Chapter One

Introduction

Rationale for the study

Providing good educational experiences for students who are gifted and talented [GAT] is an important issue in developing and nurturing their skills. These young people hold promise and hope for the future of our nation and need to be catered for educationally to allow them to develop to their potential. As with all children, the GAT have a right to an equitable share of educational resources such as access to information and materials, availability of good teachers, physical structures and good classroom practice.

There has been recognition in educational research that gifted and talented children do need specific types of learning and teaching programs (Gross, 2000; New South Wales Department of Education, 1991; Renzulli, 1977; Silverman, 1993). That recognition led to an increase in the number of special classes for gifted children in New South Wales [NSW] in 1993, following the issue of a policy advising ways of catering for gifted children (Department of School Education, 1991).
There is a degree of controversy about how best to group gifted students, should they be:

- all grouped together in a class;
- randomly allocated to different classes; or,
- in a class which is streamed for ability?

The effects of grouping on the academic self-concept, on motivational orientation and on achievement of GAT children are unclear; therefore it is necessary to conduct research in this area of education. Research into the value of special class placement for achievement and positive academic self-concept has important implications for both policy decisions and the development of individual children’s potential.

In the United States of America, research showed that for some individuals their placement in a homogeneous group of gifted and talented students has positive outcomes on motivation, learning and self-concept (Feldhusen, 1991). However, there is research that questions grouping children of similar academic ability because the Big Fish Little Pond Effect (BFLPE) operates (Marsh & Parker, 1984). This is where equally able students have lower academic self-concepts when they compare themselves with more able students when they are grouped together and higher academic self-concepts when they compare themselves with less able students. This is significant when grouping gifted students into a homogeneous class of gifted students because the effects of that grouping may be that aspects of self-concept will be diminished. Marsh’s (1984, 1991) research has shown that academic self-concept will depend on a student’s own academic ability and how this compares with the ability levels of the other students in the same class.
There is a paucity of current research looking at the effects of grouping on academic self-concept, motivation and achievement of gifted and talented students in an Australian setting. Hence research in this area is important in the local setting so that practice can be informed by systematic and thorough investigation. This investigation must address what effect selective gifted classes called opportunity classes [OC] have on children, on their self concept, on their motivational goal orientation and on their learning. Placement of primary school children into special classes involves parents making decisions about what may be the best educational setting for their gifted child. To understand and evaluate what informs parents in their decision-making it is important to ask parents how and why they make choices for the education of their young gifted children. Parents, as prime educators of their children, have a wealth of knowledge about their child. They have an understanding of what interests and motivates their child. This understanding is usually based on observation, informal conversation, everyday living and some intuition. Parents can be excellent advocates for their children. Often information from parents is best obtained not by rigid questionnaire, but by open-ended interview where parents are able to talk freely and often elaborately about their child (Bogden & Biklen, 1992). The wealth of knowledge that each parent has of their child allows them to articulate why they make choices about special class placement for their gifted child within a framework of their knowing how their child learns and what motivates that learning.

Parents and educators value children having a belief in themselves and their abilities. A positive self-concept, as an outcome of education, is valued across all educational settings. Janos, Fung and Robinson (1985) identified that the vast majority of academically gifted children show a positive self-concept compared to
children not identified as gifted. However, gifted children participating in special
programs, have also been observed to show a diminished self-concept in comparison
with other gifted children (Fults, 1980; Kulik & Kulik, 1992; Marsh, Chessor, Craven
& Roche, 1994). For gifted children to be motivated to use their ability and to keep
their self-concept high is an important goal for special class placement or any other
placement.

Purpose

The purpose of the research reported here considered three issues regarding the
placement and education of gifted and talented children into special classes. The
research was divided into three studies.

Study 1 examined the academic self-concept of gifted and talented students in
two settings: an homogenous grouping of gifted and talented children; and, an
heterogenous grouping of mixed ability children, to determine if the BFLPE is
evident. The second purpose of Study 1 was to examine whether the effects of the
BFLPE were still evident after a period of time; that is, whether the effects on
academic self-concept are residual over time and possibly persistent in another
setting.

The purpose of Study 2 was to qualitatively obtain parents’ perceptions of
special class placement for their child given their knowledge of how their child learns,
what motivates their learning and the parents’ wishes to best meet the needs of their
gifted child. Parents were asked to share their insights into the effect of this
placement on their child’s performance and general well-being. In addition,
discussion considered how the original special class placement effected subsequent class placement and transition to, and achievement at, high school.

The purpose of Study 3 was to research the effect on gifted children, of selective class placement on academic and general self-concept, on motivational goal orientation and on achievement over time compared to gifted children’s self-concept, motivation and achievement over time in non-selective class settings. The motivation types examined were mastery goal orientation, performance approach goal orientation and performance or work avoidance orientation (Dweck, 1986).

Participants in each Study

Study 1: A class group of 24 gifted and talented students who had been selected on merit to be a member of the OC class (experimental group) and a matched group of 24 gifted students in mixed ability classes (comparison group).

Study 2: One parent of each of the gifted and talented children in the experimental group in Study 1.

Study 3: Comprised two groups one of two hundred and fifty gifted and talented students, selected on merit to be a member of one of 10 opportunity classes in a region of Sydney (experimental group), and a control group made up of 384 gifted and talented students, 197 students from 9 schools in a mixed ability setting and 187 students from 5 schools in streamed settings.

Hypotheses & Research Questions

The effect of special class placement on self-concept has been described as both positive and negative. The positive effects are often in relation to the social
context (Gross, 1993) while the negative effects are often in the area of academic self-concept (Marsh, 1984). In the light of the increasing number of selective gifted classes being provided by the Department of Education and Training in NSW, the key issues in discerning good educational experiences for gifted and talented students at present is the lack of clarity with regard to:

- the effects of special class placement, over time, on academic self-concept;
- the effects of special class placement, over time, on motivation and achievement; and,
- parents' perception of what is important in determining the best education for their gifted and talented child who has been selected for special GAT class placement.

Researchers have established the link between academic self-concept and academic achievement (Gagné, 1993; Marsh & Yeung, 1997). Additionally research into the motivation of gifted students within different placement settings has postulated, 'intrinsic motivation of gifted students might be diminished in the context of heterogeneous classrooms' (Vallerand, Gagné, Senecal, & Pelletier, 1994, p. 174). What is needed is research to provide clarity of best fit of educational setting, specifically a selective OC class or non-selective class, to enhance academic achievement of gifted individuals within an adequate motivation framework.

The key purpose of the present research is to contribute to the knowledge of best practice regarding gifted and talented students particularly with respect to the type of placement and with regard to academic and motivational goals.

Research questions, which support the key purpose, are:
1. What type of placement best supports high academic self-concept in a school setting?
2. What aspects of special class placement do parents report as impacting on their gifted child?
3. What type of placement supports mastery goal motivation?
4. What type of placement supports academic achievement?

Research questions direct our study and hypotheses allow us to examine possible relationships which arise (Borg and Gall, 1989). The specific hypotheses to support the research questions are:

1. The academic self-concept will be significantly lower over time for gifted and talented students in a homogeneous setting compared to gifted and talented students in a heterogeneous setting;
2. The reading self-concept of gifted children in a selective OC class will be lower over time;
3. The mathematics self-concept of gifted children in a selective OC class will be lower over time;
4. Gifted children who are in an OC class will have a general self concept which will not be diminished over time;
5. Gifted children who are in an OC class will have a mastery goal orientation; and,
6. The achievement of gifted children who are in an OC class will be higher than gifted children in other classes.
Analysis of data

Study 1 data were analysed using paired $t$ tests to compare total academic self-concept of the experimental and comparison groups and academic self-concept of the experimental group from the first to the second testing. The 12 month follow-up study was analysed using ANOVAs to determine whether academic self-concept was maintained over time.

Study 2 was a qualitative study and the open-ended responses of the participants were tabulated onto a case ordered meta-matrix to obtain an overall picture of the responses.

Study 3 data were analysed using repeated measures ANOVA to test for differences in means of reading self-concept, mathematics self-concept, general self-concept, mastery goal motivation, performance goal orientation, performance avoidance orientation and academic achievement over time comparing selective OC class placement to non-selective class placement for gifted children.

Limitations of the study

The small sample size used for Studies 1 and 2 limits the generalisability of the findings to a defined population (Borg & Gall, 1989, p. 649).

These studies were undertaken in government schools in New South Wales [NSW], Australia. They will be of interest to the other state education authorities, Catholic and independent education authorities, since their education systems are organised in a similar manner to NSW government schools and similar recommendations and expectations for gifted students exist in all three systems. In
particular, the impending introduction of specialist classes for gifted students in all
government high schools sees many groups of principals and teachers seeking
research results and strategies to utilise to inform their school practice.

Summary

Overall this research investigated:

1. The effect of grouping on the academic self-concept of gifted and talented
   students;

2. Whether the effects on academic self-concept persisted over time;

3. Parental perception of special class placement on the general performance
   and well-being of their child;

4. The correlation between mastery goal motivation and placement in a
   selective OC class; and,

5. The correlation between achievement and placement in a selective OC class.

The research pointed to the effects of selective class grouping of gifted children on
their motivation orientation, on academic self-concept and achievement. This allowed
predictions to be made and recommendations for best practice for the education of
individual gifted and talented students.
Chapter Two

Review of Literature

Historical Perspective

The origin of ‘white’ Australia as a British penal colony, established in the late eighteenth century, has given rise to the egalitarianism that characterises Australian society. Society at that time was split into two classes, the aristocracy (or landed gentry) and convicts, who were often treated like slaves (Ward, 1958). Hence there was resentment of inherited wealth and inherited power. Against this backdrop, the structure of public education was established in each state in the nineteenth century (Robinson, 1992). The aim was to introduce free, compulsory and secular schooling.

The curriculum in the mid-nineteenth century was inflexible and defined by educational authorities. All students were taught the same material at the same pace and at the same level of competence. There was no provision in the set curricula for the individual needs of students and similarities among students were stressed while individual differences were down played or were not accepted (Braggett, 1985). It was only when the work of Binet on the intellectual potential of individuals was
recognised in Australia, that awareness of the differences in children's intellectual
development was acknowledged (Terman, 1925). This led to discussion of gifted
children and their needs. In 1924 the six state directors of education in Australia
evaluated the provisions made for gifted children in their systems and concluded that
special class placement would be appropriate for children with high intellectual
functioning.

In NSW, four special classes for academically gifted children were established
in 1932. These were in metropolitan primary schools catering for Year 5 and 6
students and known as Opportunity ‘C’ [OC] classes (Larsson, 1986). Beyond this,
there were no specific plans to provide for gifted children in NSW primary schools
until the 1970s. “Provision for gifted and talented children was not a popular cause to
espouse in a nation that decried special attention to academic precocity and equated
giftedness with privilege” (Braggett, 1985, p. 1).

Changes in thinking and emphasis in the area of gifted education occurred in the
Western World in response to the Russian launch into space of the ‘Sputnik 1’. This
was the first artificial satellite to circle the Earth in 1957 and was followed in 1961,
with the first Russian manned space flight. The American response to these ‘firsts’ by
the Russians was a much greater emphasis being placed on mathematics and science
in American schools. As well, Talent Search (Tannenbaum, 1993) aimed at
identifying and promoting gifted and talented young students in American Schools,
was begun (Passow, 1993; Treffinger, 1986). By 1972 the definition of gifted and
talented began to broaden to include areas of giftedness outside of the
mathematics/science domains and to include an upsurge in ‘black giftedness’ which
was a termed used in reference to giftedness in minority cultures in the USA
(Baldwin, 1987).
In 1975, the first world conference on gifted and talented was held in London. This brought attention to the identification of talent in young people as well as giving emphasis to the diversity of talent. In Australia, in 1975, the Ministry of Education appointed a committee to report on the identification and education of highly talented children in Years 7 to 12 in government schools. Whilst support was advocated for early identification of talented children and appropriate provision for their education, the decision was that children with special aptitudes or abilities were to be educated where possible in their local schools.

In 1977, the NSW Education Department published a report called *The Education of the Talented Child*. In 1978 the Victorian Association for Gifted and Talented Children was established and in 1979 a similar association was established in NSW. These associations were primarily formed by parents looking for support in catering for their gifted children. As the ground swell of interest grew, in 1981, an Advisory Group, on the Education of Gifted and Talented Children was established by the Commonwealth Schools Commission (Colston, 1988). Also in 1981, a National Seminar on the Education of Gifted and Talented Children sponsored by the Commonwealth Schools Commission was held in Melbourne. In 1983, a NSW Department of Education policy on the Education of Children with Special Talents was published. The first Australian National Conference on Education of Talented and Gifted children was held at the University of Melbourne.

Although in the period from 1977-84 not many changes took place in curriculum development for gifted and talented children, there was a continuing commitment to the education of gifted students in their local schools. This was predominantly achieved through enrichment programs. On a national level, there was a great deal of discussion about the most appropriate ways of educating the gifted. In
the early 1980s regional initiatives catering for gifted and talented students were introduced as a response to the stated needs of gifted students (Braggett, 1985). In 1985, the second National Conference on Gifted and Talented Education was held in Brisbane. One of the clear needs identified at this conference was the education of teachers in identifying and teaching gifted students. As a response, the first Graduate Diploma in Educational Studies - Teaching Gifted Children commenced in 1987 at Mitchell College of Advanced Education (Whiton, 1995).

Nineteen eighty-eight saw a number of significant steps taken in the provision of appropriate education experiences for GAT children. A report of the Senate Select Committee on the Education of Gifted and Talented Children was published (Colston, 1988). NSW appointed a Management Review Committee to examine all aspects of the Minister for Education and Youth Affairs portfolios (Scott, 1989). A National Board of Employment, Education and Training was established and a committee of Review of New South Wales Schools was instituted (Carrick, 1989). A great deal of discussion was taking place in the area of curriculum reform generally with some emphasis on meeting the needs of gifted and talented children. In 1989, a paper titled Excellence and Equity - New South Wales Curriculum Reform was published (New South Wales Ministry of Education and Youth Affairs). That same year Sydney hosted the Eighth World Conference on the education of gifted and talented children. In 1990, the Education Reform Act was passed (Wescombe & Sherington, 1993), leading to significant changes to curricula in New South Wales schools.

The change in curricula pointed to a changing ethos in which the need for specific provision for gifted and talented students was recognised. For example, in NSW, in May of 1992, plans were announced to treble and spread state-wide Opportunity Classes for gifted Year 5 and 6 students. In addition to these special
classes, initiatives for the development of early childhood programs, for accelerated progression and for the implementation of some ‘part-time’ programs for gifted students were put into place (Forster, 1992). In the tertiary sector, the University of New South Wales introduced advanced placement for very able students. The 1991 Policy for the Education of Gifted and Talented Students stated that “opportunities for students to achieve their full potential should be provided as a matter of daily routine. Such opportunities may be created within a class, among groups of classes or schools, or by regionally or centrally-designed programs and initiatives” (NSW Department of School Education, 1991a, p. 11). The emphasis in this policy, which is still current, reflected that all individuals had the right to have appropriate opportunity and experiences not only to develop their potential, but also to satisfy their learning needs. In 1992, there was evidence of a mushrooming of provisions and publications for gifted and talented education. For example, the Australian Association on the Education of Gifted and Talented published the Australasian Journal of Gifted Education. The Fifth International Conference on Thinking Skills was held in Queensland as was the first Regional Competition for Tournament of Minds. The Tournament of Minds was extended in 1992 and run on a state and National level. At the same time a broader perspective was established through the publication of literature on GAT education and the establishment of State and National Conferences on Gifted Education. The NSW Minister of Education sponsored the distribution of the journal Gifted to all government schools and local libraries for a period of two years. In 1993, the first state conference of the NSW Association for Gifted and Talented Children The Gifted Challenge was held.

By 1995, the Australian Association for the Education of the Gifted and Talented become affiliated with each of the state associations of gifted education.
That same year, the Australasian/International Conference on Education of Gifted Students was held in Melbourne. The strength of states affiliating with one another and the provision of an Australasian perspective on gifted education was some evidence of a consolidation of financial and academic resources for the education of the public and for awareness of the need for specific programs for gifted children.

The historic overview allows us to see that in the education of gifted children there was a shift in the philosophical basis of the present guidelines from the conception of giftedness as privilege and therefore elitist to one of equality of access and opportunity. Educating and specifically catering for gifted children was accepted as necessary rather than viewed as promoting privilege. It is an issue of equity to make provision for special needs children. The gifted and talented are children with special needs. Programs that allow students to grow and develop in their potential also empower them.

**Perspectives of Giftedness**

For the first half of this century giftedness was viewed only as high intellectual and academic capacity (Gross, 1993). This definition may be seen to be over simplistic and misleading. Carroll and Laming (1974, p. 29) reported that “defining giftedness is a timeless problem. Man has attempted to solve the questions of who are the gifted, and what abilities constitute giftedness for centuries ... there are no universal definitions as to what constitutes giftedness”.

In the literature it is apparent that many definitions are used and accepted. Lucito (1963) divided the definitions of giftedness into five classes.
Ex post facto

Ex post facto definitions state the gifted are those who have achieved prominence in one of the professions (Anastasi, 1958; Cox, 1926) or who have shown consistently remarkable performance in a potentially valuable human activity (Sumption & Leucking, 1960). The ex post facto definitions can lead to a wide variety of interpretations. For example the son of a successful business magnate may inherit the business leadership with no personal attributes beyond that of inheritance. Similarly, an actor may be judged as gifted in one performance but that may not be sustained over time.

IQ Definitions

The gifted have been defined as those who scored at some point on an Intelligence Quotient (IQ) scale (Terman, 1925, 1954). Spearman (1927) proposed a two factor theory of intelligence to account for the patterns of correlations observed among group tests of intelligence. The theory stated that a general factor ‘g’ and one or more specific factors ‘s’ accounted for performance on intelligence tests. Spearman described the ‘g’ factor as a general mental energy. It is this factor that is used in operations of a deductive nature, linked with the skill, speed and intensity of a person’s intellectual output. Evidence does indicate and support that there is such a factor in human intelligence. The ‘g’ factor is an index of general mental ability or intelligence and represents the ‘inventive’ as contrasted with the ‘reproductive’ aspect of mental ability (Jensen, 1979). Spearman (1927) described his ‘s’ factors as specific factors of skill, which are an expression of ‘g’. Visual-motor abilities, recall or processing speed may be specific ‘s’ factors which impact on general intelligence ‘g’ factors. There are problems associated with IQ definitions and Gowan and Torrance
(1971) pointed out that even when IQ scores are used there is no agreement in the level at which giftedness begins. Sumption and Leucking (1960, p. 47) added that “an acceptable definition of the gifted must recognize that present tests of mental ability may be incomplete or incapable of measuring the total spectrum of intelligence. If such is the case, then the IQ must be ruled out as the sole determinant of the degree of giftedness”.

The Talent definition

The Talent definition is a social definition which was developed when the IQ criterion was dropped from some definitions or was broadened to include individuals who excelled in such areas as art and music. These individuals were labelled ‘talented’ (DeHaan & Havighurst, 1961; Witty, 1962). Wood (1973) made the distinction by stating that giftedness can be viewed primarily as academic brilliance and talent as an exceptional ability in music, art, drama, sports and so on. Thorndike (1927) included a social cluster in his view of intelligence. This social cluster which involved ability to deal with people was coupled with a concrete cluster which included dealing with things and an abstract intelligence. Talent in interpersonal skills was viewed as an aspect of intelligence.

Percentage definitions

Percentage definitions were created as many as the top 15 - 20 % of a population or as few as 1-3 % of a population were considered gifted. Kough (1960) reported that the percentage definition was popular in schools trying to establish programs for gifted children by allowing the top 15 or 20 percent of a group to be part of a special program.
Creativity definitions

Creativity definitions were stimulated by Guilford’s factor analytic studies (1959, 1960). Guilford included an analysis of products in his multifactor theory of intelligence. When products can be factored into definitions of intelligence then creativity could be seen as a relevant factor in determining intelligence. Other researchers (Getzels & Jackson, 1958; Renzulli, 1977; Torrance, 1970) used creativity as one of the criteria in their definition of giftedness.

Having outlined these five definition classes, Lucito (1963, p. 184) then produced his own definition of giftedness, “the gifted are those students whose potential intellectual powers are at such a high ideational level in both productive and evaluative thinking that it can be reasonably assumed they could be the future problem solvers, innovators and evaluators of the culture if adequate educational experiences are provided”. Lucito (1963) called this the productive - evaluative - thinking definition. This definition was drawn from the work of Guilford and Merrifield (1960) who summarised four basic processes in their model of the intellect - cognition, memory, production and evaluation.

Guilford’s (1967) three-dimensional Structure of Intellect model was a way of organizing intellectual factors into a system. This system outlined that cognition, memory, production and evaluation interacted with the way information was processed with the product and content of thinking. One dimension represented the operations involved in processing information, a second dimension represented contents and a third dimension represented products. Intellectual activities were understood by the type of mental operation performed, the content on which the mental operation is performed and the resulting product.
Lucito’s (1963) summary of research definitions and variety of concepts with regard to defining the gifted opened thinking into the nature of giftedness and the multi-level conceptualisations of giftedness.

Within the multiple level ideas of giftedness one of the earliest definitions of multiple talents was developed by DeHaan and Havinghurst (1961). These researchers proposed six domains of excellence: intellectual ability; creative thinking; scientific ability; social leadership; mechanical skills; and, talent in the fine arts. This shift in thinking of giftedness as a measure of ‘g’, general intellectual ability, to a more domain specific awareness of giftedness led to a much broader understanding of giftedness and talent. In the United States of America, the Marland Report (Marland, 1972) stated that gifted children and youth need to be identified and have differentiated educational programs. There was a new understanding that gifted children may have extraordinary mathematical ability but not necessarily high verbal reasoning skills. The Marland Report influenced the thinking and the policy making in Australia in providing for gifted and talented students, resulting in the publication in Australia of a report called The Education of the Talented Child (Macdonald, 1977). As well, this report influenced the setting up of the Associations for Gifted and Talented in both Victoria and New South Wales.

In 1977, Renzulli developed a theoretical model of giftedness which had considerable influence in both America and Australia. Renzulli’s ‘three-ring’ definition proposed that giftedness is an interaction among three basic clusters of human traits - above average general ability, high levels of task commitment and general levels of creativity. Renzulli (1978) specified that above average ability may be general ability where there is evidence of high levels of abstract thinking, verbal and numerical reasoning, spatial relations, memory and word fluency as well as the
automatisation of information processing. However, he added that the category of above average ability may include specific ability in a specialized area of knowledge or areas of human performance such as in the arts, leadership or administration. Task commitment was described as the capacity for high levels of interest, enthusiasm, fascination or involvement in a particular area of study or form of human expression. Task commitment included the capacity for perseverance, determination, hard work and dedicated practice. Self-confidence and a strong belief in one’s ability to carry out important work or a drive to achieve are aspects of task commitment as well as the ability to identify significant problems within specialized areas. Renzulli (1978) described creativity as fluency, flexibility and originality of thought as well as openness to experience, curiosity, speculation and risk taking. He included sensitivity to detail and aesthetic characteristics of ideas and things. The willingness to act on and react to external stimulation with one’s own ideas and feelings was another aspect of Renzulli’s definition of giftedness.

