Acceleration and Gifted Girls

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Abstract

This study on *Acceleration and Gifted Girls* investigates acceleration as an intervention in secondary education within girls' schools in New Zealand. It explains the extent that acceleration is being used for whom and with what processes in the context of New Zealand single-sex education. It focuses particularly on acceleration. A national survey of single-sex girls' schools provided a general view of acceleration practices and provisions. Three case studies offered a more in-depth exploration. Findings from this study emphasised that schools are designing and evaluating their provisions for their gifted and talented girls, with an emphasis on personalised learning and an appropriate curriculum. Acceleration is used, typically, as part of a continuum of provisions to challenge students at higher levels than their year level. Timetable flexibility, whole class and individual acceleration, multi-level pathways through NCEA, dual enrolment or full entry at universities are all included in the provisions offered to gifted girls. This study highlighted an association between a school's culture of learning and the school's culture of care of gifted and talented students. High levels of satisfaction relating to the ways in which schools provided for gifted and talented girls were expressed by both students and their parents.

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Chapter 1: Introduction

This study on *Acceleration and Gifted Girls* investigates acceleration as an intervention in secondary education within girls' schools in New Zealand. It explains the extent that acceleration is being used for whom and with what processes in the context of New Zealand single-sex education. This chapter provides a brief discussion relating to why acceleration and giftedness might be a significant intervention. It offers the definition of acceleration within which the research is framed.

1.1. Overview of Acceleration

Acceleration has been recommended as a provision both internationally (Colangelo, Assouline, & Gross, 2004a; Gagné, 2012a; Gross, 2006; Hargrove, 2012 ; Rogers, 2007, 2010; Steenbergen-Hu, 2009) and in the national context (Kirby & Townsend, 2004; Riley, 2004; Riley & Bicknell, 2014; Townsend, 1996, 2011; Wardman, 2010). According to Hattie (2009), acceleration has a positive effect size of .88 on student achievement, equating to two year's advancement in achievement (see also Wardman & Hattie, 2012). It represents a school's highest influence on academic achievement. Indeed its effect size is higher than classroom behaviour (.80), teacher-student relationships (.72), professional development (.62), school size (.43), enrichment (.39), mentoring (.15) and ability grouping (.12). Hence, it is important that research is undertaken to investigate its use in New Zealand schools. Hattie has updated the effect size for acceleration to .68, consistent in both the updated lists of effects from 138 to 150 in 2011, to a list of 195 effects in 2015 (Hattie, 2012, 2015, 2016). An achievement gain greater than .60 is "considered excellent" (Hattie, 2009, p. 17).

But according to research (Assouline, Colangelo, Heo, & Dockery, 2013; Colangelo, Assouline, & Gross, 2004d; Wardman, 2010) acceleration is rarely used, or if used, is used cautiously. It is a controversial provision:

> Acceleration is one of the most curious phenomena in the field of education. I can think of no other issue in which there is such a gulf between what research has revealed and what most practitioners believe. The research on acceleration is so uniformly positive, the benefits of appropriate acceleration so unequivocal, that it is difficult to see how an educator could oppose it. (Borland, 1989, p. 185)

Much of the controversy stems from concerns about the benefits to students. In particular, teachers, parents and students have drawn attention to the social and emotional impact on students (Daurio, 1979; Freeman, 2001b; Southern & Jones, 1991).

Assouline (2014) defines acceleration as "an umbrella term that captures the variety of education adjustments to match the academic needs of high ability students with appropriate and advanced educational curriculum experiences and opportunities (p. 44). It is a "progress through an educational programme at rates faster or ages younger than conventional" (Pressey, 1949, p. 2), employing "curriculum activities that match the readiness and needs of the gifted student. In practice, students are exposed to new content at an earlier age than other children, or cover the same content in less time" (Education Review Office, 2008a, p. 51). Colangelo, Assouline, and Gross (2004c) have described acceleration as appropriate educational planning. "It is about matching the level and complexity of the curriculum with the readiness and motivation of the child" (p. 1) and high academic performance is required for all forms of acceleration. It is the development of curriculum "instruction which meets both readiness and needs of the

gifted child" (Townsend, 2011, p. 255). Acceleration has also been described as an educational placement for the student (Gross & Van Vliet, 2005) in which curriculum content and delivery methods are modified to ensure academic, social and emotional benefits (Brown & Stambaugh, 2014).

In this study acceleration is defined as a developmental programme which is delivered at a higher level and a faster pace to students who are younger in age than conventionally. The programme should include differentiation and enrichment and be personalised to the academic, social, emotional and cultural needs of the student. This definition combines aspects of previous definitions to include a focus on a range of needs. It also recognises that acceleration, enrichment and differentiation, used together and catering for personal development, are educationally sustainable and developmental. In that respect the definition aims to counter concerns regarding acceleration and its use.

The history of acceleration research demonstrates that acceleration is not a narrow intellectual concept. Modern research on acceleration is thought to have started with Terman's longitudinal research on giftedness and intelligence, initiated 1921, on approximately 1500 intellectually gifted children (1943). The research examined intelligence, heredity, health, and social skills. However, Hollingworth (1942) argued that intelligence went beyond heredity and was responsive to the environment which included the classroom. Her research examined the profoundly gifted and the social and emotional effects derived from different educational programmes. Hollingworth is claimed to be the first to use multiple criteria for identification of the gifted (Silverman, 1992). Her research showed that when students of exceptional ability were accelerated they were no longer socially isolated.

Also important in the history of acceleration have been two major research studies. Stanley established the *Study of Mathematically Precocious Youth (SMPY*) in 1971 at John Hopkins University, Maryland. As a longitudinal investigation of the outcomes of acceleration its focus was on specific subject areas of expertise and interest (Stanley, 1973a). The first study was based on acceleration in mathematics, and later studies extended to other subjects. The reports were positive for both men and women. The 2014 report of the longitudinal study concluded that "both groups advanced society, though in varying ways, travelling different paths to their current highly productive and satisfying lives" (Lubinski, Benbow, & Kell, 2014, p. 2230).

The other major study on acceleration, *A nation deceived: How schools hold back America's brightest students* (Colangelo, Assouline, et al., 2004d), noted that despite findings from research that demonstrated the positive effects of acceleration, acceleration was not being used in schools. The concern was raised about what effects the avoidance of acceleration might have on the future of the nation. If a nation's future is deemed to be compromised it is important to investigate the prevalence and perceptions of acceleration in schools.

Different Forms of Acceleration

Different forms of acceleration have been identified in the literature. However, some of these provisions may not technically be named as accelerative unless the delivery of content is at a faster pace (Southern & Jones, 2004) and the level of achievement is at a higher level. Some provisions also act as enrichment opportunities or are used as a combination of both enrichment and acceleration.

Based on the work of Southern and Jones (1991) 18 accelerative options have been identified (Colangelo, Assouline, & Gross, 2004b) [see Appendix A for definitions]. Specifically, for secondary education these include: grade-skipping, subject-matter acceleration/partial acceleration, continuous progress, self-paced instruction, combined classes, curriculum compacting, telescoping curriculum, mentoring, extracurricular programmes, correspondence courses, concurrent/dual enrolment, early entrance into middle school or college, early graduation (adapted from Southern & Jones, 1991, pp. 2-3; and 2004, pp. 5-6). Of interest is the point that Advanced Placement and credit by examination are not used in New Zealand secondary education. In addition, other forms have been identified (Gross, 1993) and these include radical acceleration, competition programmes, computer on-line courses, distance education courses, home schooling and the International Baccalaureate (IB) programme (Rogers, 2010). Southern and Jones (2015) added IB, and also accelerated/honors high schools.

1.2. Overview of Giftedness

Definitions of giftedness have developed and changed over time. Silverman (2013a) argues that identification of giftedness by Intelligence Quotient (IQ) tests is no longer applicable as tests identify different populations as gifted. McCann (2005) and Bevan-Brown (1993, 2002) explain that giftedness is culture specific. That is to say, cultures have different understandings of what it means to be gifted. Silverman and Miller (2009b) refer to a "feminine perspective of giftedness" (p. 99), with the emphasis not on intelligence, but on child-centeredness and "how the gifted think, feel and experience" (Grant & Piechowski, 1999, p. 8).

The definition of giftedness has developed from a narrow concept based on high intelligence to a much broader concept. In the twentieth century Terman developed the Stanford-Binet intelligence scale to measure Intelligent Quotient (IQ). His longitudinal study, selected by IQ, begun in 1921, analysed mental and physical characteristics of a thousand gifted children (1943). Hollingworth moved the idea of giftedness as primarily high intelligence to include responsiveness to the environment and the classroom (1942).

Further broadening of the concept of giftedness took place during 1950-1971 (Wiley & Brunner, 2013). For example, in the United States the Marland Report (1971) to Congress formalised a requirement for special provisions for gifted students. At this point in time, the first broad definition of giftedness was issued. It incorporated intellectual and academic talent, leadership ability, visual and performing arts, creative or productive thinking and psychomotor ability.

Theories of giftedness were then also developed and broadened. For example, Renzulli's model, original design 1976, defined a Three-Ring Conception of Giftedness including above average ability, creativity and task commitment and Gardner's theory described giftedness in terms of Multiple Intelligences in different domains. Sternberg's (1988) triarchic theory of intelligence was used to explain giftedness and included analytic, synthetic (creative, intuitive, insightful) and practical intelligence (Gardner, 1993; Reis & Renzulli, 1976; Sternberg, 2003; Sternberg, Jarvin, & Grigorenko, 2011).

The most important for this study was Gagné's 1985 development of the Differentiated Model of Giftedness and Talent (DMGT) which differentiated giftedness (natural ability or potential) from talent (outstanding achievement or demonstrated performance). He

later developed this model into the DMGT 2.0 version (Gagné, 2009b) and the Expanded Model of Talent Development (EMGT) (Gagné, 2013). The Differentiated Model of Giftedness and Talent (DMGT) (Gagné, 2009b) defined talent development as the transformation of outstanding natural abilities (called gifts-G) into outstanding knowledge and skills (called talents-T). Two types of catalysts, intrapersonal (I) and environmental (E), are said to actively moderate the talent development process (D). Behind the natural and environmental was chance. Biological factors were also considered to have influence. Gagné (2013) has further updated and extended the model and excludes chance.

Official Education Acts and Reports fostered the development of gifted education in parallel with the widening of the concept of giftedness. For example in the United States (US) the Jacob K. Javits Gifted and Talented Students Education Act 1988 acknowledged the responsibilities of the gifted, "in order to realize their contribution to self and society." The US Department of Education issue of *National Excellence: A Case for Developing America's Talent report* 1993 (Ross & Others, 1993) went further than the Javits report. It changed the word gifted to "exceptional talent," and it reported the need to identify talent in all students regardless of culture and socioeconomic position and to identify giftedness in all areas, thus signalling the need for inclusiveness in identification.

1.3. New Zealand and Giftedness

An understanding in New Zealand of what it means to be gifted has developed partially from work in the United States. In New Zealand Parkyn was the first to focus on the gifted (Moltzen, 2011b). In *Children of High Intelligence* Parkyn (1948) conceptualised

giftedness as a multicategory concept with intelligence, social, emotional and moral domains. He later included the domain of creativity. The term "children with special abilities" came to be preferred over "children with high intelligence" by the New Zealand Department of Education in 1986 (Ministry of Education, 2000). In 2000 multicultural awareness was included in both the concepts of giftedness and talent (Ministry of Education, 2000). Cultural awareness of special abilities of Māori and Pasifika cultures, in particular, and their educational and learning needs was identified (Bevan-Brown, 1993, 2009; Moltzen, 2011b).

There is no prescriptive definition of giftedness in New Zealand. For example, New Zealand distinguishes between a conservative, a liberal definition and a contemporary definition (http://gifted.tki.org.nz). The conservative is based on intelligence of high IQ (about 3% of the population), a liberal more inclusive definition (e.g., 10-15%) and a contemporary definition which does not include percentages and is based on a number of variables. Schools are asked to form their own definitions "based on its communities values and priorities" (Moltzen, 2011b, p. 17). "Gifted and talented'' (Ministry of Education, 2000, 2012) is the preferred term.

An increased awareness of gifted and talented education in New Zealand has been supported by the 2001 New Zealand Working Party on Gifted Education and the 2011 Gifted and Talented Policy Advisory Group. Ministerial support and funding, especially from 2005 to 2009, have been available. Research impetus has come from the 2004 report to the Ministry of Education (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004) and from a follow-up report a decade later (Riley & Bicknell, 2014). Education Review Office Reports (2008a, 2008b) are also significant. Resources have been developed, for example, information offered by Te Kete Ipurangi, under the

auspices of the Ministry of Education, provides resources on the education of the gifted and talented via http://gifted.tki.org.nz entitled *Gifted and Talented Online.* The aim of *Gifted and Talented Students: Meeting Their Needs in New Zealand Schools* (Ministry of Education, 2000, 2012) was to support schools in meeting the needs of their gifted and talented students academically, socially and emotionally.

The New Zealand education vision in *Success for All* (Ministry of Education, 2010b) endorses inclusive education. Reflecting the bicultural nature and multicultural character of New Zealand *Ka Hikitia - Managing for Success: The Māori Education Strategy 2008-2012* (Ministry of Education, 2009a, 2009b) and 2013-2017 (Ministry of Education, 2014a) and the Pasifika Education Plans 2009-2012, 2013-2017 (Education Review Office, 2012b; Ministry of Education, 2013c) have set out the Government's objectives for Māori and Pasifika students, in turn.

By legislation New Zealand education is governed by the National Education Guidelines (NEGs) and the National Administration Guidelines (NAGs). Schools must cater for students with special needs including gifted and talented students. The current amended legislation (Ministry of Education, 2013a, 2013b), includes requirements to address potential and actual underachievement, to develop teaching and learning strategies, to provide for gifted and talented students and those at risk of underachievement. In addition, schools must consult with the school's Māori community and inform the community about procedures and policies for improving Māori achievement. There are also requirements to provide appropriate career advice and guidance (see Appendix B).

1.4. Giftedness and the Female Perspectives

Through research different models of female giftedness have also been developed. They are important in a study of gifted girls, as they foreshadow personal, environmental and social factors. Reis (2002c) argued: "It is difficult, if not impossible, to discuss gifted girls without discussing gifted women because many young gifted girls believe that they can "do it all" or "have it all," while many older gifted females have learned that they cannot" (p. 14).

Reis and Sullivan (2009) argue that "the cumulative, and contextual experiences of women of accomplishment differ from those of men, in intellectual, moral, personal and work perceptions" (p. 488). To that end, Davidson (Shaughnessy, 2010) has argued that social responsibility is an important concept in defining giftedness for women and girls. Theories and models have been developed for adult female giftedness.

To thine own self be true

Arnold, Noble, and Subotnik (1996; Noble, Subotnik, & Arnold, 1999) developed a model based on the life experiences and achievement of 23 remarkable women scholars, psychologists and educators. The model included talented behaviours in the personal domain as indicative of giftedness. These behaviours included raising children, creating a home, and building strong primary relationships. Their research showed that women were different from men in psychological needs, in access to resources which would help them develop their giftedness, and in issues at home and work. The model stresses context as important in relation to what qualifies as gifted and it depends on a woman's individual background. It identified three areas: demographic features such as race, wealth and geographic location, and individual factors, such as personality traits, family background, areas of talent, and the personal or public domain in which the talents were

shown. Another key feature was the need for support from at least one person (Noble et al., 1999).

Kronborg (2010) used this model in her research on 10 Australian women of eminence. Her research led to an expansion of the model with a deeper explanation of sociocultural influences and individual characteristics. Influences were referred to as 'filters and catalysts' (see Appendix C).

Aspects signalled for gifted girls in this model included: sociocultural and socioeconomic status, family foundations including positive parental support, a family culture that girls could do anything and individual characteristics such as personality traits of risk-taking, and individual attributes such as academic, high general intelligence and creative problem-solving. Significant to filters and catalysts are schooling opportunities, luck, self-motivation and support from others.

Reis's Model of Talent Development in Women

Reis's model of talent development derived from theories of talent development over number of years 1998-2013. Reis (2013b) provided the following definition for a model of talent development in women:

> Female talent development occurs when women with high intellectual, creative, artistic, or leadership ability or potential achieve at high levels in an area they choose [and] make contributions that they consider meaningful to society: these contributions are enhanced when these women develop personally satisfying relationships and pursue what they believe to be significant and consequential

> work, resulting in the betterment of some aspect of society or their personal work (p. 344).

Key features from Reis's model for girls developing into gifted women can be devised such as: intelligence, a drive to follow their area of interest, personality traits such as determination, motivation, creativity, patience, risk-taking, resilience, and energy. Other factors that facilitated achievement included: an awareness of the social importance of their work and support from others. External barriers included environmental factors such as their upbringing, cultural messages, and not being supported (Reis & Sullivan, 2009, pp. 498-499).

Reis (2001) provided a model of the gifted girl. "They confront both *external barriers* (i.e., lack of support from families, stereotyping, and acculturation in home, school, and the rest of society) and *internal barriers* (i.e., self doubt, self-criticism, lowered expectations, and the attribution of success to hard work rather than ability" (p. 26). Many of Reis's arguments are based on a contrast with gifted boys, for example, attitude to success is attributed to hard work rather than ability, as for boys. Girls are said to lose courage to speak out, avoid competitions to keep relationships, fear social isolation as a consequence of success and may hide their abilities (Reis, 2002b). They may conform to parents' expectations of social behaviour including how often they should express their opinions. However, they may have multipotentiality, in academic, career and leisure activities.

Kerr's Models based on Eminent Women and the Beehive model

Another model was presented by Kerr (1997b), based on biographical research of 33 eminent women. Key features from this research for this study were external factors

such as being able to spend time alone, having individualised instruction and most had mentors who had excelled in their professions. Internal factors included voracious reading and acceptance of their difference from others.

Kerr and McKay (2014) later developed the Beehive Model, based on assessment and interviews with 500 gifted students. For them, giftedness was defined as high intelligence with additional aspects such as creativity, emotional intelligence and spiritual intelligence. As they maintained, "emotional intelligence adds to intelligence to predict that a person will do well in careers requiring interpersonal skills" (Kerr & McKay, 2014, p. 15). The model was depicted as a beehive, involving, for example, the worker bees, the professionals, and the problem solvers, such as lawyers and accountants. Giftedness developed according to different strengths (see Appendix D). Kerr and McKay also offered reasons as to why women did not reach their potential and aspects relevant for gifted girls can be derived from the model. These include environmental factors such as less rigorous education and the absence of mentors (Kerr & McKay, 2014, p. 22).

1.5. New Zealand and Education

In New Zealand "A high-performing education system at all levels is essential if young people are to have the skills they need for the jobs of the future and to maximise New Zealand's economic and social success" (Ministry of Education, 2010a, p. 2).

Secondary education spans the years between Years 9-13, (approximately) 13-17 years of age. Primary education includes the Years 1-8, (approximately) ages 5-12, and is provided at either a "full primary" for Years 1-8, or a "contributing primary" for Years

1-6, followed by intermediate school for Years 7-8. Education is compulsory from ages 6 until 16.

The National School Assessment System (Secondary Level)

The National Certificate of Educational Achievement (NCEA), administered by the New Zealand Qualifications Authority (NZQA), is the main qualification for secondary students. It starts at Level 1, usually in Year 11 (ages 15-16) through to Level 3 and University Entrance in Year 13. In addition New Zealand Scholarship is a national qualification at Year 13 provided through NZQA. There is no age requirement so accelerated students can sit higher levels, for example sit Level 3 subjects if they are in any of Years 9-12. There is also no requirement as to the number of subjects and credits can be gained from as few as two or three subjects.

According to the *OECD Reviews of Evaluation and Assessment in Education: New Zealand 2011,* NCEA assessments "allow for flexible and personalised assessment of individual students (Nusche, Laveault, MacBeath, & Santiago, 2012, p. 48).

NCEA Certificates at Level 1, 2 and 3

Certificates are awarded for gaining credits, for example, NCEA Level 2 requires 60 credits at Level 2 or above and 20 credits from any level, with literacy and numeracy requirements (New Zealand Qualifications Authority, 2014).

NCEA Certificate Endorsement

The New Zealand Qualifications Authority (http://www.nzqa.govt.nz) has provided the following information regarding National Certificates of Endorsement: If a student

gains 50 credits at Excellence, their NCEA will be endorsed with Excellence. Likewise, if a student gains 50 credits at Merit, or Merit and Excellence, their NCEA will be endorsed with Merit.

NCEA Course or Subject Endorsement

Course Endorsement provides recognition for a student who has "performed exceptionally well" in an individual course. A student needs to achieve 14 or more credits at Merit or Excellence, with at least three credits from both external and internal standards.

School Type

There are three designations of schools: state (85%), state-integrated schools (10%) which are schools of Special Character which may teach a special philosophy or religion, and private schools (just under 5%) which are not funded by the government and can develop their own curriculum (https://www.newzealandnow.govt.nz/living-in-nz/education/school-system).

School Decile

Previous New Zealand research (Education Review Office, 2008a) has reported against schools' size, type and decile. School decile in New Zealand "gives an indication of the average socio-economic level of students at the school, but it does not necessarily reflect the circumstances of particular students" (New Zealand Qualifications Authority, 2015, p. 15). There are three school bands, (see Table 1), levels 1-3 (low), levels 4-7 (medium) and levels 8-10 (high). There is a tendency for low decile schools to include a higher proportion of Māori and Pasifika students, with Māori the highest ethnic group

and Pasifika almost equal to Pakeha (Singh & Jones, 2014). Statistics from NZQA (2015) indicate that it may be more difficult for gifted and talented in lower decile schools to achieve at high levels, (see Table 1) and this study also examines this assumption.

National Assessment Data

Table 1: NCEA Course Endorsements by Decile

School Decile	Merit Endorsements			Excellence Endorsements		
	2012 %	2013 %	2014 %	2012 %	2013 %	2014 %
Decile 1-3 (low)	10.5	11.4	12.4	2.6	2.6	3.1
Decile 4-7 (medium)	17.8	18.5	19.1	5.3	6.1	6.5
Decile 8-10 (high)	24.3	25.2	25.3	9.4	10.0	10.6

Note. Adapted from the *NCEA Annual report on NCEA and NZ Scholarship Data and Statistics (2014)*, published by the New Zealand Qualifications Authority, 2015, p58.

Course Endorsement information in Table 1 includes students in all types of schools across the three NCEA levels. At each of the three levels (Levels 1-3) there are specified credit requirements for each course.

The same pattern for achievement by decile (the higher the decile range the higher the percentage achievement) shown in Table 1 NCEA Course Endorsements is reflected in NCEA Certificate Endorsements at Levels 1-3. Certificate Endorsements are awarded for specific totals with specific credit requirements gained over a number of subjects. For example, in 2012 for Excellence Endorsement NCEA Level 3 which required 50 or more Level 3 credits at Excellence level the percentages of student achievement range from low decile 2.6%, medium decile 6.6%, to high decile 11.1%.

Accelerated students can gain endorsements for courses (usually referred to as subjects by a school, although the standards may come from a number of subject domains) and certificates at higher NCEA levels than most students of similar age. The year levels are the Ministry of Education Year Levels, for example Level 1: Year 11, third year of secondary education, usually aged 15-16, Level 2: Year 12, fourth year of secondary education, usually aged 16-17: Level 3 Year 13, fifth year of secondary education. Some course numbers may be small, and may lead to identification of students. Results by courses may involve very large numbers of students and standards. For example Year 10 social science course may include standards from history, geography and economics.

