Submission to

THE SENATE EMPLOYMENT, WORKPLACE RELATIONS, SMALL BUSINESS AND EDUCATION REFERENCES COMMITTEE

The Education of Gifted and Talented Children

from

The Gifted Education Research, Resource and Information Centre (GERRIC)

The University of New South Wales

Professor Miraca U.M.Gross,
Director: GERRIC,
School of Education,
The University of New South Wales,
UNSW Sydney 2052.

Phone: (02) 9385 1971
Fax: (02) 9385 1973
Email: M.Gross@unsw.edu.au
GERRIC Website: www.arts.unsw.edu.au/gerric

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1. Introduction

> *"If priorities for resources must be determined among educationally disadvantaged groups, it could be argued that gifted children are currently among the most disadvantaged of these groups"*
>
> *(Commonwealth of Australia, 1988, p.5).*

Findings from the 1985-1986 Senate Select Committee Investigation

In 1985 the Federal Government established a Senate Select Committee to investigate the status of educational provisions for gifted and talented students across Australia. The committee represented every major political party, yet - unusually for such a Committee - it published a unanimous report with no party, or member, dissenting from any point. The Senators were deeply disturbed by what they saw. They were critical of the low level and poor quality of the provisions they observed, and noted that "many academically talented children not only fail to achieve their potential but actually drop out of school in large numbers" (p. 5). The report concluded that "most Australian schools do not appear to make any provision for the education of gifted children" (p. 82) and, in the damning quote with which we have opened this section, they described academically gifted children as among the most educationally disadvantaged students in the country.

Australia's gifted children are our most valuable national resource

Our gifted and talented young people, if their talents are allowed to develop, will enhance this nation's industrial, economic, scientific and cultural development in future years. Any nation's survival depends on the effective deployment of resources - including its intellectual resources.

As the Senate Report acknowledged, in 1988: "Without the contribution of its gifted citizens, Australian society would be poorer both materially and culturally. We would be less able to compete internationally" (p. 5). We agree with this evaluation. *We would propose further that without the contribution of intellectually and academically gifted Australians, this nation would be less able to sustain a level of prosperity which allows our education systems to provide for physically and intellectually disadvantaged students. We would fall behind in social and medical care, and in medical and scientific research. The timely investment in the*

talented youth of a community for the benefit of all has been called "enlightened self-interest" (Ross, 1991).

A striking example

A recent example of how appropriate educational provision can assist gifted young Australians to contribute to our country's economic welfare is the spectacular success of Alex Hartman, a former NSW high school student. In 1997 Alex, aged 17, signed a multi-million dollar contract with Telstra who bought InfiNET, the software program he developed, to allow users direct access to the Internet without the need of a modem. "Telstra had combed the world for the best product, its General Manager of Cable Services, Ms Judy Slater, said. But they found it in suburban Sydney designed by a teenager who started his company, Amicus, at the age of 15" (Evans, 1997).

Alex's success is directly applicable to timely intervention. Until 1994, no one in his school recognised his remarkable potential. He was desperately unhappy, socially isolated, and seriously underachieving. However, in 1994 Mr Jean Agior-Tis, Director of Educational Support in Alex's school, enrolled in the postgraduate *Certificate of Gifted Education* program at the University of New South Wales. As his studies progressed, Agior-Tis recognised, in Alex, many of the negative behaviours characteristic of demotivated and underachieving gifted students. Agior-Tis insisted that Alex be educationally assessed and, when his true intellectual capacities were identified, he persuaded the school to accelerate him in several subject areas. Alex responded with delight to the academic challenge and to the friendships he was able to develop with his new classmates. It was during this period, in 1995, that he developed the self-confidence to establish his own software business.

Agior-Tis unhesitatingly attributes Alex's success to the professional knowledge and skill that he was able to pass on other staff members through his training in gifted education. "From a student who suffered continual migraines, hated school and was desperately unhappy, we now have a motivated accelerant, a student who has achieved at the 95th percentile in 5 units at HSC level while still in Year 11, as well as presenting to Australian business one of the most exciting technological breakthroughs since the mobile phone. For this student, and for Australia through him, the sky is the limit. However, without (UNSW's) initiatives in gifted education I would not have had the professional knowledge to deal with this exceptionally gifted young man" (Agior-Tis, 1998).

Jean Agior-Tis is one of more than 600 Australian teachers who have pursued postgraduate studies in gifted education at UNSW in the last 10 years. This figure may seem impressive but it is a drop in the ocean compared to the number of teachers currently employed in Australian schools, the majority of whom have had *no* access to undergraduate or postgraduate study designed to help them recognise and respond to gifted and talented students.

The inadequacy of Australian teacher preparation in gifted education will be more extensively explored later in this submission. *It should be stated at this time, however, that the considerable majority of teachers currently employed in Australian schools would have had no instruction, or at best less than one hour of instruction, in their preservice training, on how to identify and respond to gifted and talented students.* By contrast, in New South Wales at least, there has been, since 1994, a mandated requirement that undergraduate teacher training courses include a minimum of 30 hours of coursework dealing with the special needs of students with disabilities.

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> *(Commonwealth of Australia, 1988, p.5).*

There is no doubt that the parlous situation which elicited such condemnatory comments from the Senate Select Committee in 1988 has improved over the last 15 years, significantly in some states, marginally in others. Equally there is no doubt that if academically gifted young people are to realise their potential, and contribute to the welfare of the nation, we *as* a nation need to offer more than platitudinous endorsements of their needs and their value to society. We need to offer ongoing financial investment and legislative support.

Here follows a list of Recommendations to the Reference Committee, which will be expanded upon, and supported, throughout this Submission.

1.1 Recommendations to the Reference Committee which arise from this Submission

1) Australia does not, at this time, have a National Policy on the education of gifted and talented students.

Recommendation 1: That a committee be convened, with representation from each state, whose brief will be the development of such a policy. The committee's brief should include the endorsement, in the Policy Statement, of the following:

a. a definition of giftedness and talent which has a strong foundation in current educational and psychological research, which acknowledges the developmental and multifaceted nature of giftedness and talent, the impact on achievement of factors both in the environment and personality of the gifted student, and the existence and dilemma of gifted underachievers.

b. the fact that gifted and talented students are found in all racial and ethnic groups and in all social classes, and that gifted students from disadvantaged and minority groups, and underachieving gifted students, are at particular risk of non-identification.

c. the use of a range of objective and subjective identification procedures, including the use of culture-fair tests of aptitude and ability which are of particular use in identifying gifted students from minority and disadvantaged groups, and off-level tests to identify the true ability levels of highly gifted students.

d. the applicability of parent nomination as a generally accurate and useful identification procedure, particularly in the primary school years.

e. the establishment of a range of ability and achievement groupings which research has found to be particularly effective with gifted and talented students.

f. the application, in all states, of the several forms of accelerated progression which research has found to be particularly effective with gifted and talented students.

g. the adoption of tested guidelines for the acceleration of gifted and talented students.

2) The majority of teachers currently in Australian schools have only the most limited knowledge of how to identify and respond to academically gifted and talented students. Australian and international research has established when teachers are untrained in gifted education, the majority of students whom they identify as "gifted" are middle class achievers from the dominant culture. It is urgent that this situation be remedied.

Recommendation 2: that the Commonwealth Government should fund, nationally, inservice programs for practising teachers. These should focus, *inter alia*, on:

a. procedures through which teachers can identify and respond to gifted students who are underachieving, and gifted students from disadvantaged and minority groups.

b. the development, for academically gifted students, of appropriately differentiated curricula in their specific areas of talent.

c. the appropriate and effective use of programs of ability and achievement grouping of academically gifted students.

d. the appropriate and effective use of a wide range of acceleration procedures which have been found effective with academically gifted students.

3) No university in New South Wales provides a significant component of instruction in gifted education within the compulsory core of its initial teacher training programs, and we believe that this is generally the case throughout Australia.

Recommendation 3a: that the Commonwealth Government should require School of Educations in Australian tertiary institutions to include, within the compulsory core of instruction in their undergraduate teacher training programs, no less than 12 hours of coursework covering the issues listed in 3.2.1 (2).

Recommendation 3b: that where a School of Education has no academic with formal training in gifted education, the Commonwealth Government should fund at least one academic in each School (approximately 40) to undertake a postgraduate Certificate of Gifted Education or Graduate Diploma in Gifted Education (as noted in Section 3.1 of this Submission several such are available) from an Australian university. When trained, these academics should be responsible, with any other colleagues who may already be trained in gifted education, for developing and teaching the compulsory gifted education component in the undergraduate teacher training program, and for developing and teaching at least one gifted education subject in a relevant postgraduate coursework program.

4) In 1988, the Senate Select Committee made nine recommendations to the Federal Government, none of which was implemented. These included: *that a National Centre for research into the education of gifted children should be established in an Australian university and be financially supported by the Federal Government during its establishment phase.*

Recommendation 4a: that an Australian National Centre for Research in the Education of Gifted and Talented Students be established and supported through Commonwealth funding within an Australian University.

Recommendation 4b: furthermore, that as the Gifted Education Research Resource and Information Centre (GERRIC) at The University of New South Wales has for some years exercised a *de facto* function as Australia's national centre of teaching, research and service in gifted education, that this be formalised by the Commonwealth Government and that GERRIC be recognised, and funded, to become the Australian National Centre for Research in the Education of Gifted and Talented Students.

2. Defining and measuring giftedness

2.1 Why is there a need to define giftedness or talent?

Defining giftedness is much more than a theoretical exercise. How a society defines giftedness has direct and immediate impact on which gifts will be valued, which identification procedures will be utilised, who will be identified as gifted, and which educational or training procedures will be employed to allow their gifts to be fostered.

To use an analogy from special education, there currently exist several different definitions of hearing impairment. The definition of hearing impairment accepted by any given group of educators will determine the *degree* of hearing impairment children or adults must demonstrate before they qualify to be recognised as such under the chosen definition. This has clear implications for access to special services.

However, it is accepted by the education community that hearing impairment, visual impairment and intellectual disability must be objectively measured. The identification of children with disabilities is regarded as too important to be left to the subjective judgment of teachers who may have little knowledge or experience of these areas of special need.

It is not uncommon, however, for schools to develop their own idiosyncratic definitions of giftedness. Furthermore, teacher nomination, which is recognised as being one of the most inaccurate and least effective procedures for identifying gifted children, is the identification strategy employed most widely throughout Australia. Indeed, the use of objective procedures, such as intelligence testing, to identify intellectually gifted students, or standardized achievement tests to identify students gifted in maths, reading or science, is actively discouraged in several Australian states.

As will be shown in this submission, where invalid definitions of giftedness are used, and where inappropriate or biased identification procedures are employed, students identified as "gifted" are likely to be successful achievers from middle and professional class families within the dominant culture, as it is these students whom Australian teachers commonly assume to be gifted. Only those students who are already succeeding in school will be recognised as gifted. This places at double risk gifted and talented students from

disadvantaged or minority groups, gifted students who feel constrained to conceal their abilities for peer acceptance, and gifted students who have become demotivated through years of imposed underachievement.

It is important that education systems examine, carefully, definitions of giftedness which are theoretically sound and which are grounded in current research in education and psychology. ***It is as inappropriate for schools or systems to simply "develop" their own definition of giftedness or talent as it would be for them to "develop" a local definition of hearing impairment or intellectual disability.***

2.2 Changes in conceptions of giftedness over the last 50 years

In recent times Australian educators have created a mythology which claims that it is only in the last quarter of a century that theorists internationally have moved away from a focus on giftedness as high intelligence and towards an acknowledgement that gifts take many forms. This perception is seriously flawed.

As early as 1957, in the United States, DeHaan and Havighurst published a remarkable book, *Educating the Gifted*, in which they proposed six domains of giftedness, as follows:

- intellectual ability
- creative thinking
- scientific ability
- social leadership
- mechanical skills
- talent in the fine arts

DeHaan and Havighurst were writing at a time when the Russian launch of Sputnik warned the United States that that her scientific supremacy might be at risk. This was certainly one reason why scientific ability and mechanical skills received such prominence in their definition.

The richness and sophistication of DeHaan and Havighurst's definition are impressive. They emphasized that giftedness is multifaceted. They pointed out that a child could be gifted in only one domain or in several.

- *Intellectual ability*. DeHaan and Havighurst saw this as related most directly to school subjects and they emphasized that general intellectual ability encompassed verbal, numerical, spatial, memory and reasoning abilities. *These were not seen as discrete "intelligences"*. (As will be discussed later (2.4), the concept of "multiple intelligences" as proposed by Thurstone in 1938, had already been discredited.) The authors proposed that a combination of these abilities was basic to other talents such as fine arts, social leadership, science and mechanics.
- *Creative thinking* could be revealed through complex mental powers such as the ability to recognise problems, to be flexible in thinking, to originate ideas or products, or to find new uses for old objects or materials.
- *Scientific ability* included skills in the use of numbers and algebraic symbols, arithmetic reasoning, curiosity about the natural world, and familiarity with the scientific method.
- *Social leadership* included the ability to help a group reach its goals, and to improve human relationships within a group.
- *Mechanical skills* (which were also called "craft skills") were seen as closely related to talents in the fine arts and in science and engineering. Success in this category depended on manipulative facility, spatial ability and perception of visual patterns, details, similarities and differences.
- *Talents in the fine arts* were those required of artists, writers, musicians, actors and dancers.

In 1971, encouraged by Sidney Marland, the Commissioner of Education, the United States Congress broadened the concept of high ability in specific subject areas to remove the bias towards science and the mechanical skills. High ability in *any* specific subject area was now recognised. A category entitled "psychomotor ability", which encompassed sport and athletics, was now included. This endorsed the multifaceted nature of giftedness and emphasized that it had affective and physical, as well as intellectual, dimensions.

Both DeHaan and Havighurst in 1957 and the Marland definition 14 years later, defined giftedness as the *potential* for high performance or achievement and made it clear that gifted children might or might not have had the opportunity to translate their high ability into high achievement. ***These definitions acknowledged that many gifted children perform at levels***

far below what one might expect from their ability - that many gifted children are underachievers. It is disturbing that thirty years later many Australian teachers are unable to accept this premise.

Unfortunately in 1978 an American academic, Joseph Renzulli, developed an alternative, and in some ways retrograde, definition of giftedness. This proposed that giftedness resulted from the interaction between three basic clusters of human traits. These traits were detailed as above average general ability; high levels of task commitment, and high levels of creativity. Renzulli defined gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance (Renzulli, 1978.)

Initially this definition attracted an enormous amount of publicity and acceptance throughout the United States and in Australia. The portrayal of gifted children as being those creative, motivated students who could focus their attention on a task and keep it focussed, was extremely attractive to teachers! Unfortunately this perspective discouraged teachers from considering that demotivated or underachieving students might be gifted. *In the 1980s such Australian gifted programs as existed, and such state policies as existed, tended to endorse the Renzulli definition and very few teachers, or schools, actively sought to identify gifted students who might be demotivated or underachieving.*

Over the last 10 years, however, the Renzulli definition has fallen into disfavour. It is now felt, by many teachers and school administrators with a special interest in gifted education, that this model of giftedness disallows the presence of the gifted underachiever, who is rarely described as "task-committed" and encourages a focus on moderately bright teacher pleasers - those students who are already well served by the pace and level of the curricula offered to them. Additionally, the international research community has subjected the research base for Renzulli's model to stringent criticism (e.g Gagné, 1985; Jarrell & Borland, 1990; Gross, 1993). Furthermore, it is now acknowledged that many fields of performance do not require the element of creativity.

Few Australian school or state policies now adopt Renzulli's definition or perspective.

The model of giftedness and talent which currently has greatest influence on Australian gifted education programs is that developed by Canadian psychologist Françoys Gagné.

The following description of Gagne's *Differentiated Model of Giftedness and Talent* is taken from *Gifted Students in Secondary Schools: Differentiating the Curriculum* (Gross, Sleap and Pretorius, 1999).

> The model of Françoys Gagné, first developed in 1985, explains the dynamic relationship between potential and performance, ability and achievement. Gagné argues that the terms giftedness and talent should not be used synonymously, and he proposes a most useful distinction: 'Giftedness corresponds to competence which is distinctly above average in one or more domains of ability. Talent refers to performance which is distinctly above average in one or more fields of human performance' (Gagné, 1985, p. 108).
>
> A student can be gifted - that is, possess aptitude, competence, or potential significantly beyond what we would expect for his or her age in any one of several domains of human ability or, for that matter, in all of them. Gagné suggests four major domains: intellectual, creative, socioaffective and sensori-motor.
>
> Unlike Renzulli, Gagné separates the domains of intellectual and creative ability; it is not necessary, under this definition, for a child to possess high potential in both these domains before he or she may be acknowledged as gifted.
>
> The gifted student may become talented - that is, demonstrate superior performance or achievement - in any one, or many, of a multiplicity of talent fields. Gagné emphasizes that specific talents may develop from the intertwining of abilities from several different domains. In music, for example, the skilled composer-performer may draw on abilities from the cognitive, creative, socio-affective and sensori-motor domains. He further demonstrates that excellence in many fields of performance, for example computer science, requires the interweaving of several quite different talents.
>
> Within Gagné's definition, a child can be gifted (possessing unusually high potential) without being talented (displaying unusually high performance). To explain the relationship between the two, he places, in the centre of his model, a cluster of catalytic variables which can either facilitate or impede the translation of giftedness into talent.

> Crucial to the process of talent development is the quality of the student's learning, training or practice. Impacting on this process, however, are personality factors within the student. Motivation, while not a necessary ingredient of giftedness as Renzulli proposed, is certainly essential if the child is to develop as talented. She must have the motivation to get started, the motivation to apply herself and the motivation to persevere when the going gets tough! She must also have a high degree of self-confidence, and healthy self-esteem, and she must accept and value her own gifts. Too often we confuse conceit, which we naturally want children to avoid, with a healthy pride in one's abilities, which is an essential constituent of self-esteem. The gifted student must feel good about being gifted.
>
> Also impacting on the process of learning, training and practice are a number of environmental variables such as the quality of the teaching and parenting the student receives, the provisions the school makes, or fails to make, to develop his gifts into talents, and even the social ethos of the community which can dictate which talents are valued and, consequently, which programs of talent development will be established or funded. Gagné shows how a supportive environment can enhance not only the student's likelihood of academic success, but also the development of a strong and healthy personality.
>
> Gagné's model gives a definition of giftedness and talent which is solidly grounded in research on human abilities and which demonstrates, in a practical way, the links between aptitude and achievement. Gifts are natural innate abilities, while talents are systematically developed skills. This model recognises the student who may have high ability but who may be underachieving, demotivated, or prevented from realising his or her potential by environmental, personality or physiological constraints. In other words, a child can be gifted, but not yet talented. The teacher's task, and challenge, is to recognize the gift, and foster the talent.
>
> (Gross, Sleap and Pretorius, 1999, p. 15-17).

Gagné's model has received wide international recognition and over the last seven or eight years it has gained wide acceptance in Australia. It is practical, teacher-friendly, and recognises the gifted underachiever. It teaches educators to look for the student who may be gifted in a single subject area, as well as those who have several gifts. It has been adopted as the State Government definition in Western Australia and the Australian Capital Territory.