The interaction between general ability, task commitment and creativity is fluid. “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, p. 73). Since the mid-1980s Renzulli's definition was under increasing criticism (Borland, 1989; Gagné, 1985; Jarrell & Borland, 1990; Kontos, Carter, Ormrod & Cooney, 1983). Renzulli’s theory still has many supporters, but there is a growing concern that this model possibly does not allow for the underachieving gifted child. Renzulli refutes this to a point by questioning the use of the term gifted to describe people. He expressed a need to shift the emphasis from the concept of ‘being gifted’ to developing ‘gifted behaviours’ (Renzulli, 1986, p. 61).
With this shift in terminology, the concept of an underachieving gifted person is irrelevant.

Children who have potential for succeeding as gifted adults not only require the general and specific abilities mentioned in some of the earlier definitions of giftedness, but also must have facilitative personality attributes and a facilitative environment to foster the emergence of talent (Tannenbaum, 1983). What Tannenbaum offered was a model which not only looked at the attributes of the individual for the expression or potential of giftedness but also included personality and environmental variables which can assist or hinder the translation of promise into fulfilment. Tannenbaum (1983, p. 87) proposed that “giftedness in children....denotes their potential for becoming critically acclaimed performers or exemplary producers of ideas in spheres of activity that enhance the moral, physical, social, intellectual or aesthetic life of humanity”. Tannenbaum regarded the emergence of giftedness as dependent on the coming together of general and specific abilities, non-intellective factors such as environmental stimulation or dedication to a chosen field as well as chance. He highlighted the role of sociocultural contexts in defining giftedness as well as the difficulty of predicting adult giftedness from any group of children and environmental characteristics because of the diversity of individual, cultural and chance factors that contribute to giftedness, not to say anything of people’s lives in general. Tannenbaum (1986, p. 21) expressed this by stating “rare brainpower has to fit into its own Zeitgeist in order to be recognized and appreciated....there has to be a perfect match between a person’s particular talent and the readiness of society to appreciate it. Otherwise genius will remain stillborn or mature to serve an unappreciative audience”. For a child to become gifted, Tannenbaum defines five crucial factors: superior general intellect with distinctive special aptitudes, the right
blending of non-intellective qualities, a challenging environment and good fortune at crucial periods of life. Each of these factors is necessary but not sufficient in itself. It is the combination of these factors that is a critical issue in the development of giftedness.

Gagné (1985) in his differentiated model of giftedness and talent also provided for the link between potential and performance but in a different way to that of Tannenbaum. Gagné distinguishes between giftedness and talent on the basis of potential and realisation: giftedness being the innate, natural aptitude, and talent that which can be systematically developed. “Giftedness corresponds to competence which is distinctly above average in one or more domains of human aptitude. Talent corresponds to performance that is distinctly above average in one or more fields of human activity” (Gagné, 1985, p. 108). He suggested four major domains: intellectual, creative, socio-affective and sensori-motor (Gagné, 1991). Unlike Renzulli, Gagné separated the domains of intellectual and creative ability. For children to be acknowledged as gifted they do not have to possess high potential in both these domains. The gifted student may become talented in any one, or in many talent fields. An example of this may be the student with high ability in academic subjects, as well as being an accomplished musician and perhaps an exceptional athlete. Gagné places factors of personality, environment and motivation between giftedness and the translation of this giftedness into talent. Motivation is an essential element for the emergence of talent in the gifted child. Gagné's model shows the linkage between aptitude and achievement. The model recognises the student who may have high ability but who may be underachieving, lacking in motivation or prevented from realising his or her potential by environmental, physiological or psychological factors. Gagné (1995, p. 106) went on to propose a model to further
differentiate the terms giftedness and talent. The term giftedness was formally defined as “the possession and use of untrained and spontaneously expressed natural abilities (called aptitudes or gifts) in at least one ability domain. The term talent was formally defined as the superior mastery of systematically developed abilities (or skills) and knowledge in at least one field of human activity”. Gagné (1995) proposed that the distinction between gifts and talents should be maintained and based on the distinction between two types of abilities, natural abilities (gifts or aptitudes) and systematically developed skills (talents). He maintained that there is a developmental relationship between these two types of abilities - gifts or aptitudes being the constituent elements of talent with learning having a crucial role in the transformation of natural abilities into the systematically developed skills of a talent area. Gagné continued in the development of his definitions to include the importance of motivation, temperament, surroundings, significant people and events as essential elements of the developmental process.

Gagné (2000) differentiated the definition further by expressing giftedness as natural abilities which can result in talents, if they are systematically acted upon by catalysts. Gagné includes in these catalysts intrapersonal qualities such as motivation, personality and work habits as well as environmental catalysts such as family, school and teachers. He also includes program provisions and activities within the developmental process of both formal and informal learning. Gagné has added to this new model a catalyst called chance. Gagné thesis is that the catalysts are vital in activating the translation of giftedness into talent. He suggests that an important mediating factor is training and practice.

Gardner's (1983) conception of multiple intelligences has been used as the basis of some definitions of giftedness. The Multiple Intelligences theory challenges the
notion of general intelligence or ‘g’. Intelligence is an ability or a set of abilities that permit an individual to solve problems or fashion products that are of consequence in a particular culture (Gardner, 1983). There are seven somewhat independent intelligences - linguistic, logical-mathematical, spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal. Gardner believes that these intelligences are relatively autonomous intellectual competencies. He stated that linguistic intelligence may involve syntactic and pragmatic abilities involved in the use of language for communication and could be evident in some individuals. Musical intelligence may include rhythmic and pitch abilities involved in composing, singing and playing music. Gardner (1983) found that some individuals have intelligences in one area while others may have intelligences in a number of areas. The competencies or intelligences may be viewed as building blocks out of which thought and action develop. They make up the basis of human symbol-using capacities and interact to produce a diverse mixture of human talents. “A human intellectual competence must entail a set of skills of problem solving - enabling the individual to resolve genuine problems or difficulties that she or he encounters, and when appropriate, to create an effective product - and must also entail the potential for finding or creating problems thereby laying the ground work for the acquisition of new knowledge” (Gardner, 1983, pp. 60-61).

Using Gardner's model, Sloat (1990) suggested that talent, giftedness and creativity are neither synonymous entities, nor completely separate but can be seen in seven distinct groups of individuals:

1. gifted;
2. creative;
3. talented;
4. gifted-creative;
5. gifted-talented;
6. creative-talented; and,
7. gifted-creative-talented.

The model in Figure 1 shows the seven groups in diagrammatic form (Sloat, 1990, p. 37). Although Sloat (1990) has included on the diagram some key words to describe each type of giftedness such as abstract thinkers for the gifted or musical/artistic in the talented group, these characteristics are not exclusive to any one domain.

![Diagram](image)

*Figure 1. The interrelationship of giftedness, creativity and talent.*

Sternberg (1986) divided human intelligence into three dimensions: componential, experiential and contextual. The componential dimension relates
intelligence to the internal mental mechanisms of the individual. These mental mechanisms are referred to as information processing components. The experiential dimension relates intelligence to both the external and internal worlds of the individual. This part of the theory specifies at what point intelligence is most critically involved in a person’s experience with handling tasks and situations. The contextual dimension relates intelligence to the external world of the individual. It emphasizes adaptation to, selection of, and shaping of the environment. Sternberg (1986) saw intelligence as purposive adaptation to, shaping and selection of the environment relevant to an individual’s life. The cultural context of individuals was seen as very relevant in terms of what was adaptive in that setting.

A number of conceptual models of intelligence which lead to differing views of giftedness and talent in individuals have been outlined. The NSW Department of Education and Training uses the definition that gifted students are those “with the potential to exhibit superior performance across a range of areas of endeavour”. Talented students are those “with the potential to exhibit superior performance in one area of endeavour” (NSW Department of School Education, 1991a, p. 2). Although Gross (1993) describes these definitions as deriving from Gagné’s (1995) model, they do make different distinction between giftedness and talent from those of Gagné

Overall, definitions of giftedness can be categorised into the basic classes used by Lucito (1963) but not completed by his five classes. There is an obvious omission of a category of giftedness that is culturally embedded. What is valued, esteemed and developed in some cultures as intelligence is not so highly acclaimed by other cultures. Secondly, the development of intelligence is somewhat dependent on a chance factor to which Tannenbaum (1986) referred and which Gagné (2000) has introduced into his catalysts as a causal factor in the expression of giftedness to talent.
This chance factor is highly significant from an individual perspective when referring to the development and the expression of intelligence. Therefore it may be necessary to constitute a sixth category of definition which includes culturally specific considerations and those factors of chance of being in the right place at the right time, or in a time and a place where giftedness was recognized and opportunities available. Chance is also a major causal factor in the determination of genetic endowment (Gagné, 2000).

Giftedness and talent should not be used to describe all children but rather be used to refer to exceptionality – “a level of ability or performance possessed or achieved by a small minority of the population” (Gross, 1993, p. 40). This elitist focus, catering for a minority of the population, has influenced the history of education for gifted and talented students in Australia. Educators are still ambivalent and lacking clear direction for the most appropriate ways of developing the potential of gifted and talented students.

Most of the research in this study uses NSW Government schools and hence the NSW Department of Education and Training definition from the policy document is adopted (NSW Education Department Gifted and Talented Policy, 1991a). As the 1991 Gifted and Talented policy document is currently being reviewed there is evidence of a wider acceptance of Gagné’s model (Chessman, 2003). A Reference Group made up of university academics, senior curriculum advisers from the NSW Department of Education and Training, school counsellors, teachers and parents convened in 2003 for the purpose of discussion in order to rewrite the gifted and talented policy. The new policy is still in the process of being written and has been influenced by the findings of the Australian association on the education of gifted and talented students (1996). The paper is based on three premises:
• “Australia’s prosperity depends on its ability to recognise and nurture its
diverse gifted and talented population”

• “there are students with outstanding potential and exceptional abilities in
all socio-cultural groups across Australia”

• “the development of specific policies, programs and provisions and their
implementation are essential in assisting these students reach their
potential.” (Australian Future: A National position paper on the
education of gifted and talented students. Australian Association for the
Gifted and Talented, 1996, pp. 2-3).

With the broadening of the philosophical basis of gifted education, the Reference
Group have adopted a broader view of giftedness (Chessman, 2003). Giftedness
designates the possession and use of untrained and spontaneously expressed superior
abilities in one ability domain out of four proposed aptitude domains: intellectual,
creative, socio-affective and sensorimotor. Talent designates the superior mastery of
systematically developed abilities and knowledge in at least one field of human
activity.

The acceptance of the Gagné definition is an important shift in thinking for the
Department of Education and Training in NSW because it acknowledges that innate
ability may exist but needs to be nurtured and developed. This bears influence on
policy decisions in catering for the needs of gifted students. It needs to be noted
however, the identification and selection of students for the OC classes for this
research was based on the 1991 Policy called Government Strategy for the Education
of Gifted and Talented Students.
Theoretical Underpinnings of Grouping Students

Children in a social setting will compare themselves to others in that setting. This comparison can take place on various levels and include many constructs such as physical, psychological, academic and social. The process and theory of social comparison is well documented (Bandura, 1986, 1997; Festinger, 1954). What is important is the effect of this social comparison on psychological factors. Students regularly use social comparative information for self-evaluative purposes (Schunk, 1984). Social comparative information provides a standard against which students can judge their performance level (Butler, 1995). Three studies conducted by Lockwood (2002) examined the impact of downward comparisons on self. Downward comparisons occur when individuals compare themselves to others worse-off than themselves on any number of constructs such as intelligence or wealth. Lockwood (2002) found that when vulnerability was high, that is, when an individual was not very confident the self-evaluations were highly deflated, but when vulnerability was low, that is, when an individual was confident and secure downward comparisons enhanced self-evaluations. The milieu in which these comparisons are made is highly significant. Social comparison theory has linked improved performance to the tendency to compare with others who are performing well (Blanton, Buunk, Gibbons, & Kuyper, 1999; Collins, 1996). Clearly then the impact of the educational setting on a student’s self evaluation is worth considering. The impact of the educational setting is less negative if the student is confident and self-concept is high.

It can be hypothesized that gifted children would have a positive self-concept. This is true to the extent that ability is translated into achievement. However, exceptional ability is not always expressed as advanced achievement and therefore this hypothesis is tenuous. However, if specific domains of self-concept are measured
and these reflect areas of specific achievement of gifted children then indeed positive self-concept may result. Marsh (1990a) has noted that the relation between performance and self-concept is a complicated one, with high performance not always resulting in high self-concept. Cornell (1983) has shown that labelling a child ‘gifted’ often results in a positive self image and an expectation of a positive effect on a child’s self esteem.

A basis for predicting a negative self-concept in a gifted child comes from considerations of the social comparison process. Placement of a gifted child in a homogeneous group of gifted children may result in a decline in self-concept - particularly academic self-concept - if the class is organized around academic measures (Coleman & Fults, 1982; Harter, 1986; Marsh, 1990b). Therefore the actual grouping arrangement for gifted children is of concern when establishing good practice for these children. Goldring (1990) specified positive and negative outcomes of special grouping for gifted children.

Students also differ in their orientation to success and failure. “Students can be separated into those who are success oriented, those who are failure avoidant and those who are failure accepting” (Martin, 2002, p. 75). Success oriented students have high self esteem and believe they can maintain their success. Failure avoidant students tend to be lower in self-esteem and doubt their ability to be successful. Failure accepting students also are low in self-esteem and do not have confidence in their ability to avoid failure. Although motivational goals are complex, students’ goals direct their thinking and behaviour as they engage in academic tasks (Dweck & Elliot, 1983, Weiner, 1986). Those students who perform academic tasks to improve their level of competence and understanding are said to have a mastery goal orientation (Ames & Archer, 1988). Those students who reference their goals against the
performance of others or against external standards are said to have a performance approach goal orientation (Ames, 1992). These students focus on ability and take pride in doing well without too much effort. Goal orientation is one way of representing students’ motivation and provides a comprehensive theory of academic motivation.

Social comparison theory will operate in an academic situation where students perform academic tasks and compare themselves to peers. Marsh (1991) suggests that academic self-concept may be influenced when gifted students are placed in a specialised setting of gifted students. Goal orientation theory allows for research to examine motivation in this specialised setting for gifted students. Overall, when gifted students self-concept is challenged in a specialised setting and students have a differing orientation to success and failure as well as achievement, then it is important to examine best practice for the placement of gifted students in academic settings.

**Special Class Placement**

There is concern from educators and parents, over how best to educate and meet the needs of gifted students. Broadly, programs can be classified as special class placement, enrichment programs, acceleration through classes, selective schools, special interest groupings or individual programs or a combination of some of the above provisions (Braggett, 1985; Gross, 1993, 2000; Hoge & Renzulli, 1993).

Special classes for gifted and talented children can yield successful educational experiences for highly gifted students (Feldhusen, 1991; Feldhusen & Sayler, 1990; Gamoran, 1990; Kulik & Kulik, 1992). Political, social and educational considerations affect practice and attitudes regarding special schools, classes and groupings for students with outstanding academic performance. Different states in
Australia organise differently their provision of learning environments for students identified as academically exceptional. Rimm (1996) wrote that there is more widespread acceptance for students to be grouped on the basis of non-academic and sporting excellence. This has seen the development of prestigious performing arts and sporting high schools being highly accepted and sought after.

Goldring (1990), in her meta-analysis of studies of the effects of special class placement on achievement of gifted children, emphasises that the debate is 'largely philosophical' with many contradictory opinions. Researchers of gifted education, she maintains, claimed that the teacher may be the most important factor in the success of gifted programs and this statement would be true for all children in educational settings.

Allen (1991) after analysing and reviewing many research studies concluded that gifted and high ability children show positive academic effects from some forms of homogeneous grouping. The positive effects of grouping result from the acceleration and special curriculum that can be provided in such classes. The link between grouping, acceleration and differentiated curriculum is an essential aspect of the instruction that produces higher achievement among gifted students (Feldhusen & Moon, 1992).

In the United States of America, meta-analysis of research on the ability grouping of gifted students has reported no significant effect on general school attitude or self-esteem but a positive attitude toward subject matter for all learners when they are grouped according to ability (Kulik & Kulik, 1987, 1992). There is support for sustained periods of instruction in like-ability groups for gifted students (Feldhusen & Moon, 1992; Gamoran, 1990; Rogers, 1993). Instructional organisation should stress flexibility, opportunities for various forms of grouping as well as
independent learning opportunities. Full-time classes of gifted students are not supported to the same extent (Feidler, Lange, & Winebrenner, 1993; Marsh, 1991; Van Tassel-Baska, 1992).

In Australia, Sampson (1969, 1977) examined selective OC class placement of gifted primary children and later selective high school students in terms of their academic performance. He compared gifted children in selective classes and selective schools with matched samples of students in mainstream settings and found no significant differences in achievement for students in the selective settings either at primary school or high school. His research indicated that achievement was not enhanced by special class placement, however he emphasised that his research did not examine affective variables which he speculated may be enhanced by selective class placement.

Often a means of initially catering for gifted children, especially those who work quickly and complete work before their age peers, is to simply give them more of the same to do. Although speed of mental processing is one aspect of giftedness, Van Deur (1996) believed that gifted children think differently to other children and therefore a qualitatively different program needs to be provided. Langrehr (1994) outlined that better thinkers are those who quickly sense patterns in information, are motivated to ask themselves relevant questions, construct clear mental maps, form connections between known concepts and new ideas, think flexibly and thrive on questions and problems. Consequently, there is a need for a differentiated curriculum for gifted learners as well as consideration for acceleration or special class placement for gifted students. Research both in the United States of America and in Australia shows a decrease in motivation among extremely gifted children confined to the regular classroom (Gross, 1989; Silverman, 1989). By contrast, Slavin's (1990) best
evidence synthesis of the research on ability grouping at the secondary level concluded that there are no significant benefits of special class placement for gifted students in high school.

Research based on social comparison theory and on the big-fish-little-pond effect [BFLPE] has found that participation in selective schools or high ability selective classes has resulted in declines in the academic self-concepts of gifted children (Craven & Marsh, 1997; Hoge & Renzulli, 1993; Marsh, Chessor, Craven, & Roche, 1995). A positive self-concept is seen to be a desirable outcome in the education of all children including gifted children. Marsh and Craven (1998) reported that a positive self-concept is associated with other desirable outcomes such as motivation, persistence and academic achievement. Gross (1997) refuted the existence of the BFLPE as an optical illusion and not relevant to gifted education. Specific research has provided evidence of the BFLPE with gifted children in a selective OC class (Marsh et al., 1995). Gross (1997) proposed that special class placement is highly relevant for gifted children either in selective classes or in academically selective schools. Gross (1993, p. 234) does, however, place emphasis on the importance of self-concept for gifted children stressing that “many psychologists and educators studying the gifted and talented have emphasized the importance, to the realisation of intellectual potential, of a positive self-concept and a high level of self-esteem”. Whether best practice is to educate gifted students in selective gifted classes is not clear. Research findings are often contradictory and confusing and hence there is a need for clear and methodologically sound research to be continued.

Evidence from American research indicated that the effects of special classes can be very positive for gifted children (Aldrich & Mills, 1989; Van Tassel-Baska, Willis, & Meyers, 1989). Parents and teachers are often the greatest advocates of
special classes indicating that they meet the academic as well as the social-emotional needs of gifted children (Feldhusen & Sayler, 1990). As well as grouping gifted children together, research indicates there is also a need for acceleration of subject matter for highly able and high achieving learners (Feldhusen & Moon, 1992; Gross, 1993).

What is obvious in research in gifted education is the range of conclusions reached about the suitability of different instructional organisations. Sicola (1990, p. 47) suggested that the “only reliable findings of research suggest that an individual program is the best answer and that there is no other universal sequential method for meeting the unique needs of this very diverse population”. This response however, does not give evidence to whether this individual program would be implemented within a homogeneous or heterogeneous classroom or not in a classroom at all.

In an Australian setting, when gifted students were asked for their perceptions of what they valued in education, the response indicated that students valued personal-social characteristics of teachers most highly above cognitive qualities or classroom organisational factors (Williams, 1988). The quality of teaching in nurturing students’ talents in whatever setting is seen as an important consideration in catering for gifted students (Resnick, 1987; Schlichter, 1993).

Feldhusen (1991) sought responses from many teachers about special class placement of gifted students and found that approximately 90% of teachers judged that gifted students in special classes were more highly motivated than they would be in regular classes and that they learned more. However, Feldhusen (1991) does emphasise that these special classes should be a choice of the students, not just parents, if they are to be successful. Kulik and Kulik (1990) conclude “programs of special instruction for high aptitude and gifted students are usually effective” (p. 191).
The weight of evidence indicates that differentiation of the curriculum and at least some grouping by ability level is important in catering for the needs of gifted and talented students. Although research to date is not conclusive it is evident that attention needs to be paid to the grouping of gifted children. Many psychologists and educators studying the gifted and talented have emphasized the importance of a positive self-concept and a high level of self-esteem to the realisation of intellectual potential (DeHaan & Havighurst, 1961; Feldhusen & Hoover, 1986; Foster, 1983; Hollingworth, 1926; Tannenbaum, 1983). To cultivate the nation’s resources of intellectual talent, intellectual potential of the gifted child needs to be nurtured.

Self-concept

Self-concept can be defined in general terms as the image we have of ourselves. A more precise definition refers to “our attitudes, feelings and knowledge about our abilities, skills, appearance and social acceptability” (Byrne, 1984, p.429). This definition implies various dimensions to self-concept including cognitive, perceptual and affective domains. Considerable controversy exists regarding the conceptualisation and measurement of self-concept (Byrne, 1984; Harter, 1983, 1986; Marsh, Byrne, & Shavelson, 1992). This controversy revolves around the way that various aspects of self-concept are conceptualised and how these aspects then relate to each other. The meaningfulness of a global self-concept measure is also a source of controversy. It is generally more accepted that the self-concept structure is both multidimensional and hierarchical (Marsh, 1984; Shalveson, Hubner & Stanton, 1976). Multidimensional aspects of self-concept reflect domain specific measures (Marsh, 1984). Defining self-concept as a multidimensional construct allows the measurement of specific domains. That is, a measure can be obtained for a general
self-concept but there also exists a construct of academic self-concept and social and physical self-concept. In fact, academic self-concept can be a discrete measure not affected by physical self-concept (Marsh, 1987b). For example, academic performance in mathematics and English will be reflected in academic self-concept but may not have an effect on physical self-concept.

It is generally accepted that a positive self-concept is a worthwhile outcome in education (Australian Education Council, 1989). The achievement of high standards and the development of self-confidence and self-esteem are identified as some of the national goals of schooling (Australian Education Council, 1989). A positive academic self-concept is linked to academic effort and persistence as well as academic achievement (Marsh, 1990a; Marsh & Craven, 1997).

For gifted children, positive effects on self-concept are often assumed as a correlate of participation in special classes. Foster (1983) suggested that a secure self-concept was necessary for the development of a drive to excel. Gross (1993, pp. 245-246) proposed that “where a child who is known to be intellectually gifted is not demonstrating high level performance, we might suspect that her exceptional cognitive abilities are not supported by healthy levels of self-concept or self-esteem”. Studies relating to the self-concept of gifted children also indicate the relative independence of the components of the self-concept as well as the developmental process operating in the formation of self-concept (Hoge & McSheffrey, 1991; Marsh, 1990a; Marsh & Craven, 1997).