Table 2: NCEA Level Certificates 2012: Numbers of Accelerated Students

Decile	MOE Year Level	Number of Students	Not Endorsed	Merit	Excellence	Total Endorsements
Level 1						
8-10	10	7	1	3	3	6
4-7	10	27	2	17	8	25 (1 school)
1-3	10	2	2			
Total		36	5	20	11	31
Level 2						
8-10	10	1			1	1
8-10	11	23	10	6	7	13
4-7	11	34	12	16	6	22 (1 school)
1-3	11	8	7	1		1
Total		66	29	23	14	37
Level 3						
4-7	11	1	1			
8-10	12	13	9	3	1	4
4-7	12	38	26	3	8	11 (10 from 1 school)
1-3	12					
Total		51	36	6	9	15
Total All		153	70	49	34	83

Note. Numbers sourced from New Zealand Qualifications Authority. Percentages for each school are available from the NZQA website, but do not include numbers of students, and may not indicate those who have out-of-level achievement.

Table 2 shows results of accelerated students, by the number of students and deciles and indicates all deciles accelerate one or more students in a number of subjects, to gain the required totals and level of achievement. One school in the medium decile, 4-7, gained the most endorsements.

Students from a range of school types and deciles are accelerated. In 2012, the year the research was undertaken, there were 14 NCEA Endorsed Certificates recorded from private schools, three by integrated, and 74 by state schools. The number of accelerated students who gained endorsements from all types of schools are shown in Table 3: Private Registered School (16 students), State: Integrated (20 students), State: Not Integrated (117).

Table 3: Type of School: NCEA Certificate Endorsements 2012: Numbers of Accelerated Students

Decile	Level 1 in Year 10			Level 2 in Year11			Level 3 in Year 12		
	Not Endorsed	M	E	Not Endorsed	M	E	Not Endorsed	M	E
Private									
8-10		3	3		5	1	2	2	
Total		3	3		5	1	2	2	
State: Integrated									
8-10	1			8		2	7		
4-7									1
1-3				1					
Total	1			9		2	7		1
State: Not Integrated									
8-10				2	1	5 includes 1xYr10		1	1 includes 1xYr10
4-7	2	17	8	12	16	6	27	3	7
1-3	2				6	1			
Total	4	17	8	12	23	12	27	4	10
Total All	5	20	11	21	28	15	36	6	11

Note. Note. Numbers sourced from New Zealand Qualifications Authority. Percentages for each school are available from the NZQA website, but do not include numbers of students, and may not indicate those who have out-of-level achievement.

Table 3 also shows there were two students who gained an Excellence endorsement two years below their MOE year. Both students attended State: Not Integrated Schools, in the high decile range 8-10. One Year 10 student gained Excellence at Year 12, and one at Year 13. In general, accelerated students gained results one year above their Ministry of Education year level, with most endorsements occurring at State: Not Integrated schools in the medium decile range. "Not endorsed" records that the student has achieved 50 credits at the level, and gained NCEA Level Certificate but with insufficient Merit or Excellence credits for endorsements.

1.6. Girls in Secondary and Tertiary Education

Educationally, females are out-performing males. At secondary level in New Zealand education merits and excellences indicate higher levels of performance. Females outperform males in Merit and Excellence course endorsements for NCEA. Results for 2012, the year the research data was collected, have revealed this difference at Excellence across all levels for males (M) and females (F): Level 1 - 10.4% (M), 19.4% (F); Level 2 - 8.7% (M), 14.8% (F); Level 3 - 6.9% (M), 9.2% (F), (New Zealand Qualifications Authority, 2015).

At the tertiary level more women are enrolled in educational programmes than men. In 2014 women made up 52% of enrolments in doctoral programmes and 51% of doctorates were completed by women (Ministry of Education, 2014c). For bachelor degrees and higher and at 59% in 2014 "there are substantially more women studying at these levels than men," (Ministry of Education, 2014b, p. 24). "Women, however, are less likely than men to study Science, Engineering, Technology, or Mathematics – subjects that have a high economic return" (Ministry for Women, 2014).

There are differences based on ethnicity and gender. Across ethnic groups women participate more than men at most levels of qualifications (Ministry of Education, 2014b). However, Māori and Pasifika students continue to demonstrate the lowest participation rate at undergraduate and graduate levels.

1.7. Parameters of this Research

In this research giftedness is understood in Gagné's (2009a, 2012a) terms. Gagné's 2008-2012 model is used for this study because of the inclusion and interrelationship between the environmental, intrapersonal and developmental process and the encompassing chance factor (see Figure 1).

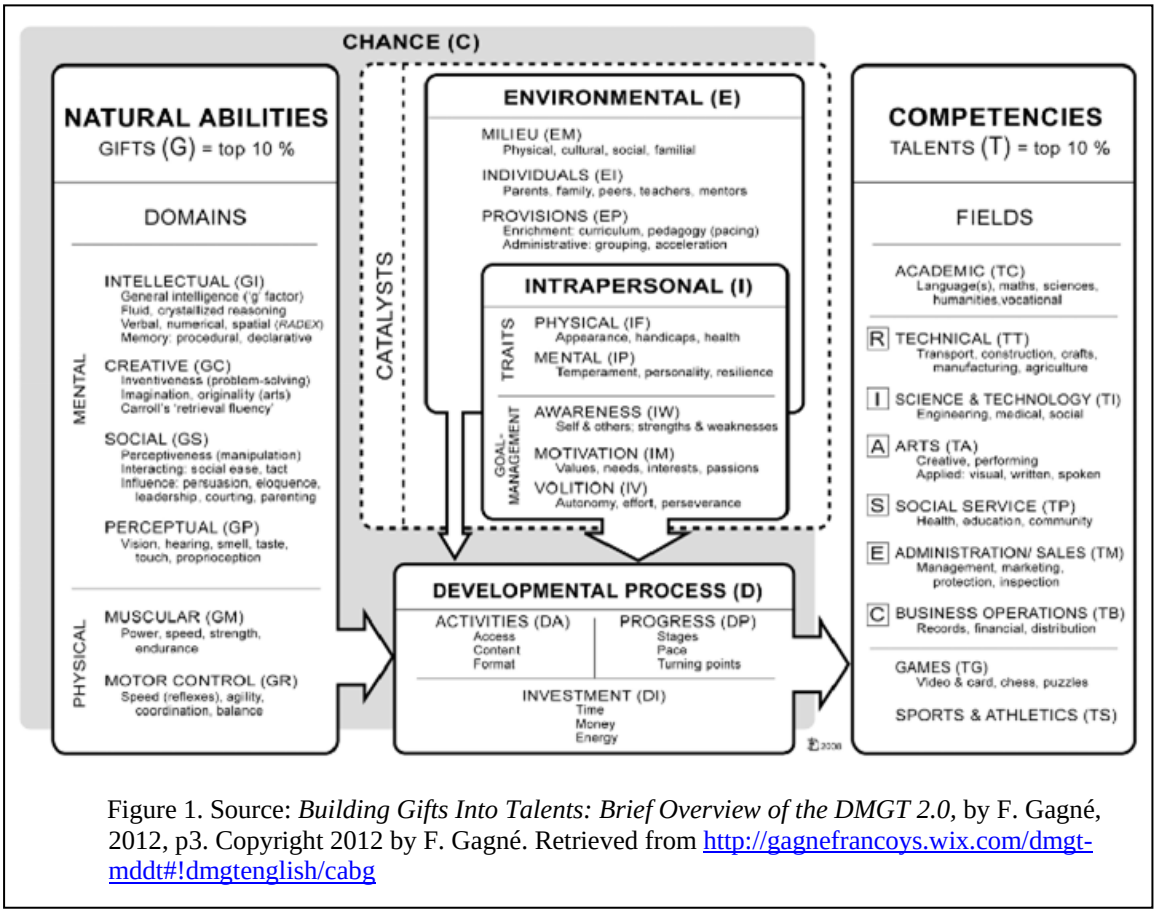

Figure 1. Source: *Building Gifts Into Talents: Brief Overview of the DMGT 2.0*, by F. Gagné, 2012, p3. Copyright 2012 by F. Gagné. Retrieved from http://gagnefrancoys.wix.com/dmgt-mddt#!dmgtenglish/cabg

Figure 1: Differentiated Model of Giftedness and Talent (DMGT) 2.0

This study investigates "environmental provisions" including: acceleration, enrichment, grouping, pedagogy (pacing) and administrative provisions such as school systems and administration. It investigates "individuals" and their contribution and support in the talent development process. Gagné refers to parents, family, peers, teachers and mentors. Also contributing to the talent development process is the "milieu" which in this study includes cultural, social and family influences and physical influences such as rural and urban. In addition, the personal characteristics and traits of gifted girls, their strengths and weaknesses, the "intrapersonal" factors, according to Gagné, affect the talent development process.

Giftedness in this study is conceptualised as a natural ability, and "talent in a particular field emerges during a long developmental process that has its foundations in remarkable aptitudes (the gifts), and benefits from the constant influence of intrapersonal as well as environmental catalysts" (Gagné, 2012b), developing through "a structured learning process to develop natural abilities" (Gagné, 2013, p. 13). Included in this process, and investigated in this study, are 'access' by identification procedures, the curriculum content, and the 'pace' of delivery which Gagné refers to as "how fast-compared to learning peers-the talentee is progressing toward the defined excellence goal" and the stages and turning points referred to as assessment and evaluation. It also includes time, funding and the psychological energy of the participants.

It is recognised that Gagné has created a new model. Gagné's (2013) Expanded Model of Talent Development (EMTD) integrates his new Developmental Model for Natural Abilities (DMNA) which includes the biological underpinnings of talent development,

the anatomical and physiological phenotypes, and the Differentiating Model of Giftedness and Talent (DMGT) to explain the structure of talent development. The 2013 model does not include chance which had featured previously and there is an added emphasis on maturation and informal learning and exercise in the developmental process. The DMGT 2.0 version (2012a), adapted to the educational context, has been used in this research. It is the most generally accepted definition of giftedness and talent in Australia and it is considered to be directly related to teaching and learning (Australian Curriculum Assessment and Reporting Authority, 2015). Gagné (2015) does not refer to the later EMTD model as the basis for his revised formal definition of academic talent development (ATD) and the best practices for implementation: an enriched K-12 curriculum, systematic daily enrichment, full time ability-grouping, customized and accelerated pacing, personal excellence goals, highly selective access and early interventions (p. 287).

Gagné's talent development model of giftedness and talent is complemented in this study with an adaptation of Stanley's accelerated curriculum model, referred to as The Stanley Model of Talent Identification and Development (VanTassel-Baska & Brown, 2009). Like Gagné's, it too is a talent development model. Stanley's model includes identification using testing, different forms of acceleration such as subject acceleration and a smorgasbord of acceleration forms (VanTassel-Baska & Brown, 2009). It is an assessment model, clarified by Riley (2011b) who refers to it as "assess, test, and reassess" model. In addition, this study also draws on Renzulli's Enrichment Triad model which developed into the Schoolwide Enrichment Model (Reis, *n.d.;* VanTassel-Baska & Brown, 2009). This model uses multiple methods of identification procedures and provides a variety of enrichment experiences according to three types with Type 11

including thinking skills and Type 111 as the most suitable for high ability learners. It, too, is a developmental model, aimed "to educate for individual development over the lifespan" (VanTassel-Baska & Brown, 2009, p. 79).

Of interest also in the study is the different "feminine perspective" of giftedness (Silverman & Miller, 2009b) as presented by Kronborg (2010), Kerr (1997b; Kerr & McKay, 2014) and Reis (1998; Reis & Sullivan, 2009).

1.8. Research Questions

The overarching research question in this study is as follows:

> What are the acceleration methods and provisions that increase, or aim to increase, achievement and meet the academic, social, emotional and cultural needs of gifted and talented girls in single-sex secondary education in New Zealand?

The specific research questions are as follows:

1. How are acceleration processes being designed, implemented, maintained and evaluated in single–sex girls' secondary education in New Zealand?
2. In what ways does the school climate and philosophy match the academic, social, emotional and cultural needs of gifted girls in single-sex schools in secondary education in relation to acceleration?
3. How effective is acceleration as an intervention for raising achievement and supporting social, emotional and cultural development of individuals and/or

groups of gifted girls in single-sex schools in secondary education in New Zealand?

1.9. Conclusion

Acceleration, as a curriculum intervention, cannot be considered independently from educational provisions for gifted and talented students. Academic, social and emotional, and cultural outcomes of acceleration for secondary students who are gifted or of high ability are affected by education policies, provisions and practices. Education in New Zealand is expected to develop individual competencies needed for study, work and lifelong learning (Ministry of Education, 2007b, p. 6). This study's focus is on gifted girls. It explores how acceleration is provided and implemented for gifted girls in Years 9-13 and investigates the effects of these provisions.

Chapter Two provides a review of the literature specifically on acceleration and its provisions. It includes findings from meta-analyses, research syntheses, research and reports. It also explores the New Zealand context and includes specific information on gifted girls. Chapter Three discusses the methodology used in the four investigations within the research. Chapter Four describes the findings from a national survey of girls' schools which offer secondary education. It includes quantitative and qualitative data. Chapters Five, Six and Seven describe the perceptions of teachers, students, and parents or caregivers in three case studies of schools which provide acceleration as an intervention. They also examine the interrelationship between a school's culture and philosophy, the programmes and evaluation provisions for acceleration and their effects on gifted girls in single-sex schools. Chapter Eight analyses the findings from both the national survey and the case studies. It examines these findings and their relevance for

the overarching and specific research questions. It relates the findings to the international and national literature on acceleration. Chapter Nine concludes the study and identifies its contribution to the research on acceleration and educational practice, especially in a New Zealand context. It also sets out the limitations of the study and suggestions for further research are offered.

Chapter 2: Literature Review

2.1. Scope of the Literature Review

This chapter offers a critical review of the literature on the acceleration of gifted girls in secondary education, Years 9-13 (ages 13-18 approximately). To access the literature a search was carried out on the catalogue and the electronic databases available at Massey University (see Appendix E). The key search terms used were 'acceleration,' 'gifted,' 'gifted girls,' 'gifted females,' and 'gender.' Sites were searched on the internet, using the same keywords, and citations in journal articles also signposted important articles, writers and researchers working in gifted education. Other key areas, not specifically on gifted education, emerged through the literature review including student achievement and motivation, school context such as school climate and culture, and culture referring to ethnicity.

2.2. Divergent Views of Acceleration

Positive views

Colangelo, Assouline, and Gross (2004c), Gross (1993), Kulik and Kulik (1984a), Rogers (1991b) and Steenbergen-Hu and Moon (2011) among others have expressed positive views of acceleration. It is claimed to be both educationally and cost effective for academically gifted students "regardless of gender, ethnicity, social and economic background and geographic location" (Colangelo, Assouline, et al., 2004b, p. xi). Academically accelerated students tend to have higher academic performance than non-accelerated students (Daurio, 1979; Kulik & Kulik, 1984b; McClarty, 2015). In schools

acceleration is said to be able to reduce the potential for frustration (Young, Rogers, Hoekman, Van Vliet, & Long, 2015) and boredom and help prevent discipline problems caused by disengagement with learning (Southern, 2014). Acceleration can forestall problems occurring when placement with same age students is "an intellectually inadequate situation" (Hoogeveen, 2015, p. 219). Since students need challenges to find learning exciting (Gross, Urquhart, Doyle, Juratowitch, & Matheson, 2011; Kaman & Kronborg, 2012) acceleration may contribute to reducing drop-out rates for gifted underachieving students (Phillips, 2008; Southern & Jones, 1991). It can lead to increased time for careers, or more opportunities for other academic courses or options (Silverman, 1993a; Southern & Jones, 2015). It can also reduce career training time, and increase earnings through the selection of occupations, and accelerated students are just as satisfied with careers as older students of similar ability who have not been accelerated (McClarty, 2015). Above all, appropriate pacing and placement through educational acceleration ensures gifted students are "engaged in learning for life" (Wai, 2015, p. 82).

Socially, according to Robinson (2004), acceleration enables students to mix with their intellectual peers and does not create psychosocial damage to students or social maladjustment (Brody & Benbow, 1987). It has also been described as "the fair and equitable intervention for highly able students" (Assouline et al., 2014). Flexible pacing opportunities through acceleration can increase both the academic and social engagement of gifted students by reducing frustration at school (Young et al., 2015). Working with other like-minded students, including being in an accelerate class, can increase students' enjoyment of school academically, socially and emotionally (Kaman & Kronborg, 2012). In Kulik's (2004) view acceleration does not prevent a student

participating in the life of the school or extracurricular activities. Indeed, accelerants participate the same or more than students who have not been accelerated (Kaman & Kronborg, 2012; Steenbergen-Hu & Moon, 2011). Acceleration is not an irrevocable decision (Southern, 2014).

Acceleration is said to be cost effective for a school (Bevan-Brown, 2012; Colangelo, Assouline, et al., 2004b; Freeman, 1998; Hoogeveen, 2015; Southern & Jones, 1991, 2015; VanTassel-Baska & Stambaugh, 2006). It is also relatively easy to implement (Swiatek, 2007), especially with planning and collaboration (Southern & Jones, 2015) and it can provide flexible pacing options that can result in positive outcomes "in relation to social connections, self-directions and academic challenges of university life" (Young et al., 2015, p. 239).

To be positive as an intervention acceleration has to be successfully implemented within a context. This can be affected by different understandings about giftedness within the school, the possible range of subjects which can be offered and the school's organisational culture (Southern & Jones, 2015). Acceleration does require flexibility within the school in terms of courses and timetabling (Merrotsy, 2002; National Science Board, 2010; Wardman, 2010), and other issues also need to be addressed such as "pacing, salience, peers, access and timing" (Southern & Jones, 2015, p. 17).

Opposing views

Academic identification of gifted and talented students has been found to be sometimes inaccurate (Freeman, 2001b) and affects identification for acceleration. Resistance to the implementation of acceleration has been reported in teacher, administrator and parent attitudes (Gross et al., 2011). Access to gifted programmes has been affected by

lack of knowledge by teachers, parents and policy makers of methods of identification and ways to support acceleration (Assouline, Colangelo, VanTassel-Baska, & Lupkowski-Shoplik, 2015). Southern and Jones (1991) highlighted academic issues, including gaps in knowledge, underachievement if the content was too advanced, career choices made too soon, selection of subjects may be compromised and academic workload limiting time for other interests.

Kulik and Kulik (1984a) identified issues of students' physical and social immaturity, and raised equity issues, including exclusion of others from provisions. Concerns regarding elitism have also been raised by Ford (2012) and Braggett (1992). Gross and Van Vliet (2005) have identified issues such as: loss of childhood, social and learning experiences, loss of same age friends yet not gaining respect from older students, and loss of leadership experiences. The choice of the form of acceleration and the school context may cause psychological adjustment effects (Cross, Andersen, & Mammadov, 2015; Neihart, 2007). Cross and Swiatek (2009) identified changes in social coping behaviours of gifted adolescents. A student's emotional immaturity may lead to underachievement, and may also result in social isolation. As Southern and Jones (1991) argue, "unhappy maladjusted children will become unhappy, maladjusted adults" (p. 15).

2.3. New Zealand and Australia and Acceleration

New Zealand

Keen's (2001) research on gifted and talented provisions in three regions of New Zealand looked at frequency of use in schools and included 16 secondary schools, five

of which were single-sex girls' schools. Acceleration was used only half as much as enrichment. Larnder (2010) also noted the unevenness of provisions, with a heavier weighting on enrichment.

Horsley (2009b) argued that acceleration is a positive provision. Based on out-of-level National Certificate of Educational Achievement (NCEA) examination statistics (2008) Horsley reported on 56 students gaining NCEA Level 3 when enrolled in Year 11. Most were from low decile schools and most were Māori. Expectation of success for Māori is usually not high according to Rubie-Davies, Hattie, and Hamilton (2006). At the Year 12 level 395, in Horsley's findings most from mid-decile schools, gained NCEA Level 3. But the results for accelerated students were not high; students were not achieving at Excellence level, and there was only one Merit endorsement.

The most recent New Zealand research was undertaken by Wardman (2010) on the academic acceleration of gifted and talented students, at secondary education with a focus on grade-skipping as an intervention. The research involved two studies: one of teachers, student teachers, and university students studying education perceptions, and the other of students at one secondary school. The research sampled teachers from ten high schools, mainly from one urban region from a range of deciles. Teachers raised concerns more so than student teachers or university students, regarding the loss of opportunities for leadership. They raised fewer concerns about the academic, social or emotional effects of acceleration. Teachers from lower decile schools were positive about acceleration. Teachers from high deciles, though still positive, had slightly more concerns about social and leadership factors. However, teacher perceptions were based on limited teacher experience with acceleration.

Other concerns were reported. Teachers believed acceleration should be for individuals only, and not for a class. The major concern regarding class acceleration centered on the inclusion of the "almost gifted" (2010, p. 79) to make up class numbers, and this "often meant that some students were included who were out of their depth, academically, in their final years at school" (Wardman, 2009, p. 30). NCEA was deemed to have a negative effect because of the emphasis on assessment. Further concerns expressed included: lack of subject choice at Year 13, and perceived unfairness of acceleration. Most of the negative comments indicated a preference for enrichment rather than acceleration. Findings indicated that funding and the provision of suitably qualified teachers were both important for the successful implementation of acceleration.

The second part of the research looked at perceptions and outcomes of an acceleration programme between 2001 and 2004. The sample involved 12 (five were female) 'accelerands' (Gross, 2006; Wardman, 2010) who had experienced full-year acceleration. A quarter of students who received an invitation for acceleration did not accept. Some were underachievers and most cited social and emotional reasons. Singling out, or being separated from a peer group, did not appeal to Pasifika and Māori students, which confirmed findings offered by Bevan-Brown (1993). Of those who did accept, Wardman reported that "with one exception the accelerands viewed their full-year acceleration as having overall positive effects on their academic outcomes" (2010, p. 105).

Wardman's research on full-year acceleration and Riley and Bicknell's (2014) research on gifted and talented provisions both report context is important for acceleration to be successful. Influences include: the principal, funding, senior management team,

individual subject teachers in classrooms or staff rooms, the gifted and talented coordinator, mentors, parents or caregivers and university administration.

For example, in Wardman's study the programme could not be sustained after key personnel moved from the school, a division in the senior management team, a change of principal, students' achievements were not recognised, and the original marketing reasons to increase enrolments and achievement level had been achieved (Wardman, 2014; Wardman & Hattie, 2012). However, students and parents had approved grade-skipping and most parents agreed that single subject acceleration would not have been sufficient. Students reported that "the major short-term challenges and resulting long-term benefits of full-year acceleration were in the social and emotional outcomes" (Wardman, 2010, p. 200).

Mixed teacher attitudes have been shown in New Zealand research. Teacher attitude (n=20), using Gagné and Nadeau's *Opinions about the Gifted and their Education* questionnaire (Gagné, 1991), was found to be negative, and at times contradictory, by Watts (2006) in a single-sex girls' Composite Year 1-15 school. The overall finding was that teachers were positive in attitude towards the gifted but had reservations about acceleration. The main concern was that accelerated students would find it difficult to socialise with older students. In addition it was believed that acceleration caused gaps in knowledge. Teachers also perceived that parents pressured students into being accelerated. However, they thought it was worse for students to waste their time in regular classrooms than be accelerated.