The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) endorsed the Gagné definition at its meeting in Darwin in 1997, and in New South Wales in 1999 the Ministerial Advisory Council on the Quality of Teaching (MACQT) endorsed its adoption as the preferred New South Wales state definition to replace the idiosyncratic and rather impractical definition generated by the committee which developed the State Government policy in 1991.

The definition of giftedness and talent employed by a school or education system is of critical importance. If gifted students are defined only as those children and adolescents who are successful school achievers, then these are the students who will be identified as gifted, and assisted to develop their talents further, while gifted students who are underachieving will remain unrecognised and unserved. If gifted students are defined only as task-committed teacher-pleasers, only those gifted students who are motivated, compliant and easy to "manage" will be recognised and assisted to develop their talents further, while gifted students who are intellectually frustrated, bored and resentful of the undemanding curriculum with which they are presented will remain unrecognised and unserved. Furthermore, if the terms "elite" and "elitism" are used positively when they refer to athletes and sportspersons (as in the Commonwealth Government's identification of "elite" sports and "elite" athletes as candidates for special funding) but continue to be used negatively to describe educators' attempts to give special assistance to academically gifted young people, then the education of gifted students will continue to be decried as "elitist" in the word's most negative sense. ***The terms we incorporate in our educational lexicon have a powerful influence on teacher attitudes and actions.***

Summary: Changes in conceptions of giftedness or talent

It is sometimes claimed that it is only in the last 20 years that conceptions of giftedness have moved away from a single-faceted perception of giftedness as high intellectual ability alone. This is incorrect. Definitions of giftedness and talent developed over the last 50 years have viewed giftedness as multi-faceted, encompassing many domains of ability.

The majority of definitions developed over the last five decades recognise that high ability does not always develop into high achievement. The plight of students who remain gifted underachievers is explicitly acknowledged in these definitions. Modern definitions (with the

exception of that of Renzulli) universally acknowledge the influence of factors in the student's environment and personality in facilitating or hindering the translation of high ability into high achievement.

The model of giftedness developed by Françoys Gagné is practical, educationally and psychologically defensible, and widely accepted throughout Australia.

2.3 Recognising and responding to levels of giftedness

Gifted students are not a homogeneous group, either in the domain in which their high abilities are found, or in the level or degree of their gifts. Educational interventions must respond not only to the *fact* that a student is gifted, but also to the *level* of his or her ability.

In addressing this issue we can be assisted, as before, through an analogy with special education. Educators working with "special needs" populations recognise that the *level* and *type* of intervention prescribed for children with disabilities - children with hearing impairment, visual impairment or intellectual disability, for example - are dictated by the degree of severity of the condition (Payne and Patton, 1981). Indeed children with severe disabilities are taught by teachers with special training and qualifications.

Teachers of hearing impaired and intellectually disabled students have avoided the temptation to treat their clientele as if they were a homogeneous group. However, until some 10 years ago, and certainly at the time of the last Senate enquiry, the majority of educators and psychologists working with intellectually gifted students were trapped in precisely this mind-set. We readily acknowledged distinguishable levels of talent among young people gifted in sport, athletics, music or dance, but in our dealings with intellectually able children we developed identification strategies, designed curricula and established special programs based on the assumption that what worked for a moderately gifted student would also work for the extremely gifted.

Fortunately, this perception is beginning to break down, and educators who have a special interest in the gifted and talented are beginning to acknowledge the need to recognize degrees, as well as types, of intellectual giftedness. This is not the case, unhappily, with the majority of Australian classroom teachers and school administrators.

It would be simplistic to define intellectual giftedness solely in terms of IQ scores; nonetheless the intelligence quotient is a useful index of the relationship (and in the case of the gifted child, the discrepancy) between mental age and chronological age. A moderately gifted 10 year old with a an IQ of 133 and therefore a mental age of around 13, will be "out of synch" by at least three years before she has even passed through primary school; however, a classmate with an IQ of 169 and therefore a mental age of around 17, looks across a chasm of seven years from the level at which he is capable of reasoning to the grade level in which he has been placed on the basis of his chronological age. The IQ can assist us to understand the fundamental differences in mental processing between moderately and extremely gifted students.

Intellectually gifted children can be classified as mildly, moderately, highly, exceptionally and profoundly gifted. Levels of intellectual giftedness, as defined by IQ ranges, and the prevalence of such children in the population, can be classified as follows:

Level IQ range Prevalence
Mildly (or basically) gifted 115 - 129 1:6 - 1:44
Moderately gifted 130 - 144 1:44 - 1:1000
Highly gifted 145 - 159 1:1000 - 1:10,000
Exceptionally gifted 160 - 179 1:10,000 - 1:1 million
Profoundly gifted 180+ Fewer than 1:1 million

Exceptionally and profoundly gifted students differ not only from their age-peers of average ability, but also from their moderately gifted age-peers, on virtually every cognitive and social-emotional variable studied to this date (Gross, 1993, 2000). Professor Miraca Gross has made an 18 year longitudinal study of 60 Australian children of IQ 160+ (approximately 20% of the theoretical population of such children in Australia) and her findings have influenced the education of exceptionally and profoundly gifted children world-wide. Issues specifically affecting the education of such children will be addressed in the section on ability grouping and acceleration.

The *level* and *type* of intervention prescribed for intellectually gifted students must be dictated by the level of the student's ability. Unfortunately, in Australia, the majority of exceptionally and profoundly gifted children are educated in the mainstream classroom by

teachers who have had no opportunity to be trained or inserviced in how they may best respond to these students.

Summary: Responding to levels of giftedness

It is not enough simply to identify a student as gifted; the level of the gift or talent should be recognised. Students at different levels of giftedness require different degrees of intervention.

Identification procedures and interventions which are designed for use with moderately gifted students are often inappropriate for use with extremely gifted students.

2.4 Relevance of theories on different types of intelligence

As early as 1904 Charles Spearman proposed that there is a general, pervasive human ability, which he called *g* - general intelligence - which underpins virtually all human activity and which is the major factor measured in IQ tests. This does not deny that *g* manifests itself differently in different fields of activity, or that different levels of *g* may be required for successful performance in different occupations; it does hold, however, that general intelligence - the capacity to reason - is at the core of all activities which involve the generation of knowledge and the processing of information. It has recently been described as "a highly general information-processing capacity that facilitates reasoning, problem solving, decision making and other higher order thinking skills" (Gottfredson, 1997, p. 81)

Models of intelligence which propose a number of specific, quasi-autonomous factors, abilities or aptitudes, such as Thurstone's now discredited theory of "seven primary intelligences" (1938) and Gardner's (1983) theory of "multiple intelligences" which bears significant resemblances to Thurstone's model, have a very limited research base and would require much greater empirical support if they were to become a formal foundation for broad-based educational usage.

Unfortunately, Gardner's model has become something of a fad in Australian educational circles. It is particularly popular among teachers who would wish to claim that every child is gifted. Professor Abraham Tannenbaum of Columbia University, New York, a leading

researcher in gifted education, humorously refuted this premise at an education conference in Adelaide in 1988, 13 years ago.

> "Unfortunately there are still some people who accept a pseudo-scientific belief that the human mind consists of many discrete abilities and that if you break down these independent abilities and keep on breaking them down, you will eventually reach a point where there are more special aptitudes than there are people walking on the face of the earth. And the logical conclusion and absurdity that arises from this belief is the idea that if there are more aptitudes around than people, then surely each human being must have a chance of possessing at least one superior aptitude. Sadly, however, this is not so. God was not a democrat when She distributed abilities."
>
> Tannenbaum, 1988.

Tannenbaum is affirming that human abilities are not discrete or only tenuously linked. For example, mathematical ability and musical ability are not two separate "intelligences" as proposed by Gardner; they are aptitudes which teachers of maths and teachers of music happily acknowledge to be quite highly correlated. Similarly, what Gardner calls "inter-personal intelligence" - the capacity to understand other people - is closely related to what he calls "intra-personal intelligence" - the capacity to understand oneself - and indeed a strong relationships between the two is essential for mental health.

Unfortunately teachers who adhere too closely to the "multiple intelligences" theory are reluctant to acknowledge that students who achieve highly in one area of academic work are likely to have the potential to achieve highly in other areas. Rather than assuming that a specific academic ability exists in isolation, educators should look for unusually high potential in related areas.

A recent longitudinal study of the cognitive and affective development of intellectually gifted children has re-emphasised the remarkable breadth of abilities which objective investigation finds in these children. The Fullerton Study found that differences in the level of intellectual performance between gifted children and a nongifted comparison group of age-peers appeared on psychometric testing as early as 1½ years of age, and were sustained throughout the study, which is ongoing. Significant differences in expressive language were consistently found from infancy onwards. Assessments of comprehension, gross and fine motor skill, memory, and personal-social development consistently found the gifted group superior. Indeed, the only academic skill on which the gifted children did not display significant superiority was on numeracy - and the researchers noted that this was due to a ceiling effect on the test for the gifted group. Indeed, the Fullerton team concluded: *"Gifted IQ implies*

generalized high intelligence. Gifted children were superior across an array of cognitive tasks beginning as early as the pre-school period. Gifted children tended to be cognitively well rounded or adept. Globality rather than specificity in cognitive performance characterizes intellectual giftedness" (Gottfried, Gottfried, Bathurst and Guerin, 1994, p. 85).

Indeed, the more highly gifted the student, the greater the likelihood that he or she will possess high abilities in a range of fields. Virtually every study conducted of exceptionally and profoundly gifted children (e.g. Hollingworth, 1942; Gross, 1993; Rogers and Silverman, 1997) has found that these children possess remarkably high abilities in many academic subject areas. In many cases, however, the children's teachers have focussed on one ability, ignoring the others, even when the child has repeatedly demonstrated that he or she *does* indeed have multiple talents.

It is disturbing to note that Gardner's "multiple intelligences" theory has influenced the development of definitions of giftedness in the policy documents of a number of Australian states.

Summary: Theories of intelligence

Research lends little support to theories of multiple, quasi-discrete "intelligences", demonstrating, rather, that students who display high potential in one academic subject area are likely to possess high potential in other academic fields. Rather than assuming that they have found a student's single "intelligence" or talent area, teachers should view high potential or performance is one field as an indication of probable high ability in others. *Schools and education systems should be discouraged from using untested theories, or theories which are actively contradicted by empirical research, in their development of education policy.*

2.5 Adequacy of current procedures to identify gifted and talented students

(Earlier this year, the Commonwealth Department of Education, Training and Youth Affairs employed GERRIC to develop an analytical and evaluative literature review on a range of issues in gifted education, which might assist them with their submission to the present

Senate Committee Enquiry. We are unsure as to whether this literature review will be used in part or whether it will be presented in whole as an Appendix to DETYA's submission.

It would seem impractical for GERRIC to develop, for its own submission, a further analysis of Australian identification procedures. Accordingly, Section 2.5 and 2.6 of this GERRIC submission are virtually identical (with the exception of a few additions arising from very recent publications) to the relevant sections in our literature review for DETYA. We trust that the Senate Committee will understand, therefore, any overlap in these sections between GERRIC and DETYA submissions.)

Identification of Gifted Students

The identification of gifted and talented students can be achieved by the use of a variety of assessment strategies, as well as by the recognition of some of the general cognitive and affective characteristics of gifted learners.

2.5.1 Cognitive and Affective Characteristics of Gifted Learners

Gifted learners often possess a heightened level of curiosity; a fascination with seeking out and acquiring new knowledge; a wide variety of interests; power of concentration; superior reasoning powers and ability to handle abstract ideas; flexibility in thinking and considering problems from a number of viewpoints; and, an alert and subtle sense of humour (Silverman, 1993; Gross, 1994b).

Gifted learners often develop, at an early age the ability to delay closure - simple, immediately obvious responses are unlikely to satisfy them. They may also possess an ability to handle abstractions; superiority in quality and quantity of written and/or spoken vocabulary; interest in the subtleties of words and their uses; the desire to read and absorb books well beyond their years; and, the ability to learn and recall important details, concepts and principles (Silverman, 1998; Gross, 2000).

Gifted learners often learn quickly and easily and retain what is comprehended readily; grasp mathematical concepts readily; show creative ability or imaginative expression in such things

as music, art, dance and drama; show sensitivity and finesse in rhythm, movement, and bodily control; show outstanding responsibility and independence in classwork; set realistically high standards for themselves; are self-critical in evaluating and correcting their own efforts; show initiative and originality in intellectual work; show poise and an ability to communicate with adults in a mature way; and, get excitement and pleasure from intellectual challenge.

However, other characteristics which many gifted children possess are less easily understood by their classmates, or even by the children themselves. These include:

- overresponsiveness to intellectual or emotional stimulus - other children may find it hard to understand why the gifted student becomes so passionate about things.
- perceptiveness - early development of the ability to 'read between the lines' of other people's words or actions.
- empathy - an unusual capacity to understand how other people feel.
- sensitivity - a tendency to take criticism very much to heart.
- entelechy - extraordinary degrees of motivation - a single-minded pursuit of goals, particularly the drive to develop one's potential to the fullest.

(Lovecky, 1986; Silverman, 1998).

It is those social-emotional traits, even more than the cognitive traits, that alert students to the fact that their gifted age-peers are 'different' - and this difference may cause the gifted student to be distrusted or resented.

These traits and characteristics are easy for teachers to recognise when they are manifested through positive classroom behaviours. Often, however, the pace and level of work presented to gifted students does little to engage their interest in learning, and they may respond with behaviours which are negative or disruptive. When a gifted student displays negative behaviour, it is often a call for help or at least an indication that some intervention is needed.

It is important to bear in mind the following points when considering the cognitive characteristics of gifted students:

- Not all children will display all of the characteristics.
- There will be a range among gifted children in respect to each characteristic.
- These characteristics may be viewed as developmental. Some children may not display them at early stages of development but at later stages, while others may manifest the characteristics from a very early age.
- Characteristics of the gifted tend to cluster and thus constitute different profiles across children as the combination of characteristics varies.
- Characteristics may reveal themselves only when students engage in an area of interest and aptitude.

(VanTassel-Baska, 1996, p.180)

2.5.2 Psychoeducational Assessment

Psychoeducational assessment is a term used to describe results obtain from psychological as well as educational assessment. "An assessment is a data-gathering procedure designed to help answer a question and make a decision. An assessment often includes testing because some decisions about gifted children require information obtained from tests, either psychological or educational" (Assouline, 1997, p. 89). Psychological tests measure individual differences in behaviour. These behaviours may be sampled from broad domains, such as intelligence or personality. Educational tests are also measures of behaviour but they have been specifically developed for use in the educational arena and predominantly for use in the primary and secondary levels of education (Assouline, 1997).

"Tests are not the only component of psychoeducational assessment - behavioural observation as well as background and anecdotal information are also typically included in an assessment - but tests are often the major component" (Assouline, 1997. p. 89).

2.5.2.1 Types of Tests

Group intelligence tests are often used as a way of initially screening for students of high academic ability. In general, scores obtained from group intelligence tests tend to be lower

than those from individually administered intelligence tests (Sattler, 1988). Because they are so economical, group administered tests of intelligence are used far more extensively than are individually administered intelligence tests. However, a standardised, individually administered intelligence test is the best instrument for identifying gifted children on the criteria of general ability. No intelligence test is perfectly designed to measure all attributes of intelligent behaviour, but when used correctly, information from a well-designed, individually administered intelligence test can be one of the best indicators regarding an individual's range of knowledge and cognitive skills at a given point in time (Assouline, 1997).

As was noted in the 1998 Report of the Senate Select Committee, there is a significant concern among Australian educators that IQ tests may be biased against children from minority or disadvantaged groups. However, the problem might be better phrased as "tester bias" rather than “test bias”. It is completely inappropriate to administer, in English, a verbal IQ test to a child who uses English as her second language and who still thinks in a language other than English. This happens much less frequently nowadays than happened 20 years ago, but teachers, understandably, have long memories for such inappropriate use of testing - a procedure of which many were already wary.

As VanTassel-Baska describes below, culture-fair IQ and aptitude tests have proven a highly effective mechanism for identifying gifted children from minority or disadvantaged groups.

> "Contrary to intuitive belief, traditional tests have been shown to be a valuable tool for identifying disadvantaged gifted populations. Individual intelligence tests offer valuable data on the ability of disadvantaged students, since new norms include appropriate samples of minority and low socioeconomic level populations. Achievement and aptitude measures also find many disadvantaged students, especially if cutoff score points are used less stringently for program inclusion. To ignore good standardized aptitude, achievement and ability indices in the identification process would do more harm than good in identifying high-functioning students within this population.
>
> While traditional measures can continue to be supported for use with the disadvantaged, it is also helpful to employ nontraditional methods at the screening level of the process. The most promising of these measures appear to be the Ravens series of Matrices… which are non-verbal, general ability measures. In one recent study, the Advanced Ravens Matrices was found to identify a significantly greater percentage of minority students than did a more traditional measure (Mills and Tissot, 1995). It appears to be especially promising as a screening tool (Mills, Ablard and Brody, 1993).

(VanTassel-Baska, 1998, p 97-98)

Rather than reject, “out of hand”, the use of standardised tests of ability and achievement, Australian schools should consider the appropriate use of such tests to obtain an objective assessment of the abilities of students who might not otherwise be recognised as gifted.

A major international seminar on World Class Testing was held in London in February 2001, funded by the British Government. This investigated the development of standardized assessment procedures specifically designed to identify intellectually and academically gifted children. Ms Rosalind Walsh Elder, Manager of UNSW's Gifted Education Research, Resource and Information Centre (GERRIC) made an invited presentation on the Australian Primary Talent Search (APTS) which annually assesses more than 1500 academically gifted primary students around Australia. APTS is described in Section 2.5.4.

The recognition of some or all of the characteristics of a gifted student is an important element of the identification process and is particularly important when the student may not be performing at the level indicated by his or her potential.

Often the identification of a gifted student will occur through the use of more than one method (multiple criteria identification). It is possible that information about a child may be offered to the school by the parents (such as the results of an independent psychologist's assessment); or the school counsellor may have assessed the child; or the school may have a policy of testing all students at some stage using a group intelligence test.

These methods provide information concerning a student's ability and the possible levels of achievement they may be able to work towards. However, it is also important to realise that many of these gifted students will already know most of the work that is planned for their specific grade level. For example, a gifted student placed in a Year 7 Mathematics class may very well know and be proficient in, the majority of curriculum outcomes for this grade at the beginning of the school year. Research by Flanders (1987) on the scope and sequence of content and skills development in many of the Mathematics textbooks used in schools, showed that there is considerable duplication of work from year to year, particularly from Years 2 - 8. Gifted students may be required to mark time over a period of several years, learning very little that they do not already know, and having very little chance to show their

true ability. The method known as "off-level testing" may be used as an additional step in the identification process.

2.5.3 Off-Level Testing

The effect often described as "hitting the ceiling" of a test occurs when students may score highly on an age appropriate test and yet not have the opportunity to display the full extent of knowledge and capabilities. When this happens, it is clear that the level of difficulty of the particular test is not high enough and a test of greater difficulty is required. Gross describes the use of grade - level tests with highly gifted children as:

"…a little like trying to measure the height of the Harlem Globetrotters on a pole which only goes up to 6 feet 6 inches, and then, when the coach protests that this won't tell him more than he can already see, defending our action by claiming that the pole we are using is a perfectly adequate measure for 99 percent of the population" (Gross, 1998).