Just as self-concept can be viewed as a “set of perceptions, interpretations and evaluations of self and one's own talents, abilities and liabilities” (Feldhusen, 1986, p. 120), self-esteem is an affective aspect of self-concept, and as such is a personal judgement of worth or value expressed in the attitudes a person holds towards himself
or herself. Self-esteem is largely derived from the positive or negative feedback the individual receives from significant others, such as teachers, parents and peers, about the value or effectiveness of his or her actions (Foster, 1983). Self-concept ratings, like other psychological impressions are relative.

Studies of the self-concept of intellectually gifted children produce conflicting results. Several studies (Colangelo & Pfleger, 1978; Karnes & Wherry, 1981; Tidwell, 1980) have suggested that children identified as intellectually gifted have higher self-concepts than children not so identified. Other studies (Bracken, 1980; Glenn, 1978) have found no such superiority. However, there may be some measurement effects as the same instruments for measuring self-concept were not used in all these studies.

A number of studies comparing gifted students enrolled in special programs with equally able students not so enrolled have identified diminished self-concept within the special programs group (Fults, 1980; Rodgers, 1979; Rogers, 2002; Van Tassel-Baska, 1992). Janos, Fung, and Robinson (1985) found that diminished self-concepts may be due to feelings engendered among children when they join an already established group. However, there are suggestions that such declines in self-concept are short lived and dissipate after an initial settling in period and assimilation with the group (Mills & Durden, 1992). Other researchers (Coleman & Fults, 1982; Feldhusen, Saylor, Nielson, & Kolloff, 1990; Karnes & Wherry, 1981; Kolloff & Feldhusen, 1984) have observed an enhanced self-concept among the gifted in special programs. Marsh (1984) reported that ability grouping does have substantial effects on self-concept because the formation of self-concept in various domains e.g. academic self-concept is determined to a degree by students comparing themselves to other students within the group. While it is difficult to reconcile such differences in the research outcomes on the effects of streaming by ability on self-concept, work by
Marsh (1987b) has unravelled some of these complexities. His research showed that students compare their own academic ability to the academic abilities of their class group and use this social comparison for forming their own academic self-concept.

The more closely a particular domain of self-concept is linked to a particular situation, the closer the relationship between self-concept and behaviour in that situation (Marsh, 1987a). In an academically gifted class, the academic self-concept may be affected. Instruments for the measure of self-concept have improved and self-concept measures can now be based on more precise theoretical models and better measurement instruments which allows for more precise and accurate measures (Marsh & Craven, 1997). Shavelson, Hubner, and Stanton (1976) developed a multi-faceted and hierarchical model of self-concept. When self-concept is measured as a unidimensional measure with no differentiation of the aspects that make up different facets of self-concept, then you only get one measure of self-concept. Using a multi-dimensional instrument for measuring self-concept allows you to take measures of differing aspects. Research (Byrne, 1984; Marsh & Shavelson, 1985; Shavelson & Marsh, 1986) pointed to a multi-faceted structure of self-concept. Self-concept studies of gifted students, as with all students, can be more adequately considered within a framework of a multidimensional model of self-concept (Marsh, Chessor, Craven, & Roche, 1995). Marsh et al. (1995) found that for students in a specially selected gifted class there were significant declines in academic self-concept but these declines were not evident in non-academic self-concept. This research was significant because most previous research with gifted students relied on total self-concept scores and did not delineate between academic and non-academic self-concept (Craven, Marsh, & Print, 2000). The use of multidimensional self-concept scales distinguishes between
different components of self-concept and hence provides finer detail in research results.

**Big-Fish-Little-Pond Effect [BFLPE]**

In the extensive research on self-concept pursued by Marsh (1984, 1987b, 1998) it is evident that there are many facets to self-concept and that self-concept does not stand alone but is influenced by other factors. Social comparison theory suggests that domains of self-concept may depend on the group within which comparisons are made. The more closely a particular domain of self-concept is linked to a particular situation, the closer the relationship between self-concept and behaviour in the specific situation (Marsh, 1987b). Self-concept ratings, like other psychological impressions, are relative. Marsh (1984) has found that grouping children on the basis of their ability does have substantial effects on self-concept within different ability groupings. For example, if in a mixed ability group a child’s academic achievement places them at the top of that group when placed in a class of gifted and talented students that same person’s position in class may fall somewhere below the top in the class. For some children this drop in position in class would have a damaging effect on academic self-concept. This means that in an academically gifted class, the academic self-concept may be affected.

Marsh and Parker (1984) suggested that studies of BFLPE have implications for considering the placement of children in high ability schools or high ability classes because this may produce a lower academic self-concept. A positive academic self-concept based on comparisons with abilities of others in a mixed ability setting may not be maintainable in a different academic setting (Marsh, 1987b). Other facets of self-concept such as physical, social or general self-concept may not necessarily be
affected. However Gross (1992) reported that social self-concept for gifted children in accelerated class situations or in special groups is positive and enhanced by the placement. With an awareness of the multi dimensional aspects of self-concept (Byrne, 1984; Marsh, Relich, & Smith, 1983; Marsh, Smith, & Barnes, 1985; Shavelson, Hubner, & Stanton, 1976) it may be possible to observe both effects in the same situation.

In summary, all students need educational experiences that will help to fulfil their potential as learners. What is evident is that the educational experiences necessary to maximise educational outcomes are not the same for all students. Within an egalitarian ethos, the legitimate needs of gifted and talented students have in the past been neglected. Gifted and talented students have specific needs (Braggett, 1985; Gross, 1993). The basic conception of giftedness frames what educational opportunities are offered to students. There is still a degree of controversy over the best educational experiences for gifted children (Feldhusen, 1991; Gross, 1989). However, present policy and its implementation in New South Wales reflects the right of all individuals to have appropriate opportunities and experiences (NSW Department of School Education, 1991a; 1991b).

Special class placement can give appropriate educational opportunities and experiences for gifted students (Feldhusen, 1991; Kulik & Kulik, 1992). At least some grouping by ability is beneficial for the needs of gifted and talented students.

The realisation of potential requires a positive self-concept (Colangelo, Kelly, & Schrepfer, 1987). Although research has shown that gifted students have appropriately high self-concepts regarding their academic ability (Chan, 1988; Colangelo & Pfleger, 1978; Kelly & Colangelo, 1984), there have been inconsistent results on non-academic self-concept. Self-concept ratings are relative and depend on some basis of
comparison. It can be assumed that in an academically gifted class, the academic self-concept may be affected but it is unclear how this will effect motivation to learn.

The Issue of Motivation

Motivation to learn is a competence “acquired through general experience but stimulated most directly through modelling, communication of expectations, and direct instruction or socialization by significant others (especially parents and teachers)” (Brophy, 1987, p. 3). Children’s home environment initially shapes attitudes that children develop towards learning. “When parents nurture their children’s natural curiosity about the world around them by encouraging questions and exploration, they give children a powerful message that learning is worthwhile and can be fun and satisfying” (Brophy, 1987, p. 3). When children are raised in a home that nurtures a sense of self-worth, competence, autonomy and self-efficacy, they will be more apt to accept the risks inherent in learning. Conversely, when children do not view themselves as basically competent and able, “their freedom to engage in academically challenging pursuits and capacity to tolerate and cope with failure are greatly diminished” (Lumsden, 1994, p. 1).

The term motivation to learn is defined by Marshall (1987, p. 136) as “the meaningfulness, value, and benefits of academic tasks to the learner—regardless of whether or not they are intrinsically interesting”. Ames (1990) notes that motivation to learn is characterised by long-term, quality involvement in learning and commitment to the process of learning. Factors such as home environment, parent’s nurturing of children’s natural curiosity about the world, encouraging exploration, rewarding effort and persistence rather than simply focussing on results in many domains are at the core of motivated learning.
Motivated action involves choosing certain behaviours in preference to others. It also involves a degree of engagement in those behaviours with a level of intensity as well as persistence in those behaviours even in the face of difficulty (Maehr, 1989). Student motivation has to do with students’ desire to participate in the learning process, but it also concerns the reasons or goals that underlie their involvement or non-involvement in learning activities. Although children may be equally motivated to perform a task, the sources of their motivation may differ.

A child who is intrinsically motivated undertakes an activity “for its own sake, for the enjoyment it provides, the learning it permits or the feelings of accomplishment it evokes” (Lepper, 1988, p. 23). An extrinsically motivated child performs “in order to obtain some reward or avoid some punishment external to the activity itself” such as grades, stickers or teacher or parent approval (Lepper, 1988, p. 24).

Therefore one vital component of student motivation is goal orientation. Goals are cognitive representations of the different purposes children may adopt in achievement situations (Pintrich, Marx, & Boyle, 1993). They are the answers to the question “Why am I doing this task?” Research has focused on two general answers to this question which represent two particular goal orientations. Children who engage in a task primarily to improve their level of competence are said to have a mastery goal orientation (Ames & Archer, 1988). The other broad orientation is performance approach goals which are referenced against the performance of others or external standards such as grades (Ames, 1992). Performance approach orientation reflects students wanting to achieve academically to demonstrate their ability, to perform better than other students and to attain certain marks. Often performance approach
goals reflect being able to obtain tangible rewards associated with academic performance (Dowson & McInerney, 1998).

Cognitive skills necessary for academic achievement interact with motivational processes. Motivation to achieve involves a goal orientation toward competence and can be seen to fall into two categories: learning goals where individuals seek to increase their competence or to understand or master a new task; and, performance goals, in which individuals work to gain favourable judgements of their competence or avoid negative judgements of their competence (Dweck & Elliott, 1983).

Students who are mastery goal oriented value learning for its own sake and define success by greater competence and understanding (Butler, 1995). These mastery goals are also known as intrinsic goals (Harter, 1981), learning goals (Dweck & Elliott, 1983) and task involved goals (Nicholls, 1984). They are self-referenced. Subjective feelings of efficacy are involved with effort and achievements in pursuing these self referenced standards and lead to determining self-concept in distinct domains (Nicholls, Cheung, Lauer, & Pataschnick, 1989).

In contrast, performance goals, which are also known as extrinsic goals (Harter, 1981) and ego-involved goals, (Nicholls, 1984) are referenced against others’ performance or against external standards such as grades (Ames, 1992). Integral to performance goals is a focus on ability (Dweck, 1986), self-worth (Covington, 1984) and obtaining favourable judgements from others (Meece, 1994) rather than on effort. Success is seen in terms of 'beating' others. Feelings of pride are obtained from doing well, especially with little effort rather than from improved competence through appropriate effort (Ames, 1984).

The link between an individual’s self-concept and his or her achievement motivation and behaviour is a crucial issue in education generally and in gifted
education in particular. Dweck (1986) describes adaptive and maladaptive patterns of motivation which based on research indicate that people have either an ‘entity’ or ‘incremental’ view of intelligence which influences their motivation. Briefly, those students who view intelligence as a fixed state tend to try and obtain favourable judgements of their intelligence. Students who have an ‘incremental’ theory of intelligence view intelligence as a malleable quality and tend to try and develop that quality. Student’s theories of intelligence tend to orient them toward different goals. They can be orientated toward ‘performance goals’ or toward ‘learning goals’ (Dweck, 1986, p. 1041). Students who have an entity theory of intelligence and have a performance goal orientation, often try and gain positive judgements and avoid negative judgements about their competence. Students with an incremental theory of intelligence and a learning goal orientation, try to increase their competence.

Fuelled by the mastery goal orientation, individuals who embrace a belief that intelligence is a fixed entity (Dweck, 1986) and therefore are more extrinsic in their motivation to work are also more likely to feel failure when facing a difficult problem. By contrast, students who hold an incremental view of intelligence (Dweck, 1986) and who believe that effort activates ability are likely to be more adaptive and intrinsically motivated to view challenges as opportunities to become smarter. The social settings of learning for the two groups, the ‘entity’ group and the ‘incrementalists’, are important factors in determining both their achievement and self-concept.

Dweck (1986) believed motivation to achieve involves competence in relation to set goals. Adaptive motivational patterns will promote, maintain and value achievement goals. This mastery approach to motivation is characterised by challenge, high persistence in the face of obstacles and the discernment of effective
strategies by the students. Pintrich and Schrauben (1992) identified a number of components which include expectation of challenge or success, an intrinsic value for learning and some element of affect or desire. Dweck (1986, p. 1040) states that “children displaying this pattern appear to enjoy exerting effort in the pursuit of task mastery”.

Maladaptive motivational patterns are characterised by failure to:

- establish valued goals;
- remain focused striving toward those goals; or,
- attain goals that are within a person’s reach.

This maladaptive pattern tends to be characterised by challenge avoidance and a low level of persistence in the face of difficulty. In this situation there is often a display of negative affect and negative beliefs about ability in the face of obstacles (Ames, 1984).

The ability of the children is not the issue in question. There may be no difference in cognitive potential between children exhibiting the varying motivational patterns but the patterns can have enormous impact on cognitive performance. Research (Bandura & Dweck, 1985; Elliott & Dweck, 1988; Leggett, 1985, 1986) indicated that with performance goals, goals to gain positive judgements or avoid negative judgements of competence, the choice of the task and the process used to pursue the task revolves around a child’s concern about his/her ability level. In contrast with learning goals, where the goal is to increase competence, the choice of the task and the process used to pursue the task involves a focus on progress and mastery of the task through effort. When children focus on ability judgments there can be a tendency to avoid and withdraw from challenge while children focused on progress through effort are often energised by challenge. This is an important issue in
the education of gifted and talented students because the realisation of their cognitive potential hinges on motivation orientation. Goldberg and Cornell (1998), in their national study of 949 academically gifted primary school children, found mastery oriented motivation influenced perceived competence and that perceived competence influenced subsequent academic achievement.

The self can act as an agent of motivation. McCombs and Marzano (1990) discussed how an individual's metacognitive skills are a critical aspect of the link between self-concept and motivation, arguing that a person's awareness of the self as an agent is a key factor in motivating behaviour. Motivation to complete a task may be dependent on an individual's awareness of self as an agent and an evaluation of a task as being relevant to his or her goals (Wigfield & Karpathian, 1991). With gifted children, when they perceive themselves to be more cognitively competent they are usually also more intrinsically motivated (Vallerand, Gagné, Senecal, & Pelletier, 1994).

Adaptive motivational patterns promote the establishment, maintenance and attainment of personally challenging and personally valued achievement goals (Dweck, 1986). The adaptive pattern of motivation included challenge seeking as well as highly effective persistence even in the face of obstacles. Children displaying this pattern seem to enjoy working hard in the pursuit of task mastery. By contrast the maladaptive pattern is characterised by avoiding challenge and having little persistence when a task is difficult. Children in this category are often anxious and show evidence of negative affect and negative thinking when they find the challenge difficult (Ames, 1984; Diener & Dweck, 1978; Licht & Dweck, 1984; Schunk, 1989). For gifted children research has shown that negative focus on ability judgements can
result in a tendency to avoid and withdraw from challenge irrespective of cognitive potential (Dweck, 1986).

If as Rosenberg (1986) found, social comparison information is the most important in children making self judgements such as how able they are, then certainly Marsh's BFLPE research is crucial in determining placement for gifted and talented students.

Although Marsh's work on BFLPE is used in social comparison situations, it can also be linked to children's motivation. Performance approach goal orientation may be negatively affected when social comparisons are made about ability and performance in a gifted class. While gifted children in a mixed ability setting may have been able to outperform their peers, and been motivated by this, it may be more difficult to remain performance approach motivated in a selective gifted class. Marsh's research on BFLPE is based on work with adolescent students in selective high schools (Marsh, 1987b, Marsh & Parker, 1984). Will the same effects be evident with younger students at the primary school level? A lowering of academic self-concept in a class of gifted and talented students may reflect a more realistic awareness of other gifted students and their capabilities or may reflect an overall lowered self-concept.

This research investigated whether similar effects were to be found among primary school children by comparing the academic self-concept of gifted and talented children in a homogeneous setting with gifted and talented children in a mixed ability setting. Another aspect of this research involved motivation and achievement. Dowson and McInerney's (1998) research indicated that students' academic achievement is based on an interaction of cognitive processes and
motivational orientations. The challenge in gifted education is to empower students to use their gifts and become life-long learners.

Empowerment of Students

Empowerment of students means enabling individuals to develop to their potential through access to adequate programs and to appropriate learning situations with emphasis on the individual needs of all learners (McConnell, 1992). Some students will develop more quickly than their peers and therefore may need to be accelerated or enriched. For others it means that their specific talent area can be developed through special provision, while the rest of their educational experience is shared with age cohorts. In empowering students to develop their potential, traditional time frames of learning may be challenged (Beare, 1992).

Some gifted children process information more quickly, others have the ability to process more complex information (Resnick, 1987; Sternberg, 1990; Tannenbaum, 1983) and some gifted children think in qualitatively distinctive ways from non-gifted children (Van Deur, 1996). Van Deur referred to these children as having rich thinking networks which can activate many ideas in an endeavour to solve problems and introduces another cognitive dimension referred to as meta-mental modelling or a creative form of critical thinking. These mental models enable an individual to think, reason, manipulate, imagine and re-order and exchange parts of the model to create new models. Although gifted children may have this qualitative difference in the way that they think, these thinking processes can be enhanced and developed more fully with the teaching of thinking skills, creative problem solving and the promotion of a multi-disciplinary approach to learning and teaching (Landvogt, 2001). Higher order reasoning can then be promoted within individuals on a consistent basis. However,
Resnick (1987) stressed that dispositions for higher order thinking and reasoning require sustained long term cultivation. Maker (1986) argued that justification for a qualitatively different curriculum for gifted children is premised by the conclusion that gifted individuals are qualitatively different. If a curriculum is to cater for this difference in thinking of gifted children, Maker (1986) concluded that the curriculum should focus on, and be organised to include more elaborate, complex and in-depth study of ideas, problems and themes that integrate knowledge with and across systems of thought. Additionally, the curriculum should promote self-initiated and self-directed learning and growth as well as provide for the development of insight to themselves as learners. Such a curriculum focus empowers gifted individuals to set learning goals, to analyse tasks, to develop strategies for overcoming difficulties and to have some control over their learning strategies. Gifted students report that when they are challenged appropriately in learning situations they feel empowered to take charge of their learning (Gentry, Rizza, & Owen, 2002).

Mental self-management, which includes taking charge of their thinking processes and developing critical thinking skills, for the gifted child, requires nurturing. Schlichter (1993) suggested this happens most successfully when there is intellectual cooperation and intellectual criticism in a classroom coupled with the lively demands of reasons for opinions and explanations for puzzling events plus a desire for meaning and an exploration of alternatives. When children are allowed and encouraged to be inventive and to care for the tools and procedures of inquiry then they are able to monitor, manage and have some control over cognitive processes. Allowing gifted students increased decision-making opportunities in the classroom empowers them to take more charge of their learning (McArdle, Numrich, & Walsh, 2002). Gifted students need to be encouraged to realise that good learning involves
effort and self-control. Gifted reasoning and advanced intelligence will not happen if an appropriate attitude and disposition is not cultivated. Therefore, within the school community, values of thinking and independent judgement need to be incorporated into the curriculum. Price (2002) reported that attention to the emotional, social and spiritual needs empowered gifted underachievers to overcome barriers to success. Some researchers propose that allowing students to design service-learning projects which are of benefit to the community is an effective means of empowering students (Werner, Voce, Openshaw, & Simons, 2002).

The development of a society of life-long learners who are characterised by equality of access and opportunity in education has been seen as a worthwhile goal of education (Beare, 1992; Betts, 1986; Carbinis, 1992; Elkins, 1990; McConnell, 1992). Parents are instrumental in making decisions about the education of their children. With gifted children, parents have responsibility to be informed about what educational settings and groupings are best for their child.

Parents’ Responsibility to the Education of their Gifted Child

Gifted children have special needs and, as with any child with special needs, they require parents to advocate them so that the best possible educational setting and program is provided. Because the needs of gifted children are not as physically obvious as they are for other special needs children, often persistence and collaboration are required to assure that the needs of gifted children are kept firmly in focus.

Parent responsibility needs to begin early in their children’s educational process. Collaboration between teachers and school personnel is vital. When parents and teachers work together, appropriate programs can be developed and problems and
issues can be faced as a team working in the best interests of the child. Respect for the
ermote of teachers and school leaders is an important element of the collaborative
work of parents and teachers for the benefit of gifted and talented children.

Advocating for the rights and needs of gifted children takes knowledge,
perseverance and commitment. Parents of gifted children need courage, confidence
and often emotional support to pursue appropriate services for their children
(Nachshen, Anderson, and Jamieson 2001).

Any decisions about placement for gifted children is a vital part of the process
of catering for gifted children but needs to be made with the knowledge of what
provisions are available and what the best educational placement may be for the gifted
child (Silverman, 1992). Effective parents stay involved in their children’s education
and informed about gifted education generally (Feldhusen, 1992). Parents have a
responsibility to the uniqueness of their child, with a respect for their opinions and an
awareness and appreciation of their knowledge, their ideas as well as their dreams.
Young children are most flexible and their motivation to learn, task persistence, self-
concept and self-esteem all have their beginnings in the early formative years. Parents
who can advocate for their child are a great resource to the child in early years
because it is parents who can seek out appropriate programs, and then be involved
with professionals to deliver exemplary programs to these gifted children (Karnes &
Johnson, 1990). As is true for all children, gifted children need parents who are
responsive and aware of their child’s needs and are flexible enough to meet individual
needs. Being wise in how they discern what is most appropriate for their child is
important. Parents have a responsibility to children to cherish them in their uniqueness
and appreciate them for the children that they are.
Fecke (1983) wrote that gifted and talented children need their parents to help them succeed and overcome the myths and stereotypes surrounding giftedness. Nielsen and Mortorff-Albert (1989) pointed to evidence where anger between parents and school authorities prevents the best educational service and outcome for young gifted children. If parents are to be a successful advocate for their child they must determine the desired goals and then plan the most appropriate ways of reaching those goals. A partnership between home and school needs to be characterised by mutual respect and an ongoing sharing of ideas and observations about the children involved (Berger, 1990). A healthy partnership between home and school can be an encouragement for parents in raising children with a commitment to effort and a healthy attitude to learning and accomplishment (Stephens, 1999).

An effective tool for producing change and specific programs for gifted children often requires a group of people with a unified voice sharing concerns. Berger (1990) advocated that a healthy parent support group grows and changes with changing knowledge about gifted children, their special needs and effective political process. Parents should have some real choices in making decisions about school placement as well as effective programs for their child. Russell (2001) urged public policy makers to take into consideration that funding needs to be offered equally to all members of society in order to fully achieve choice in education.

An interview, as a purposeful conversation, is a means of getting information from a person (Morgan, 1988). Gathering this descriptive data can allow teachers to develop insights to a student (Bogden & Biklen, 1992). Parents are the ones who have information about their children and could be available advocates for them. Decisions about children’s education are always made by parents and it is important to understand what informs their decision making especially when special programs are
sought for gifted children. Qualitative interviews with parents can vary in the degree to which they are structured. When interviewing about gifted children and their education an unstructured interview can be relatively open-ended but focused around issues of relevance and therefore guided by general questions. This open-endedness allows a parents to tell their particular story while preserving the richness of information. Good interviews are those in which parents are at ease and can talk freely about their child (Briggs, 1986). This supportive environment encourages the involvement of the parent in the interview process.