Two major New Zealand reports outlined provisions for gifted and talented students. *The Extent, Nature and Effectiveness of Planned Approaches in New Zealand Schools*

for Providing for Gifted and Talented Students: Report to the Ministry of Education (Riley et al., 2004) provided information from all school types-primary, intermediate and secondary schools, noting that New Zealand had its own ways of providing for gifted and talented students within a framework of a national curriculum (Ministry of Education, 2007b). Significantly, most education for gifted students occurred in the regular classroom and a range of provisions was offered. The report noted that "in spite of the research providing evidence that acceleration can work well, it is met with resistance in practice" (Riley et al., 2004, p. 47). This same expression of resistance is reported in Australian research by Vialle, Ashton, Carlen, and Rankin (2001). Although in 2012 across Victoria there were 36 secondary schools providing accelerated programmes in Select Entry Accelerated Learning (SEAL) schools which had been in existence in 1995 (Kaman & Kronborg, 2012).

The findings of this report have been updated by Riley and Bicknell (2014) using the original questionnaire format. Riley and Bicknell reported that dual enrolment and early entry were less likely to be offered. Barriers, which they describe as also enablers, were identified as: funding, lack of time, teacher knowledge and teacher attitudes. Their research confirmed a growth in teacher awareness of the needs of the gifted and talented and they credited a change in the National Administration Guidelines (NAGs), since 2005, for identifying gifted and talented as a category within "special needs." However, the guidelines convey an apparent contradiction between children with special needs, and children with special needs including gifted and talented. While children with special needs are identified as "priority learners" (Education Review Office, 2012a) gifted and talented learners are not listed as priority learners by the Ministry of Education (giftEdnz-The Professional Association for Gifted Education, NZAGC-The

NZ Association for Gifted Children, & New Zealand Centre for Gifted Education, 2014) and are not provided with the additional funding that other special needs groups receive.

The second major report of New Zealand educational practices for gifted and talented students was published by the New Zealand Education Review Office (2008a, 2008b). A recommendation for more professional development for schools from low socioeconomic areas and rural areas aligns with the literature (see Colangelo, Assouline, & New, 1999; Howley, Rhodes, & Beall, 2009; Lawrence, 2009). Other recommendations included: increased use of differentiation and teachers' enhanced "awareness" (Education Review Office, 2008a, p. 54) of the characteristics of gifted and talented students. The report also recommended more communication and consultation with parents and whanau of gifted children and this point has been echoed in New Zealand literature (Bevan-Brown, 2002; Si'ilata, 2014b).

Australia

There are similarities between New Zealand and Australian educational systems (McGee et al., 2003; Townsend, 2011). Both countries have been influenced by the United States and the United Kingdom but there are some similar approaches to providing education for the gifted, including principles of inclusiveness and egalitarianism (Plunkett & Kronborg, 2007a). All Australian states and territories have gifted and talented policies and some refer to acceleration (Young et al., 2015). Acceleration practices have grown more rapidly in Australia (Townsend, 2011) but there have also been concerns about long-term social and emotional effects of acceleration (Young et al., 2015).

As in New Zealand there are different acceleration programmes depending on school context, but there are also differences between states. For example, in Victoria there are Select Entry Accelerated Learning (SEAL) programmes in four selective entry high schools and 36 government secondary schools. Research on these programmes has been limited (Kaman & Kronborg, 2012). SEAL programmes provide selected highly able students in Years 7-10 (NZ Years 8-11) with a differentiated curriculum delivered at a faster pace and a greater depth. Entry is by examination, teacher reference and interview. Some programmes provide a compacted curriculum to complete four years education in three, within a class of students of similar ability. In Years 11-12 students are integrated into mainstream classes. Students may then complete their education earlier or study a greater range of subjects for the Victorian Certificate of Education (VCE). Acceleration and ability grouping are used to deliver the core subjects in a class: for example, English, Mathematics, Science, Studies of Society and Environment (SOSE) and Languages other than English (LOTE). The long term effects of acceleration in core subjects SEAL programmes have been reported to be positive academically, without negative social and emotional effects for students (Plunkett & Kronborg, 2007a).

Kaman and Kronborg's (2012) research of a Select Entry Accelerated Learning (SEAL) high school, of Year 7 and 8 students (NZ Year 8 and 9 with Year 9 classed as secondary education) found the learning needs of the highly able and mainstream students can both be met in the same school within supportive school cultures for learning and well-being for both students and teachers. SEAL students participated more than mainstream students in extracurricular activities, they reported enjoyment of challenging work, and working with like-minded students. Teachers reported the SEAL

programme academically challenged and motivated gifted and talented students academically and they perceived social and emotional benefits for students who felt accepted in classes of like-minded individuals.

In 2005 Kronborg and Plunkett (2006, 2008) researched the effectiveness of an Extended Curriculum Programme (ECP), at an Australian single-sex private girls' school, a programme which offered extension classes in Years 7-10 in Mathematics, English and LOTE to high ability students who had aptitude in these subjects. These extension classes were provided with a qualitatively different curricula using pre-testing and curriculum compacting, with more complexity and depth than in regular classes. In addition the school provided learning experiences targeted to meet individual differences in the ECP and regular classes. For example, the school also used acceleration by subject and year level, withdrawal for enrichment or extension activities, in-class and cluster grouping, flexible pacing (early entry and advanced level courses), mentoring, Individualised Education Programmes (IEP), and individual support and counselling (Kronborg & Plunkett, 2006, p. 17). Most of the ECP students participated in extracurricular activities. This study found that the gifted and talented coordinator was critical to the success of the programme, teachers in the ECP programme needed to be "suitably educated" (p. 23), and professional development in gifted education was beneficial. The programme was effective according to teachers, parents and students.

2.4. Acceleration as a Planned Intervention

Design: Policy and Curriculum Models

Schools need an acceleration policy to ensure "fairness and systematic use of acceleration opportunities" (Colangelo et al., 2010, p. 181) and it should be in addition to, or exist alongside, gifted and talented provisions. Schools are asked to use curriculum and programme models to support and frame gifted and talented provisions (Ministry of Education, 2012; VanTassel-Baska & Brown, 2007).

Two macro programmes, specifically, Stanley's Talent Identification Development Model of acceleration and the Renzulli's Schoolwide Enrichment Triad Model of enrichment have "undergirded gifted education" (see Brown & Stambaugh, 2014, p. 43). According to Benbow and Lubinski (1997), Stanley's model is first and foremost an acceleration model, but includes enrichment and out-of-school opportunities. It uses out-of-level testing, diagnostic testing-prescriptive instruction, subject-acceleration with fast-paced instruction in core subject areas and "curriculum flexibility in all schooling" (VanTassel-Baska & Brown, 2009). The model is a development model, based on an "'assess-teach-reassess' model" (Riley, 2011b, p. 323) and it has been described as a vertical provision (Stanley, 1979), providing a smorgasbord of acceleration approaches including: grade-skipping, dual enrolment, curriculum compacting, individual programming and fast-paced classes (Benbow & Lubinski, 1997). Although the model is easily implemented because it uses existing resources, structures and programmes (Riley, 2011b), teachers need subject expertise and must be able to work effectively with gifted students.

In contrast, the Schoolwide Enrichment Model is aimed not only at gifted and talented students but all students. The selection of students and identification is through multiple methods, including achievement measures. Interest and learning style assessments are used to create an individual portfolio, after which curriculum compacting and content

modifications are offered (Brown & Stambaugh, 2014; Riley, 2011b). The first stage is conducted in the regular classroom, followed by enrichment clusters, and then the offer of special services, including acceleration (subject, grade-skipping, early entry or dual enrolment), internships or mentorships, specialised programmes (e.g., Future Problem Solving) and special classes (International Baccalaureate or withdrawal programmes). In New Zealand the use of curriculum models is increasing (see Riley & Bicknell, 2014). The Schoolwide Enrichment Model is included in the list of six models used in New Zealand schools for gifted and talented education. However, the Stanley Model is not included (see http://gifted.tki.org.nz).

Brown and Stambaugh (2014) recommend multiple entry points to programmes and a combination of models. "Curriculum and instruction must be differentiated in response to learner characteristics, subject matter, cultural relevance, interests and skills" (Brown & Stambaugh, 2014, p. 62). Wai (2015) refers to the need for an educational dose "the density of advanced and enriching precollegiate learning opportunities beyond the norm that students have participated in" (Wai, Lubinski, Benbow, & Steiger, 2010, p. 861), a dose of both appropriate educational acceleration and enrichment, with stimulation also needed. This advice for a range of approaches involving acceleration, enrichment and differentiation is endorsed in the New Zealand literature (Riley & Bicknell, 2014; Townsend, 2011).

School administration support is critical (Peterson, 2006b; Rambo & McCoach, 2012; Wardman, 2010; Wardman & Hattie, 2012). In particular, the support and leadership of the principal (Grantham, Collins, & Dickson, 2014; Wardman, 2010) is critical in creating change or fostering school climate, school culture and learning (MacNeil, Prater, & Busch, 2009; VanTassel-Baska & Brown, 2007). However, Witzers, Bosker

and Krüger's (2003) research found "no evidence for a direct effect of educational leadership on student achievement in secondary schools," (p. 415) with less effect at secondary than in primary schools.

Programmes for the acceleration of students need to be carefully planned (Gross, 1993; Southern & Jones, 1991, 2004, 2015; Vialle et al., 2001). All programmes for gifted and talented students, including acceleration programmes, need evaluation as part of the planning (Callahan, 1993). However, according to the Education Review Office (2008a), most schools do not evaluate their gifted and talented programmes effectively.

Identification

To be identified for a gifted and talented programme a student needs to have high academic ability (Colangelo, Assouline, et al., 2004b; Stanley, 1973b). The accelerant also needs to be socially, emotionally and physically mature (Colangelo, Assouline, et al., 2004b). According to Cross, Coleman, and Terhaar-Yonkers (2014) and the Ministry of Education (2012) identification needs to follow the school's definition of giftedness which should be school-based. Cross (2013) recommends that identification uses multiple methods as do Robinson, Shore, and Emerson (2007). Parent and student consultation (Jones & Southern, 1991) are also recommended. In New Zealand teacher nomination for gifted programmes has been reported as the most common method of identification by 94.1% of respondents (Riley & Bicknell, 2014). Selection for acceleration is also dependent on teacher nomination.

Ford (2010), Montgomeroy (2009) and Webber (2011) have argued that schools need to have in place measures to identify gifted students who are culturally diverse, from low economic backgrounds, underachievers, and students who are gifted with disabilities

because they are underrepresented in gifted programmes. The measures should be culturally appropriate (Bevan-Brown, 2009). In particular, consultation with parents is important because they may have information about their children's giftedness that is not necessarily obvious in the school setting (Jolly & Matthew, 2014). Identification is also dependent on different cultural understandings of the concept and characteristics of giftedness (Niwa, 1999). Students who are twice exceptional may also be accelerated, but probably only in individual subjects of expertise (Moon & Reis, 2004). Being twice exceptional may increase social and emotional issues (Silverman, 2002). Decisions need to be individualised and may depend on the nature of the disability (Foley-Nicpon & Cederberg, 2015). Professional development to identify giftedness may be needed especially as teachers have low expectations regarding twice exceptional students and may be reluctant to refer them for gifted provisions (Bianco & Leech, 2010).

Design of Provisions

The selection of an appropriate form or forms of acceleration depends on the needs of the individual student (Colangelo, Assouline, et al., 2004d; Rogers, 1991b; Southern & Jones, 1991, 2004) and it must be academically and socially appropriate (Wai, 2015). A student may need to be offered one or more forms to provide "appropriate academic challenges" within a school "environment that is conducive to positive social and emotional development (Jung & Gross, 2014, p. 311). Rogers (2015) refers to the "match" (p. 27) which is needed between the form of acceleration and the academic, social and emotional needs of the student. In addition, new teachers need to be prepared to accept the students at the higher level (Cohn, 1979; Feldhusen, Proctor, & Black, 1986; Lupkowski-Shoplik, Assouline, & Colangelo, 2015; Wardman, 2010). Students,

in particular, need to be involved in the planning of their courses (Flutter, 2007; Russell & Riley, 2011).

Different Forms of Acceleration

Schiever and Maker (1997, 2003) distinguish between service delivery acceleration which provides standard curriculum material to younger students or from a lower grade than usual, and curriculum model acceleration which involves speeding up the pace of the delivery of content. "As with acceleration as a service delivery model, acceleration as a curriculum model offers 'the same but sooner and/or faster' to gifted students" (2003, p. 166).

Grade-based acceleration and content-based acceleration are also identified. Grade-based acceleration shortens the number of years in the K-12 school system and includes grade-skipping, also referred to as whole-grade acceleration (Colangelo, Assouline, & Lupkowski-Shoplik, 2004), and early entrance into college (Colangelo, Assouline, & Marron, 2013; Rogers, 2007). Content-based acceleration, which involves advanced content (Colangelo, Assouline, et al., 2004b), also referred to as subject-based acceleration (Plucker & Callahan, 2014b) can be provided in the student's own classroom or in a higher subject classroom (Colangelo et al., 2013). Socially and emotionally where acceleration is provided may have different social and emotional effects (Cross et al., 2015).

It is interesting that Steenbergen-Hu and Moon's (2011) meta-analysis of 38 studies from 1984-2008 found little difference between the academic and social and emotional effects of both forms of acceleration. Neither form has been shown to cause academic, emotional or social difficulties (Southern & Jones, 2015). In contrast Rogers' (2015)

research synthesis reported at high school level subject-based acceleration had higher academic effects at .56 compared to .50. However, grade-based acceleration had higher socialization effects (.23) and higher psychological effects (.34) than subject-based acceleration at .16 and .21 respectively.

Grade-Skipping

The largest body of research undertaken on acceleration focuses on grade-skipping (Rogers, 2004). Wells et al.'s (2009) research confirmed higher academic results for accelerated versus non-accelerated older students throughout high school based on two national longitudinal United States databases. Rogers'(2010) best-evidence synthesis of studies from 1990-2008 (n=234) found grade-skipping as the most consistently beneficial accelerative option for academic, social, and psychological effects for gifted students.

To be successful acceleration by grade-skipping should be well-planned (Feldhusen et al., 1986; Gross, 2008) from design to evaluation. However, grade-skipping is not widely used as a provision. For example, in Duffet, Farkas and Lovelass's (2008) United States research of 900 teachers (grades 3-12) 48% of high school teachers indicated their schools did not offer grade-skipping and Kanevsky's (2011) Canadian research found a preference for content-based acceleration. Freeman's (2001b) twenty-seven year longitudinal research of gifted children reported on 17 students who had been accelerated. Her research did not endorse grade-skipping as an intervention on the basis that being "'hurried' on in that way [the student] may not be either physically or emotionally mature enough to fit in socially with the older children in the new class" (pp. 215-216). Vialle and Rogers (2012) more recently have reported ambivalent

teacher attitudes to grade-skipping. It is reported, however, by Lupkowski-Shoplik, Assouline, and Colangelo (2015) that no educational intervention is always successful, but carefully planned whole-grade acceleration, for high ability students who are "ready," want to be accelerated and understand the process, "can not only be an effective and sound intervention, but better than the alternative [i.e., doing nothing] (Lupkowski-Shoplik et al., 2015, p. 68).

According to Wardman's (2010) research, grade-skipping is rarely used in New Zealand. The important conclusion from Wardman's (2010) research was that after an initial adjustment period, grade-skipped students found acceleration beneficial academically, but more beneficial socially and emotionally. Parents also found it was beneficial socially and emotionally (Wardman, 2014).

Subject-Specific Acceleration

Colangelo, Assouline et al. (2004b) argue that subject-based acceleration has some advantages over other forms of acceleration. It raises fewer issues about social and emotional issues. The positive effect size for subject-based acceleration has been identified by Rogers (1992, 1999) as providing three-fifths (ES +.59) of a year's additional academic growth in a subject. Of interest is the fact that 17 of the 21 studies in Roger's 1992 research were on Mathematics (1992, 1999). This subject has been the most common accelerated subject. Science and English follow (see Lubinski, 2004; Lubinski et al., 2014; Stanley, 1973a, 1991b; Winsley, 2000). Not all educational practitioners agree that subject-based acceleration at the secondary level (Barbeau, 2011) is beneficial. The level of understanding required at higher levels is cited. However, academically, students who are accelerated in single subjects achieve well in

the higher class, performing at the top of the new class in a short period of time (Daurio, 1979; Kulik, 2004; Kulik & Kulik, 1984a). To be effective, academically, the accelerated student needs to continue to be in the top 10% even in the new class (Colangelo et al., 2010).

In Victoria, Australia, 36 Select Entry Accelerated Learning (SEAL) schools accelerate whole classes of students in curriculum content, in a range of core subjects, where curriculum is compacted from four years into three years between Years 7-10 NZ [NZ Years 8-11] (Kaman & Kronborg, 2012). Academically and socially there have been benefits for accelerated students without causing resentment from main-stream students in the same school (Plunkett & Kronborg, 2007a).

Subject-based acceleration occurred in a range of subjects in an Australian study by Vialle et al. (2001) with a sample size of 50, in grades 8-10 (9-11NZ). Most of the accelerants benefitted academically from challenging content and the faster pace. While they felt pressured to succeed, most felt they had grown in confidence because of positive academic outcomes. However, teachers' perceptions were mixed; they acknowledged academic benefits but still had concerns about students' social and emotional needs.

Teachers' ambivalent attitudes towards acceleration also affected the recommendation of students for subject acceleration in a study by Rambo and McCoach (2012) of 1000 teachers. This study confirmed that teachers took more account of negative rather than potential positive outcomes to nominate students for acceleration. There also appeared to be contradictory attitudes amongst the 900 teachers, in Duffet et al.'s (2008) research,

with 85% wanting more subject acceleration but 63% against "encouraging advanced students to skip grades when appropriate" (p. 68).

Some research showed ambivalence in relation to social and emotional benefits. For example, gifted students (n=1526) who had been accelerated in a single subject (67.4%) in one study "showed higher interpersonal ability than students who were not" (Lee, Olszewski-Kubilius, & Thomson, 2012, p. 100). Händel, Vialle and Ziegler (2013) reported that high achievement in some subjects, especially Science and Mathematics, resulted in negative reactions affecting peer relations for the Year 11 students.

There has been little New Zealand research on the effectiveness of specialised subject-based programmes. However, two studies were undertaken on accelerated learning in New Zealand Mathematics taught at secondary level. Rawlins (2000) investigated students' perceptions of accelerated Mathematics in four New Zealand secondary schools. The findings were positive academically and students did not find that acceleration affected their friendships with peers or older students. Winsley (2000) found over half (55%) of surveyed secondary schools (n=235) offered an acceleration programme. Whole class acceleration was not common, in that 27% organised accelerated groups of 21, and 61% offered acceleration to less than 10 at a time. However, 74% of schools had raised concerns regarding timetabling and issues were raised about pressure from parents, social immaturity of students and the level of academic performance of previously accelerated students in the senior school.

National assessments can affect academic provisions. For example, changes to the national examination system in New Zealand have facilitated subject acceleration. Only 51% of teachers believe NCEA provides sufficient motivation for high achieving

students to perform at their best (Hipkins, 2013). Wardman (2010) found that NCEA has led to some teachers' perceptions of a watering down of curriculum difficulty, resulting in teachers being more receptive to using subject acceleration. The New Zealand Scholarship examination, however, is providing challenge for students of high ability according to Horsley (2009a, 2009b), and is entered as an accelerative provision (Moses, 2010; New Zealand Qualifications Authority, 2015) in one or more subjects.

Radical Acceleration

Radical acceleration, acceleration by two or more years, may occur by grade-skipping or by subject acceleration (Merrotsy, 2006), and is especially recommended for highly gifted students (Gross, 2004; VanTassel-Baska, 2004a) who are mature both socially and emotionally (Gross & Van Vliet, 2005). Radical acceleration, however, according to Jung and Gross (2015) refers to a student graduating from high school three or more years than is usual, and usually multiple forms of acceleration have been provided during the school years. Similar to grade-skipping, radical acceleration has academic, social and emotional benefits (Gross & Van Vliet, 2003; Jung & Gross, 2014; Lubinski, Webb, Morelock, & Benbow, 2001; Rogers, 2004). Jung and Gross (2015) also endorse the academic, social and emotional benefits, but recommend regular monitoring to prevent problems occurring such as inadequate study and organisational skills, and social, emotional and psychological issues. Gross (1993) reported on the five students who had been radically accelerated in her longitudinal study of 15 children who were profoundly gifted (+160 IQ). "In every case the young people who have been radically accelerated have found both outstanding academic success and the sure shelter of a warm and supportive friendship group" (Gross, 2004, p. 281).

Half-way through the longitudinal study Gross (1993) reported no negative social or emotional consequences and by 2003 no students regretted having been radically accelerated. However, students who had only been accelerated one year were not as positive. It was explained that "when schools retain such students with age peers, they typically underachieve and experience negative affective outcomes, including lowered self-esteem, anxiety and serious demotivation" (Gross & Van Vliet, 2005, p. 154).

Early Entry to University, Including Dual Enrolment

Both early entry and dual enrolment forms of acceleration provide academic challenge and meet social and emotional needs (Brody & Muratori, 2015; Jung & Gross, 2014). Stanley (1979) reported on early entrance acceleration to John Hopkins University with some gifted girls finding the acceleration "easy and pleasurable" (p. 176). Most of the eminent women in Kronborg's (2010) study had experienced acceleration at school before early entry to university. Merrotsy's (2003) case study research in Australia on two secondary students who had been radically accelerated and who had experienced university study while still at school was also positive. Students in the study recommended the following: funding for tertiary study; teachers who understand about giftedness and their learning styles; schools with a flexible organisation with subjects and timetables and more career information and guidance. Two further case studies of subject accelerated students (Merrotsy, 2006) emphasised the need for choice and a negotiated curriculum. The provision enables high ability students to stay at school (Khazem & Khazem, 2014) and take part in high school activities (Brody & Muratori, 2015).

Early entrance to tertiary study is also a viable option for gifted students if they have been grade-skipped (Gross & Van Vliet, 2005; Neihart, 2007; Southern & Jones, 2004; Wardman, 2010; Wardman & Hattie, 2012). It meets students' needs academically, socially and emotionally (Noble & Drummond, 1992; Noble & Smyth, 1995). Horsley (2013) examined dual enrolment (n=50) and early entry to university (n=40) through students' perceptions. Some of those who entered early attained higher results than they had at school where they thought they were not academically challenged resulting from disengagement with learning and frustration over teachers who were not able to teach content at a high level.

Continuous progress and self-paced instruction are rare as acceleration options, according to Southern and Jones (1991) and "do not involve external modification of the pace or demands of instruction" (1991, p. 19). An Australian study (see Muiznieks, 2000) reported on a five-year longitudinal study of the use of a telescoped curriculum, curriculum compacting and subject acceleration particularly in Mathematics and English for a cohort at the junior level. The cohort numbered 145 and 29 of these were in the accelerative programme. More than half of the students perceived the acceleration programme was successful, especially academically. However, most of the students were in favour of subject acceleration rather than cohort acceleration.