The use of off-level tests (administering, to gifted students, a test designed for older students) allows teachers to place students in subjects and courses that are appropriate to their ability levels rather than simply age or grade appropriate.

Above level tests may be developed by:

- giving to students, at the start of the year, a test of the material they will be expected to know at the end of the year
- using a test designed for older students within the school
- using already available tests such as competition papers (for example UNSW Maths, Computer, English and Science Competitions or the Maths or Science Olympiad questions)
- using past examination papers for end of schooling (for example, the NSW Department of Education School Certificate or Higher School Certificate, or the SAT - Scholastic Aptitude Test - from the United States or International Baccalaureate tests)
- using an existing Talent Search program

2.5.4 The Australian Primary Talent Search (APTS)

The Australian Primary Talent Search (APTS) is a testing program for academically gifted primary school students, initiated by GERRIC at The University of New South Wales, in association with the Belin-Blank International Centre for Gifted Education and Talent Development at The University of Iowa. The goal of talent searches is to identify, through above-level testing, students who need further educational challenge to fully realise their potential.

The Australian Primary Talent Search assesses academically gifted students in Years 3-6 on EXPLORE, a multiple choice test developed by American College Testing as a test for 8th grade students. EXPLORE measures students' academic aptitude in four key learning areas, English, Mathematics, Reading Comprehension and Science Reasoning.

Taking EXPLORE enables students to demonstrate unusual academic strengths in any or all of these four Key Learning Areas by taking an academically challenging test at a level that is not generally set in primary school. Families receive two individualised score reports and a written interpretation of results. This interpretation guide includes recommendations for curriculum readiness. Individual scores and interpretations are sent only to families - not to schools. Families may choose to give the second copy of the report to their child's school. This information can be used by schools to determine appropriate curricular and programming modifications. Outstanding individual scores are acknowledged in formal recognition ceremonies around Australia. Students scoring significantly above their grade level are eligible to participate in a range of GERRIC programs which have been developed specifically for high scoring APTS students. (This is described more comprehensively later in this Submission, in the section describing GERRIC's gifted education services.)

Participation in the Australian Primary Talent Search involves students in school years 4-6 (these grades refer to all states) who have either:

- scored at or above the 95th percentile (IQ 125+) on an individual or group IQ test; or scored at or above the 95th percentile on a subscale (e.g. verbal or performance) of an individual IQ test (all states);

- scored at or above the 95th percentile on a standardized test of achievement in any academic subject area (all states);
- scored well within the top band on the Basic Skills Test (NSW & SA);
- scored well within the top band on at least one area of the LAP (outside the "results for most" students) (VIC);
- been identified through testing for the PEAC program (WA);
- gained placement in a full time, self-contained class for academically gifted students e.g. NSW Opportunity C Class (all states);
- obtained an academic scholarship (all states);
- gained a Distinction or High Distinction in the Australian Schools Science or English competitions, or the Australian Primary Mathematics Competition (all states); or
- whose teachers believe they have the academic potential to perform at a level well above their grade level in an academic area (all states).

To date, more than 4500 primary school students from around Australia have taken part in APTS. The selection criteria have been effective and the students' scores have been outstanding. The purpose of APTS testing is to see how students perform on an above-level test and over 50% of the Australian participants have scored higher than the average 8th grade student.

In Victoria, the Department of Education has endorsed the use of the APTS testing in their state policy *Bright Futures: A Guide for Strategic Action to Support Gifted Students 2000 - 2005.* As indicated earlier, Ms Rosalind Walsh Elder, Manager: GERRIC made an invited presentation on the structure and measurement qualities of APTS to a major international conference on World Class tests, funded by the British government.

Current educational theory and practice in gifted education support the use of multiple criteria in the identification process (Richert, 1997). While objective assessment procedures such as achievement, ability or aptitude testing are still regarded as essential elements in the identification of academically gifted and talented students, particularly those who may not be

easily recognized as gifted by teachers or peers, most researchers advocate the inclusion of teacher, parent, peer and self-nomination. This balance of objective and subjective identification procedures ensures that individuals who work closely with the gifted students have the opportunity to provide valuable input.

2.5.5 Teacher nomination

Teacher nomination, used alone, is probably the least effective method of identifying gifted children in the primary years, and the method most prone to class and cultural bias. As early as 30 years ago Jacobs (1971) found that kindergarten teachers who had received no training or inservice on the characteristics of gifted young children tended to over-estimate the ability of children who were verbally articulate, who were cooperative in class and who sought teacher approval. Seventeen years later, Betts and Neihart (1988) estimated that as many as 90% of children nominated as "gifted" by untrained teachers are likely to be high achieving conformists - teacher pleasers "who often become bored in school but learn to use the system to get by with as little effort as possible" (p. 249). Children identified by teacher nomination alone have generally been found to come from middle class families within the dominant culture (Ciha et al, 1974; Gross, 1993).

However, extensive inservice or training in gifted education can significantly increase teacher effectiveness (Gear 1978) and teacher nomination forms and trait lists can be of some assistance in helping the teacher to structure her observation of the children in her class, and alerting her to some of the behavioural characteristics of gifted students. However, many of the trait lists published both in gifted education texts and as commercial materials focus on the behavioural traits and characteristics of moderately gifted students. A further problem is that these lists, with very few exceptions, concentrate on the positive characteristics of the gifted achiever and ignore the negative behaviours often displayed by gifted children whose schools have failed to make appropriate provision for them.

2.5.6 Peer nomination

While peer nomination can be used successfully in later childhood or adolescence, as one element of a school's identification program, it has serious limitations in the earlier years of school. Gagné (1989) warns that children in Year 3 or younger have difficulty in making objective judgments about the abilities of their classmates, and discriminating between many of the concepts that peer nomination forms address, while Banbury and Wellington (1986) recommend that peer nomination should not be used with children younger than Year 4. Certainly in the first two years of school it is not practicable to ask students to categorize their age-peers by talent area, or to quantify their levels of ability. Questions such as "Who would you go to if you wanted help with a maths problem?" or "Who is the best reader in our class?" are more likely to be answered by younger children on the basis of friendship or (more disturbingly) on the basis of the teacher's visible preference!

2.5.7 Parent nomination

Research has consistently shown that parents are significantly more successful than teachers in identifying giftedness in the primary years of school, particularly, as Robinson (1993) has pointed out, in domains such as the development of speech and movement, and the emergence of reading or literacy, where there are distinctive milestones and where strong normative expectations are held by the community.

Although some parents of gifted children do remain surprisingly unaware that their children are developmentally advanced, in most cases the onset of awareness that the child is "different" occurs in the early childhood years. Robinson and Robinson (1992) reported that almost half of 550 young children aged 2-5, who were nominated by their parents for a longitudinal study of high ability children, and who were subsequently tested, had IQs of 132 or higher. This is statistically remarkable; only 2.3% of the population scores at this level.

In general, parents of gifted children recognise their children's developmental precocity in the very early years (Silverman and Kearney, 1989; Gross, 1992; Morelock, 1994). More than 90% of the parents of highly gifted children in Gross's longitudinal Australian study realised by their child's second birthday that the child was not only developmentally advanced, but remarkably so. As with an earlier study, conducted in the United States by Louis and Lewis (1992) with parents of gifted preschool children, Gross's parents cited an unusual facilitative and retentive memory, and an unusual capacity for abstract reasoning as factors which

signalled to them that their child might be gifted. However, they also reported that they had been alerted by the level of questioning, intense curiosity, desire to learn, and unusually advanced sense of humour displayed by the child, as well as the precocity of speech and movement and, in some cases, the spontaneous emergence of reading (Gross, 1993).

It is hardly surprising that parents are so much more successful than teachers in identifying giftedness in the early years. It is during the early years of life that cognitive development proceeds most swiftly, and that the changes in the child's interactions with her environment are most visible, and most dramatic. By the time the teacher enters the scene, developmental changes have become more gradual. Furthermore, the parent sees a much wider range of cognitive and affective behaviours than does the teacher who, by the nature of things, operates in a setting which imposes greater uniformity of conduct upon the children in her charge. At home, the gifted young child has no need to moderate her behaviour for peer or teacher acceptance.

However, despite the efficiency and effectiveness of parent nomination, parents of the gifted who approach the school to discuss their children's high abilities are very often disbelieved (Gross, 1993). More than 90% of the extremely gifted children in Gross's study were reading before the age of 5. However, because of the overt hostility shown, by many Australians, towards intellectually precocious children, only 30% of the parents of these early readers felt confident enough to tell the school, on enrolment, that their child was, indeed, already reading. The majority were afraid that they would be disbelieved and apostrophised as pushy mothers or ambitious fathers and that, worse still, the teachers might retaliate against their children.

The reliability and validity of parent nomination can be greatly enhanced by the use of trait lists which have been designed by researchers who are trained in both gifted education and psychological measurement. A particularly effective parent checklist is *Things My Young Child Has Done*, developed by Sayler and published in Harrison's Australian book *Giftedness in Early Childhood* (Harrison, 1995). This asks parents to respond to questions on the development of speech, movement and reading in the young child, as well as several aspects of cognitive and affective development.

Smutney (1995) recommends that parents of gifted young children should also construct a portfolio of their child's work, activities and interests, which will serve as a record of his or

her intellectual development. "A portfolio may include library book awards, preschool projects of merit, projects from home that are unusual, special awards from scouting or community service and video or audio-tapes of performances or projects (although photographs are better as they can be viewed at the time the portfolio is reviewed)" (Smutney, 1995, p. 15). The parent can take the portfolio to the child's future teacher before school starts, or as soon as possible after the school year begins, so that the teacher is not left to discover for herself that the young child is exceptional, and before the child has the opportunity to discover for herself that she is different, and respond by "going underground".

The portfolio technique can be particularly useful where a gifted child is already reading at an unusually advanced level, writing short stories or poetry, or creating exceptional artwork. Harrison (1995) and Winner (1996) have both documented remarkable examples of the art work of gifted young children which demonstrate these children's astonishing visual memory and passion for detail; teachers presented with such direct and unequivocal examples of precocity are less likely to suspect that the child's achievements are the result of parental "hothousing".

2.5.8 Self nomination

Unfortunately, intellectually gifted students are only likely to nominate themselves for inclusion in gifted programs when the class climate or school culture permits them to acknowledge openly that they are gifted. Australian research shows that adolescents tend to socially reject intellectually gifted students (Carrington, 1993) while trainee teachers participating in a large scale attitudinal study stated that they preferred to teach average ability students rather than gifted students, and that they preferred students not to be studious (Carrington and Bailey, 2000). It is understandable that gifted students in such socio-educational environments might be reluctant to request special assistance in developing their talents.

2.6 Identifying gifted students from minority and disadvantaged groups

As discussed in Section 1:5, a range of traditional and non-traditional procedures, including the use of standardised tests of ability and aptitude, are recommended for the identification of gifted students from groups particularly at risk. *It cannot be sufficiently emphasised that the*

use of culture-fair IQ and aptitude tests have proven a highly effective mechanism for identifying gifted children from minority or disadvantaged groups.

It is notable that in New South Wales, Selective High Schools and Opportunity Classes (fulltime classes for gifted students in comprehensive primary schools), programs for which students are selected through objective (test-based), as well as subjective (teacher and parent nomination) identification procedures, enrol students from a wide range of socio-economic and cultural groups.

Other procedures which research has found successful in identifying gifted students from disadvantaged groups are:

- The use of community nominations. Community nominations have around 90% effectiveness at identifying disadvantaged gifted students (VanTassel-Baska, 1998) VanTassel-Baska suggests that social workers, doctors and community workers may be in an excellent position to perceive high-ability students in the neighbourhood context and recommend them for enrolment in gifted programs.

- The use of "try-out" approaches. Some school districts in the United States allow disadvantaged students who are viewed as being possibly of high ability to participate in gifted programs over several weeks to assess their response to the more challenging curriculum. The student's work and behaviour is assessed by a trained teacher-observer. VanTassel-Baska (1992) reports data from a number of school districts which suggest that greater numbers of gifted minority and disadvantaged students are identified through this process. (It is important, however, that students who do *not* experience success in the gifted program should not be retained in the program, regardless of whether they belong to a minority or majority group.)

- The use of "profile analysis". Passow and Frasier (1996) advocate the use of student profiles (case study information) which will identify peaks of performance, in specific subject areas, in students whose all-over academic profile might not otherwise suggest high ability. Enrichment or extension work can then be provided for these students in their areas of relative strength.

Passow and Frasier (1996) further recommended the following strategies to identify minority students for gifted programs.

- Using multiple criteria which include inventories and checklists with traits corresponding to those found in gifted students from various minority populations.

- Using the diagnostic-prescriptive teaching approach to improving classroom test performance; a "test-teach-test" technique. This allows the teacher and student to focus on material which the student does not yet know, rather than reinforcing students' view of schooling as pointless through re-teaching what they have already mastered. (Seeley's 1987 study found that many teachers assumed that students from disadvantaged backgrounds were slow learners, without even assessing what these students had learned.)

- Broadening the data-finding procedures for students including procedures such as peer, parent and self-nomination.

- Considering broader ranges of scores for entrance into programs.

- Using standardized tests (such as culture-fair tests) which have a history of effectiveness in identifying gifted disadvantaged students

Summary: Identification of gifted and talented students

Identification of gifted and talented students should proceed from an awareness of what research reveals about the characteristics and behaviours (not always facilitative!) of these students and through the use of multiple identification criteria and a range of objective and subjective procedures.

Objective procedures which may be used include: standardized tests of ability, aptitude and achievement; off-level testing; teacher-made tests; class grades; school records and reports.

Subjective procedures include: teacher, parent, peer and self-nomination; interviews; community perceptions.

Contrary to the perceptions of many Australian teachers, there is a solid research base to support the use of IQ and achievement testing, sensitively conducted by trained professionals, to identify gifted students from minority and disadvantaged groups as well as from the majority culture. This assessment must, of course, be supported by the use of other objective

and subjective identification procedures. No single procedure should be used on its own to identify gifted students - including teacher nomination, which is less reliable than many other methods.

Unfortunately the identification process used most frequently in Australia - teacher nomination - is shown to be the least effective and most prone to class, cultural and gender bias when it is not supplemented by objective procedures.

2.7 Recommendations arising from Section 1

1) Australia does not, at this time, have a National Policy on the education of gifted and talented students.

   Recommendation 1: that a committee be convened, with representation from each state, whose brief will be the development of such a policy. The committee's brief should include:

- The endorsement, in the policy statement, of a model or definition of giftedness which has a strong foundation in current educational and psychological research, which acknowledges the developmental and multifacted nature of giftedness and talent, the impact on achievement of factors both in the environment and personality of the gifted student, and the existence and dilemma of gifted underachievers.
- The acknowledgement, in the policy statement, that gifted students can be found in all racial and ethnic groups and in all social classes, and that gifted students from disadvantaged and minority groups, and underachieving gifted students, are at particular risk of non-identification.
- The endorsement, in the policy, of the use of a range of objective and subjective identification procedures, including the use of culture-fair tests of aptitude and ability which are of particular use in identifying gifted students from minority and disadvantaged groups, and off-level tests to identify the true ability levels of highly gifted students.
- The endorsement of parent nomination as a generally accurate and useful identification procedure, particularly in the primary school years.

2) The majority of teachers currently in Australian schools have only the most limited knowledge of how to identify and respond to academically gifted and talented students.

Recommendation 2: that the Commonwealth Government should fund, nationally, inservice programs for practising teachers. These should focus, inter alia, on procedures through which teachers can identify and respond to gifted students who are underachieving, and gifted students from disadvantaged and minority groups. At present, students who are informally identified as "gifted" by teachers who have not been trained or inservice in gifted education are likely to come from middle class Anglo-Celtic or Asian families.

(N.B. In 1983 the former Schools Commission funded a National Seminar on gifted students from disadvantaged groups and a small publication emerged from this. In our opinion the resulting publication was of limited usefulness as the majority of the delegates, while being expert in the particular field of disadvantage which they represented, had very limited knowledge of the characteristics and needs of gifted and talented students within these groups. It is extremely important that the individuals or groups selected to conduct inservices of the nature we propose should have both qualifications and experience in identifying and teaching academically gifted students.

3. Current provisions for gifted and talented students in Australia

3.1 Enrichment in the regular classroom

3.1.1. The nature of appropriate curriculum for gifted students

Curriculum and programming for gifted and talented young people, whether in primary or secondary schools, must be developed in response to the learning characteristics of the students. VanTassel-Baska (1988) lists three fundamental differences in the way intellectually gifted students and students of average ability process information.

2) Gifted students learn at faster rates.

3) Gifted students have the ability to find, solve and act on problems more readily.

4) Gifted students have a superior capacity to manipulate abstract ideas and make connections.

Although gifted children differ within each of these points, it is clear that the curriculum for this group of students needs to allow time for in-depth exploration, manipulation of ideas and questions requiring higher order thinking, as well as acceleration when appropriate.

When planning learning experiences for students of lower academic ability, teachers generally agree that these students need a modified presentation of the core curriculum. Few would claim that it is either equitable or practical to expect these students to work at the same pace as students of average ability. Equally, the pace, level and degree of complexity of curriculum must be modified for students with high ability.

Passow (1982) set guidelines for the development of curricula for the gifted which retain their usefulness almost 20 years later:

"With respect to the principles of curriculum differentiation - in determining whether a particular learning opportunity is appropriate for the gifted/talented or whether it is equally appropriate for all - one should ask three questions:

1) *Would* all children want to be involved in such learning experiences?

2) *Could* all children participate in such learning experiences?

3) *Should* all children be expected to succeed in such learning experiences?

If the answer to any of these questions is *yes*, then the curriculum that has been planned for the gifted students is, in fact, not appropriate for them. It is unlikely to offer sufficient challenge. *The curriculum presented to gifted students should be pitched at a level of difficulty that the average ability students could not master. It should be presented at a pace which would be too fast for the average ability student to cope with. It should involve a level of complexity and abstract reasoning which average ability students would find too demanding.*

It is important not to confuse what is good whole-school enrichment with that which is only appropriate for gifted students. For example, if a guest speaker is invited to a school to talk about motivation and achievement, *all* students should be given the opportunity to participate and learn from the experience.

Providing, for gifted students, work which is beyond the capacity of their age-peers is not elitist; it is a sound professional response to individual differences in students' capacities to learn.

By contrast, offering *only* to gifted students enjoyable enrichment material at a level and pace which could be mastered by many or all of their classmates *is* elitist, and, understandably, may lead to resentment and accusations of bias.

Unfortunately, the majority of Australian teachers have little understanding of appropriate curriculum development for academically gifted students. Much of what is presented to gifted students is "lateral enrichment" - material set at a level and pace appropriate to their chronological age and therefore unsuited to their learning styles or levels of ability. This is not meant as a condemnatory comment. *We estimate that the majority of teachers in Australian classrooms would have had less than one hour of preservice training on how to recognise or respond to academically gifted students. There is an urgent need to inservice the Australian teaching force on the development of appropriate curricula for gifted and talented students both in the regular classroom and in ability grouped settings.*

Summary: The nature of appropriate curriculum for gifted students

The development of appropriate curriculum for gifted and talented learners must be responsive to the cognitive and affective characteristics of these students. Work offered to gifted learners should be pitched at a higher level and faster pace than could be mastered by classmates of average ability.