Haensly (2001) proposed that it may be necessary for a parent to ask on behalf of their child for the teacher to more appropriately tailor an existing program, even perhaps a gifted and talented program, to the special needs of the child. It is suggested that in particular, children from culturally and linguistically diverse groups who are gifted need support from parents to be included in gifted programs (Webster, 1989). However, often this requires parent training for an expansion of gifted program eligibility guidelines and services. Lack of proper encouragement, nurturance and challenge may adversely affect a gifted person in their ability to socialize, in their motivation to learn and in their self-esteem.

Strip & Hirsch (2001, p. 32) point out that gifted children often have “esoteric passions” that other children don’t share. These interests can often set them apart from other children and isolate them from their peers. Parents or teachers can provide ways for gifted children to pursue their passion. This nurturing of interest may lead to children knowing more than either their parents or teachers about a particular topic. A respect for this intelligence is important. Adults can celebrate children’s academic excellence but an awareness of their social and emotional development and the
guidance that these children still need is an important role that parents need to maintain.

In the same way, creative talent needs to be nurtured and fostered. Natural ability may well be evident but with creative talent such as in art or music, parents have an important role with their gifted child because creative imagination is a process and skill which needs to be developed (Kay, 2001). Often the development of creative talent is a long process requiring parent assistance and investments of time and financial resources (Yun Dai & Schader, 2001). The value of pursuing training in music or creative arts is well documented and is associated with personal benefits for the learner in improved intellectual performance, personal growth, discipline and diligence (Gardner, 1997; Graziano, Peterson & Shaw, 1999; Sicola, 1990).

Because the family has a profound effect on how a child develops, desirable parenting behaviours facilitate cognitive behaviour as well as nurture gifts and talents displayed by the child. Snowden & Christian (1999) provided what they believe are necessary behaviours in parenting gifted children and including fostering of creativity, managing frustration, a healthy balance in control issues, and providing resources for play and learning. Successful parents of gifted children acted as guides and mentors as well as allowing their child to learn from a variety of socially and culturally relevant experiences. The responsibilities of parents are always to advocate and nurture their child within the context of his/her social, emotional and cognitive development and also to recognise extraordinary ability wherever and whenever it emerges (Haensly, 2001).
Chapter Three

Research Design

This chapter provides a detailed description of the methods and procedures used in the three studies focussing on GAT students’ self-concept, motivation, and achievement when they are grouped in a selective class of gifted students and parents’ perception of the success of their gifted children’s placement in a selective gifted class. The sampling techniques, research design, instruments used for data collection and procedures used for data analysis are explained.

Study One

Subjects

Two groups of students were involved in this study:

- an intact class of 24 gifted and talented students (experimental group); and,
- 24 gifted and talented students from four primary schools (comparison group).

All students were in Years 4, 5 or 6. Using a self-concept questionnaire, called the Self Description Questionnaire 1 (SDQ 1) (Marsh, 1987a), the self-concept of each student was measured at the start of the school year (Time One) and again after a period of six months (Time 2). Comparisons were made between the two groups at each time. As well, comparisons for each group were made between the first and the second measures of self-concept.
Twelve months after the Time 2 testing, a third wave of data was collected as a Time 3 measure for both the experimental and the control group. Comparisons were made between the two groups from Time 3 data.

Figures 2 and 3 diagrammatically give a visual summary of the groups in this study, instruments used for measurement and measurements collected. Figure 2 refers to Time 1 and Time 2 data collection. Figure 3 represents Time 3 data collection.
Figure 2. The Effect of Grouping on the Self-Concept of Gifted and Talented Primary School Children in Study 1

**Experimental Group**
- 24 Ss
  - IQ: 120+
  - Age: 9 - 12 years
  - One gifted class

**Comparison Group**
- 24 Ss
  - 11 girls
  - 13 boys
  - IQ: 120+
  - Age: 9-12 years
  - From 4 mixed ability classes

**Time one – day 2 of term 1**
- Self-concept Measure
  - Instrument:
    - Self Description Questionnaire 1
    - Academic self-concept
    - Non Academic self-concept
    - Peer relations self-concept
    - General self-concept

**Time two – 6 months later**
- Self-concept Measure
  - Instrument:
    - Self Description Questionnaire 1
    - Academic self-concept
    - Non Academic self-concept
    - Peer relations self-concept
    - General self-concept
Figure 3. The Effect of Grouping on the Self-concept of Gifted and Talented Primary School Children Time 3

Experimental Group

23 Ss

In gifted classes n = 18

Moved to local high school (mixed ability classes) n = 5

Comparison Group

24 Ss

In mixed ability primary classes n = 17

In selective high schools n = 1

In mixed ability high schools n = 6

Time three – 12 months later

Self-concept Measure

Instrument:

Self Description Questionnaire 1

Academic self-concept

Non Academic self-concept

Peer relations self-concept

General self-concept
The experimental group was one of the classes for gifted and talented students in a primary school in the Metropolitan South West Region of Sydney. There were 11 girls and 13 boys in this group. Their ages ranged from 9 to 12 - six 9 year olds, ten 10 year olds, seven 11 year olds and one 12 year old.

These students were selected for the class by a gifted and talented committee, made up of two psychologists, three school principals and a director of schools, after applications had been submitted by schools with recommendations from teachers and/or parents. Each child applicant undertook an individual intelligence test (K-Bit, Kaufman & Kaufman, 1990), an interview with the school counsellor and submitted a sample of work. The children were selected on merit, based on the IQ score, parent and teacher recommendations as well as submitted work. All children selected gained an IQ score of 120+.

The control or comparison group was made up of children from four primary schools in the Metropolitan South West Region of Sydney who were placed in mixed ability classes. These children had been identified by their schools as gifted students because of their achievement in school subjects. Each child recommended by the school was tested using an individual intelligence test (K-Bit, Kaufman & Kaufman, 1990). The selection of students for this study, chosen for the control group from the four schools, was based on criteria of IQ, gaining an IQ score of 120+, age and gender. The control group subjects were matched with the experimental group subjects on age, gender and IQ score.

For the 12 month follow-on study, the same subjects were used. Five subjects from the original experimental group were in Year 7 at a local high school in a mixed ability setting. One student had moved interstate and no forwarding information was
available. The remaining 18 students were still part of a gifted and talented class at the same primary school as in the previous year.

Of the comparison group, one of the girls was attending a selective high school, 6 students were attending 3 different local high schools and the remaining 17 students were still in the primary schools that they had been attending at the time of the original study.

Data collection procedures

The SDQ 1 is a 76-item questionnaire that assesses four areas of non-academic self-concept, three areas of academic self-concept and a general self-concept. The scales included in the non-academic self-concept were physical abilities, physical appearance, peer relations and parent relations scales. For the academic self-concept the scales included were reading, mathematics and general school scales. The general self scale on the SDQ 1, infers a general or overall self-perspective that is not specific to any particular facet of self-concept but could be applied to each specific facet of the self. It refers to a student's rating of himself or herself as an effective, capable individual who is proud of and satisfied with the way he or she is (Marsh, 1987a). These eight scales reflect a student's self ratings in various areas of self-concept.

There are also two composite scores that have been used. Total academic self-concept is a composite score made up by adding the scores and obtaining the mean of the sub scales of reading, mathematics and general school. Total non-academic self-concept is a composite score made up by adding the scores and obtaining the mean of the sub scales physical ability, physical appearance, peer relations and parent relations. In the SDQ 1, students are asked to respond to simple declarative statements (e.g., I am good at mathematics, I make friends easily) on a five point scale: false, mostly false,
sometimes false/sometimes true, mostly true and true. The reliability and validity of the SDQ1 is well documented (Marsh, Byrne, & Shavelson, 1988; Marsh & Shavelson, 1985; Marsh, Smith, Barnes, & Butler, 1983; Shavelson & Marsh, 1986). The internal consistency reliability estimates for the various scales and total scores are all in the .80s and .90s. The SDQ 1 responses are systematically related to external criteria such as sex, age, socioeconomic status, academic achievement, teacher ratings of achievement and inferred self-concept, peer ratings of inferred self-concept and responses to other self-concept instruments. With high reliability and good construct validity, the SDQ 1 is a useful instrument to use for the measurement of multi-dimensional self-concept (Marsh, 1987a).

**Variables**

**Independent variable**

In this study, the independent variables are time and group membership - that is membership in a homogeneous class of gifted and talented children versus mixed ability class membership.

**Dependent Variables**

The dependent variables in this study are:

1. the measure of academic self-concept on the SDQ 1;
2. the measure of non-academic self-concept on the SDQ 1;
3. the measure of peer relations self-concept on the SDQ 1; and,
4. the measure of general self-concept on the SDQ 1.
Control Variables

There are three control variables in this study. The age of the children, the intelligence as measured on an individual intelligence test and gender of the students.

Procedures

Each of the 48 children was asked to complete a SDQ 1 (Marsh, 1987a) (See Appendix A). All students in the experimental group completed the SDQ 1 as a group in the morning on Day 2 of Term 1 (early February). The children in the comparison group were from four different primary schools. In three of these, the children completed the SDQ 1 in small groups while at school. In order to complete the initial testing within a two week period, time restrictions did not allow the examiner to go to the fourth school and therefore the remaining six children completed the SDQ 1 in their individual homes with the examiner present. The control group testing was completed within the first two weeks of Term 1 to make it as close to the experimental group testing as possible.

The SDQ 1 was administered a second time to all students during the month of August. The experimental group completed the SDQ 1 in the first week of August, 1993. The children in the comparison group who were tested at school, did the SDQ 1 in the first or second week in August, in their respective schools. All six children who had done the first SDQ 1 in their own home, completed their second SDQ 1 in the second week of August, 1993, in their own homes.

The SDQ 1 profiles for each child were hand scored by the examiner and results recorded on the Scoring Profile (See Appendix B).

Twelve months after Time 2 data collection, a further set of data were collected (Time 3) from each of the candidates in the original study using the same SDQ 1
instrument. All the students completed the SDQ 1 questionnaire while in their school setting.

Data Analysis

The information from each of the SDQ 1 profiles was collated and data was analysed for statistical information such as mean, standard deviation and t test significance. The t-test was used to determine differences in mean scores. The design of this experiment did not allow for random selection of students for the control group and experimental groups. The experimental group was a convenient sample and the control group had to be matched with the experimental group on the basis of IQ score, gender and age. In order to determine whether the two groups were in fact similar enough to make comparisons, a test of homogeneity of variance was applied all the subscales of the SDQ 1.

For the initial testing, Time 1, t tests were used to note any statistically significant differences between the groups on total academic score and total non-academic score. t tests were also used to discern any significant differences between the groups on the total academic self-concept score and the total non-academic self-concept score for the second testing.

For Time 2 a paired t test was used to determine any significant difference for total academic self-concept in the experimental group for the first and the second testing. As well, paired t tests were used to determine any significant differences for the peer relations and general self sub scales between the first and the second testing for the experimental group.

The data collected 12 months after the original study, Time 3, was analysed using ANOVA. Coefficient alpha reliabilities were obtained for the reading self-
concept and mathematics self-concept scales. Reliability coefficients at Time 3 were .94 for Reading self-concept and .92 for Mathematics self-concept. A one-way ANOVA was used to compare the mean scores on academic self-concept for the experimental group and the comparison group.

**Study Two**

**Parents’ Perceptions of gifted and talented class placement**

This is a qualitative study obtaining parent’s perceptions of selective gifted OC class placement on their identified gifted and talented child. Qualitative data in this situation can provide rich information that can help illuminate a complex issue. The issue is whether to educate a gifted child in a special group of gifted and talented children or whether to educate their gifted child in a mixed ability setting. Interviews were used to collect this information. “An interview is a purposeful conversation that is directed by one in order to get information from the other” (Bogden & Biklen, 1992, p. 96). The principle advantage of the interview is its adaptability (Borg & Gall, 1989). The well-trained interviewer can make full use of responses, follow up leads and obtain more data and greater clarity. “The interview situation usually permits much greater depth than the other methods of collecting research data” (Borg & Gall, 1989, p. 446). Tuckman (1988) warned that if there was self-interest or if respondents anticipate what researchers want to hear, then validity can be compromised in an interview situation. In this particular study, because the interview was about a parent’s child, issues about validity, especially with regard to parent bias and self-interest need to be asked. Some of the emphasis of interview data can be on speculation, feelings, problems, ideas, impressions and prejudices (Bogden & Biklen, 1992). The interview was used to obtain descriptive data in the parent’s own words so that insights could be
developed into how parents viewed the OC class placement for their child and what
the transition to high school process entailed for their child. Because this study was
conducted at least two years after each child left the OC class, it has the potential of
also providing information about present school placement and performance in the
light of their special class placement. This research project allowed parents to reflect
and examine the child’s present placement in the light of the OC class placement in
primary school. Parents are usually the people who act as advocates for gifted
children and as advocates they are usually the people who make decisions finally
about their child’s placement in a program as well as directing many of the
experiences that their children will have. Individual cases are all so different and
although common trends can be established and conclusions drawn from quantitative
data, qualitative emphasises people’s experience and, therefore, can be useful in
finding meanings that people place on events, situations and on-going processes in
their lives such that their “perceptions, assumptions, prejudices, presuppositions”
(van Maanen, 1983, p. 205) can be connected within a broader social framework.

Since parents were the adults who made the choice of OC class placement for
their child, it was seen as appropriate that parents’ perceptions of the success or
otherwise of that decision should be obtained. This information from parents should
shed light on each parent’s retrospective thoughts in relation to the special class
placement and the effect of that placement on subsequent school placement and
performance. Using qualitative analysis the potential “for understanding latent,
underlying and non-obvious issues is strong” (Miles & Huberman, 1994, p. 10).
The specific research questions for this study are:

1. what do parents see as the benefit or disadvantage of special class placement for their identified gifted and talented child; and,

2. how do parents perceive placement in a homogeneous class setting of gifted and talented students affecting their child’s consequent placement and performance in high school.

Method

Subjects

The subjects for this study were parents of students who had been in the OC class at a public school in the Metropolitan South West Region of Sydney. The students were members of the experimental group in Study 1. Parents were invited to participate in an informal telephone interview. Every parent who had a child in the OC class was willing to be interviewed. The parents made the decision about which adult would be available for this interview. Only one parent per child was interviewed.

Interview procedures

A specific time was arranged for the telephone interview to take place. Each parent was contacted by the researcher at the pre-arranged time and asked again if they were willing to talk about their perception of their child’s performance and placement when they were in the OC class. Following their approval, an open-ended phone conversation ensued and this conversation was taped using answering machine equipment. The interview tapes were transcribed prior to data analysis.

The questions asked to lead the interview were:
What were the reasons for sending your child to an OC class?
Did the parent have a personal experience of an OC class?
Which needs of their child were met by being in the OC class?
Were there any disadvantages to their child’s placement in the OC class? and,
What is their child’s present school and does that school meet their child’s needs?

Data Analysis

The analysis of the data involved careful reading of responses for an analysis of the results as well as an immersion in common threads that were obvious in all responses. An analysis of the content of the interviews was followed by categorisation of information into groups of perceived level of success. Then there was a process of mapping of responses on a grid for each respondent in the style of a case-ordered meta-matrix (Miles & Huberman, 1994).

Study Three
Subjects

In 1992, the New South Wales Department of Education instituted 12 new selective gifted and talented OC classes in primary schools in the Metropolitan South West Region of Sydney.

The comparison group was made up of gifted and talented children in either streamed classes or mixed ability classes. The purpose of the streamed groups was to provide gifted children with an enriched curriculum. The children in the streamed groups were chosen by teachers based on the children’s academic performance. Other gifted children remained in mixed ability classes in some schools and were again identified by classroom teachers and offered a more enriched curriculum.
Letters were sent to the Principals of the 12 schools with selective OC classes inviting them to participate in this study. The same letters were sent to the Principals of the other 14 schools which catered for their gifted children in either streamed settings or in mixed ability groups. The letters were jointly signed by representatives of the University of Western Sydney and the Department of School Education. This resulted in the participation of 250 students from 10 of the 12 schools where there was a regional OC class. The comparison group consisted of 187 students in 5 schools in a streamed setting as well as 197 students from 9 schools in mixed ability settings. Students in both groups were aged between 8 and 12 and included both boys and girls.

Figure 4 gives a diagrammatic visual summary of the sample used for Study 3 and the measures taken.
Figure 4. Self-concept, motivation and achievement of Gifted Primary Students

- Gifted and talented students in selective gifted primary classes
  - 10 classes  n = 250

- Gifted students in non-selective classes
  - n = 384

- Self-concept
  - Self description Questionnaire 1
    - Academic self-concept
      - Reading Self-concept
      - Mathematics Self-concept
    - General Self-concept
    - Total Self-concept

- Motivation
  - School Motivation Questionnaire
    - Mastery Goal Orientation
    - Performance achievement
    - Performance avoidance

- Achievement
  - Literacy – Gapadol Test
  - Numeracy – PAT Mathematics Test (2A)
Data collection procedures

The Self Description Questionnaire-1 (SDQ-1) (Marsh, 1987a) was used to measure self-concept. This is the same instrument that was used in Study 1. After Study 1, Marsh, Chessor, Craven, and Roche (1995) evaluated the responses of GAT students to the SDQ-1 by examining the results of factor analysis, coefficient alpha estimates of reliability and factor scores standardised relative to the normal curve. The factor analysis clearly identified all 8 SDQ-1 scales. Reliability estimates were between .84 and .93, slightly higher than those reported in the test manual for a normative sample. Hence it was concluded that the SDQ-1 is appropriate, valid and reliable as a measure of self-concept within a GAT population.

The School Motivation Questionnaire (Marsh & Craven, 1994) was used to determine motivational orientations (Appendix C). This questionnaire measured six motivational orientations. Each scale contained six or seven items. Participants responded to positively worded declarative statements, using the same five-point Likert scale used on the SDQ-1. Standardised coefficient alpha reliabilities varied from .59 to .77 for Time 1 measures and from .63 to .80 for Time 2 measures. Factor analyses identified all the hypothesised factors on the School Motivation Questionnaire. The clarity of the factor structure supports the construct validity of the School Motivation Questionnaire.

Reading achievement was measured by the Gapadol reading comprehension test (Form G) (McLeod & Anderson, 1994). This test uses a cloze technique where students are asked to supply words which have been deleted from a paragraph of the text. The test is designed to discriminate reading ability at high ability and adolescent age levels. The total number of correct responses was used to calculate each person’s
reading age. Calculated standardised coefficient alpha reliabilities were similar to the estimates of reliability reported in the test manual and varied from .75 to .85.

Mathematics ability was measured using Progressive Achievement Tests in Mathematics (PAT) 2A (Australian Council for Educational Research, 1984). The 57 multiple-choice items assess a range of general mathematics topics including number, computation, fractions, measurement, money, statistics, graphs and spatial relations. The total number of correct responses was computed and scores were standardised based on norms in the test manual. Standardised coefficient alpha reliabilities were between .94 and .97 for the different age groups. This reflects a reliable instrument for measuring mathematics ability with this age group.

Variables

Independent Variables

In this study the independent variable are:

1. group membership, that is, membership in a homogeneous class of gifted and talented students versus mixed ability or streamed class membership; and,

2. time.

Dependent Variables

The dependent variables in this study are:

1. the measure of reading self-concept on the Self Description Questionnaire 1 (SDQ 1) (Marsh, 1987);  
2. the measure of mathematics self-concept on the SDQ1;  
3. the measure of total self-concept on the SDQ1;  
4. the measure of academic self-concept on the SDQ1;
5. the measure of general self-concept on the SDQ1;
6. the measure of mastery goal orientation on the School Motivation Questionnaire (SMQ) (Marsh & Craven, 1994);
7. the measure of performance approach goal orientation on the SMQ;
8. the measure of performance avoidance orientation on the SMQ;
9. the measure of reading achievement measured on the Gapadol (McLeod & Anderson, 1994);
10. the measure of mathematics achievement measured on PAT Math (Australian Council of Educational Research, 1984); and,
11. the measure of academic achievement made up of a composite of reading achievement measured on the Gapadol and mathematics achievement measured on PAT Math.

Control Variables

There is one control variable in this study:

- the age of the children

Procedures

Each of the 250 children in the 10 selective OC classes as well as the 384 students in streamed or mixed ability classes were tested on each of the instruments. The classroom teachers of the selective OC classes and the streamed classes and one school-nominated teacher from each school housing the mixed ability classes, were trained to administer the SDQ-1, SMQ, GAPADOL and PAT Mathematics. The instruction was given by trained administrators of the tests. Teachers were provided
with scripted directions detailing the administration procedures for each test. The importance of following the scripted directions was emphasised so that there was a standardised testing procedure. Teachers were instructed to administer the tests in two separate sessions. In the first session teachers administered the SDQ-1 followed by the SMQ. After a short break, the Gapadol test was administered as a timed 30-minute test followed by the PAT Mathematics test which was a timed 45-minute test. There were two waves of data collected. Time 1 data was collected in the second or third week of the school year in February. Time 2 data was collected in the same way, using the same procedures, in October of the same year.

Data Analysis

Items on the SDQ-1 were scored and mathematics self-concept, reading self-concept and general self-concept scores were calculated according to the instructions in the manual (Marsh, 1987a). The reading, mathematics and general self-concept scales each consisted of 8 items. Reliabilities of these scales were calculated for Time 1 and 2 and are represented in Table 1. The coefficient alpha reliabilities varied from .88 to .94 for Time 1 measures and from .86 to .93 for Time 2 measures.

Items on the School Motivation Questionnaire (Marsh & Craven, 1994) were scored and mastery goal orientation, performance goal orientation and performance avoidance orientation scores were calculated. The mastery goal orientation scale consisted of 6 items, performance goal orientation had 7 items and performance avoidance orientation consisted of 5 items. Reliabilities of these scales were calculated for Time 1 and Time 2 and are reported in Table 1. The coefficient alpha
reliabilities varied from .59 to .77 for Time 1 measures and from .63 to .80 for Time 2 measures.

Table 1

*Scales from Self-Description Questionnaire-1 (SDQ 1) and the School Motivation Questionnaire (SMQ) with Sample Items and Reliability Coefficient Alphas for Time 1 and 2*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Example Item</th>
<th>Reliability Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Time 1</td>
</tr>
<tr>
<td>SDQ-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Self-Concept</td>
<td>I enjoy doing work in reading</td>
<td>.88</td>
</tr>
<tr>
<td>Mathematics Self-Concept</td>
<td>I’m good at mathematics</td>
<td>.94</td>
</tr>
<tr>
<td>General Self-Concept</td>
<td>A lot of things about me are good</td>
<td>.89</td>
</tr>
<tr>
<td>SMQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery Goal Orientation</td>
<td>I feel most successful in school when I reach a goal or target</td>
<td>.59</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>I do my school work because I like to solve hard problems</td>
<td>.68</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>I do my school work because I do not want to do poorly on tests</td>
<td>.77</td>
</tr>
</tbody>
</table>

The total achievement score was calculated by combining the result of the reading achievement score as measured by the Gapadol (McLeod & Anderson, 1994) and the mathematics achievement score as measured by PAT Math (Australian Council for Educational Research, 1984). The two scores were totalled and used as an achievement score.
A series of repeated measures ANOVAs was performed on the three self-concept scales, the three motivation scales and on reading achievement, mathematics achievement and total achievement. The means of reading self-concept, mathematics self-concept, general self-concept, mastery goal orientation, performance approach goal orientation, performance goal avoidance, reading achievement, mathematics achievement and total achievement were calculated and then used in these repeated measures ANOVAs. For each analysis time (Time 1 vs. Time 2) was a repeated measures variable whereas group (selective OC group, or non-selective group) was the between group variable. Statistical analyses of comparing means of each construct, examined the effects of group placement on self-concept, motivational goal orientation and academic achievement on group differences between Time 1 and Time 2. The main focus of these analyses was whether or not there were differences between the two groups over time.
Chapter Four

Results

Introduction

This chapter reports the results of the three studies. Study 1 examined the effects of special class placement on the self-concept of gifted students. This was a small group study which examined the academic and non-academic self-concept of gifted children at the time of entry (Time 1) into an OC class, with subsequent measures after being in the class for 6 months (Time 2). This group was compared to a matched group of gifted children in mixed ability settings. A further measure of academic self-concept (Time 3) was taken 12 months after Time 2.