2.5. Implementation: Provisions

Acceleration is not usually provided as a stand-alone provision. Acceleration, enrichment, or a combination of these, is the basis of most services for gifted students (Siegle, Wilson, & Little, 2013). Wai (2015) suggests that both are needed for an optimal educational programme. However, VanTassel-Baska and Stambaugh (2006)

argue that acceleration should be provided first and then followed by enrichment for faster pace and complexity. “If appropriately done acceleration must be enriching and enrichment must in the long run at least be accelerative" (Southern, Jones, & Stanley, 1993, p. 406). In addition, Gross, Pretorius, and Macleod (2001), Riley, Bevan-Brown, Bicknell, Carroll-Lind, and Kearney (2004) and Vialle, Ashton, Carlon, and Rankin (2001) maintain that differentiation and enrichment, together, need to be used with acceleration.

In New Zealand schools the preferred approach for gifted and talented students is a differentiated programme for gifted and talented students with a combination of acceleration and enrichment for gifted and talented students (Ministry of Education, 2000, 2012; Riley et al., 2004; Townsend, 2011). Riley and Bicknell’s follow-up research to the 2004 national report indicated that 66.1% of schools (the majority in this report being secondary schools, and from high deciles) preferred a combination of acceleration and enrichment. However, over a quarter of the schools still preferred using enrichment as the only provision for gifted and talented students.

Enrichment

Enrichment has been described as horizontal extension. Acceleration, on the other hand, is known as vertical extension (Hattie, 2009; Stanley, 1979). Enrichment may include in-depth content, pull-out programmes, special classes, competitions and extracurricular activities (Gubbins, 2014) as well as cultural activities, such as drama and dance (Stanley, 1979). Academically, enrichment yields positive outcomes. Kulik and Kulik (1992) found while students in enriched classes performed better academically than students of similar ability by four or five months, the academic results were not as

effective as acceleration. Hattie's (2009) meta-analysis also confirmed the benefits of acceleration (.88) over enrichment at .39, just below what he referred to as the .4 hinge point, above which was the "zone of desired effects" (p. 19). However, concerns have been expressed that enrichment may sometimes include irrelevant academic material, unrelated to the curriculum, and becomes, according to Stanley (1979), "busywork." In Braggett's (1992) views, enrichment needs to be developmental intellectually and needs to be offered at a higher level than what is offered to all other students.

Acceleration and Enrichment Options

Extracurricular activities have been identified as an accelerative provision (Colangelo, Assouline, et al., 2004b; Southern & Jones, 1991). While Kerr and McKay (2014) recommend limiting the number of activities for gifted girls, Steenbergen-Hu and Moon (2011) did not find that participation was affected by acceleration.

Curriculum Compacting, referred to as content-based acceleration (Colangelo et al., 2010; Kanevsky, 2011) leaves time for enrichment and acceleration (Starko, 1986) though enrichment appears to be offered more frequently (Sheehan, 2000). Curriculum compacting is used in all of Victoria's SEAL schools in addition to other accelerative options (Kaman & Kronborg, 2012; Plunkett & Kronborg, 2007a). Combined classes of two or more grades enable the younger students to interact academically and socially with the older students. But the provision may not result in progression to the higher level with the older students (Kanevsky, 2011). Correspondence courses along with subject acceleration were the main acceleration options in Kanevsky's (2011) national Canadian survey which indicated a preference for advanced content without moving to a higher grade with older students. In New Zealand the use of the Correspondence

School, Te Aho O Te Kura Pounamu, by schools has declined since 2004 and it is not known whether correspondence subjects involved acceleration (Riley & Bicknell, 2014).

The International Baccalaureate (IB) is included as an acceleration option in the United States to allow students taking the corresponding university level curricula to gain course credits (Colangelo et al., 2010). Rogers' (2010) synthesis of research endorsed its academic effects with an effect size of .54 (n=2) but the effect of IB was reported to have under .10 social (n=1) and psychological (n=1) effects. However, in New Zealand, students who gain the IB diploma enter university at entrance level, although it may help with preferential entry to courses. The IB is, therefore, considered as enrichment (DiGiorgio, 2010). Students have provided mixed reviews of IB from being academically challenged and social and emotional benefits from working with like-minded peers (Foust, Hertberg-Davis, & Callahan, 2009), to feelings of social isolation because of being different from peers (Park, Caine, & Wimmer, 2014). Few schools offer IB in New Zealand.

Pull-out or withdrawal programmes, considered to be a most common service delivery model (Brighton & Wiley, 2013), are used for acceleration and enrichment. They prevent the criticism levelled at full-time programmes as "elitist" (Borland, 2013). Rogers (2007) found they were worthwhile for gifted and talented students providing they were related to the curriculum. In New Zealand they were the second most common provision reported in 2014 (Riley & Bicknell).

Competitions "provide the single outstanding international universal in out-of-school activities for the gifted" (Freeman, 2002, p. 58). They can be accelerative as an

academic provision but are used more frequently as enrichment, including for accelerated students. As an out-of-school provision they provide “opportunities for growth and development including creative problem-solving, critical thinking, leadership, group dynamics and communication” (Karnes & Riley, 1996, p. 8). However, while competitions have been recommended because they provide "a training ground for excellence" (Riley, 2007, p. 146; Riley & Karnes, 1998/1999) they have also been described as "breeding grounds for problems with equity" (Riley, 2007, p. 151). While they may also be inexpensive to provide (Campbell, Wagner, & Walberg, 2000), Riley (2011a) has argued that they should only be one part of a continuum of provisions for gifted and talented students (Riley, 2013b) in-school and out-of-school.

Differentiation

Curriculum differentiation refers to appropriateness of learning for the learner in content, pace and product in the learning environment to meet student readiness and interests (Riley, 2013a; Tomlinson, 2014). The methods of instruction need to be directed to the learning preferences and styles of the learner (Bray, 2012; Tomlinson et al., 2003). For gifted students differentiation should include both enrichment and acceleration (Riley, 2011c).

2.6. Implementation: Delivery

Whether students are accelerated individually or in groups may affect acceleration and its outcomes. Kulik and Kuliks’ meta-analysis (1992) of 23 studies on accelerated classes had indicated increased academic achievement. In relation to results with the same age control groups the “superiority of the accelerated class was great enough to be

considered practically significant" (Kulik, 2004, p. 15). In addition cohort acceleration can raise the expectations of other students, a "halo effect," without resentment from other students, as reported by Plunkett and Kronborg (2007a). Teaching practices used with gifted students also tend to "spillover" into regular mixed-ability classes (Kaman & Kronborg, 2012; Plunkett & Kronborg, 2007a).

Grouping students of similar ability has been recommended by the research as providing "substantial academic gains" (Rogers, 2002b, p. 105) for acceleration. It may also achieve social benefits (Rogers, 1993). Ability grouping combined with curriculum differentiation and acceleration is educationally effective for gifted students (Kaman & Kronborg, 2012; Neihart, 2007). Groups can be large or small but one or more like-minded peers can help academically, socially and emotionally (Wardman, 2010, 2014). Grouping needs to be flexible but students also need to be grouped for ability (Feldhusen & Moon, 1992; VanTassel-Baska, 1992). In particular, as Neihart explained, "There appear to be benefits to cohort acceleration that are more difficult to replicate when students go it alone" (2007, p. 336) especially for grade-skipping.

Recent Australian research by Owens (2014) of 58 Year 9 students of mixed gender investigated students', teachers' and parents' perceptions of accelerate classes which were ability grouped. Students were accelerated in three subjects English, Mathematics and Classics and Latin and students were in mainstreamed classes for their other classes. All participants were positive that there was more academic challenge in the accelerated classes. However, students would have liked more curriculum differentiation and teacher support to meet their academic and social and emotional needs and parents would have liked more communication.

2.7. Maintenance and Support

Supportive systems and personnel (Merrotsy, 2002) are needed to provide academic, social, emotional and cultural support. School culture is related to school climate. School climate is "based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures" (National School Climate Center, 2015, para. 3). A positive school climate encourages academic success and the development of students' well-being (Cohen, McCabe, Michelli, & Pickeral, 2009; Kaman & Kronborg, 2012; National Science Board, 2010). The role of the principal is critical in creating a "culture of learning and achievement in the school" (MacNeil et al., 2009, p. 73). The social and emotional well-being of gifted teenagers at secondary school is supported in a school and classroom environment where "it's safe to be smart" (Hébert et al., 2014, p. 95).

In New Zealand ERO (2014) noted that a culture of well-being in a school, creates a sense of belonging and student engagement. Recommendations for a culture that supports gifted and talented students includes the supportive role of the principal (Easter, 2011) and the expectation that every teacher is a teacher of the gifted (Bourne & Sturgess, 2006; Easter, 2011).

Support for Staff: Professional Development

Professional development (PD) has been described as the "vehicle" of educational reform (Gubbins, 2008) and it is recommended for gifted education (Croft & Wood, 2015; Duffet et al., 2008; Education Review Office, 2008a; Geake & Gross, 2008; Horsley, 2006). In addition, professional development is especially required to meet the

needs of accelerated students who are gifted and talented (Kronborg & Plunkett, 2006; Vialle et al., 2001). Not only does professional development increase teacher confidence about provisions for gifted and talented students (Casey & Koshy, 2013), it also provides guidance with identification practices and concerns regarding the social effects of acceleration (Wells et al., 2009). PD is recommended for those who give advice on acceleration, including school counsellors (Croft & Wood, 2015; Wood, 2010) and gifted and talented coordinators (Watters & Diezmann, 2013).

Professional development for teachers is needed because teacher nomination is the most commonly used means to identify gifted students (Freeman, Raffan, & Warwick, 2010; Riley & Bicknell, 2014). Professional development is also needed for teachers to understand the characteristics and needs of accelerated students who are gifted (Geake & Gross, 2008; Rambo & McCoach, 2012; Vialle et al., 2001) and to improve and provide effective programmes (Duffet et al., 2008; Kronborg & Plunkett, 2013). Teacher beliefs about teaching and learning can affect the delivery of programmes to effectively meet the needs of students with high ability (Pedersen & Kronborg, 2014). Teachers may not understand cultural differences in the meaning of giftedness, especially for Māori and Pasifika (Bevan-Brown, 1999; Faaea-Semeatu & Faitaua, 2013; Webber, 2011) or may not know how to identify or cater for the needs of twice exceptional students (Bianco & Leech, 2010). They may miss identifying gifted minority students (Ford, 2014a) or identifying students from low socioeconomic backgrounds as argued by Briggs, Reis, and Sullivan (2008), Olszewski-Kubilius and Thomson (2010) and Payne (2011). In a national report ERO (2008a) noted "that often there had been little or no relevant professional development" and teachers at most

schools "did not have a broad understanding of current theories" (p. 38) in gifted and talented education.

Support for Students including Pastoral Care

Robinson (2004) and Wardman (2010) both report that support is needed from parents for students who are gifted and talented and accelerated students. Support is needed from educators including teachers (Hattie, 2009), gifted and talented coordinators (Kerr & McKay, 2014), gifted committees (Riley & Bicknell, 2014), and careers and subject advisers (Chen & Wong, 2013; Maxwell, 2007; Silverman, 1993a). School counsellors (Blackett, 2006; Hurst & Riley, 2014; Moon, Kelly, & Feldhusen, 1997; Peterson, 2006a) can provide support but they may not have had training in working with students who are gifted and talented, (Blackett, 2006; Elijah, 2011; Wood, Portman, Cigrand, & Colangelo, 2010). Mentors can provide support for gifted and talented students (Bevan-Brown, Taylor, & Fraser, 2006; Cutler, Riley, MacIntyre, & Bicknell, 2010) and for gifted Māori students, mentors are highly recommended (Bevan-Brown, 2009).

All accelerated students need support, as do all gifted students (Cornell, Callahan, & Loyd, 1991; Gross et al., 2011). Gross and Van Vliet (2005) argue that support for radically accelerated students should include: counselling, study skills, and providing social opportunities for engagement with other students. A pastoral care system which supports all students influences academic achievement (Agee & Dickinson, 2008). As Murphy (2011) explains the role of pastoral care has developed beyond care for social and emotional needs and is extending to "care for improved academic outcomes" (p. 19), though each secondary school has its own ways of implementation. Other sources of support include mentors (Freeman, 2008; Grassinger, Porath, & Ziegler, 2010; Hurst

& Riley, 2014; Wardman, 2010) and the gifted and talented coordinator (Kronborg & Plunkett, 2006; Vidergor, 2012; Wardman, 2010).

Robinson (2004) notes that support is needed from both school and home for "optimal learning" of accelerated students. Parents are "instrumental" in the upbringing of gifted children (Silverman, 2013b, p. 192). Support is also needed from the whanau (Bevan-Brown, 1996, 2011a). To enhance Māori achievement, communication and good relationships between teacher, student and whanau is recommended (Averill et al., 2014). Communication with the community is also recommended, but it does not always occur (Bevan-Brown, McGee, Ward, & MacIntyre, 2011). Close communication between the school and the parents of accelerated students was deemed important to facilitate acceleration in Wardman's research (2014).

2.8. Effectiveness

Academic Effects

Academic outcomes are mostly positive for accelerated students (Kulik, 2004; 1984a; Rogers, 2010) in both the short and the long term (McClarty, 2015; Steenbergen-Hu & Moon, 2011) and acceleration generally does not create detrimental academic, social or emotional effects (Rogers, 2002a, 2010). Terman "disproved the notion of 'early ripe, early rot'" (1954, p. 122) with findings that showed academic, social and emotional benefits. Accelerated students do not "burn out" according to recent research (Wai, 2015).

Kulik and Kulik (1984b), Kulik (2004), Rogers (1991a, 2010), Kent (1992), Hattie (2009), Steenbergen-Hu (2009) and Steenbergen-Hu and Moon (2011) have all shown

the positive academic effects of acceleration. Such studies have shown that “no other arrangement for gifted children works as well as acceleration" (Kulik, 2004, p. 21). Kulik’s (2004) comparison of accelerated students with non-accelerated students demonstrated a large impact of ES+.8, as did Hattie’s (2009) analysis of acceleration on student achievement of ES+.88. Similarly Rogers’ (2010) findings of the academic effect of acceleration were positive at ES+ .68. Students perceive that acceleration is a positive intervention especially for academic challenge and achievement (Gross et al., 2011; Wardman, 2010). Longitudinal studies have also confirmed positive academic outcomes from acceleration (Benbow, Lubinski, Shea, & Eftekhari-Sanjani, 2000; Bleske-Rechek, Lubinski, & Benbow, 2004; Brody, 2005; Gross, 2006; Lubinski & Benbow, 2006; Lubinski, Benbow, Shea, Eftekhari-Sanjani, & Halvorson, 2001; Lubinski, Webb, et al., 2001; Muiznieks, 2000). Other long-term effects include more prestigious careers with greater earnings (McClarty, 2015), satisfaction with educational and occupational choices and “the impact of those choices in other areas of their lives” (Wai, 2015, p. 81).

Social and Emotional Effects

Concerns regarding acceleration have frequently centered on social and emotional outcomes (Colangelo, Assouline, et al., 2004a; Gross & Van Vliet, 2005; Vialle et al., 2001). For example, social and emotional outcomes were at the forefront of concerns by school psychologists, principals, teachers, and gifted and talented coordinators (though slightly less concerned) in research (n=554) conducted by Southern et al. (1989). However, research has also found that “accelerants equal or surpass non-accelerants in self-concept, self-esteem, self-confidence, social relationships, participation in extracurricular activities, and life satisfaction” (Steenbergen-Hu & Moon, 2011, p. 39).

In Gross et al.'s (2011) research students did not believe that they had lost self-esteem or peer friendships and they felt positive about themselves and their school experiences. However, the students were aware that future issues could arise if acceleration was continued and they had some social concerns that they might be bullied. Students in Wardman's (2010) research who had been grade-skipped made friends with older students, and made adjustments socially to age dependent activities, for example alcohol availability, to fit in.

Rogers (2007) reported that the research for subject-based acceleration has been significantly positive in regards to social and emotional effects for gifted students. The social effects of grade-skipping are very positive, and are slightly positive for other forms of acceleration such as early admission to college. Rogers also noted that "emotional impacts are small and positive throughout" (p. 388) for different forms of acceleration. Gifted students believed that being grade-skipped (Lee et al., 2012) did not affect their socialisation with others nor did they feel it caused depression. Robinson (2004) and Richardson and Benbow (1990) point out that accelerated students are not more psychologically vulnerable than other students.

Kulik (2004) described acceleration as "not short changing" students socially or emotionally (p. 13). He pointed out that self-esteem could be affected with the "big fish little pond effect" (p. 21), but the drops were described as "trivial" for same-age accelerated students and "small" with older control grouped students. If these effects did occur, it was only for a short period of time, as also found by Wardman (2010). Acceleration has been shown to contribute to students having a realistic self-esteem (Colangelo et al., 2013).

However, not all research has reported positive social and emotional effects. Neihart (2007) was more cautious, reporting, that with careful identification students showed academic as well as social and emotional maturity. They may "experience some social and emotional benefits" (Neihart, 2007, p. 333). However, the study explained that acceleration may not be beneficial socially and emotionally for all students. This was also a concern in Freeman's (2001b) research of accelerated students. Gross and Van Vliet (2003) pointed out that the level of emotional maturity, as well as the academic ability of the student, should be considered with regard to acceleration (Gross, 2004). There was also some concern expressed in New Zealand:

> At just under half the schools, gifted and talented students' social and emotional wellbeing was not being nurtured through pastoral care. For example, there was little consideration of specific types of bullying of these students, or of balancing learning needs with social needs when students were moved into older age group classes for extension or acceleration (Education Review Office, 2008a, p. 37).

The report included all types of schools and levels not simply secondary schooling in single-sex girls' schools.

Cultural Effects

There is an underrepresentation of students from difference cultures in gifted programmes in high schools (Olszewski-Kubilius & Thomson, 2010; Webber, 2006) and in acceleration programmes (Borland & Wright, 2000). Students from low socioeconomic areas and certain diverse minorities, especially African American and Hispanics in the United States (Ford, Grantham, & Whiting, 2008) are underrepresented in United States gifted programmes, including acceleration. As Gagné (2011) and Ho

(2014) point out this is an equity issue. The most prominent explanations have centered on methods of identification and programme provision which may not be culturally appropriate (Ford, 2013; Ford et al., 2008). Teacher attitudes can affect teacher-student relationships which have a strong effect (ES+.72) on student achievement (Hattie, 2009). In particular, teacher cultural values and attitudes "influence teacher-student relationships, curriculum content, teaching styles and classroom climate, etc." (Bevan-Brown, 2004b, no page given) and these affect the provisions for gifted and talented students and acceleration provisions.

In New Zealand "a strong plea was made against enrichment and acceleration programmes that isolate Māori children with special abilities from their peers" (Bevan-Brown, 2004a, p. 187), and against withdrawal programmes which involve removing students from where they are socially and emotionally comfortable. Personal and cultural isolation may result (Bevan-Brown, 2009). Positive experience of one Māori student, selected as high achieving and accelerated in an accelerated class, was reported in a case study undertaken by Macfarlane, Webber, Cookson-Cox, and McRae (2014). Bevan-Brown (1996) has suggested that it is possible to accelerate within the regular classroom: "Individualised programmes could operate successfully *within a group context*" (1996, p. 107, italics in original). In particular acceleration might be provided using an ability group within the class (Mahuika, 2007; Weir, 2003).

Like Māori, Pasifika students are underrepresented in gifted programmes because they are not being identified (Faaea-Semeatu & Faitaua, 2013; Keen, 2006) or there is a lack of understanding or knowledge by teachers and the school. As Siope (2011) explained, Pasifika students "live in 'siloed' worlds in which their school, family and church lives are kept separate, and students learn not to draw attention to themselves at school"

(Siope, 2011, p. 10). Frengley-Vaipuna's (2007) research on Tongan giftedness explained that "some culturally specific factors such as *talangofua* (obedience) and *faka 'apa 'apa* respect may have a negative effect on talent development in a school if not properly understood by teachers" (p. 100).

Culturally responsive environments are needed for culturally diverse students (Bevan-Brown, 2005; Gay, 2013). However, there is a lack of research on effective programmes for gifted Pasifika students (Chu, Glasgow, Rimoni, Hodis, & Meyer, 2013). Though there is some evidence that at secondary school Pasifika students "report being more motivated when their teachers show they care about their learning" (Chu et al., 2013, p. 2).

2.9. Gifted Girls

Gifted girls are a 'special population' in the field of giftedness (Callahan & Hertberg-Davis, 2013; Colangelo & Davis, 1997; Macleod, 2004; Reis, 2013b). According to Kerr and McKay (2014) gifted girls and women are well-adjusted, and have used their intelligence "to fit in rather than to lead" (p. xx). In Kerr's (1997b) view, educational acceleration does not create social and emotional harm to gifted girls and "grade-skipping and acceleration are less harmful than the alternative" (p. 250). Academically, most gifted girls achieve well (Kerr, 2000) if they are challenged and motivated. However, educationally underachievement has also been recognised as a major concern for gifted girls (Plunkett, Harvey, & Harvey, 2003; Plunkett & Kronborg, 2007b; Reis, 1987, 2013b; Riley et al., 2004). In particular Hollinger and Fleming (1984) described underachievement in high school or secondary school as an internal barrier affecting career potential. Society's beliefs and stereotypes (Reis, 1987) can affect girls'

achievement especially if they believe girls are not as good as boys at Mathematics and Sciences (Ceci & Williams, 2010; Ceci, Williams, Ginther, & Kahn, 2014; Fennema & Sherman, 1977).

Kerr (1997b) reported on the subtle start of underachievement, such as selection of less demanding courses at school. This can lead to later underachievement of potential in career choice (Kerr, Vuyk, & Rea, 2012). Gifted girls often tend to believe they are better at the language arts or more verbal activities (Tirri & Nokelainen, 2011). To counter this, research has suggested that career advice from teachers and career counsellors is most important (Fox, 1976; Rudasill & Callahan, 2010; Watters, 2010). In addition Catsambis (2005) referred to the need for girls to take advanced courses in Mathematics at high school. However, students who take subjects such as Science and Mathematics may be seen as having less positive social characteristics (Kessels, 2005; Kessels, Rau, & Hannover, 2006).

Internal Barriers for Gifted Girls

Kerr and McKay (2014) have recently pointed out that there are risks or internal barriers for "smart girls" including "too much openness to experience, perfectionist anxiety, multipotentiality, rejections for being intellectually or creatively different and losing boundaries because of high emotional intelligence" (p. 157). However, most concerns are about the vulnerability of gifted girls socially and emotionally. Kerr (1997b) referred to adolescence as "a time of crisis" (p. 125) where there are physical changes, social and emotional changes, and psychological changes (Vialle, Heaven, & Ciarrochi, 2007).

To be gifted means "to be vulnerable" (Silverman, 1997, p. 37). Gifted girls, according to Robinson, Reis, Neihart, and Moon (2002), may be lonely or experience peer pressure to be like everyone else. Reis (2002b) identified dilemmas about ability and talents and, in adolescence, personal priorities for social goals rather than achievement goals (Reis, 2002a). Gifted girls also need assistance in risk-taking (Silverman, 1993a), especially intellectual risks and resilience (Farrall, 2004; Tan & Chun, 2014), and maintaining a positive attitude (Siegle & McCoach, 2002; Tan & Chun, 2014).

Fear of success, has been found in highly achieving female adolescents (Hollinger & Fleming, 1984; Horner, 1972; Lavach & Lanier, 1975). Two-thirds of Hollinger and Fleming's (1984) research of 284 female adolescents, from six diverse metropolitan high schools, indicated they felt internal barriers. To counter internal barriers support is needed by counsellors and other support personnel to increase motivation for academic achievement and to improve self-esteem (Kerr & McKay, 2014; Reis, 1998).