The content, process, product and learning environment should be differentiated to facilitate the provision of material which is more abstract and cognitively complex than students would generally be expected to encounter at the given grade level. It is not enough simply to provide "lateral enrichment" for gifted students - enrichment material set at the usual level for the child's age. If we "enrich" a 7-year-old who is reading like a 10 year-old by providing reading enrichment designed for her age-peers of average ability, we will be "enriching" her at a level she passed through three years ago - a procedure which is seldom particularly enriching!

The three criteria set by Passow, and described above, best describe how to evaluate the suitability of any curriculum or program for gifted students.

The majority of Australian teachers have had little, if any, instruction or preservice or inesrvice training in how to develop appropriate curricula for gifted and talented students.

3.1.2. The spread of abilities in the regular classroom

Teachers are becoming increasingly disturbed by the spread of abilities they encounter in the regular (mixed-ability) classroom. Three empirical research studies may indicate the extent of the problem.

(a) A recent Australian research study surveying literacy in primary school children found “a learning gap” equivalent to at least five years of schooling between the top and bottom 10 per cent of children in each 3rd grade class surveyed in the study (Coorey, 1998).

(b) A study conducted by Deslaurier in Montreal (Gagné, 1986) graphically illustrates the management problems faced by a teacher who seeks to individualize the curriculum of a mixed-ability classroom. Deslaurier wanted to investigate the learning status, at the beginning of the school year, of students entering any particular grade level. He was interested to find

out what proportion of children already knew some of the work that was to be presented to them.

Accordingly, at the beginning of the school year, Deslaurier administered, to 96 randomly selected 5th grade students, the maths test and the French test that would normally be given at the end of the school year. (French is the first language of most students in Quebec.) The results were disturbing. Fully three per cent of the children scored 85 per cent or higher on at least one of the tests, a further three per cent scored between 80 and 84 per cent, and seven per cent scored between 75 and 79 percent. In other words, fully 13 per cent of the students - almost one-seventh of this 5th grade group - knew three-quarters of the 5th grade material in two key learning areas before the work of the school year had started. Indeed, Deslaurier found that 45 per cent of these 5th graders knew more than 60 per cent of the work.

(c) As already outlined, in the United States Flanders (1987) analyzed the content of three of the best-selling school mathematics textbook series to see how much new material was taught each year. He found that the texts required teachers to revise previously taught maths work to such an extent that, in 4th and 5th grade, less than 50% of the work children are given is new to them, while in 6th grade fully 62% of the work is review of work undertaken in previous years.

Recognition of individual differences between and among students reinforces the idea that not all learners can or should participate in similar learning engagements, or experience the same curricula. Each child is entitled to the most appropriate education according to his/her needs, interests and abilities. It is, however, extremely difficult for teachers to differentiate the curriculum for academically gifted students in a classroom setting which generally contains, as early as Year 3, a spread of at least five years in reading, the most important tool of curriculum building.

We have already alluded to the concept of levels of giftedness **(2:3).** While mildly gifted students, who appear in the population at ratios of 1:6 - 1:40, may be catered for adequately in the mixed-ability classroom through sensitive curriculum differentiation, research has found that children at higher levels of giftedness may be more adequately served through programs of ability grouping or acceleration. A child of IQ 135 appears in the population at a ratio of 1:100; such a child may pass through four years of primary school without finding

another child or similar abilities and interests. *A child of IQ 145 (1 in 1000) may pass through the 13 years of schooling without encountering another of similar abilities.*

Summary: The spread of abilities in the regular classroom

The range of abilities in the regular classroom requires that gifted students have to revise, repeatedly, with their classmates, material they have already mastered.

It is extremely difficult, if not impossible, for teachers to individualise curriculum provision in a classroom which contains, as early as Year 3, at least a five year spread of achievement in reading, the primary tool of learning.

While the mixed-ability classroom, with appropriate curriculum differentiation, may be a suitable learning environment for many gifted students, it may not be an appropriate or facilitative learning or social environment for more highly gifted students.

3.2. Accelerated progression

(Please note that elements of this section may also appear in the literature review which GERRIC developed for DETYA.)

3.2.1 Introduction

Acceleration of academically gifted students is much more comprehensively used in New South Wales than in any other Australian state. More than 9000 gifted and talented students have been accelerated in NSW through grade advancement, single subject acceleration or early entrance, since 1991, with a high degree of success.

Historically, this occurred because, until the state's education legislation was changed in 1990 with the development of the Education Reform Act, students were legally required to spend seven years in primary school, regardless of their level of intellectual ability or their academic or social readiness to enter secondary education. The Education Reform Act removed this requirement and, as a consequence, the NSW Department of School Education

included a special focus on acceleration in its 1991 policy "Strategies for the Education of Gifted and Talented Students" while the NSW Board of Studies (the state curriculum authority) developed a complementary document "Guidelines for the Accelerated Progression of Gifted and Talented Students" adapting the existing international guidelines for Australian use. *This provided teachers with an official policy on acceleration combined with a practical structure and a set of model strategies which had proven effective overseas.* These two teacher-friendly documents, combined with the Department of School Education's decision to commit funds over the period 1992-1993 to inservice teachers on the practical use of acceleration for gifted students, ensured acceptance and use of the "new" procedures. *Inservicing teachers on new techniques empowers them to use these techniques. It should be noted that teachers in other states, who have not received such inservice, are very much more reluctant to accelerate gifted students for fear of causing social or emotional damage or distress to the students.*

3.2.2 What is Acceleration?

Acceleration is a natural response to an educational decision that competence, rather than age, should be the criterion for determining when an individual obtains access to particular curricula or academic experiences. It is an accepted practice in the arts and sport, where grouping for instruction according to age is not utilised (Benbow, 1998). In music and sport, for example, instructors determine the relative areas of strength and weakness of a child and then work with them at a level slightly above their demonstrated level of mastery, the level at which research shows that people learn best (Vygotsky, 1962). Just as children of the same age are expected to display variations in physical development, it is reasonable to expect variations in intellectual development among age peers. People vary at every age in their physical size, social and emotional maturity, and intellectual development, and education needs to respond to these differences if it is to be effective.

3.2.3 Teachers' Misconceptions Regarding Acceleration

In the United States Southern, Jones & Fiscus (1989) surveyed 550 teachers on their attitudes towards acceleration. Their findings were not encouraging. They listed four principal

concerns of educators regarding the possible maladaptive effects of acceleration on gifted students. Teachers feared that accelerated students would:

- lose their academic advantage in later school years,
- experience difficulties in social and emotional development as a result of being relatively young and mediocre in achievement compared to their older classmates,
- lack the physical and emotional maturity to handle the stress of acceleration,
- become arrogant or elitist in their attitudes toward others.

However research in both the United States and Australia (Benbow, 1998; Gross, 1993, 2000) has shown that these fears have little foundation in fact. Indeed thoughtfully planned and carefully monitored acceleration of gifted students results in positive changes to students' academic development and a greater social acceptance by the older students with whom the accelerated students are placed, than by their chronological aged peers (Gross, 1994b, 2000). Southern, Jones & Fiscus (1989) found that teachers who had misgivings about acceleration in general had minimal or no awareness of the research on the effectiveness of acceleration; furthermore they tended to have had no experience in teaching accelerated students. By contrast, respondents to the survey who had actually taught accelerated students, or who were in schools where gifted students had been accelerated, had much more positive attitudes to the use of acceleration.

3.2.4 Accelerative Options

Many people believe that acceleration is simply another term for grade skipping, and this in itself may create objections among educators. However, acceleration is far more than this; it allows for the development of a variety of options. These options, which Benbow calls "curricular flexibility" (Benbow, 1998, p.282) may be a combination of acceleration, enrichment, and out-of-school opportunities that best reflect the educational needs of a student. They include:

1) Early entry to school (Proctor, Feldhusen, & Black, 1988). This is one of the best options for meeting the needs of gifted students whose advanced abilities are evident at an early

age. It allows the student to enter school with a peer group with whom he or she will remain.

2) Grade skipping (Proctor, Black and Feldhusen, 1986). This is a common form of acceleration. Grade skipping is especially recommended for highly gifted students who are advanced in all subjects relative to their classmates, and it is most effective when implemented at a natural transition point in schools. For example, a particularly useful time to skip a grade is the year before there is a transition to a new school. That is, the recommendation may be made to have a child skip Year Six and move to Year Seven at the high school level. This student would then be placed in an environment where the incoming Year Seven students come from a number of different schools and situations, and thereby the accelerated student would not be conspicuous to other grade peers.

3) Compacting the curriculum. In this option, the curriculum is compacted in a way that it can be completed by gifted students in much less time. One means of doing this is to allow students to skip those units in which they have already attained mastery. Alternatively, diagnostic testing can be used to determine what the student knows and does not know in a subject matter area; then the student is taught only those concepts that he or she has not already mastered (Gross, Sleap and Pretorius, 1999).

4) Completing two years of a subject in one year. With this option, the student doubles up on courses in one year in order to subsequently reach higher level course work.

5) Content acceleration (Kolitch & Brody, 1992 Jaggar, 2000). In this form of acceleration, a student may take a course one or two years earlier than is typical. For example, a Year Seven student who is highly gifted in mathematics may take his or her maths classes with the Year Eight or Nine cohort, but remain in Year Seven for all other subjects. Dr Kim Jaggar, currently Principal of Sydney Boys High School, undertook an EdD study of 306 New South Wales high school students while they were actually in the process of subject acceleration, following them through to the conclusion of the program. The findings strongly supported this accelerative process.

6) Telescoping curricula. Through this procedure, schools provide students with the means of completing, for example, two years of high school in one, three years in two, or four years in three. Research indicates that there are very positive academic outcomes for high school students who experience curriculum telescoping, particularly when the experience is with

a cohort of gifted students (Rogers, 1992; Muizneiks, 2001). Dr Carol Muiznieks, a New South Wales state school teacher conducted, for her PhD, a five year longitudinal study of students in a Sydney Selective High School who compacted the six years of secondary schooling into five years. The considerable majority of the students experienced highly positive outcomes and said they would repeat the experience if they had the choice over again..

7) Advanced Placement (AP) courses and examinations. In the United States, AP courses are college-level courses taught in high schools that may garner college credit for the student if his or her final AP scores are sufficiently high. There are approximately 30 different AP courses that high schools can offer. The Advanced Placement program provides to schools, at no cost or at a nominal cost, syllabi and complete instructions for conducting AP courses. At the end of an AP course, students must take an AP examination, administered by the Educational Testing Service (ETS), and score well if they are to become eligible for college credit. Many professionals in gifted education in the United States view AP courses and exams as the best program option high schools can provide to their gifted students. Research has shown that students who completed AP courses had better academic records in college, graduated from college with more honours, engaged in more leadership activities, and took more advanced courses in college than students of equal ability who did not complete AP courses (Willingham & Morris, 1986).

8) Individual tutoring or mentoring in advanced subject matter. Sometimes it is not practical or advisable to grade advance or subject accelerate a gifted student, or to further accelerate a gifted student who has earlier been accelerated. In such a case, individual tutoring or mentoring at a level beyond what would be normally experienced for the student's age, may be an option. This may be provided by a university student, an older and more advanced gifted student, an expert in the field or a teacher.

9) The International Baccalaureate (IB) Program. The IB Program is designed to facilitate admission to colleges and universities around the world. A number of independent schools in New South Wales and a state high school in South Australia have introduced the IB Program to their teaching programs and students may elect to complete this instead of the usual state senior program, such as the Higher School Certificate in New South Wales.

10) Concurrent enrolment at school and university. As with content acceleration, students gifted in any subject area may obtain access to a university level course in that subject at the same time as completing other subjects at the high school level. Research has indicated that this form of acceleration provides substantial improvement in psychological adjustment for the gifted students involved (Rogers, 1992).

11) Fast-paced summer or academic year university courses (Swiatek & Benbow, 1991). A number of universities in the United States offer fast-paced summer courses. In these programs, students who as Year Seven students scored at the level of college-bound, high school seniors on the SAT or American College Test (ACT) study one topic in depth and at fast pace so they cover a semester of college work or a year of high school work in about three weeks. Students can master in three weeks, a year of high school physics, a semester or writing at college level or a semester of university level mathematics. Long-term evaluations of programs offering fast-paced classes have been extremely positive (Benbow, Lubinski & Suchy, 1996).

12) Early entry to University (Brody & Stanley, 1991; Janos, Robinson & Lunneborg, 1989). Several Australian universities, including the University of New South Wales and the University of Melbourne, accept early entrants.

13) Entering an early-entrance University program specifically designed for gifted students (Stanley, 1991). These programs, although they vary widely in their philosophy and approach, are designed to meet the needs of students who are ready for University but would like to be part of a peer group who have made the same decision to leave high school early. Many students complete these programs and then transfer to another university where they eventually receive their degrees. In New South Wales, the University of Wollongong offers one such early entry program where students who have completed Year Ten or Eleven may apply to complete a one or two semester early entrance program. Completion of this program provides eligibility into a full degree program at that university as well as a number of other universities in Australia.

14) Distinction Courses. In New South Wales gifted students who have taken one or more HSC subjects a year early can enrol in fast-paced, highly enriching Distinction Courses offered by the New South Wales Board of Studies.

Stanley described this remarkable range of accelerative procedures a *smorgasbord* of accelerative opportunities (Stanley & Benbow, 1982). Educators can help a gifted child select either one or a combination of accelerative opportunities that will provide an education commensurate with his or her abilities. Some gifted students may choose none of the options or one only, whereas others may select a combination of approaches. The possible combinations are endless. These options have a research base that indicates substantial academic achievement gains for the students involved and most provide a direct positive effect on the students' social skills and self concept.

"If teachers have avoided offering these practices to bright students out of concern for the social and emotional effects, such misgivings should be laid to rest. Those who wish to enhance outcomes in affective areas for accelerated students, however, might consider the assistance of a school counselor or a support group. With careful attention to the cognitive, social and emotional needs of prospective accelerated students, teachers and administrators can recommend from an array of practices with the confidence that the child will not only survive but will thrive in a more challenging learning environment" (Rogers, 1992, p.61).

3.2.5 Radical Acceleration of Exceptionally Gifted Students

Radical acceleration of exceptionally and profoundly gifted (IQ 160+) students involves a series of carefully planned and monitored grade skips spaced over the course of the student's school career (Gross, 1992, 1993, 1994b, 1998, 2000). There is considerable research evidence which also suggests that these students benefit from entering university several years early (Brody, Assouline & Stanley, 1990; Noble & Drummond, 1992). This research highlights the superior academic achievement of early entry students as opposed to those equally gifted students who did not enter early. Additionally, this research documents that the experience of early entry has no negative effects on, but rather enhances, the social and emotional development of accelerants (Gross, 1994b).

There are profound differences between moderately and exceptionally gifted students on almost every cognitive and affective variable studied (Gross, 1993) and identification procedures and programs developed to serve the needs of the moderately gifted will not generally be appropriate for the exceptionally gifted. These exceptionally gifted students

require a program which is significantly different in the pace and content offered to the moderately gifted (Gross, 1994b). They require contact with intellectual peers, rather than their age peers who will not understand them, or they will be placed in a "forced-choice dilemma" (Gross, 1989). If an exceptionally gifted student's need for social acceptance is higher than his or her need for academic satisfaction, then the student may choose to severely moderate his or her achievements to gain the social acceptance of age peers. This problem becomes even more heightened during adolescence when being "different" is not accepted. Professor Miraca Gross of UNSW has since 1983 conducted a longitudinal study of the academic, social and emotional development of 60 exceptionally and profoundly gifted Australian students. Few of the students studied had experienced any form of acceleration and the majority had practised deliberate underachievement for peer acceptance from their early years in school. However, of the 60 students, 16 have been permitted radical acceleration and subsequently studied at the university level with mental age peers who were three or more years chronologically their seniors. In comparison to the students not permitted such acceleration, their social self-esteem was more than one standard deviation above that of the non-accelerated students (Gross, 1993). They also displayed higher levels of motivation and the pressure to underachieve for social peer acceptance was significantly diminished.

"Radical acceleration would be unsuitable for the moderately gifted student, whose intellectual and psychosocial development are not as advanced as those of the exceptionally and profoundly gifted. However, for the extremely gifted, placement with students not simply one year, but several years, beyond their age, has strongly beneficial effects on their social adjustment, when the acceleration occurs through a series of carefully planned and monitored grade-skips" (Gross, 1994b, p.33)

3.2.6 Guidelines for Using Acceleration

As previously mentioned in the opening statement of this section on acceleration, the NSW Board of Studies has developed a document "Guidelines for the Accelerated Progression of Gifted and Talented Students" which adapted international guidelines for Australian use. This is a teacher-friendly document which provides logical steps for procedures to undertake when considering acceleration as an educational option for a gifted student.

Gross (2001) has synthesized the international and NSW Board of Studies guidelines on accelerated progression.

Guidelines for the acceleration of gifted and talented students

- For whole grade advancement, the student should probably have an IQ of 135. (One in 100 in the population). For subject acceleration, the student should probably have an IQ of 125. (One in 20).
- The student should be achieving above the mean of the grade he or she intends to enter.
- There should be an absence of serious adjustment problems (except those *caused* by an inappropriate grade placement).
- The student should be in good health; however physical size should only be considered an important factor where the student has a talent or passion for sport or athletics.
- The student should be eager to accelerate.
- The receiving teacher must have a positive attitude towards the acceleration and be prepared to facilitate it.
- Choose natural transition points where possible. (This is *not* limited to the end of the school year.)
- There should be a trial period of several weeks.
- Teachers, parents and the student should avoid excessive expectations. Acceleration is not a "miracle cure".
- Use group acceleration where possible.
- Give support in those few cases where the student needs to de-accelerate, so that the student is not left with a sense of having failed.

(Gross, 2001)

In January 2001, GERRIC conducted a workshop for over 60 teachers and school counsellors from around Australia on the use of the Iowa Acceleration Scale (IAS). The workshop was led Dr. Nicholas Colangelo, Director of the Belin-Blank International Center for Gifted Education and Talent Development at the University of Iowa who is one of the developers of the scale. The IAS has been developed to guide educators in making important decisions regarding whether or not particular students are good candidates for whole grade acceleration. The IAS is designed for use with students in grades K - 8. The scale provides educators and parents with guidelines to help them make educated and appropriate placement

choices for children who demonstrate high ability and a capacity to process more information and knowledge than they are able to acquire in the present learning environments. The IAS has been developed over a ten year period from the research and clinical experiences of staff at the Belin-Blank Center.

3.2.7 Enhancing the Effectiveness of Acceleration

Benbow (1998) suggests that in order to further enhance the effectiveness of acceleration for gifted students, educators may want to consider the following:

- Accelerating more than just one student.
- The need for program modifications in addition to acceleration (e.g., career counselling, enrichment, independent study, mentorships, teaching higher order thinking skills, or teaching problem solving).
- Selecting a teacher who endorses acceleration, has the ability to modify the curriculum appropriately for gifted learners, exhibits an advanced knowledge base, and has good classroom management skills.
- Having students complete some university or advanced level courses if they are to enter university early.
- Arranging opportunities for students to interact socially with older students prior to acceleration, to ensure they will feel comfortable with their new peer group.
- Helping and advising students to avoid publicity and avoid discussing their age, when this is not necessary, with their new peer group.