Study 2 reports the results of a qualitative analysis of parent perceptions of selective class placement for their gifted child. This study was conducted after the children had left the gifted class and moved to a high school setting.

Study 3 reports on the impact of selective gifted class grouping on the self-concept, motivation and achievement of primary school children. This was a large study using 10 OC classes of gifted children from an area of Sydney. This study
examines the effect of selective group membership as well over of time on the self-concept, motivation and achievement of gifted children. Two waves of data were collected and analysed.

**Study 1**

Self-concept is stable over time (Marsh, 1987). However, specific components of self-concept can change over time and this change can be measured (Marsh, Richards & Barnes, 1968). In this study, placement in a homogeneous group of gifted and talented students was expected to affect academic self-concept because the overall academic ability of the group was higher. It was predicted that non-academic self-concept would be higher based on research that has indicated that students who relate to academically equal peers will have a higher self-concept and therefore generally feel better about themselves (Gross, 1993). All other aspects of self-concept were predicted to remain stable because of the overall stability of self-concept (Byrne, 1984).

The results from the initial testing (Time 1) in this study indicated that there were no significant differences between the experimental and comparison group on total academic and non-academic self concept (Appendix D, Tables D1, D2). Because the groups had been matched on IQ score it can be assumed that the groups were of similar ability and testing (Tables, D1 and D2) revealed similar level of self-concept.

Because the groups were matched on various constructs for the sake of comparability and not randomly selected, a test of homogeneity of variance was used to determine whether the variance between the two groups was due to chance or whether the two groups were quite different from the outset. The test of homogeneity
of variance was used on each of the subscale scores as well as the two composite total scores.

As a result of the test of homogeneity of variance, it was found that the experimental and control groups differed on a number of characteristics. They were different on aspects of physical ability self-concept, peer relations self-concept, mathematics self-concept and general self self-concept. The lack of homogeneity of variance on the physical abilities scale and mathematics did not affect this study as these two subscales did not relate to the hypotheses of the present study. However the lack of homogeneity of variance on the peer relations and the general self scale did mean that comparisons on the peer relations and general scale were made only for the experimental group comparing the results of Time 1 and Time 2 testing. The two composite scores, total non-academic self-concept and total academic self-concept were homogeneous and therefore comparisons could be made on these two measures for the experimental and the comparison groups. Table 2 shows means and standard deviations for all self-concept scales for the experimental and comparison group.
Table 2

*Means and Standard Deviations for Self-Concept Scales of SDQ-1*

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th></th>
<th>Comparison Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
<td>Time 2</td>
</tr>
<tr>
<td>Physical Abilities</td>
<td>$M = 27.58$</td>
<td>$M = 29.63$</td>
<td>$M = 30.88$</td>
<td>$M = 31.04$</td>
</tr>
<tr>
<td></td>
<td>$SD = 8.97$</td>
<td>$SD = 7.79$</td>
<td>$SD = 5.46$</td>
<td>$SD = 7.97$</td>
</tr>
<tr>
<td></td>
<td>$SD = 6.61$</td>
<td>$SD = 7.12$</td>
<td>$SD = 6.76$</td>
<td>$SD = 6.41$</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>$M = 28.29$</td>
<td>$M = 29.17$</td>
<td>$M = 31.58$</td>
<td>$M = 31.30$</td>
</tr>
<tr>
<td></td>
<td>$SD = 8.57$</td>
<td>$SD = 7.86$</td>
<td>$SD = 5.31$</td>
<td>$SD = 5.85$</td>
</tr>
<tr>
<td>Parent Relations *</td>
<td>$M = 34.04$</td>
<td>$M = 35.54$</td>
<td>$M = 35.54$</td>
<td>$M = 36.04$</td>
</tr>
<tr>
<td></td>
<td>$SD = 6.59$</td>
<td>$SD = 4.71$</td>
<td>$SD = 4.84$</td>
<td>$SD = 4.53$</td>
</tr>
<tr>
<td>Reading *</td>
<td>$M = 35.87$</td>
<td>$M = 33.04$</td>
<td>$M = 36.21$</td>
<td>$M = 35.04$</td>
</tr>
<tr>
<td></td>
<td>$SD = 4.79$</td>
<td>$SD = 7.84$</td>
<td>$SD = 3.92$</td>
<td>$SD = 5.89$</td>
</tr>
<tr>
<td>Mathematics</td>
<td>$M = 31.96$</td>
<td>$M = 28.88$</td>
<td>$M = 34.67$</td>
<td>$M = 34.96$</td>
</tr>
<tr>
<td></td>
<td>$SD = 8.91$</td>
<td>$SD = 9.77$</td>
<td>$SD = 5.57$</td>
<td>$SD = 6.09$</td>
</tr>
<tr>
<td>General School *</td>
<td>$M = 30.25$</td>
<td>$M = 27.83$</td>
<td>$M = 32.17$</td>
<td>$M = 31.71$</td>
</tr>
<tr>
<td></td>
<td>$SD = 6.26$</td>
<td>$SD = 7.63$</td>
<td>$SD = 4.88$</td>
<td>$SD = 5.84$</td>
</tr>
<tr>
<td>General Self</td>
<td>$M = 30.92$</td>
<td>$M = 32.88$</td>
<td>$M = 35.58$</td>
<td>$M = 34.67$</td>
</tr>
<tr>
<td></td>
<td>$SD = 5.55$</td>
<td>$SD = 5.52$</td>
<td>$SD = 3.83$</td>
<td>$SD = 5.67$</td>
</tr>
<tr>
<td>Total Non-Academic * +</td>
<td>$M = 29.25$</td>
<td>$M = 30.38$</td>
<td>$M = 31.54$</td>
<td>$M = 32.08$</td>
</tr>
<tr>
<td></td>
<td>$SD = 5.71$</td>
<td>$SD = 4.98$</td>
<td>$SD = 4.14$</td>
<td>$SD = 5.07$</td>
</tr>
<tr>
<td>Total Academic * ++</td>
<td>$M = 33.04$</td>
<td>$M = 29.92$</td>
<td>$M = 34.46$</td>
<td>$M = 33.92$</td>
</tr>
<tr>
<td></td>
<td>$SD = 4.57$</td>
<td>$SD = 6.53$</td>
<td>$SD = 3.61$</td>
<td>$SD = 5.12$</td>
</tr>
</tbody>
</table>

* These subscales displayed homogeneity of variance
+ Composite score of physical abilities, physical appearance, peer relations and parent relations
++ Composite score of reading, mathematics and general school

Analysis of the results from the Time 2 testing in this study indicate that there was a significant difference in the total academic self-concept of the experimental group compared to that of the comparison group ($t = 2.36$, $p < 0.05$) (Table 3). Students in the experimental group of gifted and talented students had a significantly lower
total academic self-concept after 6 months in the group than the gifted and talented students in the mixed ability group. The first research hypothesis is therefore accepted while the null hypothesis relating to no difference in total academic self-concept for the experimental group and the comparison group is rejected.

Table 3

*t test Comparing Total Academic Self-Concept of the Experimental and Comparison Groups at Time 2 Testing

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>29.30</td>
<td>6.53</td>
<td>-2.36</td>
<td>*0.023</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>33.92</td>
<td>5.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

The results of the paired *t* test also showed that there was a significant difference for the experimental group in total academic self-concept between the time of entry into the program (Time 1) and 6 months later (Time 2), (*r=3.45, p<0.01*) (Table 4). The second research hypothesis is therefore accepted while the second null hypothesis relating to no difference in academic self-concept for the experimental group after 6 months is rejected.
Table 4

*t test Comparing Total Academic Self-Concept of Experimental Group From Time 1 to Time 2. (6 months).

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1</td>
<td>33.04</td>
<td>4.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>29.92</td>
<td>6.53</td>
<td>3.45</td>
<td>*0.002</td>
</tr>
</tbody>
</table>

*p<0.01

The results of the testing at Time 2 also show that there was no significant difference in total non-academic self-concept between the gifted and talented students in the homogeneous group compared to the gifted and talented students in the mixed ability group. Therefore the third research hypothesis is rejected and the third null hypothesis stating that the non-academic self-concept of gifted students in a mixed ability group remained the same as that of gifted students in a special gifted class is sustained (Appendix D, Table D3).

Time 3 testing indicated that there continued to be a significant difference in all scales that made up academic self-concept as well as total academic self-concept for the students in the experimental group, compared to the comparison group, after a period of 12 months. Table 5 shows means and standard deviations for the academic self-concept scales of the SDQ-1 at time 3 testing for the experimental and comparison group.
Table 5

*Means and Standard Deviations for Academic Self-Concept Scales of SDQ-1 for Time*

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th></th>
<th>Comparison Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Reading</td>
<td>32.16</td>
<td>6.56</td>
<td>34.56</td>
<td>6.32</td>
</tr>
<tr>
<td>Mathematics</td>
<td>28.64</td>
<td>7.44</td>
<td>32.80</td>
<td>6.48</td>
</tr>
<tr>
<td>General School</td>
<td>26.48</td>
<td>7.04</td>
<td>30.72</td>
<td>7.60</td>
</tr>
<tr>
<td>Total Academic ++</td>
<td>29.09</td>
<td>7.01</td>
<td>32.69</td>
<td>6.80</td>
</tr>
</tbody>
</table>

++Composite score of reading, mathematics and general school

The results of the one-way analysis of variance (ANOVA), indicated that with an alpha level of .05, the effect of time on academic self-concept was statistically significant for the experimental group, $F(1,44) = 4.61, p < .05$. Hypothesis 4, that academic self-concept will continue to be lower for the experimental group over an extended period of time, is therefore accepted while the null hypothesis relating to no difference in the academic self-concept for the experimental group and the comparison group, over time, is rejected.

The results indicated that in a homogeneous group of gifted and talented students, total academic self-concept was lowered over a period of 6 months. This was consistent with past research which has shown that as the general level of academic ability of a group increases, the academic self-concept of individuals goes down (Marsh, 1987; Marsh & Parker, 1984; Marsh, Chessor, Craven, & Roche, 1995). Individuals compare their academic ability to the academic ability of other students in
their own group and get an overall impression of their own academic self-concept. The non-academic self-concept was not affected by being in a class of gifted and talented students. Non-academic self-concept can be affected positively in a homogeneous setting of gifted and talented children (Gross, 1993; Moon, Swift, & Shallenberger, 2002) but in this research, there was no statistically significant rise, after 6 months in the program, in total non-academic self-concept for the children in the homogeneous group.

The stability of self-concept over time is verified by the continued significant difference in academic self-concept of the experimental group in contrast to the comparison group after a period of 12 months. Byrne (1984) stated that self-concept is stable over time and pointed to difficulties in research where measurement of changes in self-concept is being assessed. In the experimental situation self-concept is stable and therefore it is difficult to record measurable changes. Marsh (1987a, p. 105) pointed to multidimensional aspects of self-concept, being isolated and subject to intervention effects. He argued “specific dimensions of self-concept, most relevant to the intervention should be most affected”. These results indicate that academic self-concept was the factor, of those measured, most influenced by placement in an academically gifted class.
Study 2

This was a qualitative study where parent interviews were conducted to obtain information on their perceptions of the OC class placement for their child. Academic outcomes as well as broader social and emotional outcomes were labelled as outcomes. These outcomes were obtained from the interviews with parents. They were analysed using a case ordered matrix (Miles & Huberman, 1986).

Interviewing of parents occurred 12 months after the gifted students had left the OC class. Only 21 parents of the 25 students in the Study 1 OC class were available for this study. The other four participants had either moved from their original address or were otherwise unable to be contacted. Each parent that was approached was willing to participate in this study.

High Success Group

Results of interviews indicated that seven students (33%) were perceived by their parents to have had high success in the OC class. Table 6 presents direct positive and negative outcomes for the high success group.
Table 6

*Parents’ Perceptions of Direct Outcomes of OC Class Placement for High Success*

**Students**

<table>
<thead>
<tr>
<th>High Success Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
In their parents’ opinion, these children are enjoying success and performing well in their high school situation. For this group, there were very few reported direct negative outcomes of the OC class experience. Two of these seven children gained entrance from the OC class to a selective high school.

**Moderate Success Group**

Parents reported on the OC class being a moderate success for nine students (45%). Of these students, seven are reported to be doing very well in their high school. One of this group also gained entrance to a selective high school from the OC class and is reported to be doing exceptionally well academically. Table 7 presents direct positive and negative outcomes of the OC class placement for this moderate success group.

**Table 7**

*Parents’ Perceptions of Direct Outcomes of OC Class Placement for Moderate Success Students*

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>F</td>
<td>• learned to strive ahead of other capable students</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• learned to achieve at high level</td>
<td>• problems in establishing 'pecking' order with all the bright children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• problems faced in OC class</td>
<td>• teacher initially unaware of her needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• allowed her to face year 7 with confidence</td>
<td>• social problems with friends</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• developed a maturity in outlook</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• gave her opportunity for selective high school</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• offered ‘window of opportunity’ for the future</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>picked up his performance of high class standard</td>
<td>set apart from peers in OC class by original peers and staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>found he could work quite easily</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>was spurred on by highly competitive situation</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>endured the new situation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>gave her confidence</td>
<td>removed from friends</td>
</tr>
<tr>
<td></td>
<td></td>
<td>coped well in later high school experience</td>
<td>being in OC class produced some uncertainties</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>developed good English and Music skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>performing successfully in high school</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>F</td>
<td>good academic experience</td>
<td>had to cope with the pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>achieved well</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>helped later adjustment to high school</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>M</td>
<td>thrived against the other bright kids</td>
<td>found competitive atmosphere difficult</td>
</tr>
<tr>
<td></td>
<td></td>
<td>enjoyed the project work</td>
<td>strict teacher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>persevered through the first even though it was difficult</td>
<td>left local school where other siblings attended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>became school vice-captain</td>
<td>first 6 months were miserable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>some separation of OC class from the rest of the school</td>
</tr>
<tr>
<td>14</td>
<td>M</td>
<td>happy to be chosen for the class</td>
<td>no real value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>socially, helped her to mix with a lot of different children</td>
<td>confirmed she wasn’t gifted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>upheaval from her home school</td>
</tr>
<tr>
<td>15</td>
<td>M</td>
<td>coped with the work</td>
<td>pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>enjoyed the experience</td>
<td>competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>high standard set and he met the standard</td>
<td>set expectation for selective high school entrance and then disappointed to have missed out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>more attention given which allowed him to work at his own pace</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>felt special because of his selection for OC class</td>
<td>has performed average in an average school</td>
</tr>
<tr>
<td>16</td>
<td>M</td>
<td>other bright children helped to push him along</td>
<td>didn’t really apply himself</td>
</tr>
<tr>
<td></td>
<td></td>
<td>confirmed that he was bright</td>
<td>lacked concentration</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>socially immature and OC class did not help that</td>
</tr>
</tbody>
</table>
In this moderate success group parents were able to identify some positives but also a number of negatives. Competition and pressure were aspects that were reported negatively by a number of parents in this group. This was in contrast to the high success group where the competition was viewed as a positive factor. In the moderate success group, many parents spoke of the positive unexpected outcome of better settling and handling of high school because of the OC class experience. The more student-centred style of learning also gave some students good skills to take to high school even though parents spoke of many negative aspects of inclusion in the OC class.

**Low Success Group**

Parents described low success of the OC class for five students (25%) of the sample. Of this low success group, two students are performing very well in a mixed ability local high school. The other three students are performing in the average range but parents report that this is below their capability. Table 8 presents direct positive and negative outcomes of the OC class placement for this low success group.
### Table 8

**Parents' Perceptions of Direct Outcomes of OC Class Placement for Low Success**

**Students**

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Positive</th>
<th>Direct Outcomes</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>M</td>
<td></td>
<td>concentrated on language and writing skills and Mathematics was his best area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>writing being messy was a big problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>very unhappy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>suicidal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>took him away from his friends</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>teacher and peers did not value the knowledge he had</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>M</td>
<td>confirmed he was bright but not gifted</td>
<td>results were poor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>did not try as hard as before</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>many problems in this class</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>M</td>
<td>good for his self image</td>
<td>missed a lot of basics in OC class</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>knows he is bright</td>
<td>poor teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>more interested in social things</td>
<td>poor teaching style</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>was lazy and looked for short cuts</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>F</td>
<td>good memory skills</td>
<td>there were only 4 Year 6 students and they did much of their work alone and they felt marginalised</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>boost to self confidence initially</td>
<td>poor teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>was school captain</td>
<td>terrible report</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>no awards</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Year 5 were seen as the smarter children and treated differently – more elite</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>F</td>
<td>research work was good experience</td>
<td>perfectionist</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>couldn’t keep up with assignments</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>became upset that she took so long to complete work</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>whole family affected by high work load</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>work load too high</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>became depressed</td>
<td></td>
</tr>
</tbody>
</table>
Parents who reported low success for their children in the OC class group nearly all reported that the style of teaching and management of the class did not suit their child. There were issues of motivation and teaching/learning style that reportedly resulted in little success for their child in the OC class.

Summary

Many of the positive outcomes of special class placement could be generalised to include the opportunity for children to work at their own ability level and to enjoy the stimulus of ideas from other thinking students. Also many of the children in this OC class reportedly took responsibility for their own learning and this was seen as a positive outcome. Parents reported that the foundations were laid for good study skills and for training in lateral thinking. Positive social interactions were also a pleasing outcome.

The negative outcomes seemed to relate to an overly competitive atmosphere that was a negative pressure for some children. It appeared also that those children who had low success in the OC class lost some motivation to work hard and some parents speculated that their achievement may have been higher in their former mixed ability group.

Choice of OC Class

Eleven of the 21 parents (52%) reported that they would choose an OC class again for their child. These parents all reported on the OC class being a high success (7 parents or 64% of this group) or moderate success (4 parents or 36% of this group) for their child.
Five parents (24%) were definite that they would not choose the OC class, given the decision to make again. Four parents (19%) were either uncertain or had conditions that they would investigate before they made the decision again. One parent (5%) did not wish to speculate on this question. Two parents reported on the importance of the class teacher for the OC class and in retrospect they would investigate who the teacher was and that teacher’s teaching style before they made their decision.

The fact of moving schools was a relevant issue for some parents. In the group of 21 children, 8 children went into the OC class from within that school where the OC class was created and 13 children came from neighbouring state primary schools. Three parents reported that changing the child’s school was a problem to their child and they would not make that decision in retrospect.

Three of the five children in the low success class seemed to be more gifted in mathematics than language and parents had the perception that this area was not valued as highly. One parent reported that “the class concentrated on language and writing skills and this was not his strong area”. A parent of another child referred to her son having “skills and knowledge in areas of economics and politics and these are not valued in school”.

Comments from a number of parents related the social difficulties encountered by their children when they moved from their primary school to the OC class: “She was moved from a lot of her friends and so socially it was not a good experience”. Some mentioned the teacher referring to the OC class at assemblies as “the best class” and that was socially very difficult for the GAT children in the playground.
Placement in High School

Parents spoke about the transition to high school in very positive terms generally for those children who attended the local high school and for those who went on to selective schools. “He does very well in high school when he works” was a common thread from parents including an awareness that the results are good when the students make decisions to work positively. One parent suggested: “It is a matter of time for him to decide he wants to do better. It is a decision and not a question of ability”. About a local high school class a different parent reported: “She doesn’t have to work very hard to be in the top classes”. One particular parent who talked about the OC class putting a lot of pressure on her child was able to share: “My daughter is in the top classes in the local high school and is happy to work at her own pace to remain there.” This theme of pressure on their child in the OC class resonates through a number of parent’s comments: “She is enjoying not having the pressure in high school that was on her in the OC class and she is achieving very well”.

Various parents believed that the OC class experience prepared their children for high school. One parent commented that “the OC class was a good experience socially and it prepared her for high school”. Another mother speaking of her son in a private non-selective high school reported: “My son does what he has to but without any effort”. A parent whose son went into a selective high school reported: “He’s just coasting through without much effort but doing well”. A mother who was very pleased with the OC class experience for her child reported: “My daughter is at a selective high school and both years now she has received a certificate for an
outstanding report...she is in the right place...and I don’t know if she would have got there without the OC class experience”.

Overall the transition to high school from the OC class was positive whatever the high school setting was. Of the high success group all students were reported to have made the transition to high school successfully. From the moderate success group 55% of students were reported to have made a successful transition to high school while 80% of students in the low success group have made a good transition into high school. None of the students from the low success group gained entry to a selective high school.

Study 3

Selective OC classes in primary schools aim to meet the needs of gifted students. Research has shown that academic self-concept is lowered over time for children in selectively grouped gifted and talented classes (Marsh, Chessor, Craven & Roche, 1995). The same research showed that academic self-concept for gifted children in mixed ability settings was not lowered over time. Research has also indicated that this selective grouping of gifted children can have positive social outcomes for gifted children (Feldhusen, 1991; Feldhusen, Van Tassel-Baska & Seeley, 1989; Gross, 1993; Silverman, 1989). The link between self-concept, particularly multi-dimensional measures of self-concept, and academic achievement is documented (Gross, 1997; Craven, Marsh & Print, 2000; Marsh & Yeung, 1997) and hence a study of the effect of selective OC class placement on self-concept is important for primary school children. Part of this study looked at academic aspects of
self-concept in an academically selective class for gifted students as well as considering general self-concept and the composite measure of total self-concept.

Motivational goal orientation is an important factor in learning because the interaction of motivational factors and cognitive factors has a subsequent effect on academic performance (Pintrich, 1990). Is motivation to learn enhanced by selective OC class placement? This is an important issue when discerning where a gifted child will learn. Gifted children have outstanding potential and exceptional abilities to achieve. Educators and parents want to enhance and nurture the achievement of gifted and talented children. This study also considered whether higher achievement was reached by gifted students when they were placed in a selective class than when they were placed in non-selective class situations.