According to Assouline, Colangelo, Ihrig and Forsdadt (2006) gifted girls approach life differently. If girls do not achieve academically they attribute it to a lack of effort. This low self-esteem caused when high achieving girls view their success as not due to their own efforts and hide, or doubt their academic ability, has been referred to as the imposter syndrome or phenomenon (Clance & Imes, 1978; Hoang, 2013; Reis, 1998, 2013b).

Perfectionism has been referred to as the number one problem affecting gifted students socially and emotionally (Callard-Szulgit & Szulgit, 2012) and increases in high school (Marshall, Gardiner, & Grealy, 2004). There is a difference between "healthy" perfectionism which can result in high achievement with the setting of high standards,

the pursuit of excellence and perseverance (Christopher & Shewmaker, 2010) and "unhealthy" perfectionism which causes stress and anxiety. Robinson and Campbell (2010) point out that gifted students put pressure on themselves and Kornblum and Ainley (2005) reported that gifted girls who feel more parental pressure as they grew older, tend to set high standards for themselves and may be concerned about getting things wrong. However, they also found that gifted girls were just as likely to be healthy perfectionists as unhealthy perfectionists . One solution to anxiety over academic results for adolescent gifted girls is the provision of a safe learning environment (Ramsay, 2002).

External Factors or Barriers

External factors can affect gifted girls. Some of these are related to their home life and the role of parents, the schools, and the environment. Family life can be affected by the number of siblings in a family and the gender of these siblings, what number the gifted girls in the family, birth order and whether there is one or more parent (Reis, 1998, 2001). Other external barriers which can affect achievement reported by Reis (1998) include childhood experiences, supportive or non supportive families, parental attitudes towards girls, in particular gender stereotypical attitudes towards girls' behaviours and interests, parents' educational background and attitude to potential careers and employment opportunities. Mothers influence gifted girls, especially if they had had conflicts about whether they should be working or at home with children (Reis, 1998, 2013a). Parents also influence their daughter's "academic self-perceptions and achievement" (Reis, 2002a, p. 127). Girls and women also have pressure from single parent families in which women are the main earner (Shriver, 2014). However, Kronborg (2010) reported that eminent women, who had been gifted girls, recognised

that mothers and allies in the family contributed to their development as eminent women.

School experiences may also provide external barriers for gifted girls and these problems may be exacerbated if students are accelerated. Teachers may hold lower expectations of girls' ability to succeed and they may therefore underachieve (Moltzen, 2011a). Reis (1998) reported girls would rather not be competitive if they thought it might damage their relationships with others. Some may choose not to work independently, recommended as important for gifted girls (Kerr, 1997b), but work in groups to fit in. However, Rizza and Reis' (2001) research on a group of 11 gifted high schools students confirmed that working in ability groups provided academic, social and emotional support, and competition was not viewed in a negative light, rather as a sharing of experience. Reis (1998, 2008) believed it was difficult for schools to help gifted girls prepare for a future where they would be able to reach both their academic potential and provide time for family commitments.

Socially, being perceived as intelligent and identified as gifted may affect peer relationships (Breen, 2014; Schroeder-Davis, 1999) even if the gifted girls are positive about their giftedness (Kerr, Colangelo, & Gaeth, 1988). Girls may perceive that relationships are more important than academic achievement (Kerr, 1997b) and may hide their intelligence or "keep quiet" about their giftedness (Tapper, 2014). Being labelled can also cause gifted students too much pressure to succeed (Freeman, 2001a), especially if the labelling had not been accurate in the first place (Freeman, 1991). However, labelling can also help raise self-esteem (Freeman, 2011).

For girls, including smart girls, adolescence is a "danger zone" (Kerr & McKay, 2014, p. 141). There is pressure to be popular and attractive (Duncan & Owens, 2011; Reis & Callahan, 1996), and pressure on gifted girls from the media and popular culture, to be thin, popular and beautiful (Reis, 1998; Vialle, 2007). Adolescence gifted girls seem to lose confidence and motivation and face a conflict between being recognised for being attractive or being intelligent (Kerr, 2000) in that "gifted girls were too often expected to conform to society's image of femininity rather than society's image of genius (Kerr & McKay, 2014, p. 22).

A New Zealand study of social media on the perceptions of a group of five gifted and talented girls who were school leaders showed some tension between their leadership and school positions and expectations and socialisation from social media (Price, Wardman, Bruce, & Millward, 2013). However, views of gifted girls seem to be changing. Most smart girls, according to Kerr and McKay (2014), "will get through adolescence strong and self-confident. Intelligence is a protective factor that guards most gifted girls from the worst actions and allows them to avoid the riskiest situations" (p. 142).

Gifted Girls: Low Economic Backgrounds, Culturally Diverse

Academically there have been "dramatically increased educational opportunities" (American Association of University Women & Center for American Progress, 2014, p. 1) for girls and women in schools and universities based on equal opportunity (United States Department of Justice, 2012). However, it may be difficult for adolescent gifted girls from a background of poverty or low economic background, or from cultural minorities to succeed (American Association of University Women & Center for

American Progress, 2014; Webber, 2008). Important factors found for success were family support, safe out-of-school environments, involvement in church and their communities. Concerns have been raised regarding equity, inappropriate identification procedures for students from low socioeconomic backgrounds and some ethnicities, and a lack of understanding of different ethnicities and their beliefs and values (Bevan-Brown, 2011b; Ford et al., 2008; Gagné, 2011). According to Ford (2014b) education must be multicultural to provide effectively for multicultural societies. Culturally, teacher and student relationships are important especially in New Zealand for Pasifika and Māori students (Bevan-Brown, 2002; Coxon, Anae, Mara, Wendt-Samu, & Finau, 2002; Frengley-Vaipuna, Kupu-MacIntyre, & Riley, 2011; Miller, 2011; Reid, 2006).

Factors to Support Gifted Girls in Secondary Education

Kerr and McKay (2014) have explained that "the hope for every gifted girl lies in those individual teachers who make a difference" (p. 147). Gross (1993) also emphasised the importance of a teacher who recognised giftedness and emphasised that professional development was critical for teachers. They may be difficult to identify as they may be invisible, that is hide their abilities in the regular classroom (Kerr & McKay, 2014). Silverman (1993b) refers to the "disappearing gifted girl" (p. 299), and also referring to her as a chameleon (Silverman, 2013b).

Hattie (1999, 2003) found that teachers make a difference to students' learning. High teacher expectations can influence academic achievement (Horsley, 2012) and teacher-student relationships, including respect for what the student brings to the class, from home, and culture (Hattie, 2009), are important for academic, and social and emotional outcomes. In particular, teachers need to be able to relate to gifted students and have a

positive attitude to giftedness (Chessman, 2010). Not only do they need deep subject knowledge but knowledge of research and management techniques in gifted education (Kronborg & Plunkett, 2013). Some literature argues that teachers of the gifted should be gifted themselves (Davis & Rimm, 1998), or at least, be able to "understand their way of thinking, knowledgeable enough to be able to challenge them and, last but not least, emotionally intelligent" (Rosemarin, 2014, p. 269). Teachers must have specific intellectual and personal qualities, including passion and enthusiasm, according to gifted students (Vialle & Tischler, 2005) with more emphasis on intellectual qualities in the senior school (Vialle & Quigley, 2009). Ultimately, as Hoogeveen (2015) explains "the academic and social emotional development of gifted and talented students depends to a great extent on the individual teacher" (p. 219).

Parents of gifted girls need to have high yet realistic expectations for their daughters and provide support and encouragement for academic achievement (Reis, 1998). Communication between parents and schools is important (Colmar Brunton, 2012; Hertzog & Bennett, 2004; McCoach et al., 2010), as are supportive family environments (Olszewski-Kubilius, Seon-Young, & Thomson, 2014). However, parents can negatively influence gifted girls, for example through stereotyping of girls, not having appropriate expectations, influencing career and subject choice, and not celebrating their giftedness (Reis, 1998; Winstanley, 2009). Parents often, according to Robinson, (2013), do not like or use the term "gifted."

Gifted girls need support to achieve academically at school and, as Dai (2002) explains: "peer groups, parents, and teachers can have significant influences on gifted girls' achievement behaviours in social settings" (p. 332). Families provide social support. Csikszentmihali, Rathunde, and Whalen's (1997) research on families and talented

teenagers found that a complex family structure was best, one that encouraged independence to undertake challenging experiences, with the emotional and social support from the family. Other views have indicated that gifted girls may not perform to potential if they feel it will affect family relationships (Reis, 1998).

Not only is career counselling recommended for gifted girls (Kerr & McKay, 2014) but school counsellors may also need to be available to support gifted girls (Pepperell, Rubel, & Maki, 2012). In addition mentors can provide support as "guide, advisor, model, counsellor, and friend who helps advance the student's knowledge of a particular field" (Silverman, 1993a, p. 225), or as an expert in the area of interest to the gifted student (Callahan & Dickson, 2014). Mentors may provide expertise in a subject or area of interest beyond what the school can offer (Grybek, 1997; Subotnik, Olszewski-Kubilius, & Worrell, 2011), scaffold the transition between secondary school and college and provide emotional support (Callahan & Dickson, 2014). But the support may also be variable without effective planning and evaluation (Cutler et al., 2010).

Peer relationships are important for adolescent girls (Kerr & Nicpon, 2003; Reis, 2006; Rueger, Malecki, & Demaray, 2008) and they can have positive and negative effects on academic outcomes, especially if gifted girls want to feel that they are accepted by their peers (Reis, 2001). Having supportive friends was one characteristic of high achieving female students in an urban high school that was highlighted in a three-year study by Reis, Hébert, Diaz, Maxfield, and Ratley (1995). How students view their peer relationships was explored by Lee, Olszewski-Kubilius, and Thomson (2012) in their study of 1,526 gifted students. Over 90% were positive about their friends and relationships with peers and they had not found the label of giftedness caused negative peer pressure.

2.10. Single-Sex Girls' Schools

Single-sex schools have been recommended for gifted girls for the promotion of high academic outcomes and leadership (Callahan, 1991; Silverman & Miller, 2009b), and academic progress such as in the General Certificate of Secondary Education (GCSE) examinations in both private and state-funded schools (Malacova, 2007). But much of the research available has come from within coeducational schools, especially in Britain and the United States (Smyth, 2010). Kerr's (1997b) major research study on gifted girls was based on girls accelerated in a coeducational school. From her perspective, however, Kerr also stated "one hope for 'girl-friendly' may lie in single-sex schooling" (Kerr, 1997a, p. 491).

However, research findings are mixed. According to Pahlke, Hyde, and Allison (2014) there is little difference between girls in single-sex or coeducation schools and there are no apparent advantages to boys or girls in single-sex education in aspects such as mathematics, science and verbal performance and attitudes, and "attitudes about school, gender stereotyping, self-concept, interpersonal relations, aggression, victimization, and body image" (p. 1044). Their meta-analysis of studies of Grades 1-12, (n=184) from 21 countries, included the United States. They pointed out that in the United States single-sex schools and classrooms in the public education system were more recent than in many other countries. Achievement, motivation and social effects were also little different in a study of 84 single-sex schools (Nagengast, Marsh, & Hau, 2013). Earlier, the Mael report (Mael, Alonso, Gibson, Rogers, & Smith, 2005) to the United States Department of Education on single-sex schooling versus coeducation, and the final report (Riordan et al., 2008), had also found few differences.

In New Zealand research Gibb, Fergusson, and Horwood (2008) suggested that single-sex schools differ from coeducational schools in "gender, school ethos, competitiveness, academic focus and discipline regime" (2008, p. 315). A research report for the Ministry of Education found that parents often chose single-sex schools because they perceived there were fewer distractions for learning (Colmar Brunton, 2012). Macleod (2011) recommended single-sex schools for gifted girls, because "the subtle messages for high achievement, subject choice and post-school achievement may still disadvantage girls in a co-ed setting" (p. 350). A survey, reported on by Boustead (Student Services and Communications, 2013), of four Christchurch single-sex schools identified the key features of single-sex schools as academic achievement, school values and tradition and the supportive learning environment. Earlier New Zealand research had reported academic achievement, including increasing the chance of gaining University Entrance (Shulruf, Hattie, & Tumen, 2008) and School Certificate (Woodward, Fergusson, & Horwood, 1999) was a benefit of single-sex schools. Of the three top performing schools in New Zealand Scholarship in 2012, two were single-sex (male and female).

2.11. School Context

School size has a positive effect on school achievement, according to Hattie (ES + .43) with .4 as the hinge point. Small size may mean few gifted students are identified and there may be concerns regarding elitism (Plucker, 2013) and gifted students could become bored (Colangelo et al., 1999; Spicker, Southern, & Davis, 1987). However, some research on school size, including international studies from 1990-2012 (Hendriks, 2014; Luyten, 2014; Scheerens, Hendriks, & Luyten, 2014) found little significant difference. The forms of acceleration that are offered in a school may be

affected by geographical location. As with small schools, rural location may affect the availability of courses or teachers, for example languages or a range of Mathematics courses (Southern & Jones, 2004, 2015). Minimal funding, especially if the location is identified as a low socioeconomic area, may mean fewer subject options offered (Jones & Southern, 1992), fewer resources, a narrower range of provisions, less teacher professional development and funding for gifted education (Howley et al., 2009).

In New Zealand the school decile system, based on socioeconomic census data, has been shown to have a direct relationship with academic performance (Alton-Lee & Praat, 2000). Larger rather than smaller schools tend to use acceleration as they are able to provide more options (Anthony, Rawlins, Riley, & Winsley, 2002). These findings suggest that school organisation, especially flexibility or lack of it, may be a problem for acceleration. This was also confirmed by Riley et al. (2004).

2.12. Conclusion

The main themes which have emerged from the literature include the need to challenge the intellectual ability of gifted girls and the need for a network of support for gifted girls at the school stage of their development of talent. In addition, the literature set out a wide range of potential provisions and was generally positive about the academic, social and emotional effects of acceleration with some reservations about the cultural effects. The methodology of the study and rationale for the selection of design and methods are discussed in the next chapter.

Chapter 3: Research Design and Methodology

3.1. Introduction

The previous chapter described the body of literature on acceleration and gifted girls, interconnecting but different. This chapter discusses the methodology and methods used in this study, where "methods are tools; [and] a researcher's methodology determines the way in which a tool will be utilized" (Hesse-Biber & Johnson, 2013, p. 457).

This study is an exploratory study using mixed methods. The area of research is acceleration and gifted girls within single-sex girls' schools offering secondary education from Years 9-13 in New Zealand. The purpose of this chapter is to provide a description of the methodology and research methods which were used to first gather data and were then used in its interpretation. The overall objective of the study is to investigate current practices in acceleration in girls' schools in their last years in the school system, and to develop an understanding of the provisions and practices schools use to meet the academic, social, emotional and cultural needs of their gifted and talented students. This chapter also explains the ethical principles underpinning the research and how ethical issues were addressed to protect the participants in the research.

3.2. Research Approaches

The methodological framework and data collection methods used in this study were informed by a pragmatist research position which is frequently associated with mixed methods research. This means a focus which is on "consequences of research, on the

primary importance of the question asked rather than the methods and on the use of multiple methods of data collection to inform the problems under study. Thus it is pluralistic and oriented toward 'what works' and practice" (Creswell & Plano Clark, 2011, p. 41). Teddlie and Tashakkori (2012) describe three of the core characteristics of pragmatism as methodological eclecticism, paradigm pluralism involving both quantitative and qualitative research approaches, and providing an "iterative, cyclical approach to research" (p. 781). The combination of quantitative and qualitative methods provides a better understanding of research issues than if either were used singly (Creswell, 2007).

A Mixed Methods Approach

Despite the differing philosophies underwriting quantitative and qualitative paradigms, the research design was determined by the research questions. The mixed method design followed Hesse-Biber's (2010) model of "the mixed method process: theory and praxis (p. 76), from the setting up of the mixed methods research problem and questions, through the literature review and ethics to the data collection, data analysis and data interpretation. This research study was an exploratory study, because of the nature of the research questions which asked "how many", "how much" and "what" questions (Yin, 2014) and aimed to find out which acceleration forms are used at secondary level for gifted girls and what provisions and practices are used in their implementation. Given that acceleration is a controversial provision (Colangelo, Assouline, et al., 2004c) the study examined the perceptions of the stakeholders in relation to the effectiveness of acceleration within the school's gifted and talented domain and explored possible recommendations for improvement. Thus the initial stage of the study was planned to provide a description of the national situation within girls'

single-sex schools. The second stage was planned to examine, through a number of individual school contexts, the rationale behind the design and implementation of provisions and to find out how students' needs are met.

The two methods complemented each other and worked together, providing statistical data and views of stakeholders in different contexts. Research needs to be relevant to practice. As Brown and Stambaugh (2014) explain: "practitioners are not typical consumers of research and scholars often do not translate the implications of their findings for practice (p. 61).

While the typical sequential design model of an exploratory study, beginning with a qualitative study and followed by a quantitative study (Creswell & Plano Clark, 2011) was undertaken in reverse order because the case study participants could not be selected until after the national survey, there were quantitative and qualitative elements in both stages. As Creswell and Plano Clark (2007) explain, methods must be mixed otherwise, the research is using multiple methods rather than mixed methods. In this research, the mixing of methods was deemed effective to answer the research question. For example, mixed methods allowed the researcher to move between the quantitative numerical findings in some questions in the surveys and the qualitative responses in others. It enabled a more quantitative approach for the analysis of descriptive statistics in the surveys and achievement data even though these were analysed through an interpretivist lens. Mixed methods also enabled an in-depth qualitative approach with the inclusion of the 'voices' of the participants, to enable 'thick description' (Geertz, 1973; Locke, Silverman, & Spiriduso, 2004; Merriam, 1998; Stake, 1995) in the interviews and focus groups.

The Underpinning Theory

Theories of giftedness, also referred to as theories of talent development, provided a framework for the analysis. In particular, Gagnés theory of giftedness, presented as the DMGT 2.0 model, and referred to as a "theoretical milestone" by Plucker and Callahan (2014a, p. 392), enabled the identification of catalysts that affect the development of talent leading towards competencies. It is an achievement or potential achievement perspective of giftedness. *Gifts* were defined as natural abilities in at least one domain, for example, intellectual, which places the individual in the top 10% of peers of the same age. *Talents* were evidenced in the demonstration of competence or mastery of skills in fields such as academic (Languages, Mathematics, Sciences, Humanities) which places the individual in the top 10% of age peers. In this study competencies at the school stage were evidenced as achievements or results, or what Gagné (2012a; Kerr, 1997b) refers to as "performance measures." These were obtained through analysis of documentation of results either through the school information or database, or NZQA data. The focus in both the surveys and interviews was on identifying the catalysts that contributed to the development of giftedness.

Gagné's talent development theory identified "provisions" under two headings. In particular, "enrichment" included the curriculum and pedagogy (pacing) and "administrative" included grouping and acceleration, as well as "individuals" such as teachers, mentors peers and parents. This research explored the nature and extent of provisions within a school's environment, and the roles and influence of the individuals within the school context through the national survey and case studies. Gagné's theory, as discussed in Chapter 1 (see Figure 1), of the three basic components of giftedness, talent, and the talent development process and the two additional components:

interpersonal catalysts and the environmental catalysts, with chance in the background of the components it influences (Gagné, 2012a) influenced the content of the research questions, the sections under which the surveys were designed, the interview protocols, the data analysis and interpretation. For example, the school environment and its social and cultural world (Gagné's "milieu") were included in the explanations of demographic details, school documentation, and relationships within the school climate and culture.

The research extended these identifiers to explore how and why they were used and the extent to which students' needs were met. These three descriptors formed the environmental factors in development. In contrast to Gagné's intrapersonal catalysts, only some aspects were targeted. For example, under the heading of goal management, needs, interests and effort were emphasised. Under traits, temperament, personality and resilience were included. Within the developmental process of the theory, survey and interviews asked direct questions about money (funding), access (to provisions and programmes) and content (subjects taught). There were also questions relating to progress and development through the different year levels.

Theory of Giftedness Through a Female Lens

Gagné's theory of giftedness was also examined through a female lens. Silverman and Miller (2009b) referred to a "feminine perspective of giftedness" and Reis (2005) argued for a research-based conception of giftedness in women named as "*Feminist Perspectives on Talent Development*" (Reis, 2005, p. 217). A feminine lens of giftedness underscored the investigation. Silverman and Miller (2009b) have argued that giftedness as achievement, and as demonstrated talent, "loses sight of the inner

experience of giftedness" (p. 108) and emotion. There is a need to broaden the concept of achievement to include emotional and relational success and to include success as self-actualisation (Kronborg, 2010; Silverman & Miller, 2009a). Kerr and McKay's (2014) beehive model defined giftedness firstly as intelligence and secondly with specific characteristics which lead to different roles in society and work.

The feminine lens was used to explore the school context of single-sex girls, focusing on personal traits, especially psychological qualities such as belief in self, risk-taking, taking opportunities in talent domains, passion, creative problem-solving, creativity and the factors that may lead to eminence (Kronborg, 2010; Reis & Sullivan, 2009) and the developing talent in adolescence despite hindrances of gender, personality or environment (Kerr, 1997b; Kerr & McKay, 2014; Reis, 1998). These factors were investigated through the focus group interviews, and qualitative comments on surveys by students, parents or caregivers and teachers related to needs. It enabled an exploration of how adolescent gifted girls in a specific environment perceive their school experiences.

The Curriculum Model Lens

In addition, two curriculum models provided a description for the concepts of enrichment and acceleration which are central in Gagné's model. Renzulli's Enrichment Triad Model, a process-product curriculum model, also provided an additional lens through which enrichment was investigated for gifted and talented girls. The Stanley Model of Talent Identification and Development, a content model for curriculum which provides a differentiated program for gifted students, allowed an exploration of acceleration by class and by core subject.