(Benbow, 1998)

Summary: Accelerated Progression

Acceleration is not simply one procedure, such as grade skipping, but a "smorgasbord" of options through which academically gifted students may receive a developmentally appropriate educational placement.

Contrary to the concerns of many teachers, acceleration has a strong research base, and thoughtfully planned and well monitored acceleration results in strongly positive academic and social outcomes for gifted students, and does not result in social or emotional maladjustment.

Teachers who have taught accelerated students, or who teach in a school where students have been accelerated, have much more positive attitudes towards acceleration than do teachers who have not been exposed to this procedure.

Research shows that radical acceleration, while it would not be appropriate for moderately gifted students, is a viable and strongly effective option for extremely gifted students.

A number of practical effective checklists exist (for example, the Iowa Acceleration Scale and the New South Wales Board of Studies Guidelines for Accelerated Progression) to assist teachers in determining the appropriateness of acceleration for individual gifted students.

3.3 Ability and achievement grouping

3.3.1 Issues in ability grouping of academically gifted students

Over the last four decades a substantial body of research has investigated the academic and socio-affective outcomes of a range of programs which have grouped, for the purposes of instruction, students of similar ability and/or achievement in a variety of subject areas. More than 10 forms of ability grouping have been evaluated (Rogers, 1991). Research consistently shows measurable academic gains for gifted students across all subject areas, particularly when the grouping is fulltime and when, as advised in the previous section on curriculum design, the curriculum is differentiated in pace, depth and academic rigor to match the students' learning characteristics. Comprehensive syntheses of the research on ability and achievement grouping of gifted students have been undertaken by Rogers (1991), Kulik (1992), Gross (1993), Kulik and Kulik (1997), Gross (1997b) and Benbow (1998).

Research shows that ability grouping improves the achievement of high-ability students, particularly high ability students from minority groups (Page and Keith, 1996). Students in ability grouped classes where the curriculum is accelerated as well as enriched have been shown to gain in grade-level competencies at twice the normal rate, while even students in ability grouped classes whose curriculum consists principally of enrichment were shown to progress at rates 50% higher than ability peers in the mixed-ability classroom (Kulik, 1992). The only form of ability grouping which has little effect is when gifted students are grouped by ability but receive the same curriculum, at the same pace, level and degree of complexity, as they would have received in the regular classroom. Gifted students in this form of grouping achieve only one month's gain per year over ability peers in the mixed-ability classroom - a miniscule gain compared with the gains recorded for gifted students in other forms of ability grouping (Kulik, 1992).

The effectiveness of ability grouping is due to several factors, analysed by VanTassel-Baska (1989), Rogers (1991) and Benbow (1998):

- It provides a better match between the developmental readiness and learning needs of a given student and the level and pace of the instruction he or she receives.

- Students differing in ability respond differently to different educational strategies or teaching methods.

- Students learn more effectively when they work with students who are at their own level of competence or just above. (Benbow, 1998 compares this to the similar situation in sport or athletics when one's game improves when one plays with equally skilled, or *slightly* more skilled, teammates or partners.)

- Grouping provides a challenge for gifted students to strive to excel; there is less pressure to underachieve for peer acceptance

- Grouping makes teaching very much easier by restricting the range of ability or achievement. As discussed earlier (**3:1:2**) a recent Australian study which surveyed literacy in primary school children found "a learning gap" equivalent to at least five years of schooling between the top and bottom 10 per cent of children in each Year 3 class surveyed in the study (Coorey, 1998).

In 1991 the American National Research Centre on the Gifted and Talented published Rogers' best-evidence synthesis of the wide range of research studies evaluating the ability grouping of academically gifted students. The report contained six critical recommendations:

1) Students who are academically or intellectually gifted and talented should spend the majority of their school day with others of similar abilities and interests.

2) The Cluster Grouping of a small number of students, either intellectually gifted or gifted in a similar academic domain, within an otherwise heterogeneously grouped classroom, can be considered when schools cannot support a fulltime gifted program (either demographically, economically or, unfortunately, philosophically).

3) In the absence of fulltime gifted program enrolment, gifted and talented students might be offered specific group instruction across grade levels, according to their individual knowledge acquisition in school subjects, either in conjunction with cluster grouping or in its stead.

4) Students who are gifted and talented should be given experiences involving a variety of appropriate acceleration-based options, which may be offered to gifted students as a group or on an individual basis.

5) Students who are gifted and talented may be offered experiences which involve various forms of enrichment that extend the regular school curriculum, leading to the more complete development of concepts, principles and generalisations.

6) Mixed-ability Cooperative Learning should be used sparingly for students who are gifted and talented, perhaps only for social skills development programs.

(Rogers, 1991. p. xii- xiiii).

3.3.2 Methodologies of ability grouping

There is no “one” perfect grouping structure. Each has its advantages and its disadvantages. In addition, schools have to work within certain constraints; for example, a school population may be too small to make feasible the development of a full-time class of gifted students, or a

community may be too isolated to permit the establishment of a special school. However, there is a wide range of grouping options that school communities can consider.

Here follows an analysis of the strengths and weaknesses of various forms of ability and achievement grouping of gifted and talented students. The recommendations are adapted from Borland's excellent evaluations of program formats in his 1989 text *Planning and implementing programs for the gifted*. The heterogeneous (mixed-ability) classroom is examined along with the others, as schools which employ this structure for all their students *are* making a deliberate choice of grouping strategy, with chronological age serving as the primary, or only, factor in determining student placement.

(a) Special schools for gifted and talented students

Grouping Structure: Special schools for gifted and highly able students provide a fulltime grouping structure. These schools may serve academically gifted students, or students gifted in music, the performing arts, and sport and athletics. The Selective High Schools in New South Wales are an example of this structure.

As noted above, Professor Karen Rogers, in her synthesis of the research on ability grouping for the American National Research Center on the Gifted and Talented (undertaken at the same time as the Kulik research, which it confirms), commenced her recommendations regarding grouping practices with the statement: *"Gifted and talented students should spend the majority of their school day with others of similar abilities and interests"* (Rogers, 1991, p. xii).

Advantages:

- high level of peer support, both academically and socially (Adams, et al., 1992).
- ongoing contact with other students of like abilities and interests.
- little pressure to underachieve for peer acceptance (Lubinski and Benbow, 1995).
- curriculum more likely to be truly differentiated to the needs of the gifted
- students in Selective High Schools experience a rise in self-esteem (Gross, 1997b).
- more chance of having a teacher who is interested in (or at least tolerates?) gifted and talented students.

Disadvantages:

- Some students have to travel long distances.
- No *guarantee* that teachers will be receptive to gifted children or trained in gifted education.
- Local schools may have a negative attitude towards the establishment of special schools for the gifted in their area.
- This format may be impractical for small population centres.

(b) Fulltime self-contained classes

Grouping Structure: Full-time classes for gifted students within comprehensive schools. New South Wales Opportunity Classes are an example of this.

Advantages:

- Continuous contact with age and ability peers.
- Regular contact with students of broader range of ability.
- The opportunity for a truly differentiated curriculum.
- Lower incidence of underachievement.
- Class teacher generally inserviced in gifted education and may even be trained.
- Not costly to establish or implement.

Disadvantages:

- Friction may arise between the gifted class and other classes if the staff does not handle the situation sensitively.
- May arouse parent friction.
- Requires staff commitment and administrative support.

(c) Pull-out (withdrawal) programs

Grouping Structure: Gifted students are withdrawn from mixed-ability classes for regular instruction with other gifted students.

Advantages:

- Children experience both homogeneous and heterogeneous grouping.

- The withdrawal program is a familiar model for teachers.
- Allows for a variety of groupings.
- Several staff members can share responsibility for the program: this allows for a broad sense of ownership.

Disadvantages:

- Not enough contact time for appreciable efforts.
- Curriculum can easily become trivialized.
- Because the gifted students are together for such a short period of time VanTassel Baska has called this "an 8 percent solution to a 100 percent problem."
- The regular class teacher may require the gifted student to do "catch-up" busy work.
- Difficult to time-table and can be disruptive to school program.
- An unsupportive regular class teacher can cause many difficulties.

(d) Subject specific grouping

Grouping Structure: Gifted students are grouped with other gifted students only for those subjects in which they show high achievement or aptitude.

Advantages:

- Recognises subject-specific abilities.
- Changing groups is not as disruptive as with some other modes.
- *Possibility* for curriculum to be clearly differentiated.

Disadvantages:

- Can be difficult to timetable.
- Compromises on quality of instruction.
- A truly differentiated curriculum may never emerge.

(e) Cluster grouping

Grouping Structure: Between six and ten gifted students are clustered for fulltime instruction within an otherwise mixed-ability classroom.

Advantages:

- Gifted students have some access to age and ability peers.
- The teacher is more likely to develop a differentiated curriculum than when she has only one or two gifted students to respond to.
- A very cost-effective model.
- No timetabling problems, so reduces disruption.

Disadvantages:

- The teacher must be carefully selected.
- Places a heavy workload on the teacher.
- A truly differentiated curriculum may never emerge.

(f) Mixed-ability classroom.

Grouping Structure: The classroom maintains full-time heterogeneous grouping by chronological age and makes the class teacher responsible for providing special services.

Advantages:

- The gifted child has contact with students of a wide range of ability.
- All class teachers have the opportunity to teach the gifted students.

Disadvantages:

- A truly differentiated curriculum is unlikely to emerge.
- The majority of gifted students perform several years below their ability level in the regular classroom.
- The gifted student experiences on-going peer pressure to moderate his/her performance.
- The gifted student has little or no access to other students of like abilities or interests.
- Teacher unlikely to have had any training, or even inservice, in gifted education.
- This format places the greatest strain on the most conscientious teachers.

Influenced by a considerable body of research on the positive effects of ability grouping on both the academic and social development of gifted students, virtually every recognised authority on the education and psychology of the gifted has recommended that intellectually gifted students should be grouped together for a significant proportion, if not all, of their class time (Hollingworth, 1942; Tannenbaum, 1983; Feldhusen, 1985; Borland, 1989; Kulik, 1992; Rogers, 1991). Even educators who express concern about the practice of grouping slow learning students by ability (e.g. Oakes, 1986; Johnson and Johnson, 1989) report on the benefits that accrue to gifted students when they are grouped for fast-paced, accelerated work.

Unfortunately, in both the United States and Australia, decisions regarding student placements have, all too often, been based not on educational and psychological principles, but on political expediency and administrative convenience, or on a concern for "equity" which confuses equal opportunity with equal outcomes.

In special education, we seek to place the student with special needs in "the least restrictive environment". For the gifted student, the mixed-ability, inclusion class may not be the least restrictive environment, while for the highly gifted it is arguably the most restrictive environment we could devise (Silverman, 1989; Gross, 1993).

In planning class structures and student placements, we should remember that the client group which the education system is set up to serve is not the teaching body, the school administration, or even the parents, but the children themselves. It is their needs which must receive primary consideration.

3.3.3 Teacher resistance to ability and achievement grouping

Teacher resistance to ability grouping has been based on a number of concerns. (The list of concerns below has been synthesized by Benbow, 1998). ***It is important to note that these concerns are not supported by research, and in most instances, are actually contradicted by the findings of research.***

- ***Concern***: That ability grouping negatively effects self-concept by stigmatizing those who are in the lower groups.

◊ ***Response***: This assumes that a school would group all students by ability which is seldom the case. Grouping gifted students together does not require that less able students be likewise grouped. In any case, this argument it is not supported by research. Kennedy (1989) found that children of average and low ability enjoyed having the gifted students withdrawn from the classroom; they then had a chance to shine. Fiedler, Lange and Winebrenner describe an elementary school student's comments when the gifted students had left the classroom. "When Bill (the gifted student) was in class, it was like the sun shining on a bright, clear day. But when he went out to work with the other gifted kids, it was like when the sun goes over the horizon. The rest of us were like the moon and stars; that's when we finally got a chance to shine" (1992, p. 7). In any case, as Goldberg pointed out as far back as the early 1980s, Australian educators seem to have no qualms about identifying talent in sports, athletics, or music, and providing specialized programs for children excelling in these areas (Goldberg, 1981).

- ***Concern:*** That gifted students entering special classes or schools for the gifted will experience a serious decrease in self-esteem through no longer being one of the brightest students in the class; the "big fish in the little pond" as Marsh and Parker (1984) describe it. This is often coupled with the concern that gifted students in special programs will become arrogant and conceited.

◊ ***Response***: Gifted students do not, in general become arrogant or conceited when placed in special programs; rather, it has a salutary effect in helping them realise that there are other students as bright, or brighter, then they. Neither, however, do they generally suffer a serious loss of self-esteem. Professor Miraca Gross's Australian research on self-esteem shifts in gifted students in ability grouped settings is discussed in the later section on self-esteem research.)

- ***Concern***: The perception that ability grouping makes children conceited about their academic ability.

◊ ***Response***: In 1971, in the United States a nation-wide report commissioned by Sidney P. Marland, the U.S. Commissioner of Education, showed evidence to the contrary.

> *The relatively few students who have had the advantage of special programs have shown remarkable improvements in self-understanding and in their ability to relate well to others, as well as in their academic and creative performance. The programs have not produced arrogant, selfish snobs; special programs have extended a sense of reality, wholesome humility, self-respect and respect for others. A good program for the gifted increases their involvement and interest in learning through the reduction of the irrelevant and redundant."*
>
> (Marland, 1971, p. 51)

(It is difficult, incidentally, to support both the view that ability grouping makes gifted students and the view that it diminishes their self-esteem. The fact that opponents of special programs for gifted students regularly put forward both arguments makes one question the objectivity of their objections.)

♦ ***Concern***: The belief that if gifted students are "creamed off" from regular classes, less able children will use valuable role models from whom they can learn.

◊ ***Response***: Fiedler, Lange and Winebrenner (1992) point out this idea is based on three false assumptions: firstly, that gifted students are consistently highly motivated achievers who will inspire others to similar accomplishments; secondly, that gifted students placed in inclusion classrooms will perform at their peak if they lack regular opportunities to interact with intellectual peers who can stimulate their thinking: and thirdly, that the less able or average students will be able to learn effectively from gifted students whose modes of thinking and working are so different from theirs. Schunk's (1987) research finds that children of average and low ability do not, in any case, model on high ability or gifted children; rather, they model on students of roughly similar ability to themselves who have succeeded in what they are trying to do. Gifted students are too far removed in ability from the average student to be an appropriate role model for these children - and the average ability students recognise this, and model on students whose achievements they can more realistically hope to emulate. Research by Fielder, et al (1992) shows that when gifted students are removed from a class, a new set of able students rises to the top and becomes the "more able " student group within the class).

♦ ***Concern***: That grouping may segregate students along ethnic and socio-economic lines.

◊ ***Response***: Where this happens, it is not a function of grouping *per se* but rather of inappropriate identification of gifted students. Strategies which are effective in identifying gifted students from minority and disadvantaged groups have been discussed at length earlier in this document. Again, we would point out that ability grouped programs such as Opportunity Classes and Selective High Schools in New South Wales, which employ objective (test-based) as well as subjective (teacher and parent nomination) selection procedures, enrol students from a wide range of socio-economic and cultural settings.)

♦ ***Concern***: The perception that most adult experiences do not occur in homogeneous groups and that gifted children must learn to interact with all types of people.

◊ ***Response***: Allowing gifted students to work in school with others of their own ability is hardly cutting them off from contact with the wider world. It is worth noting, however, that in adult life people choose careers on the basis of ability and interests (Lofquist and Dawis, 1991), many close friendships tend to be formed in the workplace, and we tend to choose friends and marriage partners from people of roughly similar ability to our own. Life for adults is much more homogeneous than it is for children. This clustering of like minds and like interests in adulthood is possible only because adults are mobile and can develop their own social groupings. The gifted child who has her primary social group - her school class - selected *for her* by her school on the basis of chronological age, may be placed with a group with whom she has little compatibility either on the basis of ability or interests. This may be administratively convenient for the school, but it is neither educationally nor psychologically defensible.

Unfortunately, over the first half of the 1990s, many American schools systematically disbanded programs of ability grouping for gifted students. The reasons for this were not educational but socio-political in nature, and related to the ever-present tension between the desire for equity and the need for excellence in any nation's educational system. The social politics underpinning this move have been perceptively analysed by Benbow and Stanley (1996). The negative educational outcomes for gifted students, particularly those from disadvantaged and minority groups, are disturbing (see, for example, Purcell, 1993) and in the last few years several states have begun to restore programs of ability grouping,

especially through the medium of cluster grouping (described in Roger's recommendations, above, as a fallback procedure). It is vital that Australia avoids a similar erosion of the few exemplary grouping programs which exist in this country and that, instead, the Federal and State governments encourage and foster the expansion of such programs. It might be useful for the state education department of New South Wales to be encouraged to release the findings (as yet not made public) of the "value added" research undertaken on the academic success of students in Selective High Schools.

Summary: Ability grouping of gifted students

This is an important and sensitive issue. Basically the facts are:

- The academic gains to gifted students participating in programs of ability grouping are incontestable.
- Academic gains are greatest for students in fulltime ability grouped programs.
- Findings on socio-affective outcomes of ability grouping are somewhat less clear but no research exists which supports the contention that gifted students in ability grouped programs experience a substantial or lasting decrease in self-esteem. (See next section.)
- Teacher concerns about negative outcomes of ability grouping of gifted students are not supported, and are often contradicted, by research.

3.3.4 Self-esteem issues related to ability grouping

"The social/emotional needs of gifted kids frequently escape the attention of educators who have so much potential to help them. Self-esteem is in part dependent upon their perception that they are accepted and appreciated for the individuals they are. Discussion groups are one way to facilitate strong self-esteem for gifted youngsters, enabling them to accept that high intelligence is "normal" for them and that being true to themselves is not as scary as it may seem" (Winebrenner, 1999).

Intrapersonal difficulties experienced by gifted students - for example low self-concept, self-acceptance or self-esteem - may lead to the development either of appropriate coping strategies or dysfunctional behavioural responses (Silverman, 1993; Gross, 1993). When self-concept is secure, the drive towards excellence is less likely to be influenced by negative societal pressures and thus it becomes, along with its affective aspect, self-esteem, a facilitative factor in the realisation of intellectual ability or potential.

The development of a secure and healthy academic self-concept depends on honest and accurate feedback on one's performance from one's teachers and classmates. Gifted students often receive invalid feedback from classmates motivated by envy or resentment. This may result in poor self-esteem and low self-concept, resulting in a cycle of diminishing motivation and deliberate underachievement (Gross, 1989). This can often be avoided by allowing gifted students to work with ability peers who are less likely to provide false feedback on their achievements.

It is important to note that when gifted students are grouped together for instruction, the experience of studying with intellectual peers may actually lower academic self-esteem slightly (Marsh, et al, 1995). However, rather than this being interpreted as a negative outcome, it should be remembered that to develop a realistic understanding of their own abilities, gifted students do need to measure their performance against others of the same ability. The dip in self-esteem, particularly when it is already high, as is usually the case with gifted students, can be seen as a realistic response to the realisation that there are others as bright as oneself.

