improve the children's writing abilities I first asked them to write weekly notes on various events they observed around them and asked them to make their own comments on the events. This made them observe their surroundings, think about things that happened, and perceive social life. Second, I encouraged each of them to work out a topic for other children for composition work. Providing good composition topics was so difficult that they had to stretch their imaginations which also benefited their writing ability.

By writing, while practicing speaking and reading, children can learn to organize their thoughts. After habitually writing in response to speaking and reading, they can learn to clarify and refine their thoughts. Through activities centered around speaking and reading, students can discover ideas, apply those ideas, rethink the ideas, and then elucidate their thoughts in reports, stories, papers, or even a novel. Gifted and talented children educated in this way showed bilateral success in obtaining high marks in the National Matriculation Chinese test and real competence in writing.

4. Properly combine advanced computer technology with mother language teaching.

In many ways, modern advanced technologies like television, computers, and the Internet have migrated into school education. The facilities developed have brought benefits for educational business and broadened information for school education. The traditional educational system is facing a challenge to adjust to the modern technologies.

It is obvious that computers and the Internet cannot fully replace classroom teaching. However, technologies can be a means to facilitate school teaching. The amount of time children sit in front of computers and the content with which the children interact on computers or the Internet should be controlled by their parents and teachers to keep children from spending excessive amounts of time on computer entertainment.

Finally, I would like to reemphasize the importance of teaching the mother language for every nation. We are facing a rapidly changing world, and the existing language-teaching programs need to be reformed to meet the needs of special education for gifted and talented children.