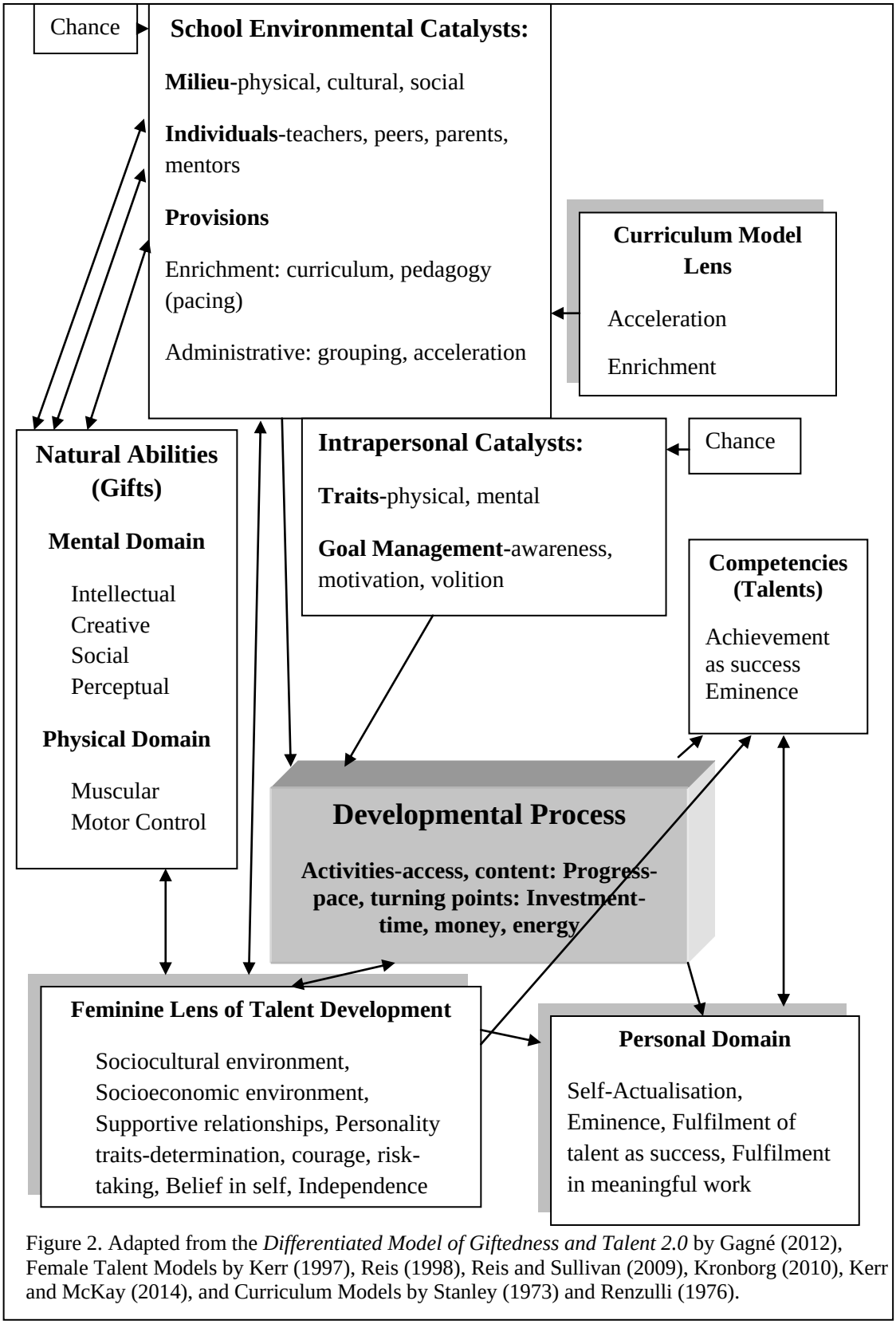

Figure 2. Adapted from the *Differentiated Model of Giftedness and Talent 2.0* by Gagné (2012), Female Talent Models by Kerr (1997), Reis (1998), Reis and Sullivan (2009), Kronborg (2010), Kerr and McKay (2014), and Curriculum Models by Stanley (1973) and Renzulli (1976).

Figure 2: Gagné's Theory of Giftedness (adapted) and Gifted Girls

For this study the model has been adapted to show secondary education as a stage in the developmental process to competencies (talents) as success and eminence and the personal domain of the gifted girl as a gifted woman.

3.3. Research Design for This Study

The pragmatic point of view determined the twofold design of the research. In stage one, survey design was the data gathering tool used to gain a national overview of acceleration and gifted and talented provisions. The questionnaire was divided into two sections; the first part on gifted and talented and the second on acceleration. The reason for the division is as follows: the Ministry of Education requires schools in New Zealand to identify and provide for their gifted and talented students. Acceleration is one intervention that can be used, but it is rarely used or used cautiously according to the literature review. In stage two case study design was used for multiple case studies. Within the case studies, questionnaires were used to gain an overview of gifted and talented education in the school. In particular, questionnaires were completed by teachers, students and parents or caregivers who had been involved with acceleration. To gain more depth to the questionnaire responses focus group and individual interviews were conducted at the school sites. School documentation such as statements of philosophy, policies and achievement data were also requested at this time to allow for triangulation of data. The findings from both sections, taken together, provided a depth and richness to the findings.

Advisory Group

After ethics approval had been gained (see Appendix F), all the questionnaires and interview protocols were sent to an advisory group of five researchers in gifted education (eight had been approached), identified through the national literature and through professional development courses. Each was asked to consider, in addition to content, the writing style, question ordering, timing and layout-all issues identified by Fan and Yan (2010) which can affect response rates (see Appendix G). On the basis of feedback from this group changes were made and a final version constructed.

National Questionnaire: Survey Choice

A survey design, using questionnaire, is time efficient in collecting data from a large number of participants in different geographical locations. It is usually regarded as linked to quantitative methodologies but it can also be used to provide information about the participants' opinions and beliefs.

An internet-based survey for example, SurveyMonkey, is convenient and is more cost effective than a mail survey. The method has a fast turnaround, reduced data entry, can be answered on a portable device and is not place dependent (Fraenkel, Wallen, & Hyun, 2012). However, it can have a lower response rate than mailed surveys (Fan & Yan, 2010; Fraenkel & Wallen, 2006; Fraenkel et al., 2012).

National Survey: Content

The questionnaire was organised in different sections to match the key concepts in the research questions. The contents of the survey questions and interview protocols were based on Gagné's theory of talent development and the issues raised by the literature review. In particular the questionnaire and the findings of the New Zealand report to the

Ministry of Education (Riley et al., 2004), Gagné and Nadeau's survey on attitudes to gifted education (Gagné, 1991), and advice from the Advisory panel were important in the construction of the content for quantitative and qualitative findings. The first two sections of the survey asked for demographic information such as decile and school type, and school-wide coordination information. Context factors were used to filter for analysis of the effects on provisions and for any generalising of findings. The third section asked about methods of identification and provisions and practices and the section on acceleration duplicated both these aspects (see Appendix H).

The questionnaire was constructed using SurveyMonkey and provided a variety of questions types including closed-ended and open-ended questions. It used multiple choice with multiple answers from a selection of options, a matrix of drop-down menus and text box questions. In addition, there were text boxes for additional comments. The information required was descriptive and explanatory.

National Questionnaire: Sampling procedure

A purposive sample of single-sex girls' schools which offered secondary education in Years 9-13 was selected as the "target population" (Fraenkel & Wallen, 2006, p. 400). These years of secondary education are described by the New Zealand Qualifications Authority (*n.d.*): "study at secondary school begins when students are 12 or 13 years old and lasts for about five years, from Year 9 to Year 13." In New Zealand, secondary school is also referred to as high school or college.

However, there is a distinction in meaning between the years of "secondary education" and "secondary schools." The target population was all girls' single-sex schools with students in Years 9-13, but the 'accessible' population (Fraenkel & Wallen, 2006, p. 93)

for case study schools which use acceleration was different, and also dependent on schools volunteering to take part.

An introductory letter of information and invitation to participate was posted to the principal or the gifted and talented coordinator schools identified through the Ministry of Education website (see Appendix I). Invitations were sent to 62 girls' single-sex school: 36 girls' secondary schools Years 9-15, 16 secondary schools Years 7-15, seven Composite private fully registered schools Year 1-15, and one Special School. There was a 65% return rate with 40 schools accepting the invitation. Anonymity and confidential issues, including ethics approval were addressed in the letter. A web link was provided for completion of the survey.

National Questionnaire: Data Analysis

The data were first checked for duplicates and completeness of responses. Most of the data were categorical data (where the variable was able to be counted). Closed-ended questions are easy to score and code for analysis (Fraenkel et al., 2012), and the data were able to be analysed using, counts, percentages, means and standard deviations. SurveyMonkey basic statistic analysis and graphs were also exported to PDF files for further analyses and filtering. For questions which included comments the answers were analysed by underlining key words and themes and using a highlighter to indicate areas of commonality and difference. Each comment was then analysed according to demographic information for patterns. Each questionnaire was also read as a whole so that a picture of the school could be gained in its entirety and notes were made of key themes, concepts and interesting sentences.

The analysis started with the research questions which is, according to Hamilton and Corbett-Whittier (2013), "the most straightforward way of beginning to analyse data" (p. 138). The first step was the identification and emphasis on key words and concepts in the research questions such as 'design', 'evaluation' and 'culture'. These formed a matrix of categories (Miles & Huberman, 1994) under which evidence could be placed. Then through a process of reading and rereading to understand "a sense of totality" (Bogdan & Biklen, 2007, p. 185) the researcher looked for repetitions of certain words and phrases, patterns of thoughts and responses and events which indicated importance. These 'stand out' words and phrases became a form of coding with sub-code categories (Bogdan & Biklen, 2007) under the categories from the research questions. For example, setting, climate, culture were categorised within a 'context' code, participants' ways of thinking were referred to as 'perceptions' such as teacher, students, parents, relationship and social structure codes referred to as 'relationships' and 'methods' codes for programmes and provisions.

Text codes were added to with colour coding, which "clearly identifies what categories apply to which part of the text and also highlights possible important quotations for use in the written research (Hamilton & Corbett-Whittier, 2013, p. 141). Three colours were used to identify student needs: yellow for academic needs, green for social and emotional needs and red for cultural needs. In addition important negative comments were coded in grey and important positive comments in dark green. Each open-ended response on survey questions was placed in a table, to include further columns of information.

Jottings, which strengthen coding were made first as handwritten notes in the margins (Miles, Huberman, & Saldaña, 2014, p. 93). These comprised the researcher's "fleeting

thoughts and emergent reflections" (Miles et al., 2014, p. 94) and were then written in more detail and kept in text files under the research questions key words or concepts, or under new file headings such as 'enrichment.' These expanded jottings or analytic memos, went beyond descriptive summaries of data, for example problems and limitations of the study, comments on data in relation to theory on giftedness, or feminine perspectives of giftedness and ethics.

Data analysis was an iterative process, involving "a toing and froing across the data, reflecting critically on possible choices during the analysis as patterns or themes or anomalies occur" (Hamilton & Corbett-Whittier, 2013, p. 140). This applied to both the qualitative and quantitative data. Miles and Huberman (1994) described the iterative process as data collection, reduction, display, conclusion drawing and verification. The collection of data was acquired from the questionnaires, interviews, and documentation relating to the case study schools and New Zealand education requirements.

The specific research question one on acceleration processes was analysed using data from the surveys to determine what schools provided in the key areas of design, implementation, maintenance and evaluation. It led to the analysis of school context in question two through the case study interviews and surveys, especially of the qualitative data, to determine how the schools created their own cultures of learning and care, according to the stakeholders and the school documentation. Question three explored the effectiveness of acceleration for achievement according to the quantitative data in the surveys and the qualitative data in the surveys and interviews. It was an iterative process between the case studies and national survey and the research questions first drawing tentative conclusions, then revisiting the data to verify conclusions first to these questions and then to the overarching question.

3.4. Case Study

The second research strategy was case study. Case study was chosen as a research strategy using a variety of methods to focus on acceleration in the natural environment of the school setting to understand how it was used with whom and by whom. The aim of case study research is to understand complex social phenomena, by looking holistically at real life events or contexts (Yin, 2003). A variety of data can be used with this strategy (Creswell, 1994) such as questionnaires and numerical data as well as qualitative interviews (Punch, 2014). The interest for the researcher is "in discovery rather than confirmation" (Merriam, 1998, p. 19).

According to Punch (2014), case study is closer to a strategy than a method because it aims to understand the case in depth, within its natural setting, "recognising its complexity and its context" (p. 120). Bassey (1999) emphasises that the researcher needs to collect sufficient data to be able to explore and report on the case. Case study can 'fleshout' the information gained from a survey (Punch, 2014) because it provides multiple perspectives of the complexity of the case, especially of complex social relationships (Denscombe, 2010).

The use of multiple case studies was not intended to be a comparative study. Rather, it was to report each case as an individual case, "knowing that this case will be compared to others, but not giving emphasis to attributes for comparison"(Stake, 2006, p. 83). Each case, however, was a "concentrate enquiry into a single case" (Stake, 2008, p. 121). It was an "*instrumental* case study," where the researcher was interested in understanding "something else" (Stake, 1995, p. 3). As Fraenkel, Wallen and Hyun (2012) explained, the researcher, is not just looking in depth at the case but is interested

in making conclusions. Punch (2014) refers to a collective case study as an extension of the instrumental case "to learn more about the phenomenon, population or general condition" (p. 121), with a focus within and across cases.

Case Study: Participant Selection

The number of case studies was dependent on the number of schools which volunteered at the end of the national survey questionnaire. Prior to confirmation of selection, information regarding the extent of acceleration was requested. Three of the four were included as case studies because they were able to provide "diversity across contexts" and "good opportunities to learn about complexity and contexts (Stake, 2006, p. 23). The different school types and deciles suggested differences in acceleration provisions.

The case studies provided qualitative and quantitative data. The triangulation of data (Bogdan & Biklen, 2007; Gillham, 2000; Gray, 2004; Stake, 1995) involved questionnaire, focus groups and individual interviews, and the analysis of documents and data. Importantly, the case study information was used to enhance and add depth to the national questionnaire data.

Case Study: Research Sites

The case studies involved three schools. Pseudonyms have been used for the school name. The order of schools, noted below, is based on the order of school visits for the interviews.

- Challenge High School (School C) was a Composite private school Year 1-15, high decile (between 8-10), large sized school (over 1000), in a university city.

- Discovery High School (School D) was a state integrated secondary school Year 7-15, medium decile (between 4-7), medium sized school (between (399-999), in a university city.
- New Light High School (School N) was a state not integrated secondary school Year 9-15, medium decile, (between 4-7), large sized school (over 1000), in a provincial city, without a university.

The school rolls were between 800 and 1600, for Schools C and D and also included students who were below Year 9.

Case Study: Participants

Written confirmation of participation was given by Principal and Board of Trustees agreement to the letter of invitation and information regarding the study in general and use of the school database (see Appendices J-N). The researcher's contact person was the person with responsibility for gifted and talented education. Other participants were teachers, students who had been identified as either gifted and talented or who had been accelerated, and parents or caregivers of these students (see Table 4).

Participants were informed of the dual focus of the research on acceleration and giftedness, to find out "how schools use acceleration for their gifted girls. If acceleration is not used how do schools cater for their gifted girls?" It is possible in research to use the same individuals for both the qualitative and quantitative aspects and the samples used do not need to be the same size (Creswell & Plano Clark, 2007). Some participants participated in both the questionnaires and interviews. Each school received the same research information. However, numbers of participants in the stages of the research differed according to school type, school context, the timing of distribution within the

school year, and the numbers of participants who were invited to take part and those who accepted the invitation. For example the teacher numbers for School C in Table 4 for Gagné and Nadeau's survey *Opinions About the Gifted and Their Education* (Gagné, 1991) are less than 20% of teaching staff.

Table 4: Participants in the Research

Sch	Surveys				Interviews	
	Teacher Opinion About Gifted	Teacher	Student	Parent	Focus Group	Individual
C	6	4				3 (coordinator, students-2)
D	17	15	9		2 (students-3&5)	6 (coordinator, senior manager, teachers-4)
N	14	32	26	12	5 (teachers-5, students-6&5, parents-3&3)	2 (senior managers-2)
Total	37	51	35	12	7 (30)	11

Note. Sch=School. Participants involved indicated in brackets. The schools were: Challenge High School (School C-private, Composite in Years 9-13); Discovery High School (School D-integrated secondary in Years 9-13); New Light High School (School N-state, secondary in Years 9-13).

Information letters regarding questionnaires and interviews and copies of surveys were sent by email and post. The contact person was asked to note the date of completion. Timing was difficult for all schools and affected the response rate. Email communication with the contact person was used for reminders and progress. Schools chose the internal distribution methods.

Case Study: Design

Each case study was designed to follow the same research methods and protocols:

- an international research questionnaire on teacher attitude
- questionnaires: teachers, students, parents (researcher-constructed)
- focus group and individual interviews and
- visits to school sites.

Case Study: Questionnaires

Questionnaire: Teacher Attitude to Giftedness

The first questionnaire was an adaptation of Gagné and Nadeau's teacher attitude scale *Opinions About the Gifted and Their Education* (Gagné, 1991). The survey was obtained from the authors with permission to use the survey and to make any changes to fit the research context. The attitude scale has a history of use in gifted education (see Chessman, 2010; Lewis & Milton, 2005; Plunkett & Kronborg, 2011). In the survey items 34 items are randomly distributed and cover six factors including needs and support for gifted education, and acceleration (see Appendix O).

Reasons for its use were, first, to investigate teacher attitude towards the gifted and acceleration. The literature has identified both negative and positive effects on the implementation of provisions and practices and student outcomes (Southern & Jones, 1991; Southern et al., 1989; Wardman, 2009, 2010). Thus the questionnaire provided a brief overview of teacher attitude towards giftedness and gifted education. It was quick to complete. Second, it was selected as an independent research-based questionnaire (Bégin & Gagné, 1995) in contrast to the researcher-constructed questionnaires used

later in the same setting. The researcher was able to view the information provided before the site visit and to review the interview protocols.

Case Study: Participant Questionnaires

The target population for the overview questionnaire was 20% of the teaching staff who were selected by the school. This contrasted with the researcher-constructed 30 minute questionnaire designed for all teachers. The 20% sample also enabled a replication of Watts' (2006) use of this research instrument in a New Zealand girls' school which used acceleration. It allowed for comparisons of findings.

Participant selection depended on the school culture and climate, how the contact person was able to select, invite and involve participants, and, above all the timing in a school year. Each school selected participants differently. For example, one school chose to send the link to a few teachers and not students, parents or caregivers. The student letters of invitation were sent to 60 students in one school, to 12-15 in another, and two in another school. These numbers do not reflect the number of students who are accelerated in the school according to the school statistics. Interview selection was a combination of participants who volunteered through the surveys and participants who were invited by the school.

A letter of information for each participant included the survey link. For students, a letter with an attached permission slip from parents or caregivers was provided (see Appendices P-U).When this was returned to the contact person, a short letter with the student link was attached. All questionnaires asked if the respondent wished to be involved in a focus group.

Case Study Questionnaires: Researcher-Constructed

There were three separate questionnaires: teachers, students and parents or caregivers to be answered using SurveyMonkey. The content was developed according to key concepts in the research questions. Each group was asked questions about the school and their own experience and evaluation questions which had not been included in the national questionnaire (see Appendices V-X).

The opening section on demographics asked questions to ascertain the teacher's professional background and roles such as, classroom teacher, gender, length of time teaching, subjects and year levels of teaching accelerated students, and for students, year level and previous school experiences with acceleration. These questionnaires used close-ended and open-ended questions depending on the type of information required. But they also included rating questions, based on a five-point Likert scale (1=*Strongly Dis*agree to 5=*Strongly Agree*) to gain in-depth responses as to attitudes, beliefs and opinions, and matrix of choice questions with multiple responses were included. There were also combinations in a single question, what Frankel and Wallen (2006) refer to as "rate and comment questions" (p. 404). Each questionnaire was divided into both gifted and talented and acceleration provisions and practices, and paralleled the sections and some questions in the researcher-constructed national questionnaire. The questionnaire was also personalised and asked about the teacher's own practices as well as school practices and provisions.

Case Study: Data Analysis Questionnaires

Items were measured on a 5-point Likert scale (1 = *totally disagree*, 5 = *totally agree*). Scoring procedures were provided by Gagné and Nadeau using totals and means. An

interpretation of the results, according to the authors, was that means below 2.00 usually indicate a very negative attitude, while means above 4.00 indicate a very positive attitude. The self-scoring in the original attitude survey was not provided for participants in this research as it was considered that it might influence a change in teacher attitude which could affect in turn the teacher questionnaire or focus group participation or response. Because the number of responses was small the results were also collated by factors and questions for each school, and the individual total responses were also read to look for consistency of approach within factors or divergence of opinion. Written notations were made per response and summarised.

SurveyMonkey provided data collections and statistical data such as rating average calculations and percentages and all results could be used in Excel for further analysis. In addition, each questionnaire was read as a whole and annotated and underlined. Each question was checked and annotated against demographic detail and school type because those factors could influence responses. Questions were filtered to compare responses between the two sections for the individual and also with-in school responses. In addition, statistical responses were also aggregated to find data on students, parents, and teachers, with a view to establishing patterns and differences.

Case Study: Interviews

Case Study: Focus Group Interviews

'Thick descriptions' of social situations can be gained by exploring individual experiences within the social situation (Cohen, Manion, & Morrison, 2000; Gray, 2004; Patton, 2002). The choice of focus group interviews as a method was to provide more depth and detail which is often not provided in survey research (Carspecken, 1996). In

addition, focus groups often produce "particularly powerful knowledges and insights" (Kamberelis & Dimitriadis, 2011, p. 559) because of their synergistic potential to trigger and stimulate thoughts and reactions as the group talks and reacts. There may also be additional comments beyond what participants originally said "once they heard other responses" (Kamberelis & Dimitriadis, 2011, p. 457). This approach also allows for some methodological triangulation between quantitative and qualitative data (Fraenkel et al., 2012).

Focus groups are also faster to conduct than individual interviews for the same number of participants. The recommended size of the group is four to eight (Fraenkel et al., 2012) participants with the realisation that some will not attend (Lichtman, 2010). This is what happened at one site, for example, in the student groups where volunteer numbers were nine and seven, and the reality was six and five. Problems with focus groups include the issue that some members talk too much, or that the discussion can go off topic (Bogdan & Biklen, 2007), or some voices may be "silenced" (Michell, 1999, p. 36). The interviewer was aware of these possibilities during the interview and actively sought to involve all participants. Participation was also checked in the transcripts.

The intention was for semi-structured interviews using what Flick (2007) referred to as 'an interview guide' (p. 420) to ensure that the most essential questions were addressed. The format also provided the opportunity for the interviewer to be able to modify or extend discussion.

The interview protocols listed themes with suggested concepts based on the research questions, and then a series of questions, from broad questions to more specific

questions (see Appendices Y, Z, AA). Some questions were specifically constructed for the group, for example, parent and school communication for the parents' interview.

Prior to the interviews information letters with confidential agreement information and consent forms were sent to participants (see Appendices BB-HH). The information letters included the key areas to be discussed so that participants had prior notification.

In two of the schools the researcher conducted the interviews in 2012 and in the third, as there was a professional conflict of interest with the school, an independent research assistant conducted the interviews. A prior meeting with the research assistant discussed commonality of approach and site requirements. The research assistant was knowledgeable about the topic and qualified in research studies and was aware of the need to be flexible in responding to participants (Bogdan & Biklen, 2007). The interviews were conducted on site at times and locations agreed to by the participants, school and interviewer, so as not to compromise school learning and facilitate adult participation. The interviews were taped as recommended by Bogdan and Biklen (2007) and transcribed by an independent transcribing service. A confidentiality form was signed. This also helped guard against researcher influence. Participants were sent a copy of the transcript to check for verification and asked if there were any further comments they would like to make.

The process of each interview, while determined by the themes and questions in the interview protocols, developed in different ways as each group provided perspectives and points of view. While all the items in the protocols were addressed, some were covered more fully by some groups placing more emphasis on what they considered were important to discuss. Also, other issues were raised, or information provided that

were not in the protocols and the semi-structured approach allowed for these matters to be discussed.

Case Study: Individual Interviews

The interviews for the focus and individual interviews were semi-structured so as to ensure comparability with different research sites. In each school an individual interview with the person in charge of gifted and talented education was requested by the interviewer. In addition, there was an optional request if the schools thought a student could be a special case there was an invitation and consent form was provided.