Silverman (1998) proposes that compared with other children, as a group the gifted tend to be more highly motivated, often with a strong desire for self-advancement; often have unusually emotional depth and intensity; tend to have higher self-concepts and stronger ego strengths; are inclined to be greater risk-takers; tend to be more sensitive to the expectations and feelings of others; often express idealism and a sense of justice earlier. They tend to be more independent, more forceful and more competitive. However, there has been considerable variability among the results of studies on the self esteem of gifted students (Hoge & Renzulli, 1993). Some studies have noted rises in self-esteem when students are moved from mixed ability settings to ability grouped settings, some have noted a dip in self-esteem, whilst others have noted no change at all. For discussions of this body of research see

Rogers (1991), Kulik (1992), Hoge and Renzulli (1993), Gross (1993), Kulik and Kulik (1997).

Gross (1997b) has analysed six factors which have contributed to the ambiguity of these research results.

7) "Single-shot" studies. The majority of studies have measured the gifted students' self-esteem on only one occasion, while the subjects are either enrolled, or not enrolled, in a special program. This makes it impossible either to compare subjects' self-esteem before and after program entry, or to trace shifts in self-esteem throughout the program.

8) Reporting of total scores alone. The majority of researchers studying self-esteem in gifted students have reported only total scores, rather than subscale scores. This does not permit the observation of variations among different aspects of a subject's self-esteem.

9) Nature of program not considered. Programs of very different nature or duration cannot be readily compared. The affective outcomes of a full-time homogeneous class, for example, are likely to differ from those of a three-week summer intensive, and differ again from those of a 90 minute per week pullout program.

10) Levels of giftedness not considered. A variable seldom considered is the level of giftedness of the students served by the program. A mildly gifted student of IQ 116 may interact daily, in the mixed-ability classroom, with several age-peers of similar ability; however, a highly gifted student of IQ 146 may pass through her entire schooling without meeting an intellectual peer. The experience of working, in a gifted program, with students of similar ability, may affect those two young people quite differently.

11) Ceiling effects. A number of instruments designed to measure self-concept or self-esteem generate considerable ceiling effects for gifted students. The group as a whole scores at or near the ceiling of the test, it becomes impossible to discriminate among individual scores and the test's capacity to measure gain is severely restricted. Instruments which generate a ceiling effect are unsuitable for use in investigations requiring a repeated measures design (for example, to ascertain shifts in self-esteem over time) as the statistical phenomenon of regression towards the mean can give the false impression of a downward shift where no such shift exists.

12) Confusion as to the variable being measured. The situation is further complicated by a tendency, among several researchers, to use the terms "self-concept" and "self-esteem" synonymously, and instruments designed to measure the one construct have not infrequently been used to measure the other. Several of the studies reported in Hoge and Renzulli's publication on self-concept (1993(Hoge and Renzulli, 1993)) are actually studies of self-esteem.

In part because of the six factors outlined above, the question of whether ability grouping tends to raise or lower the self-esteem of gifted students has not been answered conclusively.

However, a major Australian study conducted by Gross (1997b) of self-esteem shifts in students in NSW Selective High Schools and in comprehensive high schools found that selective high school students had higher self-esteem scores than did the comprehensive students on all aspects of self-esteem (academic, social, home/family, and general self-esteem) and at all times during the study. Both selective and comprehensive students displayed a dip in academic self-esteem over the course of their first year in high school (which is fully congruent with many studies of adolescents entering secondary education). However, both at the beginning and close of the study the academic self-esteem of the selective high school students was much higher than that of their age-peers in comprehensive schools.

Self-esteem appears to be linked to motivational orientation, with students who are task-involved (motivated to learn for the love of learning) displaying higher self-esteem than students who are ego-involved (motivated to learn for the purpose of displaying superior achievement). The few students who did experience a disturbing less in academic self-esteem during the course of Year 7 (fewer than five per cent of the student group) tended to be highly ego-involved.

3.4 Recommendations arising from Section 3

1) Earlier in this document, we recommended that a committee be convened, with representation from each state, whose brief will be the development of an Australian National Policy on the Education of Gifted and Talented Students.

We further recommend that the Committee's brief should include:

- The endorsement, in the policy statement, of the use, in all states, of a range of ability and achievement groupings which research has found to be particularly effective with gifted and talented students.
- The endorsement, in the policy statement, of the use, in all states, of the many forms of accelerated progression which research has found to be particularly effective with gifted and talented students.
- The endorsement, in the policy statement, of the adoption of tested guidelines for the acceleration of gifted and talented students.

2) Earlier in this document we recommended that the Commonwealth Government should fund, nationally, inservice programs for practising teachers.

We further recommend:

- That these programs include practical, teacher-friendly inservice on the development, for academically gifted students, of appropriately differentiated curricula in their specific areas of talent.
- That these programs include practical, teacher-friendly inservice on the appropriate and effective use of programs of ability and achievement grouping of academically gifted students. This inservice should familiarise teachers with research findings on the effectiveness of ability grouping, and should assist teachers to understand that many of the popular arguments against such grouping have little basis in research and are, in fact, frequently contradicted by research.
- That these programs include practical, teacher-friendly inservice on the appropriate and effective use of a wide range of acceleration procedures which have been found effective with academically gifted students. This inservice should familiarise teachers with research findings on the effectiveness of acceleration and should teachers to understand that carefully designed and monitored programs of acceleration have extremely positive academic and social outcomes.

4. Teacher Education and Inservice in Gifted Education

4.1 University offerings in undergraduate or graduate courses

Sixteen years ago, when submissions were being elicited to the first Senate Enquiry on the Education of Gifted and Talented Students, no Australian university offered a Master of Education or PhD degree in gifted education. Indeed, in 1985, when the Education Department of South Australia awarded Professor Miraca Gross, who was then a classroom teacher within that system, a full salaried scholarship to undertake her Master of Education degree in gifted education, she had to move to the United States. At that time 140 American universities offered such study.

Professor Gross gained her Master of Education in Gifted Education and PhD in Educational Psychology, majoring in Gifted Education, from Purdue University in Indiana. In 1989 she was appointed as CHIP (Children of High Intellectual Potential) Lecturer in Education at the University of Melbourne, a position created that year. This was the first time an Australian university had developed an academic position specifically in gifted education.

Since that time, the situation has improved considerably, and Australian teachers are now able to study gifted education in their own country. The situation is still, however, far from satisfactory.

There are more than 40 Schools of Education in Australian universities. (Some universities have more than one). A small number of these schools include subjects focussing on gifted education within their Master of Education programs. Fewer still offer sufficient gifted education subjects to enable a teacher to specialize in this field within a Masters degree. At undergraduate level it has become somewhat more common for trainee teachers to have one or two lectures on the identification and education of academically gifted children in their undergraduate education study; however few Schools of Education offer even one entire subject on gifted education in their preservice teacher training programs.

In those universities which do offer specialist gifted education subjects, the qualifications and training in gifted education possessed by academics teaching these courses varies considerably. We do not believe that it is appropriate for an academic teaching a gifted education subject to have no academic qualifications or training in gifted education, or to

have had no classroom experience teaching gifted and talented students. It is doubtful whether a university would require (or allow) an academic who had no qualifications, training, nor experience in Special Education to train teachers in the education of intellectually or physically disabled children.

4.2 The quality and content of undergraduate courses

Certainly the situation regarding undergraduate and postgraduate training in gifted education in Australian universities has improved significantly over the last 12 years, but, as indicated at the start of this session, the situation is far from satisfactory.

While there has been a pleasing expansion of university coursework offerings and graduate student research in gifted education, particularly over the last seven or eight years, the considerable majority of such courses are offered at Graduate Certificate or Master of Education level, to teachers who have *already completed* their undergraduate teacher training.

In 1999 the NSW Ministerial Advisory Council on the Quality of Teaching (MACQT) published a report on its investigations into the professional development of teachers specifically as this impacts on their capacities to identify and cater for gifted and talented students in NSW schools (NSW Ministerial Advisory Council on the Quality of Teaching, 1999).

The following discussion of the principal issues in teacher education as it affects gifted and talented students in schools both in New South Wales and throughout Australia will outline and expand on the major findings of the NSW Ministerial Advisory Council.

As part of its investigations, MACQT surveyed NSW universities in 1997 to assess the extent to which undergraduate teacher training programs and postgraduate courses in education included information on research findings and/or current practice in the education of gifted and talented students.

The Ministerial Advisory Council on the Quality of Teaching expressed its concern as follows:

"There is currently no requirement from teacher employers in NSW that the compulsory core of initial teacher education courses should include provisions for student teachers in gifted and talented education. By contrast, there has been a mandated requirement since 1994 for these courses to include a minimum of 30 hours of coursework dealing with the special needs of students with disabilities" (NSW Ministerial Advisory Council on the Quality of Teaching, 1999, p. 15).

Given that trainee teachers can expect to have gifted and talented students in every class they teach during their professional career, it is unfortunate that there is no mandated requirement for their preservice training to include even introductory information on how to identify these students and develop appropriate educational programs for them.

Currently, no university in New South Wales provides a *significant* component on gifted education within the *compulsory core* of its initial teacher training program. Although electives focussing specifically on the education of gifted and talented students are offered in a few teacher training courses, the majority of beginning teachers have virtually no training in how to recognise and cater for the gifted students they will encounter in each year of their teaching career.

As outlined earlier, the various forms of accelerated progression are proven to be effective in meeting the academic and social needs of academically gifted students. However, many teachers are reluctant to allow gifted students access to acceleration, in the belief that acceleration will result in social or emotional damage. They lack training and confidence in implementing accelerative procedures. Teachers in training should be introduced, in their undergraduate studies, to the range of accelerative procedures which are supported by research, and given practical advice on how to implement these.

Many teachers and schools are reluctant to adopt the many different within-class and within-school ability grouping strategies which allow children of similar abilities and interests to work together for at least some part of the week. Teachers in training should be introduced both to the research which underpins the effective use of ability grouping of academically gifted students, and assisted to develop practical strategies to enable the effective use of a range of within-class and within-school grouping procedures.

Teachers need to be assisted to develop the skills to identify students with a wide range of gifts and talents, including gifted students from disadvantaged and minority groups. It is

essential that multiple criteria be used, including a range of subjective and objective indicators. Subjective indicators could include teacher, parent, peer or self-nomination. Objective indicators could include standardised tests of achievement, above-level testing (assessing gifted students on tests designed for older students) and culture-fair tests of cognitive ability. It is important that no single assessment procedure be used in isolation, for example IQ testing or teacher nomination used alone, unsupported by other procedures.

4.2.1 Undergraduate study: Recommended approaches and directions

1) Undergraduate teacher training programs over the next 15 years need to include, *within the compulsory core* of required studies in education, substantial training in recognising and responding to gifted and talented students in the regular classroom. Research has found that teachers who undertake even an introductory training program in gifted education develop more positive attitudes towards gifted students (Gross, 1994a, 1997a) are significantly more effective in identifying gifted students (Gear, 1978) demonstrate superior teaching skills, and establish more positive classroom climates (Hansen and Feldhusen, 1994).

Introductory preservice training within the compulsory core should include:

1) An introduction to some commonly used definitions of giftedness and talent.

2) An awareness of the characteristics and needs of gifted and talented students.

3) A range of effective identification procedures.

4) The most commonly used models of curriculum differentiation for gifted students

5) A range of ability grouping and accelerative procedures.

The Ministerial Advisory Council notes:

"It is appreciated that there are many pressures on the time available in the compulsory core of initial teacher education courses, but the recognition of the special needs of the high ability child is seen to be of vital importance if we are to provide appropriately and equitably for all students. The time currently allocated to gifted and talented education in the

compulsory core is negligible and, in most institutions, non-existent." (NSW Ministerial Advisory Council on the Quality of Teaching, 1999,p. 16)

GERRIC endorses these views and suggests that training in gifted education within the compulsory core should comprise no less than 12 hours of coursework.

As noted above, we recommend that, in addition to the gifted education elements in the common core, teacher training institutions should provide at least one undergraduate elective course on the education of gifted and talented students. Where only one such course can be provided, the content should build on and expand on the content provided in the common core but should also include a special focus on:

(a) the identification of gifted students from disadvantaged and minority groups,

(b) curriculum differentiation within specific Key Learning Areas

(c) issues in the social and emotional development of gifted and talented students

(d) teaching gifted students in ability grouped programs

(e) establishing supportive relationships with parents of gifted and talented students.

Trainee teachers who have undertaken at least one undergraduate elective course in gifted education should be able, if they so wish, to undertake their practicum either in specialist program for gifted students where one exists, for example in a Selective High School or Opportunity Class, or in a regular class setting in which they will be required to assist in developing a differentiated curriculum for a small group of gifted students.

Trainee teachers who have taken at least one undergraduate elective subject in gifted education and who have undertaken their practicum in one of the settings described above could be appointed to schools where they would hold positions of specific responsibility for teaching gifted students - Selective High Schools, Opportunity Classes, coordinators of gifted education in comprehensive schools, etc.

4.3 Postgraduate studies in gifted education

As indicated earlier, it is pleasing to see the growth of subjects specifically focussing on gifted education in postgraduate programs in Australian universities. Universities should be encouraged to develop such courses. However, the quality of these programs is variable, and universities should ensure that academic staff are appointed (or trained) who are qualified to teach such subjects.

4.3.1 Postgraduate study: Recommended approaches and directions

1. Universities which currently offer significant components of gifted education study in postgraduate diploma or degree courses should ensure that academics who teach these courses have, or obtain, postgraduate training in the field of gifted education.

2. In NSW the MACQT noted that the increasing cost of postgraduate coursework degrees is proving prohibitive to many teachers who would otherwise enter such study. A number of state departments of education provide research scholarships to support teachers in postgraduate study. To facilitate access to this funding for teachers wishing to undertake postgraduate study in gifted education, the education of gifted and talented students could be declared a priority for such funding.

3. Universities should encourage excellent undergraduate students who have undertaken at least one elective subject in gifted education to undertake Honours study in this field, and should encourage excellent postgraduate gifted education students to enter MEd (Honours) or doctoral study. Although Australian research in the education and psychology of the gifted has increased in quantity and quality over the last few years, there is still a need to encourage strong postgraduate students to pursue research degrees in this field.

4. Teachers would be more willing to undertake postgraduate study (postgraduate certificates, MEd etc.) if, as happens in many overseas countries, they received some financial incentive to upgrade their qualifications. We recommend that employing authorities give consideration to building recognition of postgraduate study into the salary structure with postgraduate study in the education of gifted and talented students being targeted, at least initially, as an area in which Australia urgently requires teachers with specialist training.

4.4 Teacher professional development and inservice

The teaching population of Australia is ageing and the majority of practising teachers undertook their pre-service training more than 25 years ago. Many teachers are unaware that, since that time, definitions of giftedness and talent have broadened considerably and no longer confine themselves to intellectual ability. as has been discussed earlier, the majority of currently accepted definitions suggest that 10 to 15 percent of children can be viewed as gifted or talented, and it is now accepted that many academically gifted children underachieve, performing in school at levels far below their true ability. However many teachers who retain the views of giftedness which were prevalent when they entered the profession assume that they will only rarely encounter gifted students, and further assume that such children, where they exist, must be effortless achievers. As a consequence many gifted underachievers go undetected.

The considerable majority of gifted and talented students in Australia are educated in mixed-ability settings in the regular classroom, yet the considerable majority of teachers would have had less than one hour of instruction in their pre-service training on how to differentiate the curriculum for high ability students.

Where states do offer ability grouped programs for gifted students, the majority of teachers teaching in these programs, or serving in the schools which offer these programs, have had no specialist training or even extended inservice on the education of gifted and talented students, and no previous experience developing differentiated curricula for groups of gifted students. For example, teachers of New South Wales “Opportunity Classes” (fulltime ability grouped programs in primary schools) and Selective High Schools are not required to have training or qualifications in gifted education. By contrast, the majority of teachers who have fulltime responsibility for other groups of “special needs” students, such as intellectually disabled, hearing impaired or visually impaired students, are required to have postgraduate training or significant inservice in the relevant field of education.

Teachers with special administrative responsibility for gifted education within their schools are frequently untrained in gifted education and many are inadequately inserviced. *A recent Australian study of coordinators of gifted education in NSW independent secondary schools (teachers who have special responsibility for facilitating and overseeing programs for gifted students throughout their schools) found that while 26% of coordinators possessed a postgraduate Certificate of Gifted Education, 47% had no specialist training at all, even at*

undergraduate level. Indeed, fully 58% had undertaken fewer than 10 days of gifted education inservice (Downey, 1999).

In the early 1990s, following the launch of the *NSW Government Strategy for the Education of Gifted and Talented Children*, the NSW Department of School Education's *Policy for the Education of Gifted and Talented Students* and *Implementation Strategies for the Education of Gifted and Talented Students* and the NSW Board of Studies *Guidelines for Accelerated Progression,* all of which were published in 1991, the Department of School Education encouraged schools to use a proportion of their professional development funding to inservice their teachers in this field of education. Indeed, the Government Strategy stated that:

"All schools should facilitate the participation of all staff members in at least one introductory inservice course addressing the education of gifted and talented students in 1992-1993" (NSW Government, 1991, p. 11).

There is evidence that many schools did indeed arrange inservice provisions for their teaching staff during these initial two years. This is certainly one potent reason why programs of accelerated progression and ability grouping are more common in New South Wales than in any other state. Australian research (Gross, 1997a) has found that even six hours of inservice can result in a significant improvement in teacher attitudes towards gifted and talented children and can reduce teachers' reluctance to develop special programs for these students.

At this time (2001) there appears to be very little centrally organised teacher inservice in gifted education occurring the majority of state, independent or Catholic education systems in Australia. There are, of course, pleasing exceptions to this - for example, the Inner-West Region of the Sydney Archdiocese of the Catholic Education Office which over 1997-1999 provided a minimum of 20 hours of gifted education training for the entire teaching staff of 16 primary schools, and the inservicing of teachers participating in the Accelerated Learners program in Victorian state secondary schools. In general, however, inservice opportunities in gifted education are organised by individual schools from their own funding. *This has the unhappy result that schools which do not believe they have gifted students in their population are unlikely to seek inservice in how to identify or cater for these students.*

External (out of schools) inservice opportunities are provided by a number of organisations. For example, in New South Wales the NSW Association for Gifted and Talented Children runs seminars several times per year. A number of independent schools run occasional conferences. Each state has an Association for Gifted and Talented Children and some, for example the Queensland Association, hold regular conferences. The Australian Association for the Education of the Gifted and Talented runs a biennial National Conference. The Gifted Education Research, Resource and Information Centre (GERRIC) within UNSW offers seminars, short courses, evening workshops and other inservice initiatives on a regular basis. However, when teachers are required to engage in professional development in their own time, it is possible that the teachers who have most need to enhance their skills will be the least likely to engage in professional inservice. *Specifically, teachers who still hold to the outmoded perceptions of gifted students as middle class achievers from the dominant culture are unlikely to want to develop skills through which such students can be recognised and assisted.*

4.4.1 Professional development and inservice: Recommended approaches and directions

1. The Ministerial Advisory Council report noted teachers' resistance to take professional development courses in their own time and recommended that teachers should be released from teaching duties to undertake inservice. While it must be said that we at GERRIC have not noted any particular reluctance in teachers to attend the inservices, conferences and courses we regularly offer, we acknowledge that teachers attending these professional development offerings are no doubt those who are already committed to enhancing their professional skills. We therefore strongly endorse the MACQT recommendation that funding be provided to enable schools to inservice their teaching staffs on a range of issues and practical strategies in the education of gifted and talented students within school hours. The Ministerial Advisory Council noted that its investigations revealed "a degree of negativity in some teacher educators and teachers towards the whole notion of gifted and talented education" (1999, p. 20) and concluded that "Equity imperatives make it necessary to ensure that all students are provided with the support to enable them to learn effectively. In this regard, the professional development of teachers in the mainstream and in selective classes and schools is important" (p. 20). GERRIC strongly endorses their concern. Only through providing teachers who hold negative attitudes towards gifted education with factual information about gifted students and special programs, will this pervasive negativity be abated.