In summary, this study considered the effects selective gifted classes have on the motivational goal orientation of gifted children (their mastery goal orientation, performance approach goal orientation and performance avoidance orientation), along with five aspects of self-concept: reading self-concept, mathematics self-concept academic self-concept, total self-concept and general self-concept and achievement in mathematics and reading. The gifted students in the selective gifted classes formed the experimental group. The gifted students in either the streamed grouping or the mixed ability groups formed the comparison group. Descriptive statistics for the dependent variables are shown in Table 9.
Table 9

Descriptive statistics for dependent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental group</th>
<th></th>
<th>Control group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>SD</td>
<td>Time 2</td>
<td>SD</td>
</tr>
<tr>
<td>Mastery</td>
<td>4.00</td>
<td>.67</td>
<td>3.84</td>
<td>.71</td>
</tr>
<tr>
<td>Perf / Approach</td>
<td>3.69</td>
<td>.87</td>
<td>3.47</td>
<td>.97</td>
</tr>
<tr>
<td>Self-Concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>3.95</td>
<td>.72</td>
<td>3.97</td>
<td>.84</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3.81</td>
<td>.75</td>
<td>3.92</td>
<td>.78</td>
</tr>
<tr>
<td>Academic</td>
<td>3.95</td>
<td>.73</td>
<td>3.93</td>
<td>.76</td>
</tr>
<tr>
<td>Total</td>
<td>3.88</td>
<td>.75</td>
<td>3.94</td>
<td>.76</td>
</tr>
<tr>
<td>General</td>
<td>4.15</td>
<td>.69</td>
<td>4.08</td>
<td>.72</td>
</tr>
<tr>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>3.74</td>
<td>1.95</td>
<td>4.70</td>
<td>1.74</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1.13</td>
<td>1.18</td>
<td>2.40</td>
<td>1.22</td>
</tr>
<tr>
<td>Total</td>
<td>2.44</td>
<td>1.56</td>
<td>3.50</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Motivational Goal Results

Repeated measures ANOVA results for the main effect of group and time as well as interaction effects for mastery goal orientation are shown in Table 10.
Table 10

*Main Effects (ME) of Group and Time with Interaction Effects on Mastery Goal

*Orientation*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>3.93</td>
<td>19.31</td>
<td>*.000</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>6.59</td>
<td>12.16</td>
<td>*.001</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.65</td>
<td>3.21</td>
<td>.074</td>
</tr>
</tbody>
</table>

*p < .01

Table 9 shows a decrease of means and Table 10 shows that there was a significant reduction in mastery goal orientation in the experimental group compared to the control group. There was also a significant reduction in mastery goal orientation for the experimental group over time. Although there was a reduction in mastery goal orientation for the control group this was not statistically significant. There was no significant interaction effect of group and time.
Table 11

Main Effects (ME) of Group and Time with Interaction Effects on Performance

Approach Goal Orientation

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>9.55</td>
<td>45.25</td>
<td>* .000</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>6.59</td>
<td>14.17</td>
<td>* .000</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.16</td>
<td>.75</td>
<td>.387</td>
</tr>
</tbody>
</table>

* p < .01

From Table 9 means of performance approach goal orientation for both groups decreased and Table 11 results indicate there was a significant reduction in performance approach goal orientation in the experimental group compared to the control group. There was also a significant reduction in performance approach goal orientation for the experimental group over time. The reduction for the control group was also significant. There was no significant interaction effect of group and time.
Table 12

*Main Effects (ME) of Group and Time with Interaction Effects on Performance*

*Avoidance Goal Orientation*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>18.08</td>
<td>56.87</td>
<td>* .000</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>24.52</td>
<td>18.75</td>
<td>* .000</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.51</td>
<td>1.61</td>
<td>.204</td>
</tr>
</tbody>
</table>

* *p < .01

Table 12 results show that there was a significant reduction in performance avoidance goal orientation in the experimental group compared to the control group. Table 9 shows the reduction in mean scores. There was however, also a significant reduction in performance avoidance goal orientation for the experimental group over time. There was no significant interaction effect of group and time. Overall all motivation was decreased both in the experimental group as well as the control group but the decreases in the control group were not statistically significant except for performance approach goal orientation.
Self-Concept Results

Table 13

Main Effects (ME) of Group and Time with Interaction Effects on Mathematics Self-Concept

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>.03</td>
<td>.07</td>
<td>.786</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>.45</td>
<td>.38</td>
<td>.538</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>3.22</td>
<td>9.03</td>
<td>*.003</td>
</tr>
</tbody>
</table>

*p < .01

Results of mathematics self-concept from Table 13 indicate that there was no significant difference in mathematics self-concept in the experimental group compared to the control group. There was also no significant difference in mathematics self-concept for the experimental group over time. There was however a significant interaction effect of group and time (See Figure 5). The mathematics self-concept of the gifted students in the experimental group over time was significantly higher than the gifted students in the comparison group. In this study, the direction of this change was opposite to that found in Study 1 and in Marsh’s (1987b) BFLPE work with the experimental group having a higher mathematics self-concept at Time 2.
Table 14

Main Effects (ME) of Group and Time with Interaction Effects on Reading Self-Concept

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>.42</td>
<td>.39</td>
<td>.532</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>.43</td>
<td>2.75</td>
<td>.098</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.07</td>
<td>.45</td>
<td>.503</td>
</tr>
</tbody>
</table>

Results of the reading self-concept from Table 14 showed no significant difference in reading self-concept in the experimental group compared to the gifted students in the control group. There was also no significant difference in reading self-concept for gifted students in the experimental group over time.
There was no significant interaction effect of group and time.

Table 15

*Main Effects (ME) of Group and Time with Interaction Effects on Academic Self-Concept*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>2.83</td>
<td>17.62</td>
<td>*.000</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>1.29</td>
<td>2.12</td>
<td>.146</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>1.86</td>
<td>11.70</td>
<td>*.001</td>
</tr>
</tbody>
</table>

* p < .01

Academic self-concept for the gifted students in the experimental group was not significantly different to the academic self-concept of the gifted students in the control group. Means in Table 9 indicate a significant lowering of academic self-concept over time for both groups which is shown in Figure 6. However there is a significant interaction effect. The experimental group at Time 1 testing had a lower academic self-concept than the control group but over time although both groups’ academic self-concept is lowered the students in the selective class end up having a higher academic self-concept than the students in the control group.
Total self-concept is an average score made up of all subscales of the SDQ 1. ANOVA results for the main effects of group and time for total self-concept are shown in Table 16.

Table 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>.56</td>
<td>5.77</td>
<td>**.017</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>.60</td>
<td>1.31</td>
<td>.252</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.66</td>
<td>6.80</td>
<td>*.009</td>
</tr>
</tbody>
</table>

*p< .01; **p< .05
The total self-concept measure results from Table 16 indicate that there was no significant difference in total self-concept for the experimental group compared to the comparison group. There was a significant difference ($p < .05$) in total self-concept for gifted students in the experimental group over time. The total self-concept of the experimental group had risen significantly.

There was a significant ($p < .01$) interaction effect of group and time. The interaction effect resulted in total self-concept for the OC class children rising. Figure 7 shows this interaction effect.
Figure 7. Interaction Effect Diagram for Total Self-Concept

Results of general self-concept, which as described previously, infers a general or overall positive self-perspective that is not specific to any particular aspect of the self, are shown in Table 17.
Table 17

*Main Effects (ME) of Group and Time with Interaction Effects on General Self-Concept*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>.29</td>
<td>1.87</td>
<td>.172</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>.01</td>
<td>.146</td>
<td>.702</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.35</td>
<td>2.25</td>
<td>.134</td>
</tr>
</tbody>
</table>

Results indicate that there is no significant difference in general self-concept for the two groups. There is also no significant difference in general self-concept over time and there is no significant interaction effect.
Achievement Results

The results of the achievement measures can be seen in the tables below.

Table 18

Main Effects (ME) of Group and Time with Interaction Effects on Reading

Achievement

<table>
<thead>
<tr>
<th>Variable</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>.08</td>
<td>1</td>
<td>.08</td>
<td>.335</td>
<td>.563</td>
</tr>
<tr>
<td>ME of Group</td>
<td>52.36</td>
<td>1</td>
<td>26.18</td>
<td>16.49</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>Interaction</td>
<td>.59</td>
<td>1</td>
<td>.29</td>
<td>1.20</td>
<td>.301</td>
</tr>
</tbody>
</table>

* *p < .01

Table 18 shows that reading achievement is significantly different for the two groups of students. Table 19 shows that the students in the experimental group score higher on a reading test at the start and that they stayed ahead of the control group. There is no significant interaction effect. (Means for mathematics, reading and total achievement were calculated as Z-scores in order to have a standard score for all achievement measures).
Table 19

**Z-score Means and Standard Errors for Reading Achievement**

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z-score mean</td>
<td>SE</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>.241</td>
<td>.06</td>
</tr>
<tr>
<td>Control Group</td>
<td>-.146</td>
<td>.05</td>
</tr>
</tbody>
</table>

The mathematics achievement results are in Table 20.

Table 20

**Main Effects (ME) of Group and Time with Interaction Effects on Mathematics**

**Achievement**

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>6.128</td>
<td>22.25</td>
<td>* .000</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>22.67</td>
<td>13.60</td>
<td>* .000</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.63</td>
<td>2.29</td>
<td>.131</td>
</tr>
</tbody>
</table>

* p < .01

Table 20 shows that there was a significant difference in mathematics achievement in the groups. The students in the experimental group scored higher on the mathematics achievement test than the gifted students in the control group. There was also a significant difference in mathematics achievement over time in the experimental group. There was no significant interaction effect. Table 21 shows that mathematics achievement increased in both groups from Time 1 to Time 2. There was
a significant difference in mathematics achievement for the experimental group over time.

Table 21

*Z-score Means and Standard Errors For Mathematics Achievement*

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z-score mean</td>
<td>SE</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>.064</td>
<td>.06</td>
</tr>
<tr>
<td>Control Group</td>
<td>-.146</td>
<td>.05</td>
</tr>
</tbody>
</table>

Total achievement is a mean score made up from mathematics and reading achievement. Repeated measures ANOVA results are in Table 22.

Table 22

*Main Effects (ME) of Group and Time with Interaction Effects on Total Achievement*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME of Time</td>
<td>1</td>
<td>.01</td>
<td>.03</td>
<td>.857</td>
</tr>
<tr>
<td>ME of Group</td>
<td>1</td>
<td>52.17</td>
<td>22.46</td>
<td>* .000</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.35</td>
<td>.89</td>
<td>.410</td>
</tr>
</tbody>
</table>

* p < .01

Achievement overall was significantly different in the two groups. There was no significant difference in the total achievement score for the experimental group from
Time 1 to Time 2 and there was no significant interaction effect. Table 23 shows that the Z-score means for total achievement rise for the experimental group from Time 1 to Time 2 but this is not significant.

Table 23

Z-score Means and Standard Errors For Total Achievement

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z-score mean</td>
<td>SE</td>
<td>Z-score mean</td>
<td>SE</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>.323</td>
<td>.06</td>
<td>.352</td>
<td>.05</td>
</tr>
<tr>
<td>Control Group</td>
<td>-.138</td>
<td>.04</td>
<td>-.139</td>
<td>.04</td>
</tr>
</tbody>
</table>

Summary of Patterns across Groups

Motivation Dimension

Motivational goal scores decreased over time for both the experimental and the control groups. Mastery goal orientation decreased significantly for the experimental group. The hypothesis that mastery goal orientation would be enhanced by selective gifted class placement was rejected.

Self-Concept Dimension

Reading self-concept was not significantly different for the gifted students in the experimental or control group. There was no significant difference for the
experimental group over time. The hypothesis predicting the lowering of reading self-concept over time for the students in the OC class was rejected.

The mathematics self-concept results indicate a significant interaction effect of group and time and point to a higher mathematics self-concept for the selective gifted class students after being in the class for some time. On the basis of the BFLPE (Marsh, 1986), the hypothesis stated that the mathematics self-concept of gifted children in a selective OC class would be lower over time and this hypothesis is rejected in this study.

The composite measure of academic self-concept, made up of reading and mathematics and general school self-concept, was significantly lower over time for all gifted students not just those in the experimental group. There was a significant interaction effect of group membership and time that resulted in an academic self-concept which was significantly different for the experimental group. The hypothesis predicting a lowering of academic self-concept over time was accepted. However, the academic self-concept of the control group was also lowered over time and although the control group started with a higher academic self-concept it ended up being lower than that of the experimental group at Time 2.

The results of the total self-concept measure indicated growth in total self-concept for the experimental group over time. The mean for total self-concept for the two groups was the same at Time 2.

The last self-concept scale is general self-concept, which is a scale of a general well-being. There were no significant differences on this scale between the experimental and control groups. The hypothesis stating that gifted children who are
in a selective OC class will have a general self-concept that was not diminished over time was accepted.

**Achievement Dimension**

Results of achievement measures indicated a significant difference in reading achievement for the experimental group. Their reading achievement was higher than that of the control group at Time 1 and remained higher. There were no significant interaction effects. For achievement in mathematics, results indicated a significant difference between the groups. The mathematics achievement of the experimental group was higher than that of the other gifted students in the control group. The mathematics achievement of the experimental group over time was also significantly higher than that of in the control group.

Total achievement, which is a mean score of mathematics and reading achievement, was also significantly different for the two groups. Total achievement was higher for the students in the experimental group than for the gifted students in the control group. The hypothesis stating that the achievement of gifted children who are in an OC class will be higher than gifted children in other classes was accepted.

**Results Summary across the Three Studies**

Across the three studies, it is evident, that achievement may be enhanced by a gifted child being included in a selective gifted class. A decrease in academic self-concept when gifted students were grouped together in a selective gifted class was shown by quantitative studies. However, it was evident when a larger group of students was researched that specific aspects of academic self-concept may be
influenced by achievement in specific subjects, particularly mathematics. Mathematics achievement and self-concept were enhanced by placement in a selective gifted and talented class. Parent reports indicated that when mathematics or other areas of strength were not valued as highly as reading there was a negative impact on students.

Grouping did not have an impact on overall general well-being of students. However, it was evident that gifted students motivation was impacted over time for all students by grouping choices. All motivation appeared to be lowered for gifted students irrespective of the class they were in.

Although these general trends can be extrapolated from the studies there are always exceptions for individuals. Parent reports made it clear that although special class placement was positive for a majority of students there were gifted individuals who apparently failed to thrive in this selective class environment.
Chapter Five

Discussion

This research project aimed to answer questions about the education of gifted primary school students. It investigated the effect of grouping gifted students into a special gifted class on the academic self-concept and non-academic self-concept of those students. The research investigated what type of class placement supported high academic self-concept, academic achievement and mastery goal orientation in gifted students. Parents’ perceptions of OC class placement for their gifted child were also researched.

Academic Self-Concept

Academic self-concept is the organisation of perceptions that students have about their ability to succeed in academic subjects within the frame of reference of the
group of which they are a member. In this research self-concept was measured on a multi-dimensional self-concept scale (Marsh, 1987a) and academic self-concept was separated from aspects of non-academic self-concept.

In Study 1 there were no significant differences between the experimental and comparison groups on academic self-concept or non-academic self-concept at Time 1 testing (Appendix D). However, over time, there was a significant difference in academic self-concept between the experimental and comparison groups. Although similar to the comparison group in academic self-concept initially, after being in a gifted class for six months, the experimental group had a significantly lower academic self-concept than the control group. This is consistent with the research findings of Marsh (1984) and Marsh and Parker (1987) and confirms what Marsh (1987b) described as the big-fish-little-pond effect [BFLPE]. BFLPE occurs when equally able students have lower academic self-concepts when they compare themselves to more able students when they are grouped together and higher academic self-concepts when they compare themselves with less able students (Marsh, 1984, 1987b; Marsh, Chessor, Craven, & Roche, 1995). Marsh (1987b) found that as the academic ability of a group increased, the academic self-concept of individuals within the group decreased. Some researchers (Benbow, 1992; Colangelo & Pfleger, 1979; Gross, 1993, 1997; Van Tassel-Baska, 1992) reported that this lowering of academic self-concept is short lived and usually serves to give gifted students a more realistic view of their own academic ability. Study 1 showed that the effects of lowered academic self-concept persisted over six months (Table 3) and continued to persist over 12 months (Table 5).
With the larger group of gifted students in Study 3, the Study 1 results of lowered academic self-concept were replicated in part. There was a decrease in academic self-concept for the experimental group and for the control group over time (Table 15). However, there was no significant difference in academic self-concept between the groups, that is, there was no evidence of the BFLPE (Marsh, 1987b). Although academic self-concept did decline in the experimental group, it also declined in the control group. Time 1 examination of means (Table 9) showed that the gifted students in the selective OC classes had a lower academic self-concept at the start but there was a significant interaction effect and after being in the group for some time their academic self-concept was higher than for the gifted students not in the selective groupings. This finding is consistent with the research of Benbow (1992) and Gross (1993).

Academic self-concept exists as a composite measure of reading and mathematics self-concept as well as general school self-concept. There were no significant differences in reading self-concept for the gifted children in a selective class of gifted children compared to gifted students in the comparison group or over time. Mathematics self-concept showed a significant interaction effect with both group and time. These results showed that mathematics self-concept was higher over time for the experimental group. This is consistent with the research of Benbow (1992). The results, although not reflective of the BFLPE (Marsh, 1987b) of Study 1, outline that when academic self-concept is broken up into smaller units then some of these, such as mathematics self-concept, may rise in a gifted class over time. This might be explained by the fact that higher levels of mathematics and problem solving are not learned vicariously but rely more on specific teaching than other academic
areas (Steffe & Wengel, 1996). In a selective gifted class the higher level of mathematics presented to the group resulted in a positive outcome for the students who grasped this higher level. The longer the students spent in the gifted class the more differentiated mathematics self-concept became. The increased learning in mathematics resulted in a consequent rise in mathematics self-concept. Reading self-concept, as a part measure of academic self-concept was not affected in the same way because these gifted students were already accomplished readers on entry into the gifted class. The refinement of literary skills may well be pursued in the gifted class but this was not being tapped by the measurement of reading self-concept.

The separating of these two aspects of academic self-concept has shed light on domain specific self-concept and perhaps putting reading and mathematics self-concept into one category creates a nullifying effect as described by the BFLPE (Craven, Marsh, & Print, 2000; Marsh, 1987b).

Perhaps what these results pointed to was the relationship between academic self-concept and achievement. Marsh (1990) and Marsh and Yeung (1997) found that higher academic self-concepts in particular school subjects led to an increased likelihood of further in-depth study of those subjects. The results of this study replicate the significant difference in mathematics achievement over time perhaps influencing mathematics self-concept. Although causal relationships have not been established in this study it does appear to support the work of Marsh and Yeung (1997).

Parents did not use the language of academic self-concept in their reports but indicated that being in the gifted class allowed their child to be challenged by other achieving students, to take responsibility for their learning as well as thriving against
the other gifted children. Being selected for the gifted class helped some children have
a higher self-esteem. Many parents indicated that this positive outcome led to their
child coping very well in high school. One specific comment was “Being in the OC
class was very good for C... because it gave him a lot of confidence and he went to
high school very confident of his ability”. Similarly, another parent commented that
for “S... being in the OC class gave her a lot of confidence because she managed the
work well”.

Total Self-Concept and Other Self-Concept Measures

Class membership based on academic ability in Study 1, did not affect the
total non-academic self-concept of gifted students. This is consistent with the
theoretical basis that self-concept is relatively stable over time (Byrne, 1984).
Changes in self-concept usually are only evident on a particular facet of self-concept
that may be highly affected because of some intervention (Aldrich & Mills, 1989;
Marsh, Smith, Barnes, & Butler, 1983). In Study 1, the peer relations and the general-
self scale showed no statistically significant change in the mean scores between the
first and the second testing. This was in contrast to a number of other research studies
(Feldhusen, 1991; Gross, 1992; Janos, Fung, & Robinson, 1985) that reported a
significant positive effect for gifted children in a gifted class.

In Study 1, the lack of homogeneity of variance (Table 1) on subscales of
physical abilities self-concept, peer relations self-concept, mathematics self-concept
and general-self self-concept, prohibited the analysis of comparisons on all subscales
of the Self Description Questionnaire 1 (Marsh, 1987a). The lack of random selection
of the comparison group, may have contributed to the lack of homogeneity between
the experimental and comparison groups in Study 1. The students who were selected for the comparison group were largely nominated by teachers and were highly ‘visible’ in their schools. They were recognized as superior students. With that recognition often comes reward for high achievement. Colangelo and Pfleger (1979) believe that this recognition helps high achieving students have a generally positive self-concept. Anecdotal evidence leads to a speculation that there were none or few underachieving gifted students in the comparison group. The experimental group in this study contained a number of underachieving gifted students. These were identified by the school counsellor. Additionally, the students in the comparison group were all students who were continuing their education in a school with which they were familiar. For the experimental group, 70% of the pupils had entered the gifted class from other schools. A number of researchers (Benbow, 1992; Feldhusen & Moon, 1992; Van Tassel-Baska, 1992) indicate that in a new grouping of gifted students there will be initial effects on self-concept.

In Study 3, a total self-concept measure resulted in no significant difference between the groups but there was a significant difference over time in the experimental group. The total self-concept of the experimental group was higher over time and there was a significant interaction effect. This is consistent with Gross’ research (1992). Study 3 verified that total self-concept did significantly increase for the gifted children grouped in the gifted classes over time and that there was a significant difference in the total self-concept measure of the gifted children in the experimental group over time compared with the gifted children in the control group. In part, self-concept is derived from a child’s interactions with the world around them (Foster, 1983). For children, interactions with peers are an essential aspect of school
life. As well, it is necessary for children to seek relationships with peers who are at the same developmental stage as they are (Gross, 1989, 1992). The importance of intellectual peers for academic challenge is well documented (Feldhusen, 1991; Foster, 1983; Silverman, 1989). It has been noted that intellectually gifted children tend to seek out, for companionship, older children or children who are at a similar stage of intellectual development (Hoge & Renzulli, 1993; Hollingworth, 1931; O’Shea, 1960).

It was hypothesized that general self-concept would not be affected by placement in a selective OC class. This was found to be true overall: general well-being of students in the selective gifted classes was not significantly enhanced or diminished over time and there was no difference between the groups. This is consistent with the research of Feldhusen (1991) and Gross (1992) who point to healthy social and emotional adjustment for gifted students if they are happy in their class. The overall general self-concept for the gifted students grouped together in the selective OC class was not affected by their placement. Tannenbaum (1986) would suggest that the students were generally well-adjusted in this grouping.

Parents of gifted children noted that high levels of success in the gifted class placement were due partly to the success of social interactions and appropriate intellectual peers. Equally, parents who judged that their child had been unsuccessful in the gifted class invariably cited that their child did not seem to “fit in” to the group and were unable to have satisfactory social interactions. Tannenbaum (1986) noted that to bring giftedness fully to life, cognitive faculties have to be energized through an enriched environment, which includes intellectual peers as well as appropriate programs. A parent comment was “my daughter developed a good outgoing
personality by being with like minded friends” while a father said of his son “he didn’t have friends in his old school and in the OC class he still didn’t have many friends”. The variety in the parent comments reflected the research results in Studies 1 and 3.

Motivational Goal Orientation

Study 3 considered membership of special gifted classes and the impact on motivational goal orientation. Three aspects of motivational goal orientation were considered

- Mastery goal orientation, where students engage in a task basically to improve their competence and understanding;
- Performance approach goal orientation where goals are referenced against the performance of other students or external standards and
- Performance avoidance goal orientation where student’s goals are set to avoid failure and to preserve their self-esteem.