In-depth interviews can supplement or extend focus group interviews enabling an in-depth understanding of a person's opinions and experiences. However, there is a problem, identified by Opie (1994) with interviews, that there is not equality of interviewee and interviewer in an interview – the social situation is unstable as is the question of 'power,' depending on whether the participant is a student. Questions were sent to the advisory group for consideration and, as with the focus group participants, interview participants were sent the transcript for checking. The research assistant conducted the individual interviews at New Light School (School N). All participants in both kinds of interviews were informed the interviews were taped and that transcripts could be checked, where data were to be stored, for how long, and written consent was obtained to use data for the research and presentations arising from the research. Issues concerning confidentiality and anonymity were included in the letter of invitation.

Case Study: Participant Selection for Interviews

Only two students were invited by the school in one school site to be individually interviewed. They did not accept the offer to have a support person with them. The researcher requested an interview at each site for the person with responsibility for gifted and talented. In addition, one principal volunteered to be interviewed, and in one site the deputy principal and four staff in different teaching subject areas volunteered for individual interviews. There were different interview protocols, information sheets and consent forms for adults and students (see Appendices II - NN).

Case Study Interviews: Data analysis

As part of the data analysis, the researcher wrote down her reactions and thoughts regarding content discussed and the construction and flow of the interview following the interviews because of the likely time gap before transcriptions were completed. She also met with the independent interviewer and recorded her observations. The transcripts were also checked by the researcher against the original recording for difficulties in distinguishing voices (Lichtman, 2010). The pattern for qualitative analysis was followed as in comment sections of surveys for the written transcript: read, underline, memos in margins, highlight for themes and concepts. These were also revisited, looking for inferences from the initial comments made at the time of the interview. Useful quotations or sentences were identified, as suggested by Creswell and Plano Clark (2011). Then the process was repeated.

The data from the focus groups and in-depth interviews were analysed using naturalistic data analysis. DePoy and Gilson (2008) describe naturalistic analysis as inductive and dynamic involving four thinking and action processes: "thinking inductively, developing categories, developing taxonomies and discovering meaning and underlying

themes" (p. 215). The researcher undertook this form of analysis both during and at the conclusion of the data gathering process. When 'data saturation' was reached (Bogdan & Biklen, 2007, p. 69), where points become redundant, the process finished. The qualitative data was analysed manually, using codes, writing memos (Creswell, 2002; Gratton & Jones, 2003), asking analytical questions of what was described as "open-ended data" (Creswell, 2002, p. 190). This data analysis process followed what Creswell (2002) refers to as a 'generic process' (p. 191): prepare, look for general sense, 'code into chunks,' then into themes, or categories. Individually, then in combination, the process leads to interpretation. This has been referred to as an ''open coding framework'' (Rubin & Rubin 2005, p. 222).

3.5. Documents

School documentation included school-generated material and material available about the school, for example, ERO reports, and NZQA statistics. As Stake (2006) explained additional information about the programme (gifted and talented education including acceleration) can be included in multiple studies.

Documents

For schools, the official documents such as statements of philosophy, policy documents, newsletters, provided an "understanding of how the school is defined by various people" (Bogdan & Biklen, 2007, p. 137). Bogdan and Biklen (2007) explained that even if the material provides a very positive view of how the school functions, it is the school's official perspective of its programmes and organisation. Records of student achievements, compiled by or recorded by the school were gathered. Comparisons

between official school statistics and what participants verbally report may be different and merit exploration (Bogdan & Biklen, 2007). Documents (such as gifted and talented policies) were collected directly from the school, and other documents were available through school websites such as programmes and newsletters. The document analysis was part of the overall data analysis and followed the same processes.

3.6. Data Collection Summary

The data collection has been summarised for each of the specific research questions as 1-3. Data for the study were collected from questionnaires answered through SurveyMonkey, semi-structured interviews, and school documentation and national documentation. Data provided multifaceted views of provisions and practices for gifted and talented students and acceleration.

There were two studies and these included five phases: Phase 1 as National Survey and Phases 2-4 as Case Study (see Table 5). Phase 5 was the analysis of data provided by the case study schools and data and information available from the New Zealand Qualifications Authority (NZQA) and the Ministry of Education (MOE).

The case study schools were: Challenge High School (School C-private, Composite Years 1-13); Discovery High School (School D-integrated secondary Years 7-13); New Light High School (School N-state, secondary Years 9-13).

Table 5: Data Collection

Information Collected	Method of Collection and Participants	No.	Phase
Research Question 1			
Provisions	National Survey (School Representative)	40	1
Practices	Questionnaire (Teachers-88, Students-35, Parents-16)	139	2
Effectiveness	Focus Groups (Teachers-5, Students-19, Parents-6)	7	3
	Interview (Coordinator-2, Senior Manager-3, Teachers-4, Students-2)	11	4
	School Documentation Examination, Education Information (NZQA, MOE)		5
Research Question 2			
Provisions	National Survey (School Representative)	40	1
Practices	Questionnaire (Teachers-88, Students-35, Parents-16)	139	2
Effectiveness	Focus Groups (Teachers-5, Students-19, Parents-6)	7	3
School Philosophy	Interview (Coordinator-2, Senior Manager-3, Teachers-4, Students-2)	11	4
	School Documentation		5
Research Question 3			
Provisions	National Survey (School Representative)	40	1
Practices	Questionnaire (Teachers-88, Students-35, Parents-16)	139	2
Effectiveness	Focus Groups (Teachers-5, Students-19, Parents-6)	7	3
	Interview (Coordinator-2, Senior Manager-3, Teachers-4, Students-2)	11	4
	School Documentation Examination, Education Information (NZQA, MOE)		5

Note. Numbers attending are indicated in brackets. NZQA is the New Zealand Qualifications Authority. MOE is the Ministry of Education.

3.7. Ethics

As Markham (2006) has asserted, methods are ethics and methodological choices are ethical choices. The research proposed was approved by the Massey University Human Ethics Committee HEC: Southern B 10-71. Issues addressed included working with students under 16, professional conflict of interest, interviewing students and teachers and cultural appropriateness of the research processes. Permission from parents or caregivers was obtained for student participants, and institutional consent was obtained for case study schools. Completions of surveys implied consent. For confidentiality and anonymity, the school made all contacts and forwarded the survey links to address ethical concerns (Buchanan & Hvizdak, 2009). Clear information was provided in the information letters, all of which were reviewed and approved by the ethics committee. For example, participants could decline to answer any particular question or withdraw from the study. The surveys and interview protocols were also sent for review group feedback. The open mind of the case study researcher was also important: "everything is weighed and sifted; and checked or corroborated" (Gillham, 2000, p. 32). The aim was to show the topic of the research as it was, an investigation of where the school was at, but the interpretations also needed to be fair to the participants and the institution. The researcher's aim was "to complete the enquiry without disturbing the situation" (Bassey, 1999, p. 40).

A mixed methods design was used to help "offset biases of error and methods" (Greene, 2008, p. 17). As a teacher at a school, and the gifted and talented coordinator at the time the research and ethics applications were constructed, the researcher was aware, through discussion with the principal, that her school would volunteer to be a case study school.

There are difficulties with "insider research" (Gray, 2009, p. 314), referring to the study of the researcher's own organisation and place of work. In this regard as part of the initial construction of the project issues of anonymity and confidentiality were expressly considered in the construction and implementation of the surveys and interviews. Provisions included:

- Use of pseudonyms with broad banding of deciles and school sizes.
- The school was in charge of how they selected, distributed and followed up surveys. That is, there was no follow-up of participation in surveys directly by the researcher. However, general reminders were sent to the contact person at the school, who also was not informed who had or had not completed the surveys.
- A research assistant conducted the focus group and individual interviews in the researcher's previous school.
- Information sheets regarding the length of time data would be stored, confidentiality information, the ability to withdraw at any stage, and contact details of the researcher's supervisors for further contact if required were issued to participants.
- Confidentiality forms were signed by the research assistant and the transcriber (see Appendices OO and PP). Consent forms were signed by the participants.

3.8. Conclusion

The focus of this research is through an interpretivist paradigm and it is impossible to detach emotionally or subjectively from the research, because the choice of questions,

the choice of data gathering instruments and data analysis are based on the researcher's decisions (Eichler, 1988; Simons, 2009) but efforts can be made to mitigate against bias. The selection of the participants is also of issue (Buchanan & Hvizdak, 2009). Validation of survey content and designs was sought through feedback from an advisory group. The design using multiple case study schools was chosen as "multiple-case sampling adds *confidence* (italics in original)" (Miles & Huberman, 1994, p. 29). Also, procedural checking as advocated by (Creswell, 2002, p. 196) included: triangulation, participant checking of transcripts, rich, thick description, the clarifying of bias and the inclusion of both positive and negative information and perceptions. Triangulation helps "strengthen confidence" in the research analysis (Bassey, 1999, p. 76) using convergence, but also reporting different points of view. In addition, full outlines have been provided of the data analysis process which used a variety of instruments including a record of the researcher's thoughts and reactions.

The next chapter, Chapter Four, records the findings from the national survey questionnaire. The following chapters, Chapters Five to Seven, record the findings from the case studies.

Chapter 4: National Survey Findings

4.1. Introduction

The National Survey on *Acceleration and Gifted Girls* in single-sex girls' schools which offered secondary education was conducted using SurveyMonkey in 2011. Sixty-two schools were invited to take part in the national survey and 40 (64.52%) schools took up the invitation. Their responses are reported in this chapter. The findings, in particular, provided information relating to the overarching research question and specifically the first research question:

> ***How are acceleration processes being designed, implemented, maintained and evaluated in single-sex girls' secondary education in New Zealand?***

4.2. School Demographics

School Type

Responses from schools were categorised into type of school, rural or urban, school decile and school roll. Three types of schools offering secondary education were comprised of: Secondary School Year 9-15, Secondary School Year 7-15 and Composite Year 1-15 (see Table 6). Schools were registered as being up to Year 15 though most schools did not enrol students past Year 13. To be noted is the point that students who do stay past Year 13 are not typically gifted and talented or accelerated students unless they have taken a break from their studies.

Table 6: Types of Single-Sex Girls' Schools

School Type	All Girls' Single–Sex Schools		National Survey		National Survey Response
	Number	Percent	Number	Percent	Percent
Year 9-15	37	59.68	24	60.00	64.87
Year 7-15	17	27.42	11	27.50	64.71
Composite Year 1-15	7	11.29	5	12.50	71.43
Special school	1	1.61	0.00	0.00	0.00
Total	62	100.00	40	100.00	64.52

Note. These types of schools offer secondary education.

Table 6 shows that school types were a representative sample compared with the national figures and percentages from the Ministry of Education (2011) except for the inclusion of a Special School. Participating in the national survey were 24 (60.00%) Year 9-15, 11 (27.50%) Year 7-15 and five (12.50%) Composite Year 1-15 (self-identified as Private Fully Registered Schools). Table 6 also shows (in the Response % column) the percentage of schools of that type which responded, for example 64.87% (24 out of 37 Year 9-15 girls' schools) answered the survey. There was a total of 64.52% response to the survey.

School Decile

Schools were further categorised according to school decile and school roll size. Schools were then allocated into one of three decile groups based on each school's individual decile score. Deciles were subdivided into high, medium and low as follows: 'high' included decile 8-10 schools, 'medium' included decile 4-7 schools, and 'low' included decile 1-3 schools and were a method of categorising schools in New Zealand for Ministry of Education school funding.

Of the girls' schools nationally (2011) which offered secondary education more were high decile than medium or low decile (see Table 7). Of the 40 survey responses 17 (42.50%) were in deciles 9-10 with two more in decile 8 thus giving 19 (47.50%) for high decile schools which reflected the national percentage for high decile schools (46.77%). However, the research survey sample is not a fully representative sample as it included more responses from the medium range of schools and less from the low decile range than the national percentages.

Table 7: Decile Groupings for Single-Sex Girls' Schools

Decile Range	All Girls' Single-Sex Schools		National Survey		National Survey Response
	Number	Percent	Number	Percent	Percent
High 8-10	29	46.77	19	47.50	65.52
Medium 4-7	23	37.10	17	42.50	73.91
Low 1-3	10	16.13	4	10.00	40.00
Total	62	100	40	100	64.52

Note. These deciles of girls' schools offer secondary education.

Included in Table 7 in the Response % column is the percentage of schools from each decile which responded to the research which was 64.52 %. For example 62.52% of high decile girls'schools which offer secondary education responded to the survey. These schools then made up 47.50% of the survey as shown in the Survey % column which reflects the national percentage of 46.77%.

School Size

For the purposes of this study schools were divided into three size categories of small, medium and large schools. In 2011 there was no formal Ministry of Education

definition nationally for school size apart from the U grade measurement used for Ministry of Education funding which differentiated the schools into 16 categories. The three broad sizes were also used to preserve the anonymity of the schools which responded to the survey. The roll numbers were drawn from the 2011 July 1st national Ministry of Education database. The roll size of the largest school to participate was over 2000 and the smallest roll size was 130 (see Table 8).

Table 8: School Size for Single-Sex Girls' Schools

Size	All Girls' Single-Sex Schools		National Survey		National Survey Response
	Number	Percent	Number	Percent	Percent
Large (1000 plus)	18	29.03	14	35.00	77.78
Medium (400 plus)	29	46.77	18	45.00	62.07
Small (Under 399)	15	24.19	8	20.00	53.33
Total	62	100.00	40	100.00	64.52

Note. Numbers show single-sex girls' schools which offer secondary education.

Nationally, there are more medium sized schools and this was also shown in the survey responses. However, the sample for the research had a higher percentage of large schools and a lesser number of small schools. Most of the large schools, however, answered the national survey. As shown as the Response % column (see Table 8), the highest percentage (77.78%) was for large size schools with 14 of the 18 schools responding in the national survey. Half of the schools designated nationally as small schools participated.

In addition, nationally 60 out of 62 of secondary girls' schools were urban (96.77%). Survey respondents registered as urban for 38 out of 40 (95.00%) surveys. Two rural schools answered the survey.

4.3. Design: Gifted and Talented

School-Wide Coordination

In the national survey thirty-five schools (87.50%) indicated that there was a person or persons responsible for gifted and talented education. All of the 35 affirmative responses identified the role as filled by individual teachers, or teachers working with another person in specialised roles, deputy principals or deputy principals working with another person, or individuals in a specified role inside the school. The most prevalent arrangement (31.43%) was an individual teacher. Three teachers also had distinct teaching roles within the school: two were Specialist Classroom Teachers and one was designated as a Professional Leader, therefore just over a third of the people in this role were teachers. One middle management (Head of Faculty Mathematics) teacher had a dual role with a GATE (gifted and talented education) coordinator. In addition, there were three combined or dual partnerships, and one of these teachers worked with a deputy principal. There were six (17.14%) deputy principals and two deputy principals with curriculum responsibilities in a dual partnership role, one with a teacher and one with a junior school curriculum coordinator. Five GATE coordinators or gifted and talented managers (13.89%) coordinated gifted and talented education. One Guidance Counsellor, two Diverse Needs coordinators, one Special Needs coordinator were also involved, as well as one Special Needs coordinator in a dual role with the Director of the School's Learning Centre. Specialist roles such as Director of Personalised

Learning, Student Services Coordinator and a Head of Advanced Learning (one response for each) were also identified.

Seventeen of 40 schools (42.50%) had formed a gifted and talented committee. Only one of the four small schools had a committee but half of the other two types of schools indicated they had a committee. The rural schools did not have a gifted and talented committee. However, one had a person responsible for gifted and talented education. Of the schools which did not have a committee, one school had a "manager who will consult with staff as appropriate," and the other "had a coordinator who worked with external facilitators."

Seventeen (42.50%) responses identified the members of a gifted and talented committee. The majority (15) reported that the committee was comprised of teacher(s) and most included associate or deputy principals or principals. Nine involved learning support coordinators, seven had designated teachers of gifted and talented, seven involved heads of departments and two committees involved the school counsellor. Only one school identified students as committee members. There were no parents or caregivers, or members of the community represented on any of the committees.

Gifted and Talented Definition and Register

Most schools (34) had formulated a definition for gifted and talented and most had a register of identified students. Schools were not asked to describe what information besides names were included in their registers. Two schools had only a register and procedures for identifying gifted and talented students. Three other schools had procedures for identifying gifted and talented students but no definition or register.

Six of the Year 9-15 schools did not have a register and school size seemed to suggest that it was not a factor as there were two large schools, three medium schools and one small school which did not have a register. School size was not a factor in whether or not a school had a register. One school explained its lack of register:

> *We no longer have a register or a coordinator/committee. The placing of students in multi-level programmes and accelerated classes provides the identification. Teachers of these students know who they are. Provision has become systemic to a large extent - five years on. (medium decile, large school, Year 9-15)*

4.4. Implementation: Gifted and Talented

Identification of Gifted and Talented Students

For 38 (97.44%) schools the two most common procedures for identifying gifted and talented students were both teacher observation or nomination and national achievement tests such as Progressive Achievement Tests (PATs) and Centre for Evaluation and Monitoring (CEM) testing. Previous school identification was used by 32 (82.05%) schools using this method of identification. The least used method was IQ tests, that is ability or intelligence tests e.g., Raven's Progressive Matrices, referred to by schools as "Ravens," a non verbal test of general intelligence, which was used by six schools (15.39%). The term "IQ tests" was also used in the report to the Ministry of Education on gifted education (Riley et al., 2004).

The one Year 7-15 school which did not use teacher observation used achievement tests as the only method of identification. The one school which did not use achievement

tests used five other methods: teacher observation, teacher rating scales, student work, parent or caregiver nomination and self-nomination.

Almost half of the schools (19, 48.72%) used the school enrolment form for information for identification.

Of the 38 schools which used achievement tests an additional 22 schools (57.89%) used national and international examination results such as NCEA, Cambridge International and the International Baccalaureate. However, some schools preferred to use different tests. Of the 10 schools (25.64%) which used teacher developed tests three of these schools did not also use public examination results. Student work (portfolios) was also used by 23 (58.97%) schools.

Schools used a range of nominations (see Table 9). Self-nomination (19, 48.72%) was used twice as frequently as peer nomination (9, 23.08%). Parents' and caregivers' nominations were used by 26 (66.67%) of schools and whanau nominations were used by 28.21% (11) of the schools. One high decile, large, Composite school, which did not include parent nomination as one of their formal methods of identification, explained that they used "a personalised approach" including "parent nomination informally as we do use self and peer. Parents are interviewed in the enrolment process and this information is passed onto the GATE coordinator."

Two other sources were identified, both by Year 7-15 schools: a report from a registered psychologist and "out of school nominations e.g., national teams, dance academies, sports coaches music teachers etc." "Inclusion on the gifted and talented register," however, as one school pointed out "does not necessarily follow nomination." This Year 9-15, medium decile, medium sized school, used 11 methods of identification.

Many schools used multiple methods of identification irrespective of school size or decile or type as shown in Table 9.

Table 9: Identification of Gifted and Talented Students (N=39)

Procedures	Response Percent	Response Count
Teacher observation or nomination	97.44	38
Achievement tests (e.g., PAT, CEM)	97.43	38
Previous school identification	82.05	32
Parent or caregiver nomination	66.67	26
Student work (e.g., portfolios)	58.97	23
Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])	56.41	22
Self-nomination	48.72	19
School enrolment form	48.72	19
Teacher rating scales or checklist	38.46	15
Whanau nomination	28.21	11
Teacher-made tests	25.64	10
Peer nomination	23.08	9
IQ tests (e.g., Ravens)	15.39	6

Some gifted and talented students are underachievers, from different cultural and ethnic groups and some students are twice exceptional. The survey asked if procedures were in place to identify these students. The majority of schools identified underachievers (27, 72.97%) and students from different cultural and ethnic groups (24, 64.87%). However, less than half of the schools (15) identified twice exceptional students.

Some schools identified all three groups of underachievers, students from cultural or ethnic groups and twice exceptional students. Eleven out of 37 (29.73%) schools across school size and type provided identification for all three categories of gifted learners. Half of the schools identified two categories: gifted and talented underachievers and gifted and talented students from different cultural and ethnic groups. Four of the 37 schools provided identification procedures only for underachievers. All of these were

medium decile schools; three were large schools, one was medium size and they covered a range of school types.

Five schools stated they did not identify any of these gifted and talented students and most (4) of these were small schools from high and medium deciles with all three types of schools represented. Both small rural schools did not identify these students.

Responses to Questions on Student Data

Of interest is the point that most schools (12, 30.77%) of the 39 responses did not use data provided about students before they started secondary schooling but most (29, 74.36%) did during secondary schooling. Comments from two schools included:

> *School-wide register kept with data recorded. Data available on intranet. (high decile, large school, Composite)*
>
> *Only record information given and then assess at Year 9 teacher meetings (term 2 and 3) to confirm or discuss. (high decile, large school, Year 9-15)*

Composite and Year 7-15 schools were more likely to record and analyse data both before and during the secondary school years. Six of the 39 schools (15.38%) collected and analysed data before and during secondary schooling. Neither rural school recorded or analysed data before secondary schooling.

Responses for schools which did have a register included seven which recorded data electronically. Some responses indicated the nature of the data and how they were used, for example:

Events, activities student has been invited to or competed in are recorded on Kamar for all teachers to view. Special requirements are emailed to subject teachers so they are aware of students' learning styles and can incorporate into their teaching programme. (high decile, large size, Year 9-15)

Kept on school records. Monitored by GATE coordinator who is alerted if a student who has been flagged GATE appears to be underachieving. Each student has a file. (high decile, medium size Year 7-15)

Some schools recorded competitions (2); others recorded internal "outstanding results" in tests and formative assessments, and merits and excellences (3). The gifted and talented coordinator collated, monitored and kept notes according to these schools.

Provisions for Gifted and Talented Students

Enrichment was offered by all 38 respondents to the question on provision. Twenty-nine (76.32%) schools offered acceleration with enrichment. No school offered acceleration without enrichment. Ten out of 38 schools (26.32%) offered enrichment as a single provision without acceleration. This occurred most frequently in Year 9-15 schools (7) with one high decile and one low decile and five from medium deciles with schools from all of the three school sizes represented. One rural school offered acceleration and enrichment and the other offered only enrichment.

Three schools which offered curriculum acceleration and curriculum enrichment offered multi-level courses and one school, in particular, provided information regarding academic effectiveness, "Multi-level learning and pathways and individual programmes e.g., 2010 61 students achieved an NCEA level at least one year above their school

year" (medium decile, large school, Year 9-15). Another school which also offered acceleration and enrichment specified, in addition, that their approach was to meet the social and emotional needs of GATE students and they used Form Time sessions with a GATE coordinator (high decile, medium size, Year 7-15).

Some schools also referred to specific additional programmes:

- Individual EOTC [Education Outside the Classroom] when appropriate and/or mentoring;
- Future Problem Solving Programme for interested students;
- Opt-in programmes for students in addition to their timetabled classes;
- Correspondence school for a subject that we might not offer or for a student who requires acceleration and we can't timetable them on.

One school expressed some concern regarding the extent of acceleration in the school:

> *Grouping within classes, extension activities in most topics, tiered activities, a focus on goal setting and self-analysis. However, this is not happening in all subjects and this is my concern. Acceleration happens in only a few subjects as well. (medium decile, medium school, Year 7-15)*

One school which offered enrichment without acceleration explained their school offered additional provisions for their students such as "Withdrawal programme - Project Excellence in 2011. Art lessons in a previous year. FPS [Future Problem Solving] as extracurricular, exposure to competitions."