2. Where teachers who have no training in gifted education are appointed to Selective High Schools and Opportunity Classes, induction programs should be developed to inservice these teachers on the learning characteristics of these students and the teaching methods and curricular differentiation which research has shown to be particularly effective. These induction programs should take place in school time and should include a component of mentorship whereby the new teacher shadows a teacher with experience and expertise in teaching gifted students in a similar setting.

4.5 Recommendations arising from Section 4

Recommendation 3(a)

As indicated earlier, no university in New South Wales provides a significant component of instruction in gifted education within the compulsory core of its initial teacher training programs. We believe that this is generally the case throughout Australia. The Commonwealth Government should encourage School of Educations in Australian tertiary institutions to include, within the compulsory core of instruction in their undergraduate teacher training programs, no less than 12 hours of coursework covering the issues listed in 4.2.1

Recommendation 3(b)

Where a School of Education has no academic with formal training in gifted education, the Commonwealth Government should fund at least one academic in each School (approximately 40) to undertake a postgraduate Certificate of Gifted Education or Graduate Diploma in Gifted Education from an Australian university. When trained, these academics should be responsible, with any other colleagues who may already be trained in gifted education, for developing and teaching the compulsory gifted education component in the undergraduate teacher training program, and for developing and teaching at least one gifted education subject in a relevant postgraduate coursework program.

5. The establishment of an Australian National Centre

5.1 The recommendation, in 1988, that the Commonwealth Government should establish an Australian National Centre

Two major concerns of the Senate Select Committee during their 1985-1988 investigations of Australian provisions for gifted and talented students, were:

1) the inadequacies of the teacher training courses then offered by universities and CAEs in their failure to prepare student teachers for the task of identifying and teaching academically gifted students, and

2) the continuing reluctance of Australian academics to engage in research in gifted education.

The Senate Committee endorsed an earlier, condemnatory, report from the Commonwealth Schools Commission (1981, p. 47): "The paucity of Australian research and the absence of any real attempt to harness and interpret overseas research . . . means that hypotheses are being stated, and programs are being developed, within a data base vacuum".

A primary concern of the Senate Committee was the lack of teacher awareness of the under-achievement endemic amongst their academically gifted students, and, indeed, the unwillingness of many school principals to accept that they *had* any gifted students in their schools. As a result of these concerns, the Committee made nine recommendations to the Federal Government. These included: (a) *that a National Centre for research into the education of gifted children should be established in an Australian university and be financially supported by the Federal Government during its establishment phase* and (b) *that pre-service teacher training courses should include sufficient information about gifted children - particularly those from minority and disadvantaged groups - to familiarise trainee teachers with appropriate identification and teaching techniques.*

At that time, because of the socio-political ethos which militated against the development of gifted education programs, the report had little parliamentary impact. ***Not one of the nine recommendations of the Senate Standing Committee was acted upon.*** Ironically, Australia *did* subsequently establish a National Centre for talent development in young people with

physical gifts - the Australian Institute of Sport - but the Senate Committee's recommendations regarding academically gifted young Australians were ignored.

5.2 The improvement in Australian social attitudes towards gifted education

Since 1988, however, there have been significant alterations in Australian political, cultural and educational attitudes towards the education of gifted and talented students. Every state now has a government policy on gifted education. Although very few of the education schools in Australian universities offer courses (individual subjects) in gifted education to teachers in training, a small number do offer subjects in gifted education in their postgraduate education programs. It has become more common, across the country, for state education systems to develop some degree of educational intervention for gifted students - although the extent, quality and effectiveness of these interventions differs dramatically from state to state. It has become slightly more acceptable, socially, to raise, in conversation, issues relating to academically and intellectually gifted students, and this has meant that the issue is discussed somewhat more openly within the Australian community than it was in the mid-1980s.

5.3 The leadership provided by the University of New South Wales

This cultural and educational shift has been most noteworthy in New South Wales, and the educational leadership provided by The University of New South Wales has contributed significantly to the shift.

UNSW's School of Education is a strongly research oriented school which has established itself as an Australian leader in teacher training and postgraduate teacher education. In 1991 the School created a Senior Lectureship in the education of gifted and talented children, and Dr Miraca Gross was appointed with the brief to develop a integrated program of teaching and research in this field.

The undergraduate and postgraduate teaching programs developed by Dr Gross (who was promoted to Associate Professor in 1994 and Professor in 1999 in recognition of her exemplary achievements in teaching and research) proved so successful that Dr Katherine Hoekman was appointed in 1994 as the School's second lecturer in gifted education, in

response to the huge numbers of students wishing to study in this field. The School now has a strong and vigorous teaching program in gifted education. Indeed, in 1995, when Dr Gross was awarded a Vice-Chancellor's Prize for Teaching Excellence, the University's tribute acknowledged that she had "transformed the teaching profile of the School". In November 1997 the Federal Government honoured Professor Gross with the Inaugural Australian Award for University Teaching in Education, acknowledging her influence in raising Australians' awareness of the importance of offering appropriate educational services to gifted and talented youth, and her development of a range of highly effective undergraduate and postgraduate teacher training programs.

5.4 The establishment of the Gifted Education Research, Resource and Information Centre (GERRIC)

In 1997, in recognition of the quality, and influence, of the considerable range of teaching programs, research and community service in gifted education developed by the School of Education's "Gifted Education Unit", UNSW formally established the Gifted Education Research, Resource and Information Centre (GERRIC) within the School. GERRIC was formally opened by His Excellency the Honourable Gordon Samuels, Governor of New South Wales, on September 19, 1997.

In the three years since its creation out of the former "Gifted Education Unit", GERRIC has further expanded its teaching, research and service initiatives. In January 2000, in the published external Review of the School of Education, GERRIC was described as "undoubtedly one of the most successful Centres of its kind" and "not only an ornament to the School but to the University as a whole."

GERRIC has enormous community endorsement. More than 1000 gifted students from across Australia attend GERRIC's school vacation programs each January and July. More than 4500 academically gifted primary school students have participated in the Australian Primary Talent Search. More than 500 Australasian teachers and school administrators have undertaken postgraduate study through the Certificate of Gifted Education; indeed the State Education Departments of Victoria, WA and the ACT sent their State Coordinators of Gifted Education to be trained through COGE - a very public endorsement of the program. GERRIC academic staff and graduate students have developed and conducted teacher inservices for

education systems and schools across the nation. Teachers across Australia, and increasingly overseas, use the curriculum resources (books, annotated bibliographies of research, and audio-tapes) published by GERRIC. More than 500 parents of gifted and talented students have attended GERRIC's courses for parents.

GERRIC's Advisory Board includes representatives of the various New South Wales education authorities, NSW and national associations of teachers and parents of gifted children, and other NSW universities - all of which already have strong facilitative relationships with GERRIC and regularly use the Centre's research and service initiatives. **The presence of senior executive members of the NSW Department of School Education, the NSW Board of Studies and the NSW Catholic Education Office, on the Advisory Board, emphasizes these educational authorities' high level of commitment to, and ongoing support for, GERRIC.** The current Advisory Board includes:

Chair: Sir John Carrick (Author of the influential Carrick Report which led to the NSW Education Reform Act of 1990)

Members:

Professor Chris Fell: Deputy Vice-Chancellor: Research and International, UNSW
Professor John Sweller: Head, School of Education.
Dr Alan Rice: Associate Director: Early Childhood. NSW Department of School Education.
Mr Mark Turkington: Regional Director Inner West, Catholic Education Office
Mrs Barbara Stone: Association of Principals of Independent Schools
Mr David Paterson: New South Wales Board of Studies
Mr John Lambert: Founding President: NSW Board of Studies
Ms Helen Dudeney: President: NSW Association for Gifted and Talented Children
Dr Sue Vasilevska: Secretary: Australian Association for the Education of the Gifted and Talented
Mr Bob Wingrave: Head, Selective High Schools Unit, NSW Department of School Education
Dr Kim Jaggar: Principal, Sydney Boys High School
Associate Professor Stan Bailey: School of Education, University of New England
Mr Gordon Shrub: Curriculum Advisor, NSW Board of Studies
Dr Jessica Milner Davis: Pro-Chancellor, UNSW

The University of New South Wales is extremely supportive of GERRIC and has a strong and longstanding commitment to the education of gifted and talented children. Recently $50,000 was allocated to support the expansion of GERRIC and additional funding is likely to be forthcoming in 2002.

The Vice-Chancellor, Professor John Niland, has expressed a hope that UNSW could be the home of the National Centre for Research in Gifted Education. The Pro-Vice-Chancellor (Education), Professor Adrian Lee, commented recently: "The efforts of Miraca Gross and her team are truly outstanding. I have been privileged to attend some of the programs that GERRIC has organised for gifted students from around Australia. The enthusiasm of these students, and their remarkable contributions, are clear evidence of the benefits of the special approaches to education of these wonderful young Australians that GERRIC advocates and provides."

GERRIC also benefits from the generous sponsorship of McDonald's Australia which, since 1992 has donated $20,000 per year, raised to $25,000 per year in 2000, monies which have been dedicated to the provision of sponsorships to enable economically disadvantaged gifted students to attend GERRIC's school vacation programs for gifted and talented children and adolescents.

As will be seen from the description, which follows, of GERRIC's extensive program, GERRIC already serves as Australia's *de facto* national centre for research, teaching and service in the education of gifted and talented students. This has been established with no contribution from the Commonwealth government other than the regular DETYA operating grants to UNSW. It would seem appropriate that the Commonwealth Government should now contribute to the continuation and expansion of the Centre to enable it to enlarge its research, teaching and service functions for the benefit of teachers and parents of gifted students throughout Australia - and, of course, for the benefit of the students themselves.

5.5 Recommendations arising from the above

Recommendation 4a: that an Australian National Centre for Research in the Education of Gifted and Talented Students be established and supported through Commonwealth funding within an Australian University.

Recommendation 4b: furthermore, that as the Gifted Education Research Resource and Information Centre (GERRIC) at The University of New South Wales has for some years exercised a *de facto* function as Australia's national centre of teaching, research and service in gifted education, that this be formalised by the Commonwealth Government and that GERRIC be recognised, and funded, to become the Australian National Centre for Research in the Education of Gifted and Talented Students.

In 1988, the Senate Select Committee proposed that the Australian National Centre should:

(a) Offer postgraduate programs in gifted education
(b) Provide a much needed focus for research
(c) Provide a focus for teacher education
(d) Provide a focus for the dissemination of information about gifted education.

In 1986, Professor Miraca Gross (in her former position as President of the South Australian Association for Gifted and Talented Children) gave written and oral evidence to the Senate Select Committee regarding the urgent necessity for a National Centre to be established to provide precisely such a focus and services. In the 10 years since her appointment to The University of New South Wales, firstly through the Gifted Education Unit and latterly (since 1987) through the Gifted Education Research, Resource and Information Centre, Professor Gross and her colleagues have addressed all four of these recommendations and have, as described above, developed a teaching, research and community service presence which has played no small part in transforming Australian attitudes towards gifted and talented students and the necessity to provide special educational services for them.

The expansion of GERRIC into a formally acknowledged and funded National Centre, as an outcome of the present Senate Inquiry into the Education of Gifted and Talented Children, would be an appropriate and timely response to the recommendation made by the Senate Select Committee in 1988, that such a Centre be established. The current socio-political climate of Australia would strongly support the establishment of a National Centre, particularly within a university which has already established itself as the Australian leader in, and a major international contributor to, teaching, research and community service in this

field of education. Furthermore, we believe that rather than creating a National Centre "from scratch", with the unavoidable delay which this would necessitate between the new Centre's establishment and its becoming fully functional, the community would view it as a logical and practical move to select a Centre which already has a strongly developed infrastructure and strong university and community support, to become the National Centre.

5.6 Current functions of GERRIC

The following descriptors of the current structure and functions of GERRIC will support these two recommendations outlined above.

The goals and structure of GERRIC are congruent with the Mission Statements of both The University of New South Wales (UNSW, 1995) and its Faculty of Arts and Social Sciences (FASS, 1996) which promote:

- teaching and research of the highest quality
- international links
- community outreach.

An essential element in any Centre focusing on the education of children with special needs is service and support of these children and their families. The programs of teaching, research and community service for which GERRIC has become nationally recognised are strongly interlinked.

5.6.1 GERRIC's Teaching Programs

5.6.1.1 Undergraduate and postgraduate programs

The School of Education, in which GERRIC is sited, offers two gifted education elective subjects in the BABEd/ BScBEd program which trains secondary school teachers. Currently UNSW does not offer undergraduate training for primary school teachers, but the former Bachelor of Education (Primary) program included three gifted education subjects.

The School offers a Master of Education program in which students (90% of whom are teachers or school administrators) can take up to six gifted education subjects, and this option is extremely popular. Research students specialize in gifted education in BEd (Hons), MEd (Hons), Doctor of Education and PhD.

The School of Education values its special focus on gifted education and the two academics appointed specifically to teach in this field, Professor Miraca Gross and Dr Katherine Hoekman, have Master of Education and PhD degrees specializing in gifted education.

We believe that UNSW is the only Australian university which offers substantial pre-service teacher training in the education of gifted and talented students Given that teachers encounter gifted students in every class they will teach, this is a most unfortunate state of affairs. Trainee teachers who enrol in gifted education subjects in their undergraduate courses also have the opportunity for practicum experience, assisting teachers with postgraduate qualifications in gifted education in GERRIC's school vacation programs for gifted and talented children and adolescents.

All teaching or tutoring in UNSW's gifted education subjects is undertaken by Professor Miraca Gross and Dr Katherine Hoekman, or by graduate students who have already completed a Master of Education with specialization in gifted education. As outlined earlier, we are concerned that it is not uncommon for gifted education subjects in other Australian universities to be taught by lecturers who have no qualifications, training or even experience in the field.

5.6.1.2 Certificate of Gifted Education

The Gifted Education Research, Resource and Information Centre (GERRIC), sited within the School of Education, likewise engages in teacher training and inservice. GERRIC offers the postgraduate Certificate of Gifted Education (COGE) a teacher professional development program of 80 contact hours of lectures and seminars, held over three vacation periods on the Kensington campus.

In the 10 years since COGE was established (1991) more than 500 teachers, school administrators and psychologists from across Australia, New Zealand, Hong Kong, Singapore and Vanuatu have trained in gifted education through this program. Many teachers are financially supported by their schools to attend. Indeed, Victoria, WA and the ACT sent

their State Coordinators of Gifted Education to be trained through COGE - a very public endorsement of the program. In addition, a number of academics from other Australian universities have undertaken gifted education training through COGE. In January 2001 COGE was offered for the first time in Queensland as well as in Sydney and the program was opened by the Honourable Dean Wells, MLA, Queensland Minister for Education.

The teaching team of Professor Gross and Dr Hoekman is augmented by overseas experts in gifted education brought to Australia to teach in this program. More than 20 international experts in gifted education, many of whom have developed the cutting edge research referred to in this document (for example, Françoys Gagné, JoyceVanTassel-Baska, Camilla Benbow, Karen Rogers) have taught in the program as Visiting Professors. Successful completion of COGE provides participants with credit towards the Master of Education and Master of Educational Administration programs at UNSW and at several other Australian universities.

5.6.1.3 Master Classes in Gifted Education

GERRIC offers regular three day Master Classes in which graduates of COGE or of the Master of Education programs in gifted education can undertake further study with a leading international scholar, in the scholar's specific area of research.

5.6.1.4 Teacher professional development and inservice

GERRIC develops and conducts a series of teacher professional development programs and inservices for individual schools, groups of schools and education systems across Australia. These are led by Professor Gross, Dr Hoekman and teachers or school administrators who are graduates of UNSW's gifted education courses.

To this date, GERRIC has designed and taught teacher inservice programs for the State Education Departments of NSW, WA, VIC, SA and ACT, and the Catholic Education Office of NSW. For example: the NSW Department of School Education and Training awarded GERRIC a contract to develop and teach 16 hour inservice programs in gifted education to teachers in Manly Selective High School in Term 1, 2001. North Sydney Boys and Girls Selective High Schools are undertaking a similar program in the first half of 2001. All staff members in a cluster of six Catholic systemic primary schools in the Broken Bay Diocese of NSW will take a program designed and taught by GERRIC during Terms 2 and 3 of 2001. During 1997-1999 the entire staffs of 17 Catholic systemic primary schools in the Sydney Archdiocese took a similar program of professional development. We put these examples forward as evidence of the growing awareness and need, in Australian schools, for professional inservice and training in gifted education.

5.6.1.5 Teacher conferences and seminars

GERRIC offers, each year, several well-subscribed one-day conferences and evening seminars for educators on teaching and research issues in gifted education. Topics covered include identification of gifted students, curriculum development, gifted children from disadvantaged groups, social and emotional development, and many more.

It should be noted that the School of Education Studies and GERRIC have already had a substantial impact on the education of gifted students in Australia through providing trained

personnel to the various education systems and raising levels of teaching skill and curriculum development.

5.7 GERRIC's programs of community service

5.7.1 Enrichment programs for gifted children

GERRIC runs six highly successful self-supporting enrichment and extension programs for gifted and talented students during each January and July school vacation. In each vacation period, more than 1000 gifted children and adolescents come on to the UNSW campus to participate in these programs. The majority are from New South Wales, but increasingly, secondary school students from interstate have attended Scientia Challenge, including students from as far away as Western Australia. A residential component of the program is offered to these students.

GERRIC's students' programs are:

1) *Poppyseeds* (for children in pre-school and kindergarten).

2) *Small Poppies* (for children in school years 1 and 2)

3) *Junior Scientia* (grades 3 -6);

4) *Scientia Challenge* (grades 7-10)

5) *Career Development Days* (Grades 10-12).

6) *Start Here: Go Anywhere* (a program for gifted girls in Years 7-12).

Scientia Challenge was first offered in 1990, the *Career Development Days* in 1996, *Junior Scientia* in 1997, *Small Poppies* in 1998, *Poppyseeds* in 1999 and *Start Here: Go Anywhere* in 2000.