These three contrasting orientations were used to examine why students do their work and whether this orientation differed across experimental and control groups. The research question asked which class grouping enhanced mastery goal orientation for gifted learners. Results in Tables 10, 11 and 12 clearly indicated that there were significant effects of time and group for the three types of goal orientations researched. The results were surprising and in contrast to the research of Winner (1996) who found that gifted children generally are motivated to work and challenged to achieve mastery.
Mastery goal orientation was lower for the experimental group and the effect of time was statistically significant. In this research, mastery goal orientation decreased overtime. This decrease in mastery goal orientation was evident in both the experimental group as well as the control group. It appears that students were not trying to improve their competence and understanding but were driven by other factors. This may reflect a feeling of complacency that may result when students have gained entrance into a special class. Roeper (2000) refers to the drive to learn being emotionally based while the ability to learn is cognitive. Speculation about the decline in mastery orientation may lead to thinking which reflects that the students motivation had declined possibly because their emotional development was not as advanced as their cognitive development overall or else the desire to keep learning was not a driving force at this stage in their development (Roeper, 2000).

Performance approach goal orientation was significantly lower in the gifted group and time was a statistically significant factor. Criticism of gifted classrooms has been that an overly competitive atmosphere can prevail but may not have been too strong in the present study (Webb, 1993). Competitiveness, as measured by performance goal orientation, in fact, decreased in the gifted classes. Parents in Study 2 reported competition in the OC class as both a positive and a negative factor. Students who were reported as having high success in the OC class, enjoyed and thrived on the competitive atmosphere. Comments such as “thrived against the other bright kids” and “being in a class of smart kids really helped to push him along". Students who were moderately successful or were reported to have low success in the OC class found the competition to be a negative force. Comments recorded “S....found the competitive atmosphere difficult”; “the pressure and competition were
no good for C..”. One parent referred to the high work load and competitive atmosphere contributing to her child’s depression. Competitive atmosphere in a classroom can be modified by teacher praise of student’s effort. Mueller and Dweck (2002) in their research found that praising gifted children’s intelligence did not boost performance or self-esteem. They found that when effort was praised this encouraged students to sustain their motivation and performance.

Similarly, performance avoidance goal orientation was also significantly lower for the experimental group. From Time 1 to Time 2, performance avoidance decreased in the experimental group. In performance avoidance goal orientation students tend to avoid failure to protect their self-worth. This is often done by avoiding difficult questions, choosing easier options for assignments or presenting as not trying to gain knowledge or meet goals. It is significant, that for the selective OC classes, performance avoidance approach goal orientation decreased over time and was statistically lower in the selective GAT groups. Covington (1992) found that performance avoidance stemmed from a need to protect self-worth and from a fear of failure perspective. Martin (2001, p.8) states “students have an avoidance focus when the main reason they do their schoolwork is to avoid doing poorly or to avoid being seen to do poorly”. Their main motivation tends to be avoidance of bad marks or not wanting to disappoint either teachers or parents. In the experimental group in this research, results indicated improved self-concept and this increased self-concept may reflect the lowering of performance avoidance goal orientation keeping in mind its correlation with self-worth.

The results indicated a lowering of all motivational goals for the gifted groups as well as the gifted students in non-selective groups. The surprising result is the
lowering of mastery goal orientation in the gifted group in Study 3. The justification for gifted classes often uses motivation as a key argument (Rogers, 2002; Winner, 1996) where it is assumed that gifted learners grouped together will work to improve their skills and competence. It is felt that the higher order thinking skills and problem solving presented will be a challenge to gifted learners and this can best be delivered when gifted learners are grouped together (Gross, 1995). Harter (1992) noted a decline in mastery goal orientation with average students in upper primary classes. Perhaps with a gifted population this same decline is evident. This decline in mastery orientation for gifted students grouped together in the present study was consistent with findings by other researchers (Craven, Marsh, & Print, 2000).

Students’ thinking about ability and effort has implications for educators’ understanding of high-ability students’ motivation (McNabb, 1997). Nicholls (1984) reported that there are developmental trends for children in how they view the constructs of ability and effort. Preschoolers generally do not distinguish between these two constructs but primary school age children view these two constructs as separate, and effort is reported as the most important. Towards early adolescence, there is a change in thinking, which reflects that if you are smart you do not need to exert much effort and if you have to work hard then it is because you are not very smart. The students in selective gifted class may view their inclusion in the class as evidence of their giftedness and then find it difficult to appear to work hard in front of their peers for fear of being judged by peers as not very ‘capable’.

There are important implications for work habits of gifted students when they are labelled as gifted. With this label often comes the notion that you are able to learn things easily and quickly and that learning is effortless. As the school tasks become
more challenging in a selective OC class, some gifted learners, with a notion that
learning is easy and does not require much effort, present with compensatory
behaviours of avoidance to protect their view of their high ability. The generally
lowered motivational goals of this study may be an indication of this preservation of
self-worth when you are labelled gifted (McNabb, 1997).

Parents reported issues of motivation in terms of challenge and competitive
atmosphere in the classroom. Those parents, who reported that the OC class was very
successful for their child, spoke of the motivating factor of their child being in a
challenging environment and a learning situation where his/her thinking skills were
developed and where they could test their abilities against the abilities of other
students. This was reported as a highly satisfactory atmosphere for their child.

Parents who reported on low success of their child in the selective OC class
spoke of the damaging atmosphere of a competitive classroom with reports of anxiety
and high work-load as a consequence for their child. Reports from this group of
parents seemed to indicate a lowering of motivation for their child in this selective OC
class atmosphere.

One conclusion that may be drawn is that the students who were highly
successful in the OC class may have been more mastery goal oriented and therefore
experienced a high degree of success. The students who experienced low success may
have been more performance goal orientated or performance avoidance orientated and
experienced the class as a pressure rather than a challenge that they were able to meet.

**Measures of Achievement**
Results in Study 3 indicated that there was a significant difference between the experimental and control groups on reading achievement. The experimental group’s reading achievement was higher at Time 1 and remained higher than that of the control group. Mathematics results also indicated higher mathematics achievement for the selective OC class than for the gifted students in the other groups. The results also indicate a significant improvement in mathematics achievement for the selective OC class groups over time compared to the gifted children in the control groups. The total achievement results confirmed a group difference in achievement for the gifted students in the OC class compared to the gifted students in the other settings.

One significant result of study 3 was that achievement was not damaged by membership in the OC classes. This is an important consideration because the implications of the BFLPE (Marsh, 1987b) indicate lowered self-concept impacting on achievement. In the present study inclusion in a selective OC class did not negatively impact on gifted student’s achievement.

Dweck and Leggett (1988) report from their research that adaptive achievement behaviours such as high persistence and seeking challenge differ from maladaptive achievement behaviours of avoidance of challenge and low persistence. This difference is based more on students’ classroom goals rather than on academic ability. Dweck (1986) points to an individual’s view of intelligence, either entity theory or incremental theory as being the basis of achievement behaviour. Dweck (1986) refers to two basic views of intelligence. They see intelligence as a fixed trait. The entity theorists usually adopt performance goals and view achievement situations as a test of their competence. They see ability and effort as inversely related so if a task has taken a great deal of effort they can begin to doubt their ability.
On the other hand the ‘incremental’ theorists view their intelligence as evolving and adapting. Challenges are seen as opportunities to increase competence and gain skills. They assume adaptive academic behaviours no matter what the tasks in hand are.

These views of intelligence, and subsequent achievement and motivational behaviour, are highly relevant for gifted students. When students are labelled as gifted it is assumed that they will find learning easy and be able to learn quickly. As the level of challenge increases the ‘entity’ theorists who strive to have a favourable view of their ability, must be confident of their ability before they display it for judgement. In a higher ability group, where confidence may be fragile, because tasks require effort, many gifted learners avoid challenging themselves or reaching their potential. McNabb (1997, p. 413) points out that “it would be difficult for a child referred to as ‘gifted’ for all of his or her childhood to have an incremental view of intelligence”. Children need to know that effort and ability are not mutually exclusive and challenging activities for gifted students are an important aspect of attaining high achievement.

In the present studies high achievement was maintained and fostered by special gifted class placement. Parents’ perceptions of these classes generally indicate that there are positive outcomes for their children in terms of learning, and social interactions. Parents reported in Study 2 that one of the outcomes of successful OC class placement was developing life long learners and empowering students to work to their potential. However, the present studies have shown that selective gifted classes are not a panacea for all children. When a gifted student is placed in a class where they are unhappy, feel isolated and that their gifts are unvalued, then this
grouping does not allow the student to reach their potential. Parents had an awareness of this factor and some reported that they would not choose to send their child to an OC class given another opportunity. One parent reports “we learned from K’s experience and when our other daughter was selected for the OC class and was not sure whether she wanted to go or not we decided not to send her”. Although the literature reports the positive outcomes of gifted class placement socially (Feldhusen, 1991; Gamoran, 1990; Gross 1993) the present research did not replicate the social benefits cited by others. The social benefits were measured by general self-concept, which is an overall measure of well-being, and placement in a selective gifted class did not reveal higher general self-concept for the experimental group.

One of the positive aspects of this study was the higher achievement of the experimental group in mathematics as well as the higher mathematics self-concept that was evident in Study 3. The mastery of mathematics can be seen as a measure of giftedness and some gifted students love mathematics and science because it helps them make sense of the world (Roeper, 2000). Mathematical problems, which are based on real world problems, are often highly motivating and challenging for gifted students and can offer a practical approach to mathematics (Gavin & Reis, 2003).

In catering for the educational needs of gifted children, many facets need to be explored. These range from the level of intellectual precocity to whether the gifted child is happy and achieving in their educational setting. This research hoped to answer some questions about the value of grouping gifted children together in selective gifted classes such as OC classes, the impact of this grouping on their self-concept and motivation as well as whether motivation can be enhanced by grouping gifted children together. What is clear is that academic achievement was high in OC
classes and was fostered by student’s placement in these selective groups. There was
less clear evidence about the effect of this selective class grouping on self-concept.
Research (Marsh, 1987b; Marsh, Chessor, Craven, & Roche, 1995) indicated that
academic self-concept was likely to be diminished by placement in selective gifted
classes (BFLPE) and although all the present studies clearly showed that academic
self-concept was diminished; it was less clear whether this was affected by grouping
strategy. Certainly Study 1 indicated diminishing academic self-concept in the
selective gifted class, but Study 3, showed this diminishing of academic self-concept
in all groups. Motivation was also lowered over time in all groups. Based on other
research it was predicted that selective class placement would in fact enhance mastery
goal orientation (Gross, 1995; Mueller & Dweck, 2002; Winner, 1996). The results of
Study 3 do not confirm the earlier results. Roeper (2000) reported that while ability
for cognitive learning is in the brain, the motivation for learning is emotional and is in
the heart. Awareness of the importance of a teacher establishing a relationship with a
gifted child to nurture their social and emotional development is documented (Janos
& Robinson, 1985; Tannenbaum, 1983; Webb, 1993). However it is important to
recognize that parenting is more important than teaching in dealing with social and
emotional problems. Not that teaching is unimportant; it is that parenting is more
important since teaching can seldom counteract inappropriate parenting. Supportive
family environments are essential for social and emotional development. In primary
school, the partnership of parents and teachers for emotional and social development
of the child is crucial for the child’s continued motivation to learn (Webb, 1993).
Aspects of social and emotional development need to be studied to have a clearer
understanding of these motivation results.
**Recommendations and Implications**

The present studies clearly indicated that grouping gifted students together in selective gifted classes has the potential for positive outcomes especially in terms of achievement. The decrease in academic self-concept needs further investigation. Although it was not entirely clear from these studies that the decrease in academic self-concept was due to special class placement, nevertheless, this was a significant finding. An awareness of this decrease in academic self-concept should lead both teachers and counsellors to provide opportunities for small group discussions, to help students to reframe what they are experiencing and to teach them specific strategies to deal with this lowering of academic self-concept. This process should promote personal growth while protecting their self-concepts (Foster, 1983; Gross, 1993).

This study focussed on selective gifted classes for gifted students as the ‘grouping’ effect. Further research should be conducted comparing different types of grouping, such as ‘pull out’ programs, interest groups, special talent groups, as well as curriculum compacting and acceleration and the impact these groupings may have on the development of positive academic self-concept, mastery goal orientation and achievement. For gifted students to be motivated and to achieve at high levels, grouping that is flexible, based on individual student needs and carefully organized appears to be essential (Van Tassel-Baska, 1992).

The richness of insight from the parent study indicated that some consultation with children about their educational placement is important. Children placed in programs and classes when they are unhappy will experience a negative impact on their learning and on their well-being. Social and emotional factors are a vital
consideration for parents when they are considering the educational needs of their gifted child. Parents have the strongest influence in the social and emotional development of their children and therefore need to have a strong advocacy role for their child when teachers invite children to a particular program.

A limitation of this study was the lack of controls with respect to teacher style and level of competence in teaching gifted children. There is a need for the allocation of both time and resources to skill teachers in catering for the needs of gifted students. Research into teacher style and learning environment could be valuable in providing information about best practice in teaching the gifted.

Finally, the surprising decreases in all motivational goal orientations for children in this study, poses some critical questions. The questions revolve around the need to further study the emotional development of gifted children. If, as Roeper (2000) stated, motivation is emotional, then it is important for researchers to understand how emotional development impacts on motivation to learn. Enhancement of potential to learn would be worthwhile for all students and research which unravels the complexities of motivation may shed light on how to nurture students' potential to be critical thinkers and advanced problem solvers.

What this research has pointed to is the importance of a holistic approach to the education of gifted children. Simply looking at achievement is too simplistic. Roeper (1982) cited in Betts & Niehart (1988, p. 248) states that it is the development of the whole child that is the critical issue in education and therefore this education needs to take into account the "interaction of emotional, social, cognitive, and physical factors" in relationship with peers and teachers in the school setting.
Conclusion

The literature review indicated controversy and debate about the most appropriate educational experiences for gifted learners. This study has shown that academic achievement is enhanced by gifted students being grouped together in special classes. This is an important finding because it gives evidence for academic potential being developed as academic achievement. The achievement of the GAT students was high and remained high in their selective OC classes.

At the same time academic self-concept was lowered over time. This was true for all gifted students. However, Study 1 showed convincing evidence of the BFLPE, with the academic self-concept of the GAT students in the mixed ability settings not being lowered significantly. The persistence of the decreased academic self-concept over time was also evident. Parents reported that after being in the OC class the students who went to a mixed ability setting performed well in some cases but did not perform well in other cases. All the reported students who went on to selective high schools from the OC class reportedly were doing very well. The relationship between academic self-concept and achievement could be further investigated particularly for gifted learners. The causal relationship between self-concept and achievement with a gifted population needs further research.

This research project also indicated a decrease in motivational goal orientation for all students. This was true for all gifted students not just those grouped together. This fact may be simply aged related (Harter, 1986) but the foundations for higher learning are laid in primary school. The correlation between emotional development and motivation is not fully understood and so research in this area is needed.
Nurturing of intellectual potential of all students is seen as a worthwhile outcome of education. Parental role in this area is crucial. However, the contextual factors of school environment and classroom atmosphere cannot be ignored. Guidance for gifted students can provide a preventative approach to emotional problems if parents are involved in nurturing the social and emotional needs of their children. This is an important factor and needs further study of the emotional development of gifted students. Attending to the emotional needs of gifted students is just as vital as developing their cognitive skills.

Parents have a unique insight into their children and this study showed how valuable their information is in understanding not just the educational needs of their child but also their social and emotional needs. Parents also have a greater life-long perspective of their child and this was evident in this research which reflected parent’s concern to maximize their child’s cognitive potential as well as to empower them to become lifelong learners.

This research has indicated that once children have been labelled or identified as gifted then it is important to address their educational needs. What is clear is that not all students need to be catered for in the same way. Therefore looking at the individual child and their particular needs and then trying to match an educational program which best meets their needs is the crucial factor. More understanding of this connection is needed so that educational practice is more specifically tailored to meet the individual needs of gifted student.
APPENDICES

Appendix A

SELF-DESCRIPTION QUESTIONNAIRE-1

SDQ

Your Name: ___________________________ Circle one: Boy Girl

School: ___________________________ Grade: ______ Age: ______

Teacher: ___________________________ Date: ______

This is a chance to look at yourself. It is not a test. There are no right answers, and everyone will have different answers. Be sure that your answers show how you feel about yourself. PLEASE DO NOT TALK ABOUT YOUR ANSWERS WITH ANYONE ELSE. We will keep your answers private and not show them to anyone.

When you are ready to begin, please read each sentence and choose an answer. (You may read quietly to yourself as I read aloud.) There are five possible answers for each question: "True," "False," and three answers in between. There are five boxes next to each sentence, one box for each of the answers. The answers are written at the top of the boxes. Choose your answer to a sentence and make a check mark in the box under the answer you choose. DO NOT say your answer out loud or talk about it with anyone else.

Before you start, there are three examples below. A student, Bob, has already answered two of these sentences to show you how to do it. In the third example you must choose your own answer and put in your own check mark.

EXAMPLES

1. I like to read comic books

   Bob checked the box under the answer "True." This means that he really likes to read comic books. If Bob did not like to read comic books very much, he would have answered "False" or "Mostly False."

2. In general, I am neat and tidy

   Bob answered "Sometimes False, Sometimes True," because he is not very neat, but he is not very messy either.

3. I like to watch TV.

   For this sentence you have to choose the answer that is best for you. First you must decide if the sentence is "True," or "False," or somewhere in between. If you really like to watch TV a lot, you would answer "True" by making a check mark in the last box. If you hate watching TV, you would answer "False" by making a check mark in the first box. If your answer is somewhere in between, then you would choose one of the other three boxes.

If you want to change an answer you have marked, you should cross out the check mark and put a new check mark in another box on the same line.

For all the sentences be sure that your check mark is on the same line as the sentence you are answering. You should have one answer and only one answer for each sentence. Do not leave out any of the sentences. Once you have started, PLEASE DO NOT TALK. Turn over the page and begin.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Options</th>
<th>False</th>
<th>Mostly False</th>
<th>Sometimes False</th>
<th>Mostly True</th>
<th>True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am good looking</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2. I'm good at all SCHOOL SUBJECTS</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>3. I can run fast</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>4. I get good marks in READING</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5. My parents understand me</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>6. I hate MATHEMATICS</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>7. I have lots of friends</td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>8. I like the way I look</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>9. I enjoy doing work in all SCHOOL SUBJECTS</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>10. I like to run and play hard</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>11. I like READING</td>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>12. My parents are usually unhappy or disappointed with what I do</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>13. Work in mathematics is easy for me</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>14. I make friends easily</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>15. I have a pleasant looking face</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>16. I get good marks in all SCHOOL SUBJECTS</td>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>17. I hate sports and games</td>
<td></td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>18. I'm good at READING</td>
<td></td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>19. I like my parents</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>20. I look forward to MATHEMATICS</td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>21. Most kids have more friends than I do</td>
<td></td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>22. I am a nice looking person</td>
<td></td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>23. I hate all SCHOOL SUBJECTS</td>
<td></td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>24. I enjoy sports and games</td>
<td></td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>25. I am interested in READING</td>
<td></td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>26. My parents like me</td>
<td></td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Statement</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>I get good marks in <strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get along with kids easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do lots of important things</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am ugly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn things quickly in all <strong>SCHOOL SUBJECTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have good muscles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am dumb at reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I have children of my own, I want to bring them up like my parents raised me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am interested in <strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am easy to like</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I am no good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other kids think I am good looking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am interested in all <strong>SCHOOL SUBJECTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am good at sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy doing work in <strong>READING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My parents and I spend a lot of time together</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn things quickly in <strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other kids want me to be their friend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, I like being the way I am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a good looking body</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am dumb in all <strong>SCHOOL SUBJECTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can run a long way without stopping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work in <strong>READING</strong> is easy for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My parents are easy to talk to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like <strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have more friends than most other kids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>Statement</td>
<td>Options</td>
<td>Q</td>
<td>Statement</td>
<td>Options</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------</td>
<td>--------------------------</td>
<td>------</td>
<td>-----------------------------------------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Overall I have a lot to be proud of</td>
<td></td>
<td>65</td>
<td>I hate READING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>I'm better looking than most of my friends</td>
<td></td>
<td>66</td>
<td>My parents and I have a lot of fun together</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>I look forward to all SCHOOL SUBJECTS</td>
<td></td>
<td>67</td>
<td>I can do things as well as most other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>I am a good athlete</td>
<td></td>
<td>68</td>
<td>I enjoy doing work in MATHEMATICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>I look forward to READING</td>
<td></td>
<td>69</td>
<td>Most other kids like me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>I get along well with my parents</td>
<td></td>
<td>70</td>
<td>Other people think I am a good person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>I'm good at MATHEMATICS</td>
<td></td>
<td>71</td>
<td>I like all SCHOOL SUBJECTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>I am popular with kids of my own age</td>
<td></td>
<td>72</td>
<td>A lot of things about me are good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>I can't do anything right</td>
<td></td>
<td>73</td>
<td>I learn things quickly in READING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>I have nice features like nose, and eyes, and hair</td>
<td></td>
<td>74</td>
<td>I'm as good as most other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Work in all SCHOOL SUBJECTS is easy for me</td>
<td></td>
<td>75</td>
<td>I am dumb at MATHEMATICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>I'm good at throwing a ball</td>
<td></td>
<td>76</td>
<td>When I do something, I do it well</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SELF-DESCRIPTION QUESTIONNAIRE 1

SDQ

SCORING AND PROFILE BOOKLET

HERBERT W. MARSH

CHILD'S NAME:

DATE:

SCHOOL:

TEACHER:

SEX: ☐ M ☐ F AGE: _____ GRADE: _____

© THE PSYCHOLOGICAL CORPORATION. HARCOURT BRACE JOVANOVICH, INC.

Copyright © 1988 by The Psychological Corporation. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher. Printed in the United States of America.
Score Calculation and Summary

**INDIVIDUAL SCALE SCORES:** For each scale, write the scores for the items listed in the blanks beside the item numbers. Sum the item scores within each scale and write the total raw score in the blank provided below the item scores.