Workshops in the *Poppyseeds*, *Small Poppies* and *Junior Scientia* programs are led by teachers with postgraduate qualifications in gifted education, while *Scientia Challenge* workshops are led by UNSW faculty members teaching in their area of special expertise. All three programs use, as course assistants, teachers who are currently enrolled in gifted education studies; this gives these teachers the opportunity of a practicum experience

working with gifted and talented children and observing exemplary enrichment and extension curricula. The *Career Development* workshops and *Start Here: Go Anywhere* are led by representatives of various professions from the NSW community. Through these programs, GERRIC has developed extremely effective academic and professional networks across Australia.

As mentioned earlier, since 1992 *McDonalds Australia* has sponsored *Scientia Challenge* to allow gifted students who are disadvantaged economically or by distance to attend the program free of charge or at reduced fees. *McDonalds* has agreed to continue its sponsorship of *Scientia Challenge* for $25,000 per annum to December 2005, and GERRIC is currently seeking corporate sponsorship for our other students' programs.

5.7.2 Programs of student assessment

5.7.2.1 The Australian Primary Talent Search (APTS)

A major problem in the assessment of academically gifted children is that when teachers use ability or achievement tests appropriate for their *chronological* age, the questions are much too easy. The gifted students score at the ceiling of the test and the teacher has no way of assessing their true level of achievement.

An effective solution to this problem of *ceiling effect* is to use off-level testing; that is, assessing gifted students on an instrument standardized on older students. The Australian Primary Talent Search (*APTS)*, which GERRIC introduced to NSW in 1998 and expanded Australia-wide in 1999, assesses academically gifted students in School Years 3-6 on *EXPLORE*, a battery of maths, science reasoning, reading comprehension, and English tests which are normed on Year 8 students. *EXPLORE* was developed by American College Testing (ACT) in 1992. Before GERRIC introduced it to Australia, it had been used, with considerable success, to assess academically gifted elementary school students throughout the United States.

Through links established with American College Testing and with the Belin-Blank Center for Gifted Education and Talent Development, at the University of Iowa, for whom the test was developed, GERRIC has been licensed to use EXPLORE throughout Australia.

More than 4500 gifted Australian primary school students have now been assessed through APTS at more than 160 sites around Australia including locations as remote as Geraldton, WA; Narrabri, NSW; Whyalla, SA; Cloncurry, Qld; Nhulunbuy, NT and Penguin, TAS. Parents receive comprehensive reports on the children's level of achievement in the four key learning areas assessed by the test. Parents receive two copies of the report and are encouraged to share the results of the assessment with their child's schools, to facilitate the school's planning of a curriculum which recognises what the child has already learned and does not require her to "re-learn" material which she has already completely mastered.

Increasing numbers of schools do indeed use the APTS reports as an aid to differentiating the curriculum for gifted students who have taken EXPLORE.

Children in Years 5 and 6 who score very highly on *EXPLORE* (at a level more usually attained by the top 5% of students in Year 8) are invited to attend special APTS Residential Programs developed by GERRIC, which run in school vacations. To date three such Residential Programs have been held in Sydney and one in Brisbane.

In the five day Residential Programs, which are led by secondary school teachers who have attained postgraduate qualifications in gifted education through UNSW, these highly gifted young students are offered a curriculum commensurate with their achievement levels rather than their chronological age. For example while the curriculum of the programs does not cut across the normal high school curriculum, the Year 5 and 6 students in the January 2001 Science workshop were working in physics on concepts, and with materials, more usually offered to Year 11 and 12 students.

Each January, students who score extremely highly on EXPLORE, for example, the top three students in each subject, each school year, or each state, are invited to a *APTS Recognition Ceremony* on the Kensington Campus, at which they are presented with a Certificate of Recognition from the University of New South Wales and an educational CD generously donated by educational publisher Dorling Kindersley. *For the majority of these children, this is the first time they have been publicly recognised for their abilities and achievements - whereas if their gifts had been of the body rather than of the mind, recognition would be have been accorded freely and generously in their own school and community. For many, it is the first time their abilities have been publicly referred to without jeering, mockery or resentment.*

Students who are invited to the APTS Recognition Ceremony are also invited to nominate, to be honoured with them, a teacher who has "made a difference" through a significant or valued contribution to their education. These teachers are also presented with a Certificate of Recognition from the University of New South Wales and a one-year subscription to *Gifted*, the journal of the New South Wales Association for Gifted and Talented Children, generously donated by the Association. GERRIC believes that this sends a powerful message to a society which, in the last few years, has become uncomfortably prone to "teacher-bashing". Many of the teachers who are honoured at the APTS Recognition Ceremony tell us that this is the first time anyone has publicly thanked them for their efforts.

The development of APTS, and the Australian use of *EXPLORE*, has formalised the friendly but informal links which have existed for some time between GERRIC and the Belin-Blank Center. As will be discussed later in this submission, this international link has resulted in a number of cross-cultural research projects.

In February 2001 GERRIC's Manager Rosalind Walsh Elder gave an invited presentation, as a guest of the British Government, on the Australian Primary Talent Search at a major international symposium on World Class Testing held in London. Prime Minister Tony Blair has launched a major initiative designed to identify and respond to the needs of intellectually gifted students from disadvantaged and minority groups. This will involve the process of "off-level testing" such as employed in *APTS*.

5.7.2.2 Australian Secondary School Educational Talent Search (ASSETS)

An extension of APTS, the *Australian Secondary School Educational Talent Search (ASSETS)* will be offered across Australia in 2002. This program of off-level testing will assess academically gifted students in Years 7 and 8 on the American College Testing (ACT) test of maths, science reasoning, English and reading comprehension normally undertaken by American 12th grade students seeking entrance to university.

As with *APTS,* Australian students performing at high level in ASSETS will be invited to participate in summer Residential Programs in Sydney, in which they can work at their proven achievement levels with other students who share their abilities and interests. Students making truly exceptional scores will be honoured, as are their younger colleagues in *APTS,* at a Ceremony of Recognition at UNSW. Like the younger students they will be invited to nominate, to be honoured with them, teachers who have made a difference through a significant or valued contribution to their education.

5.7.2.3 Assessment and Counselling Service

GERRIC offers the services of three registered psychologists who have also have postgraduate qualifications in gifted education. We offer educational assessment of gifted students and individual counselling, including career counselling, for gifted students and their families.

More than 600 gifted and talented students have been assisted through this service since it commenced in 1998 with the assistance of an establishment grant from UNSW's Faculty of Arts and Social Sciences..

5.7.3 Gifted Education Resource Materials

GERRIC publishes a wide range of teacher resource materials which are used by teachers across and Australia and, increasingly, overseas. It is extremely important that teachers and parents of gifted students who live in remote areas are able to have access to resource materials.

One of the nine recommendations of the Senate Select Committee in 1988 was that appropriate videotapes and other materials for isolated gifted children be funded by the Commonwealth Government and developed in conjunction with subject specialists and experts in gifted education.

As stated earlier, none of the nine recommendations bore fruit.

GERRIC has developed its resource materials out of a commitment to ensure that teachers and parents of gifted children across Australia, including those who are disadvantaged by geographical isolation, have access to practical, easy to use resources.

(a) Audio-tapes

With the assistance of UNSW's audio-visual Centre, GERRIC has produced a series of 14 hour-long audio-taped interviews entitled "What Research Tells Us . . ." in which visiting international experts in gifted education discuss aspects of their research in education and psychology, and the implications of this for classroom practice. These tapes sell widely in Australia and, increasingly, overseas.

(b) Annotated bibliographies

Annotated bibliographies, developed by UNSW graduate students in gifted education, summarise key articles, papers and book chapters in recent Australian and overseas journals. Presented in a readable, accessible format, they are bought by school administrators, teachers, parents and others who wish to be informed of current research findings and appropriate classroom practice.

(c) Books

GERRIC publishes a range of research-based teacher resource books which arise from national and international research undertaken by staff of the Centre. *Gifted Students in Secondary Schools: Differentiating the Curriculum* (Gross, Sleap and Pretorius, 1999) which has been highly successful with secondary school teachers will be joined in June 2001 by *Gifted Students K-6: Differentiating the Curriculum* (Gross, Sleap, Drummond and Merrick, in press) for use in primary schools. Giftedness in Early Childhood (Harrison, 1995) is directed at preschool and early childhood teachers, and parents. Two curriculum units for primary school students, *Look Back in Time* (Middle Primary - Stage 2) and *It's About Time*

(Lower Primary - Stage 1) will be published in May 2001, and five more units are in press. The units consist of a Teacher's Manual, 10 booklets of student readings, and a photocopiable book of blackline masters. These units arise out of joint research conducted by GERRIC with the Center for Gifted Education at The College of William and Mary in Williamsburg, Virginia.

5.7.4 Courses for parents of gifted and talented children

Since 1995 GERRIC has offered successful weekend or evening courses for parents of gifted children, which attract parents from all over New South Wales and interstate. More than 600 parents have attended these courses since their inception. The courses discuss issues of parenting and education as they apply to gifted and talented children and adolescents.

5.8 GERRIC's Research Initiatives

5.8.1 National research programs

Professor Miraca Gross, Director of GERRIC, is widely regarded as Australia's leading researcher in the education of gifted and talented children. Apart from the competitive research grants which she has won, she has, since 1987, received five international awards for her research in gifted education. In 1987 she became the first non-American to win the Hollingworth Award for Excellence in Research in the Education and Psychology of the Gifted, a prestigious award competed for internationally. In 1990 she was awarded, for the second time, the Mensa International Education and Research Award for Excellence, becoming the first person to have won this award twice. In 1995 she was honoured by the American National Association for Gifted Children with their Early Scholar Award, presented for outstanding contributions to research within 10 years of receiving one's own PhD. Dr Gross is the only non-American to have been honoured with this award.

(a) Self-esteem of gifted students ability grouped programs

Research undertaken by Professor Gross with the assistance of two large ARC grants has already impacted on the education of academically gifted students in Australian and internationally. A Large Grant held from 1992 -1994 ($60,000) investigated shifts in self-esteem in students in NSW Selective High Schools and, as discussed earlier (3.3.4)

established that, contrary to "social myth", attendance at Selective High Schools does *not* result in a damaging loss of self-esteem. The dip in academic self-esteem across the first year of selective high school was also noted in students in the comparison group of students in comprehensive schools and appears to be a function of adolescence and the change from being a senior student in a "smaller" primary school to being a junior student in a "larger" secondary school. However, for selective high schools students this "dip" simply took their self-esteem from very high to moderately high. GERRIC has promulgated this research through an audio-tape in its series of teacher resources, through the Certificate of Gifted education teacher inservices and through public seminars.

(b) Effectiveness of programs for gifted students

A Collaborative Research Grant, held from 1996-1998 with NSW schools as industry partners ($560,000) investigated the effectiveness of programs for gifted and talented students in secondary schools, including programs for gifted underachievers.

This study developed and tested a range of curricula for gifted students in comprehensive schools. A teacher resource book, *Gifted Students in Secondary Schools: Differentiating the Curriculum* which arose from this study and was published by GERRIC in 1999, is entering its second print run and is selling widely overseas as well as throughout Australia. A second book *Gifted Students K-6: Differentiating the Curriculum,* which has arisen from the study, is in press and will be published in June 2001. Two other books *Gifted Students in Secondary Schools: Developing Special Programs* and *Gifted Students in Secondary Schools: Responding to Underachievement* are in the final stages of preparation.

(c) Gifted students' conceptions of friendship

A study funded by the University of New South Wales investigated conceptions and expectations of friendship held by primary school children of average intellectual ability, moderately gifted children and exceptionally gifted children (Gross, in press.). More than 600 Australian children participated in the study, which found significant differences in the conceptions of friendship held by intellectually gifted primary school students and their age-peers. Average ability early and middle primary students displayed age-appropriate development, associating friendship with sharing of material goods, reciprocal assistance and common play interests. However, even the younger gifted children displayed friendship expectations which usually characterize children several years older, associating friendship with trust, intimacy and the sharing of deep confidences, while as early as Year 2 the exceptionally gifted children displayed the conceptions and expectations of friendship held by the average ability Year 6 and 7 students. Observed differences were most acute from age 6 through 8. These findings may explain why gifted children so often prefer the companionship of older students, and why they are so often rejected by their age-peers. The findings call into question the reluctance of Australian teachers to accelerate or ability group gifted children during the early years of school.

(d) Nomination criteria as predictors of success in the Australian Primary Talent Search

Schools refer academically gifted students to the Australian Primary Talent Search on a range of criteria. These vary from state to state. Some states endorse the use of ability and achievement tests to identify academically gifted students while some tacitly or actively discourage it. Students therefore enrol for off-level assessment in APTS through a range of selection criteria including IQ testing, standardized achievement testing in various subjects, performance in the top band of the given state's basic skills test, high level performance in state or national competitions (e.g. the University of New South Wales English, Maths or Science tests) existing membership of a full time or part-time school program for gifted and talented students, school grades, teacher nomination, etc. GERRIC is currently investigating the relative effectiveness of the various entrance criteria as predictors of success on EXPLORE, the off-level test of maths, English reasoning, science reasoning and reading comprehension used in APTS. This study is funded by GERRIC.

(e) Outcomes of the Scientia Challenge Program

A study funded by Dr John Hirshman of UNSW's School of Community Medicine is investigating the effect of participation in GERRIC's Scientia Challenge program on gifted adolescents' attitudes towards their own abilities, and towards future careers.

(f) Longitudinal study of exceptionally and profoundly gifted children

This 18 year longitudinal study of 60 extremely gifted Australian children, conducted by Professor Gross, has been briefly referred to earlier (3.2.5).

(g) Study of motivation in students in Selective High Schools

A study conducted by Dr Katherine Hoekman has investigated the effects of academic challenge or lack of challenge in enhancing or decreasing motivation of students in ability grouped settings.

5.8.2 Research in gifted education by past and recent graduate students of UNSW

Students currently undertaking MEd (Hons), EdD and PhD degrees in gifted education, or who have recently graduated, have researched a range of issues including the cognitive and affective development of autistic savants (Trevor Clark) , parenting styles of parents of musically gifted children (Dr Felicia Chadwick), shifts in self-esteem of gifted primary school children enrolled and not enrolled in Opportunity Classes (Carole Bool), attitudes towards single-subject acceleration among secondary school students who have undertaken such acceleration (Dr Kim Jaggar), attitudes and experiences of teachers who have been appointed as coordinators of gifted education within their schools (Dr Peter Downey), the effectiveness of postgraduate courses in gifted education in universities in New South Wales (Joan Sexton), and a longitudinal study (five years) of academically gifted students taking a program which combined fulltime ability grouping and cohort acceleration within a selective high school (Dr Carol Muiznieks).

5.8.3 Programs Conducted in Cooperation with International Research Centres

(a) Talent Search Research

GERRIC has a strong collaborative relationship with the Belin-Blank International Centre on Gifted Education and Talent Development at the University of Iowa. With the participation of Professor Michael Pyryt of the Centre for Gifted Education at the University of Calgary, the three Centres are currently engaged in a comparative study of Australian, American and Canadian gifted students' performance on the four subscales of EXPLORE - maths, science, English and reading comprehension. This also involves an investigation of the effectiveness of Talent Search entrance criteria in the three countries, for predicting achievement on EXPLORE.

(b) Research on Development of Effective Curricula for Academically Gifted Students

A study conducted in partnership with the Centre for Gifted Education at the College of William and Mary, in Williamsburg, Virginia, has investigated the effectiveness of an American model of curriculum design for the development of curriculum units for use with Australian gifted and talented primary and secondary students.

Teachers who already had postgraduate qualifications in gifted education from UNSW undertook an intensive week of further training in curriculum development using the William and Mary Model of curriculum development. Training was undertaken by Professor Joyce VanTassel-Baska, one of the world leaders in research and development in curriculum design and Director of William and Mary's Center for Gifted Education.

Over the course of several months, the specially trained teachers then developed curriculum units in English and science, designed for use with students who have specific talent in these areas. The units were trialled with Australian gifted and talented students, modified and trialled again. Units which proved highly successful will be published by GERRIC in its series of Teacher Resources. Two such the units are in press and will be published in May, 2001, while several others are in the final stages of preparation.,

5.9 Conclusion: The value of a National Centre

We will not attempt to outline, here, the many further programs of research, teaching and community service which could be developed by GERRIC with Commonwealth funding, for the benefit of gifted and talented students, their teachers, and their parents, across Australia.

We are sure that the Reference Committee's investigations over the next few months will elicit from the Australian community its needs and its concerns.

6. The Sound of Silence

In the late 1930s the great psychologist Leta Hollingworth (1940, p. 116) began a memorandum to the American Council on Education with these words: "The development of all the world's natural resources depends on human intelligence, courage, stamina and will. It depends primary on *thinking*. Therefore, intellectually gifted children are among the most valuable assets of a civilised nation."

This call has been reiterated repeatedly in America over the last 15 years. In 1990 the *Journal of Educational Psychology* devoted an issue to research in the education and psychology of the gifted, warning: "As a nation, we must guard against wasting the national resource that our gifted children represent" (Tomlinson-Keasay, 1990, p. 399).

Interestingly, this view of gifted children as a powerful national resource appears as strongly in communist as in capitalist societies. Special programs for gifted students still exist throughout the former USSR (Grigorenko, 2000), in its satellite countries in Eastern Europe (Persson, Joswig and Balogh, 2000) and in China (Shi and Zha, 2000). They provide advanced instruction for young people talented in science, mathematics, languages, computing, visual and performing arts, and athletics. In Australia in 1988 Senate Standing Committee (Commonwealth of Australia, 1988) endorsed this view by noting that without the contribution of its gifted citizens, Australian society would be poorer both materially and culturally.

Gifted children, however, will not develop to assist their country if they themselves are not assisted to develop. The catch-cries of "talent will out" and "the cream will rise to the top" derive from the assumption that all students of high ability will succeed, and that therefore those who *do* succeed (and are therefore most easily identifiable as gifted or talented) represent the full quota of those who have potential. Like most simplistic arguments, it is extremely seductive; however it is contradicted by the many studies of underachievement and serious demotivation among academically gifted children and adolescents.

It is essential that we identify, nurture and support the abilities of our gifted and talented young people.

We close this submission with a personal message from Professor Miraca Gross.

"I have been actively involved in gifted education, as a teacher, school administrator, academic and researcher since 1974. I was one of almost 300 individuals and groups who made submissions to the Senate Select Committee in 1988, and one of 85 who appeared before that Committee to give evidence, and I felt privileged to be able to do so.

I am delighted that again, after 15 years, the Senate is going to the people to take submissions, and hear evidence, regarding the status of gifted education in Australia today, what has happened since 1988, and what still needs to happen.

However, I am deeply concerned by the number of people who are actively working in this field, and who are passionately concerned for the education and welfare of gifted and talented children, but who have not made submissions to the Reference Committee and who have expressed to me their belief that to do so would be of little value.

Their concern can be summed up in a sentence: 'What's the point? Look what happened the last time.'

Obviously, although I myself was deeply distressed by the lack of positive or practical outcome from the 1988 Senate Enquiry, I do not share the attitude of those colleagues.

However, I do sincerely ask of the Reference Committee: If you have fewer submissions than you might have wished or expected, *please* do not feel that this arises from a lack of interest or a lack of concern. Silence can arise from a sense of disempowerment. Please listen to the sound of silence."

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