<table>
<thead>
<tr>
<th>Physical Abilities</th>
<th>Physical Appearance</th>
<th>Peer Relations</th>
<th>Parent Relations</th>
<th>Reading</th>
<th>Mathematics</th>
<th>General School</th>
<th>General Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
<td>Item (Mean)*</td>
</tr>
<tr>
<td>3</td>
<td>(3.84)</td>
<td>1</td>
<td>(3.53)</td>
<td>7</td>
<td>(4.46)</td>
<td>5</td>
<td>(4.38)</td>
</tr>
<tr>
<td>10</td>
<td>(4.14)</td>
<td>6</td>
<td>(3.64)</td>
<td>14</td>
<td>(4.01)</td>
<td>19</td>
<td>(4.82)</td>
</tr>
<tr>
<td>24</td>
<td>(4.56)</td>
<td>15</td>
<td>(3.39)</td>
<td>28</td>
<td>(4.10)</td>
<td>26</td>
<td>(4.76)</td>
</tr>
<tr>
<td>32</td>
<td>(3.71)</td>
<td>22</td>
<td>(3.43)</td>
<td>36</td>
<td>(3.73)</td>
<td>34</td>
<td>(4.30)</td>
</tr>
<tr>
<td>40</td>
<td>(4.28)</td>
<td>38</td>
<td>(3.23)</td>
<td>44</td>
<td>(3.98)</td>
<td>42</td>
<td>(4.10)</td>
</tr>
<tr>
<td>48</td>
<td>(3.83)</td>
<td>46</td>
<td>(3.42)</td>
<td>52</td>
<td>(3.58)</td>
<td>50</td>
<td>(4.27)</td>
</tr>
<tr>
<td>56</td>
<td>(3.89)</td>
<td>54</td>
<td>(3.15)</td>
<td>60</td>
<td>(3.98)</td>
<td>58</td>
<td>(4.93)</td>
</tr>
<tr>
<td>64</td>
<td>(4.36)</td>
<td>62</td>
<td>(3.70)</td>
<td>69</td>
<td>(4.02)</td>
<td>65</td>
<td>(4.34)</td>
</tr>
</tbody>
</table>

**RAW SCALE TOTALS**

**TOTAL NONACADEMIC:** Copy the Raw Scale Totals for Physical Abilities, Physical Appearance, Peer Relations, and Parent Relations into the blanks provided below. Sum these scores and divide by 4 to get the Total Nonacademic raw score.

\[
\text{Total Nonacademic Raw Score} = \frac{(\text{Physical Abilities}) + (\text{Physical Appearance}) + (\text{Peer Relations}) + (\text{Parent Relations})}{4}
\]

**TOTAL ACADEMIC:** Copy the Raw Scale Totals for Reading, Mathematics, and General School into the blanks provided below. Sum these scores and divide by 3 to get the Total Academic raw score.

\[
\text{Total Academic Raw Score} = \frac{(\text{Reading}) + (\text{Mathematics}) + (\text{General School})}{3}
\]

**TOTAL SELF:** Copy the Total Nonacademic and Total Academic raw scores into the blanks provided below. Sum these scores and divide by 2 to get the Total Self raw score.

\[
\text{Total Self Raw Score} = \frac{(\text{Total Nonacademic}) + (\text{Total Academic})}{2}
\]

**CONTROL SCORES (See Appendix A of the Manual for instructions on calculating Control raw scores.)**

<table>
<thead>
<tr>
<th>Control Score 1</th>
<th>Control Score 2</th>
<th>Control Score 3</th>
<th>Control Score 4</th>
<th>Control Score 5</th>
<th>Control Score 6</th>
</tr>
</thead>
</table>

*Substitute the item mean for missing responses only if three or fewer responses are left blank.*
T-Score Profile

Directions: Transfer the raw scores for the individual and total scales (and control scores) from page 2 to the spaces provided below the profile. Then, convert the raw scores to percentile ranks and T scores using the tables in Appendices A and B of the Manual. Record these values in the spaces provided and plot the T scores on the profile.

*General-Self norms are not available for grades 2-4.
Note: T scores falling in the shaded area (e.g., T scores of 50 or above) represent above average self-concept; however, because of the skewed distribution of the scores, T scores above 50 are not readily interpretable.
## Control Score Calculation

### Control Score 1: Inconsistency on Correlated Item Pairs

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item3</td>
<td>Item48</td>
<td>Item38</td>
<td>Item54</td>
<td>Item44</td>
<td>Item57</td>
</tr>
<tr>
<td>Item41</td>
<td>Item59</td>
<td>Item43</td>
<td>Item16</td>
<td>Item24</td>
<td>Item7</td>
</tr>
<tr>
<td>Item22</td>
<td>Item46</td>
<td>Item19</td>
<td>Item26</td>
<td>Item49</td>
<td>Item71</td>
</tr>
<tr>
<td>Item9</td>
<td>Item7</td>
<td>Item3</td>
<td>Item36</td>
<td>Item29</td>
<td>Item50</td>
</tr>
<tr>
<td>Item14</td>
<td>Item32</td>
<td>Item15</td>
<td>Item19</td>
<td>Item11</td>
<td>Item27</td>
</tr>
<tr>
<td>Item50</td>
<td>Item71</td>
<td>Item55</td>
<td>Item71</td>
<td>Item15</td>
<td>Item22</td>
</tr>
<tr>
<td>Item60</td>
<td>Item69</td>
<td>Item11</td>
<td>Item25</td>
<td>Item13</td>
<td>Item26</td>
</tr>
<tr>
<td>Item2</td>
<td>Item16</td>
<td>Item2</td>
<td>Item6</td>
<td>Item4</td>
<td>Item5</td>
</tr>
</tbody>
</table>

### Control Score 2: Consistency on Uncorrelated Item Pairs

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item10</td>
<td>Item2</td>
<td>Item15</td>
<td>Item58</td>
<td>Item16</td>
<td>Item19</td>
</tr>
<tr>
<td>Item43</td>
<td>Item5</td>
<td>Item16</td>
<td>Item5</td>
<td>Item24</td>
<td>Item62</td>
</tr>
<tr>
<td>Item7</td>
<td>Item20</td>
<td>Item38</td>
<td>Item13</td>
<td>Item66</td>
<td>Item7</td>
</tr>
<tr>
<td>Item31</td>
<td>Item26</td>
<td>Item4</td>
<td>Item19</td>
<td>Item36</td>
<td>Item19</td>
</tr>
<tr>
<td>Item68</td>
<td>Item2</td>
<td>Item2</td>
<td>Item24</td>
<td>Item2</td>
<td>Item75</td>
</tr>
<tr>
<td>Item47</td>
<td>Item8</td>
<td>Item7</td>
<td>Item32</td>
<td>Item10</td>
<td>Item38</td>
</tr>
<tr>
<td>Item52</td>
<td>Item24</td>
<td>Item11</td>
<td>Item26</td>
<td>Item13</td>
<td>Item26</td>
</tr>
<tr>
<td>Item9</td>
<td>Item64</td>
<td>Item8</td>
<td>Item58</td>
<td>Item59</td>
<td>Item58</td>
</tr>
</tbody>
</table>

### Control Score 3 - Nonconcurrent Summary

Write the values of Control Score 2 and Control Score 1 in the appropriate blanks below. Subtract Control Score 1 from Control Score 2. the result in the blank labeled Control Score 3.

### Control Scores 4 and 5: Before entering the item values, reverse direction of the scores so that 1 = True, 2 = Mostly True, 3 = Sometimes True, 4 = Mostly False, and 5 = False.

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item17</td>
<td>8</td>
</tr>
<tr>
<td>Item21</td>
<td>8</td>
</tr>
<tr>
<td>Item32</td>
<td>8</td>
</tr>
<tr>
<td>Item6</td>
<td>8</td>
</tr>
<tr>
<td>Item23</td>
<td>8</td>
</tr>
<tr>
<td>Item30</td>
<td>8</td>
</tr>
<tr>
<td>Item12</td>
<td>8</td>
</tr>
<tr>
<td>Item66</td>
<td>8</td>
</tr>
<tr>
<td>Item75</td>
<td>8</td>
</tr>
</tbody>
</table>

Total Absolute Value = 8

#### Total Signed Value

<table>
<thead>
<tr>
<th>CONTROL SCORE 4 Negativity Bias</th>
<th>CONTROL SCORE Positivity Bias</th>
</tr>
</thead>
</table>

Control Score 6 - Individual Profile Variation:

Calculate the standard deviation of the original seven scales (Pr: Abilities, Physical Appearance, Peer Relations, Parent Relations, Reading, Main, and General School).

Appendix C

School Motivation Questionnaire

SCHOOL MOTIVATION QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Name:</th>
<th>Boy/Girl</th>
<th>Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>School:</td>
<td>Teacher:</td>
</tr>
</tbody>
</table>

This is a chance to look at how you feel when you are at school. It is not a test. There are no right answers and everyone will have different answers. BE sure that your answers show how you fell about yourself when you are at school.

PLEASE DO NOT TALK ABOUT YOUR ANSWERS WITH ANYONE ELSE.

We will keep your answers private and not show them to anyone.

Answer the questions in the same way you answered the first questionnaire. Remember if you want to change an answer you have marked you should cross out the tick and put a new tick in another box on the same line.

If you have any questions put up your hand.

Turn over the page and listen to me read each question. Once you have started, PLEASE DO NOT TALK.

© H.W. Marsh and R.G. Craven
<p>| 1 | Feel most successful in school when something I learn makes me want to find out more. | 1 |
| 2 | Get smarter as I learn more. | 2 |
| 3 | I like trying to do better than other students. | 3 |
| 4 | I do my school work because I want my teacher to be pleased with me. | 4 |
| 5 | I do my school work because I like learning new things. | 5 |
| 6 | I like to work on my own. | 6 |
| 7 | I feel most successful in school when I reach personal goals. | 7 |
| 8 | I like to work with other students. | 8 |
| 9 | I feel most successful in school when I am the best. | 9 |
| 10 | I do my school work because I DO NOT want my teacher to be mad or annoyed with me. | 10 |
| 11 | I feel most successful in school when I get a new idea about how things work. | 11 |
| 12 | A smart child will always be smart. | 12 |
| 13 | I learn the most when I try to do better than other students. | 13 |
| 14 | I do my school work because I want to get good marks from my teacher. | 14 |
| 15 | I do my school work because I enjoy figuring things out. | 15 |
| 16 | I learn the most when I work on my own. | 16 |
| 17 | I feel most successful in school when I really improve. | 17 |
| 18 | I learn the most when I work with other students. | 18 |
| 19 | I feel most successful in school when I do better than other students. | 19 |
| 20 | I do my school work because I DO NOT want to get into trouble with my teacher. | 20 |
| 21 | I feel most successful in school when I learn something interesting. | 21 |
| 22 | As children learn new things they become smarter. | 22 |
| 23 | I do my best work when I try to do better than other students. | 23 |
| 24 | I do my school work because I want my teacher to say good things about me. | 24 |
| 25 | I do my school work because I enjoy thinking hard. | 25 |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>I do my best work when I work on my own.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>I feel most successful in school when I reach a goal or target.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>I do my best work when I work with other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>I feel most successful in school when I show other students that I am the best.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>I do my school work because I DO NOT want my teacher to give me bad marks.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Children can learn new things but how smart they are stays the same.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>I work harder when I try to do better than other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>I do my school work because I want my teacher to think that I am smart.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>I do my school work because I like to solve hard problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>I like to keep my ideas to myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>I feel most successful in school when I reach a goal I set for myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>I like to share my ideas with other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>I feel most successful in school when I do something others cannot do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>I do my school work because I DO NOT want my teacher to think that I am dumb.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>I feel most successful in school when I learn really well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>How smart I am will always stay the same.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Trying to do better than others makes me work well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>I do my school work because I want my teacher to say nice things about me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>I do my school work because I enjoy trying to understand new things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>I work hard when nobody bothers me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>I feel most successful in school when I work to the best of my abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>I like to help other people do well in a group.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>I feel most successful in school when I am the only one who can answer a question.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>I do my school work because I DO NOT want my teacher to say bad things about me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>I feel most successful in school when a lesson makes sense.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FALSE</td>
<td>MOSTLY FALSE</td>
<td>SOMETIMES TRUE</td>
<td>MOSTLY TRUE</td>
<td>TRUE</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>--------------</td>
<td>----------------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>51. As my knowledge increases I become smarter.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. I do well when I try to be the best student in my class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53. I do my school work because I want to get good marks on tests.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54. I do my school work because what we learn is really interesting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55. I feel most successful in school when I can do the work without anyone’s help.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56. I feel most successful in school when I do something I couldn’t do before.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. It is helpful to put together everyone’s ideas when working on a project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58. I feel most successful in school when I know more than other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. I do my school work because I DO NOT want to poorly on tests.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60. I feel most successful in school when the questions make me think hard.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61. If I work hard I will be smarter.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. I do my school work because it is fun.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63. I work best by myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64. I feel most successful in school when my school work gets better.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65. I feel most successful when my friends and I help each other figure things out.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. I feel most successful in school when I get more answers right than my friends.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67. I feel most successful in school when I solve a problem by working hard.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix D

#### Table D1
**t test Comparing Total Self-Concept of the Experimental and comparison Groups on the First Testing**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>33.0417</td>
<td>4.57</td>
<td>-1.19</td>
<td>0.024</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>34.46</td>
<td>3.61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table D2
**t test Comparing Total Non-Academic Self-Concept of the Experimental and comparison Groups on the First Testing**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>29.250</td>
<td>5.710</td>
<td>-1.59</td>
<td>0.119</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>31.540</td>
<td>4.139</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table D3
**t test Comparing Total Non-Academic Self-Concept of the Experimental and comparison Groups on the Second Testing**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>30.3750</td>
<td>4.977</td>
<td>-1.18</td>
<td>0.245</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>32.08</td>
<td>5.073</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table D4

*t test Comparing the Peer Relations Self-Concept Scale for the Experimental Group from the First to the Second Testing*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>28.2917</td>
<td>8.569</td>
<td>-0.57</td>
<td>0.574</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>29.1667</td>
<td>7.856</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
References


regression discontinuity designs: Evaluations of gifted and talented programs.

of Western Sydney: Authors

In G. Phye. (Ed.). Handbook of classroom assessment: Learning, achievement and
adjustment (pp. 131-198). Orlando, FL: Academic Press.

Gifted Education, 7, 6-15.

be a relatively large fish in a small pond even if you don't learn to swim as well?


self-concept and achievement. American Educational Research Journal, 34, 691-
720.

concept: Its hierarchical structure and its relation to academic achievement.
Journal of educational Psychology, 80, 366-380.

Marsh, H. W., Byrne, B. M., & Shavelson, R. J. (1992). A multidimensional,
hierarchical self-concept. In T.M. Brinthaupt & R.P. Lipka (Eds.), The self:


New South Wales Department of School Education. (1991a). *Policy statement for the education of gifted and talented students*. Sydney: Department of School Education.


*Systems and models for developing program for the gifted and talented* (pp. 392-

*Journal for the Education of the Gifted, 15*, 104-133.

Terman, L. M. (1925). *Genetic studies of genius: Volume I - Mental and physical traits

*American Psychologist, 9*, 221-230.


*Gifted Child Quarterly, 24*, 63-68.


Treffinger, D. (1986). Fostering effective independent learning through individualized
programming. In J. S. Renzulli (Ed.), *Systems and models for developing
programs for the gifted and talented* (pp.429-460). Mansfield Centre, CT:
Creative Learning Press.

Brace Jovanovich.

the school intrinsic motivation and perceived competence of gifted and regular
students. *Gifted Child Quarterly, 38*, 172-175.


PLEASE NOTE

The greatest amount of care has been taken while scanning this thesis,

and the best possible result has been obtained.
THE IMPACT OF GROUPING
GIFTED PRIMARY SCHOOL STUDENTS
ON SELF CONCEPT, MOTIVATION AND ACHIEVEMENT

Danuta Chessor

Diploma of Teaching, Alexander Mackie Teachers’ College, 1964
B.A., Macquarie University, 1979
Grad. Dip. Ed (Religious Education), Macauley College, 1988
M.Ed., University of Western Sydney, 1991

A Dissertation
Submitted in fulfilment of the
Requirements for the Degree of
Doctor of Philosophy
at
University of Western Sydney
2004
Copyright by

Danuta Chessor

I certify that the substance of this research is the result of original research and has not already been submitted for any degree and is not currently being submitted for any other degree.

I certify any help received in preparing this research, and all sources used have been acknowledged.

2004
APPROVAL PAGE

Doctor of Philosophy Dissertation

THE IMPACT OF GROUPING
GIFTED PRIMARY SCHOOL STUDENTS
ON SELF CONCEPT, MOTIVATION AND ACHIEVEMENT

Presented by
Danuta Chessor, BA., Grad. Dip., M.Ed.

Supervisor

Diana R Whitton

Supervisor

Robert W Perry

The University of Western Sydney
2004
Acknowledgments

For professional support, encouragement and guidance, I would like to thank Dr Diana Whitton for believing in me and in the vision she had for the completion of this thesis.

Dr Bob Perry deserves thanks for stepping into the role of supervisor late in this project but offering invaluable wisdom.

For valued statistical expertise, Dr Martin Dowson was generous and skilled in his support.

The principals, staff, parents and students of the schools where the studies took place are thanked for their co-operation and assistance.

Thanks also to my beloved Geoffrey for acknowledging that we each need to pursue our goals and encouraging me to travel this journey.

To our children David, Matthew and Elizabeth who allowed me the time for this project and gently challenged me to complete this work.

Finally, to my parents, sister and brother who from afar encouraged me to pursue a dream.
# Table of Contents

Chapter One .............................................................................................................. 15

Introduction .............................................................................................................. 15

Rationale for the study ............................................................................................ 15

Purpose ...................................................................................................................... 18

Participants in each Study ....................................................................................... 19

Study 1 ..................................................................................................................... 19

Study 2 ..................................................................................................................... 19

Study 3 ..................................................................................................................... 19

Hypotheses & Research Questions ................................................................. 19

Specific hypotheses to support the research questions ............................. 21

Analysis of data ..................................................................................................... 22

Limitations of the study ......................................................................................... 22

Summary .................................................................................................................. 23

Chapter Two............................................................................................................ 24

Review of Literature ............................................................................................... 24
Subjects ........................................ 82
Data collection procedures .................. 85
Variables ........................................ 86
Procedures ...................................... 87
Data Analysis ................................... 88

Chapter Four .................................... 91
Results .......................................... 91
Introduction ..................................... 91
Study 1 .......................................... 92
Study 2 .......................................... 99

High Success Group ......................... 99

Moderate Success Group ...................... 101

Low Success Group ........................... 103

Summary ....................................... 105

Choice of GAT Class ........................... 105

Placement in High School .................... 107

Study 3 .......................................... 108

Motivational Goal Results .................... 110
Motivational Goal Results .................................................. 110

Self-Concept Results .......................................................... 114

Table 13 ............................................................................. 114

Table 16 ............................................................................. 117

Achievement Results .......................................................... 121

Summary of Patterns across Groups ..................................... 124

Self-Concept Dimension ...................................................... 124

Achievement Dimension ...................................................... 126

Results Summary across the Three Studies .......................... 126

Chapter Five ...................................................................... 128

Discussion .......................................................................... 128

Academic Self-Concept ...................................................... 128

Total Self-Concept and Other Self-Concept Measures .......... 132

Motivational Goal Orientation ........................................... 135

Measures of Achievement .................................................. 139

Recommendations and Implications .................................... 144

Conclusion .......................................................................... 146

References .......................................................................... 148

Apendices ............................................................................. 174
List of Tables

Table 1  Scales from Self-Description Questionnaire-1 (SDQ 1) and the School Motivation Questionnaire (SMQ) with Sample Items and Reliability Coefficient Alphas for Time 1 and 2.................................................................89

Table 2  Means and Standard Deviations for Self-Concept Scales of SDQ-1 ..........94

Table 3  $t$ test Comparing Total Academic Self-Concept of the Experimental and Comparison Groups at Time 2 Testing .................................................................95

Table 4  $t$ test Comparing Total Academic Self-Concept of Experimental Group From Time 1 to Time 2, (6 months). ...........................................................................96

Table 5  Means and Standard Deviations for Academic Self-Concept Scales of SDQ-1 for Time 3 ........................................................................................................97

Table 6  Parents’ Perceptions of Direct Outcomes of OC Class Placement for High Success Students .................................................................100

Table 7  Parents’ Perceptions of Direct Outcomes of OC Class Placement for Moderate Success Students ........................................................................101

Table 8  Parents’ Perceptions of Direct Outcomes of OC Class Placement for Low Success Students .................................................................104

Table 9  Descriptive statistics for dependent variables ........................................110

Table 10  Main Effects (ME) of Group and Time with Interaction Effects on Mastery Goal Orientation .....................................................................................................111

Table 11  Main Effects (ME) of Group and Time with Interaction Effects on Performance Approach Goal Orientation ........................................112
Table 12  Main Effects (ME) of Group and Time with Interaction Effects on Performance Avoidance Goal Orientation .............................................. 113
Table 13  Main Effects (ME) of Group and Time with Interaction Effects on Mathematics Self-Concept ............................................................................. 114
Table 14  Main Effects (ME) of Group and Time with Interaction Effects on Reading Self-Concept ............................................................................. 115
Table 15  Main Effects (ME) of Group and Time with Interaction Effects on Academic Self-Concept ................................................................. 116
Table 16  Main Effects (ME) of Group and Time with Interaction Effects on Total Self-Concept ............................................................................. 117
Table 17  Main Effects (ME) of Group and Time with Interaction Effects on General Self-Concept ............................................................................. 120
Table 18  Main Effects (ME) of Group and Time with Interaction Effects on Reading Achievement ................................................................. 121
Table 19  Z-score Means and Standard Errors for Reading Achievement .......... 122
Table 20  Main Effects (ME) of Group and Time with Interaction Effects on Mathematics Achievement ................................................................. 122
Table 21  Z-score Means and Standard Errors For Mathematics Achievement .... 123
Table 22  Main Effects (ME) of Group and Time with Interaction Effects on Total Achievement ................................................................. 123
Table 23  Z-score Means and Standard Errors For Total Achievement .......... 124
List of Figures

Figure 1. The interrelationship of giftedness, creativity and talent.........................39

Figure 2. The Effect of Grouping on the Self-Concept of Gifted and Talented Primary School Children in Study 1 ..............................................................................72

Figure 3. The Effect of Grouping on the Self-concept of Gifted and Talented Primary School Children Time .................................................................................73

Figure 4. Self-concept, motivation and achievement of Gifted Primary Students.....84

Figure 5. Interaction Effect Diagram for Mathematics Self-Concept ....................115

Figure 6. Interaction Effect Diagram for Academic Self-Concept ..........................117

Figure 7. Interaction Effect Diagram for Total Self-Concept ...............................119
Abstract

A degree of controversy and debate exists about the best educational experiences to fulfil the potential of gifted and talented students. Special class placement can give good educational experiences and opportunities for gifted students. However, Marsh and Parker (1984) describe the big-fish-little-pond effect (BFLPE) where equally able students have lower academic self-concepts in high ability schools than in low ability schools. Self-concept is an important factor in determining academic achievement. The place of motivation in academic achievement is well documented (Ames, 1992; Ames & Archer, 1988; Blumenfeld, 1992; Dweck, 1986) and determined by mastery or performance goal orientation (Dweck, 1986). The motivation will ultimately have a bearing on both achievement and self-concept. The purpose of this research was to determine the interrelationship of self-concept, motivation and achievement in gifted and talented primary school children in a variety of groupings.

An initial study (Study 1) of two groups was used. The experimental group consisted of 24 gifted and talented students in a homogeneous class of gifted and talented students in a primary school in a Metropolitan area of Sydney. This group consisted of 13 boys and 11 girls aged between 9 and 12 years. The comparison group was matched for age, gender and IQ and attended mixed ability classes in four local primary schools. Each group completed a Self Description Questionnaire (SDQ 1) (Marsh, 1987a) at the start of the school year and six months later. The SDQ 1 was administered 12 months later to both groups. The academic self-concept of the experimental group was diminished after six months and remained diminished for the
12 month follow-up study. There was no difference in non-academic self-concept between the experimental and comparison groups.

Study 2 was a qualitative study of each parents' response to their child's experience in the gifted and talented class by asking them for their perceptions of the special class placement on their child using an open ended structured interview. Common threads and experiences were tabulated in a case ordered matrix (Miles & Huberman, 1994).

Study 3 analysed data, from a wider group of gifted and talented students in a Metropolitan area of Sydney, on academic self-concept, motivation and reading and mathematics achievement. From this analysis the interrelationship of motivation, academic self-concept and achievement was observed and conclusions drawn for best practice for gifted and talented students. Academic achievement was enhanced by selective class placement. All motivational goal orientations and academic self-concept were diminished for both the experimental and control groups.