Funding for Gifted and Talented Provisions

Funding was available for gifted and talented provisions according to 18 (47.37%) schools. A third of the schools identified that funding was limited. Five schools identified the Operations Grant (Ministry funding which was provided to all schools) as a source of funding. Some schools created a department budget which was used to "assist with providing speakers, travel to events etc." or "a minimal budget is allocated from the operations grant but all other funding is from parents or caregivers." Some schools identified the GATE coordinator budget or the professional development budget as providing resources. One school nominated the principal's budget for resourcing GNT [Gifted and Talented] study days, materials for GNT sessions and photocopying.

The following responses provided more detail:

> *It is budgeted for from the school budget. It supports, in the main, the Year 9 and 10 Enrichment programmes, teacher PD, Scholarship needs (e.g. pre-exam courses for scholarship students) and teacher relief for this area. It has also supported students who have attended, for example, business seminars for a couple of students, where the departments cannot support these extra programmes. (medium decile, large size, Year 9-15)*

> *I have a number of sources - a) GATE budget of $2000.00 b) Professional Leader budget of $5000.00 which is used to promote differentiation and Thinking Tools throughout the school. (medium decile, medium size, Year 7-15)*

Other sources of funding included "some provided by BOT and by STAR for individual students," "School funds for travel and registration. Support for materials required for

enrichment days," "some use of TEFA" and "students are also able to receive grants from the PTSA."

4.5. Maintenance: Gifted and Talented

School Personnel Support

There seemed to be general understanding that academic, social and emotional and cultural support was available for gifted and talented students. The two sources most providing of academic support, identified by 38 schools (97.44%), were the subject teacher and the gifted and talented coordinator (35, 89.74%). One school identified all of the providers (see Table 10) as offering academic, social and emotional and cultural support and listed, in addition, other support persons, namely, "deans, deputy principals, social worker (trial this year), wellness coordinator and specialist staff such as tutors for music, drama, dance, and Māori performing arts, and a sports coordinator" (medium decile, medium size, Year 9-15).

There was also considerable support for the other two categories (see Table 10). The most important sources of social and emotional support were the school counsellor (31, 79.49%) and the tutor, group, or homeroom teacher and the parent or caregiver (30, 76.92%). Culturally, most support was provided by the gifted and talented coordinator (20, 51.28%), followed by the parent or caregiver (17, 43.59%).

Support for students from different ethnicities was specifically provided for two schools by a Māori and Pasifika Coordinator (high decile, medium size, Year 7-15) in one school and a deputy principal and Māori development group supporting cultural extension and enrichment (medium decile, medium size, Year 9-15) in another school.

Nearly half of the respondents believed that the gifted and talented coordinator provided all three categories of support. Thirty-five out of 39 (89.74%) responses stated at least one support function of the gifted and talented coordinator. Academic support was provided by the gifted and talented coordinator in 34 schools (see Table 10).

Table 10: Providers' Support Personnel for Gifted and Talented Students (N=39)

Personnel	Academic	Social, Emotional, or Both	Cultural	Don't Know	Response Count
Subject teacher	38	15	14	0	38
Gifted and talented coordinator	34	25	20	0	35
School counsellor	5	30	8	1	31
Parent or caregiver	11	24	17	6	30
Tutor, group, or homeroom teacher	17	27	14	2	30
Mentor	15	13	12	4	23
Principal	17	12	12	3	20
Other	1	1	2	0	2

Most schools identified the academic supporting role of the subject teacher, and a quarter (10, 25.64%) of schools also nominated subject teachers as providing all three types of support. Almost half of the 20 schools (8) identified the principal as providing academic, social and emotional and cultural support. Three school counsellors provided support over all three categories, four gave social and emotional or both, and cultural support.

Ten (25.64%) of the participants in the survey identified the parent or caregiver as providing support in all three categories. Overall the least support offered by parents or caregivers was academic. Eight schools nominated mentors as providing all three types of support academic, social and emotional and cultural. One school explained that they "sometimes have mentors."

Seven schools identified the tutor, group or homeroom teacher as providing all three types of support. Both rural small schools identified the subject teacher as providing academic support, and the parents or caregivers and the school counsellor as providing social and emotional support. One of the rural schools also identified the gifted and talented coordinator and the tutor teacher as providing academic, social and emotional support and cultural support.

School Systems Support

Just over half of the 38 schools (21, 55.26%) confirmed that they used individual student profiles for gifted and talented students (i.e., information file, IEP or ILP). Of the 38 schools which responded to the question about the provision of individual student profiles most were high decile schools. About half of each school type and school size had profiles. One of the rural schools also had individual profiles.

Other supportive school provisions itemised included:

- opportunities for students to go to special camps;
- morning sessions where the group meet with common-minded people and complete tasks/assignments with each other and these are often cooperative exercises;
- scholarship groups with specific teachers working with the GATE students.

Schools also believed considerable academic support was provided by subject (32) and career (30) counseling. Almost half of these schools (16) believed that consulting the parents or caregivers by providing a consultative process about their daughter provided

not only academic support, but also social and emotional support, and cultural support for their gifted and talented daughter (see Table 11).

Table 11: School Provisions to Support Gifted and Talented Students (N=38)

School Provisions	Academic	Social, Emotional, or Both	Cultural	Don't Know	Response Count
Parent or caregiver consultation for individuals	35	27	16	0	36
Pastoral care	19	28	17	1	34
Subject counselling	31	13	8	1	32
Career counselling	29	14	7	1	30
Individual interviews	26	21	15	0	27
Individual education plans (e.g., IEP or ILP)	24	13	8	1	25
School selection of subject teacher	20	9	5	2	23
School selection of tutor group or homeroom group	12	14	6	2	20
Parent or caregiver consultation for classes	11	8	5	2	13
Other	2	2	1	1	4

Most schools believed that pastoral care (28) and parent or caregiver consultation for individuals (27) were important sources of support. Schools felt there was less cultural support for students. In general, however, most schools (33, 86.84%) identified at least one provision which they believed provided cultural support for students.

Three schools believed their school only provided academic support. Size, decile, or type of school did not appear to affect how much, or the kind of support which was offered. One small school (high decile, Year 7-15) identified the academic provisions of IEPs, parent consultation regarding individuals and pastoral care and another small school, (high decile, Composite), identified two academic provisions. Both rural schools

provided at least four provisions which they felt offered support, with at least one for each category.

4.6. Evaluation: Gifted and Talented

Over half of the 35 schools used evaluations of examination test results (27, 77.14%), gifted and talented coordinator evaluation (26, 74.29%), student evaluations (25) and staff evaluations (22). Less than half used the evaluation of competition results (14), parent evaluations (7) gifted and talented committee evaluations (7), and external evaluation (4). Of note were the multi-faceted types of evaluation and the inclusion of evaluations which were not conducted by school staff. They included seven student and parent evaluations and four external evaluations.

Overall 10 of the 35 responses (28.57%) used at least five methods of evaluation. Small schools used fewer methods. Only one high decile, small size, Composite school used one category of examination and test results. Rural schools identified three methods for one school and two for the other.

One other method a school provided was an evaluation which was part of the Annual Report. Another school explained that one of its five methods included working with a gifted and talented outside school expert for the past five years and also added that the school also had "a data specialist who helps with the Talent Pools. I am also beginning to work with a mentor who will help me work with the students" (medium decile, medium size, Year 7-15).

Only one medium decile, medium size, Year 9-15 school did not identify any evaluation procedures but was in the "process of developing procedures." One school which identified three methods was currently reviewing their processes.

4.7. Acceleration: Design

Half of the schools (18, 51.43%) which responded to the acceleration question did have a policy or procedures for acceleration. Both small rural schools, Year 9-15, from a high and a medium decile, had an acceleration policy. Approximately half of the high and medium schools had developed an acceleration policy. It was less likely for a low decile school to have a policy as from the low decile schools one school (25%) did and three (75%) did not. A slightly higher proportion of large schools than medium and small size schools had an acceleration policy: large 58.33% (7), medium 46.67% (7) and small 50% (4).

Eleven of the 17 schools had no acceleration policy but identified different practices they used to accelerate students such as: grade-skipping at Years 9 and 10, subject acceleration for Years 11 and 12, individual and self-paced instruction at Years 9 and 10, combined classes at Years 12 and 13, curriculum compacting, mentoring at Year 10, extracurricular activities at Years 9-13 and correspondence courses at Years 11-13.

Identification

Schools were asked how accelerated students were identified (see Table 12). In the national survey most schools used teacher observation or teacher nomination of students (29) or achievement tests such as PAT and CEM (25) and student work (24) to identify accelerant students. Public examination results including NCEA, University of

Cambridge International Examinations (CIE), International Baccalaureate (IB) were used by over half of the schools.

Table 12: Acceleration Identification Methods (N=33)

Methods	Response Percent	Response Count
Teacher observation or nomination	87.87	29
Achievement tests (e.g., PAT, CEM)	75.76	25
Student work (e.g., portfolios)	72.73	24
Parent or caregiver nomination	57.56	19
Public examination results	54.55	18
Previous school identification	51.52	17
Teacher-made tests	45.46	15
Teacher rating scales or checklist	36.36	12
Self-nomination	36.36	12
School enrolment form	30.30	10
Whanau nomination	24.24	8
Peer nomination	18.18	6
IQ tests (e.g., Ravens)	9.09	3
Iowa Acceleration Scale	0	0

Only two schools, one high decile, large size, Year 9-15 and one medium decile, small size, Year 7-15, nominated one method and that was achievement tests. Two high decile schools nominated 12 methods, not including IQ tests or Iowa Acceleration Scale (one large school and one medium school). Six other large and medium sized schools used between nine and 11 methods. Over two-thirds of the schools (23, 69.70%) used teacher observation and achievement tests as at least two of their methods. Small schools tended to use fewer methods. One rural school used five methods and one used two methods. One medium decile, small size, Year 9-15 school in addition to teacher observation and PAT tests noted that "Very little of this is done at [school name] since we had problems with acceleration in earlier years. Now we only accelerate certain topic or standards." This was also one of the few negative comments made in the survey but the problems referred to were not identified.

4.8. Implementation: Acceleration

Only two schools did not provide acceleration for students. One national survey respondent explained that in their school the new principal was in favour of acceleration, and the other reported that in their school "good teachers offer differentiation in their classroom for gifted and talented students but largely these students go uncatered for- especially at senior school. Many of our talented senior students develop/express their talent through extracurricular sports and music etc." (low decile, small school)

Forms of Acceleration Used by Schools

Twenty-five (75.76%) of 33 respondents used subject acceleration and 23 (69.70%) used extracurricular programmes. Most single subject acceleration occurred in Years 10, 11 and 12. It was presumed that all respondents to this question nominated the year level student who was then accelerated to a higher level, that is, a Year 9 student accelerated into Year 10. However, numbers are entered as provided by the schools.

Eight (24.24%) of the 33 schools used grade-skipping but only two stated all Years 9-13. Both schools were large schools and one was a high decile Composite and one a medium decile Year 7-15 school. Half of the eight responses about grade-skipping were from high decile Composite schools. Another Composite school provided grade-skipping at Years 9 and 10 only. Two other schools provided grade-skipping at Years 11, 12 and 13, and two provided it at Years 9-12.

Only two Year 9-15 schools, one from a high and one from a low decile, offered radical acceleration. One offered Years 9 and 10 and the other offered Years 11, 12 and 13.

Acceleration by single subject(s) was used widely in some schools. Seven schools had five years of subject acceleration from Years 9-13. They were only from high and medium deciles, and covered the three roll sizes. In addition, some schools offered acceleration over a range of consecutive years. Six schools offered four years of Year 9-12, two schools had three years from Years 10-12, and three offered Years 11-13. One school offered two years at Years 11-12 (high decile, medium size). Four schools had single subject acceleration at Year 10 with no follow up years offered. These schools were from different deciles, school sizes and types of school. One rural school offered subject acceleration at Years 10-12.

Seventeen schools offered extracurricular opportunities for five year levels and one offered four, Years 10-13. Four schools offered three levels, three at Years 9-11 and one Years 11-13. Two offered two levels, Years 11-12 and Years 9-10. None of the 23 schools offered one level only. Both rural schools offered extracurricular opportunities for five year levels.

Other forms of acceleration were also offered (see Table 13). Over half of 33 schools (18, 54.55%) offered courses by correspondence and four schools offered courses over all year levels. Three more schools offered correspondence at the junior level (Year 10) but all other schools offered correspondence courses for some of Years 11-13. Schools offered more than one consecutive level except for one medium sized school which offered one year only at Year 13. Both small rural schools offered correspondence courses, one for Years 12-13 and one for Years 10-12. It was less likely for Composite schools to offer subjects by correspondence and only one Composite school, medium size offered any correspondence courses and these were at Years 11-13.

Table 13: Forms of Acceleration Used in Girls' Schools (N=33)

Forms	Year 9	Year 10	Year 11	Year 12	Year 13	Response Count
Subject acceleration (single subject)	14	21	21	21	11	25
Extracurricular programmes	20	21	22	19	18	23
Correspondence courses	4	7	15	16	15	18
Individual and self-paced instruction	15	15	9	9	7	16
Concurrent or dual enrolment (studying university or tertiary papers while enrolled at school)	0	0	1	2	14	14
Combined classes (e.g., Years 12 and 13 in the same class)	2	3	8	12	12	13
Curriculum compacting	8	11	6	6	4	12
Mentoring	6	8	6	7	8	12
Scholarship prior to Year 13	1	1	2	12	2	12
Grade-skipping (moving up a year level across all subjects)	5	6	7	6	4	8
Telescoping curriculum (teaching 3 terms work in 1)	1	1	1	2	2	5
Early entrance into secondary school	5	0	0	0	0	5
Radical acceleration (skipping levels, or year level acceleration, by 2 or more years)	1	1	1	1	1	2

Note. The response count shows the number of schools which provided each form of acceleration. Some schools offered a form, or forms, across all year levels, others at some levels.

Mentoring occurred over a range of year levels. Three of the twelve schools offered mentoring over five year levels. One Composite school which was one of the two large

schools which offered all five year levels further explained that "We also run an on-line mentoring programme in Year 10 for gifted students under the World Mentor NZ Programme." Two schools used mentors only at Year 13 and one offered mentoring at Year 10 only (medium size). Half of the twelve schools offering mentoring were high decile schools and there were no small schools or rural schools.

Concurrent or dual enrolment as specified by 14 schools occurred over all types of schools, school deciles and school size. New Zealand Scholarship before Year 12 occurred in only two schools but in 14 of 33 schools at Year 12.

Accelerated Students: Student Numbers

In the national survey 27 schools reported accelerated student numbers (see Table 14). The highest response average was in Year 10 (25.46) and the least number in Year 13 with a response average of 10.19.

Table 14: Numbers of Accelerated Students (N=27)

Year Levels	Average Number of Accelerated Students	Total Number of Students Accelerated	Number of Schools Accelerating
9	17.06	290	17
10	25.46	662	26
11	12.36	272	22
12	12.55	251	20
13	10.19	163	16

Note. Some schools did not provide numbers as the school representative answering the survey either did not know the numbers, or it was too difficult to find out quickly in schools which offered many multi-level courses and different forms of acceleration.

Continuous acceleration occurred in just under half (12) of the schools over five school levels, and eight over three or four school years. Two schools provided acceleration only at one level and that was Year 10; one school indicated 120 students and the other

five. Some schools from all school types and sizes had 20 or more students being accelerated at various levels. For example, a medium decile, medium roll indicated they had 60, 30, 40, 40, 40 students at the five levels from Year 9 to Year 13. Table 14 includes the total of students at each year level derived from student numbers provided by 27 of the national survey schools. All but one school accelerated students at Year 10.

Acceleration Methods

Types of acceleration offered by schools were identified by 33 of the 40 schools which answered the survey. The most common were individual acceleration (28, 84.85%) and acceleration of a group or cluster, that is ability grouping within a class (21, 63.64%). An accelerate class was a service delivery method of acceleration also provided by over half the schools (18, 54.55%). Nine (27.27%) schools used pull-out groups (i.e., withdrawn from the normal class to do other activities).

Most schools (23 out of 33, 69.70%) which accelerated used more than one method of intervention (see Table 15).

Table 15: Frequency of Acceleration Methods of Service Delivery (N=33)

Type	Roll	Size	Acceleration Interventions			
			One	Two	Three	Four
Year 9-15	1000 plus	Large	4	4		1
(N=18)	400-999	Medium	3		4	
	1-399	Small		1	1	
Year 7-15	1000+	Large			2	1
(N=11)	400-999	Medium		2	2	
	1-399	Small	3		1	
Composite	1000 plus	Large			1	1
1-15	400-999	Medium			1	
(N=4)	1-399	Small			1	
Total			10	7	13	3

Of large schools, four of the 13 responding schools used one method. Three medium sized Year 9-15 schools also used one method; two provided for individual acceleration and one provided a group or cluster inside a class. Both rural schools used at least two methods. Examples of different forms of intervention are grade-skipping, subject acceleration and radical intervention. Overall, some small, medium and large size schools from each of the school types provided at least three methods of acceleration.

Types of Acceleration

Individual acceleration was reasonably representative of the national percentage for high and medium deciles but it was smaller for low decile schools (see Table 16). Some schools from each decile provided individual acceleration, with less being reported by low decile schools. Half of the high decile schools provided individual acceleration.

Table 16: Provision of Individual Acceleration: Girls' School Deciles (N=28)

	National Survey		All Girls' Schools	
Deciles	Number	Percent	Number	Percent
High (8-10)	14	50.00	29	46.77
Medium (4-7)	12	42.86	23	37.10
Low (1-3)	2	7.14	10	16.13
Total	28	100.00	62	100.00

Nationally there are 62 single-sex girls' schools which offer secondary education. From information provided by 28 of the 40 single-sex girls' schools in the national survey in 2011 some schools, regardless of type, offered individual acceleration (see Table 17). School type was also reasonably representative of the national percentage for all girls' schools though with a slightly higher percentage of Year 7-15 schools.

Table 17: Provision of Individual Acceleration: Girls' School Types (N=28)

	National Survey		All Girls' Schools	
School Type	Number	Percent	Number	Percent
Year 9-15	15	53.57	37	59.68
Year 7-15	10	35.71	17	27.42
Composite Year 1-15	3	10.71	7	11.29
Special school	0	0	1	1.61
Total	28	100.00	62	100.00

Accelerate Class

Of the 18 out of 33 schools which identified an accelerate class as an intervention three schools nominated it as their only acceleration strategy. Half of these schools used an accelerate class, individual, and group within a class as three methods of acceleration. By school type, Composite and Year 9-15 schools were more likely to offer an accelerate class.

Nine schools used pull-out groups. They all used them in combination with two or more methods of acceleration. School size, decile, and types of school were not factors.

Three respondents indicated the flexibility and independence of individual departments to make, or not make decisions about acceleration, especially in the junior school Years 9-10.

Acceleration Consultation and Communication

Many schools used multiple methods to communicate with parents or caregivers before acceleration occurred. For example, one school interviewed the parent or caregiver, conducted a phone call discussion, and interviewed with parent or caregiver and student.

The most commonly used method were interviews with the parent or caregiver and the student for 20 (66.67%) of the 30 respondents. Almost half of the responding schools provided a phone call discussion (16), an interview with parent or caregiver (15) and a letter of information requesting acceptance or refusal (14). There was a tendency for smaller schools to use fewer methods. One medium sized school explained that their procedures were "done informally through discussion with student, teacher and GATE coordinator. Student then informs parent" (medium decile, medium size, Year 9-15). Another school, which had indicated four methods of consultation, pointed out they had no overall school policy but that "different subjects do it in different ways. The tendency in most cases is that the first port of call is with the student. Then consultation through letter, meeting, or phone call with parents" (medium decile, medium size, Year 7-15).

Withdrawal and Re-entry from Acceleration Provisions

Schools appeared to be flexible with processes in place for withdrawal. Twenty-two (78.57%) out of 28 schools provided the information that students could be withdrawn from acceleration provisions but fewer schools (13, 56.2%) offered reinstatement. Three schools indicated withdrawal had never happened. Others had provided clear steps for discussion and negotiation, for example with student, parent, teacher or Head of Department (HOD) and sometimes the Deputy Principal (DP). There could also be an interview, through the academic counselling process or through the deans or through requests to the GATE coordinator.

Students themselves could request, or students and parents could request, or students, or parents, or teachers could request withdrawal. In one school the "Dean interviews the

student if concerns are identified either by the student themselves, parent or subject teacher" and in another there was discussion with the teacher or "the teacher identifies and informs student" that withdrawal could occur. The coordinator is informed and the student removed from the database for that identified criteria." As two schools pointed out, the student could simply choose not to attend GATE opportunities or sessions.

However, less than half (10) of the schools which responded to the question did not provide re-entry to acceleration provisions. Steps for reinstatement ranged from a simple request by the student, to an interview and discussion and whether it was practical to reverse the process. One school which did not allow re-entry explained that "this would be discouraged because the process to have them accelerated and then to return them to year appropriate class would already have been robust." Other reasons schools provided included timetable practicalities and the nature of the subject. One school pointed out it could occur if it was in the best interest of the student. Four schools allowed withdrawal but not re-entry. Three were high decile schools and one was a low decile and of these three were medium size and one was a small school.

Accelerated Students: Accelerated Subjects

Responses from the 25 out of 40 schools indicated that most subjects were offered at Year 10 and the least at Year 13. Acceleration in 28 individual subjects was named by the 25 schools with most being named at Year 10. Thirty-four subjects were named by the 25 schools at Year 9, 68 at Year 10, 49 at Year 11, 36 at Year 12 and 17 at Year 13.

The most commonly subject accelerated was Mathematics across all levels, followed by English, with most acceleration at Years 10-12. There was limited acceleration in the sciences. Te Reo was offered across all year levels by three schools. One of these

schools also offered Spanish across all year levels (low decile, medium size, Year 9-15) and another (high decile, large school, Year 9-15) offered acceleration in German, French in addition to Te Reo at Years 9-12. The third school offered acceleration only in Te Reo (medium decile, large school, Year 9-15). Most schools indicated acceleration was ongoing over a number of years. However, three schools (two large size and one small size) offered acceleration in Mathematics which did not continue after Year 11.

One school (high decile, medium size Year 9-15) which offered acceleration in Mathematics and English for Years 9-12 also provided one Year 10 student's programme as Level 3 Classical Studies, Level 2 Chemistry, Level 2 Accounting, Level 1 Mathematics and Stage 1 University Politics and the school noted that "One Year 10 student sees a Political Studies tutor weekly but is not enrolled in any courses." The school indicated she was not enrolled in the subject but was working on the subject with the university. Chinese was offered by two schools but no levels were specified. One school offered French "as an extension subject through all year levels" and philosophy as an extracurricular subject "for all year levels" (low decile, medium size, Year 9-15). Multi-level Year 11-13 acceleration was offered at another school and it could be "all subjects considered." One school (high decile, large size, Composite) offered University courses (unspecified subjects). Both rural schools offered some acceleration subjects. One rural school offered Mathematics at Years 9-10 and Young Enterprise at Year 10. The other offered Social Studies at Year 10, English at Year 11 and Mathematics at Years 11 and 12.

Some schools offered multiple subjects and the size of school did not appear to be a determinant. For example, one high decile small Composite school offered acceleration

in six subjects at Year 12 and five subjects at Year 11. Another large Composite school offered six at Year 11 and three at Year 12. One large Year 9-15 school offered five subjects at Year 10 and all subjects considered for Years 11-13.

Enrichment and Acceleration

Most schools 23 (74.19%) out of 31 used acceleration and enrichment for students who had been accelerated. Acceleration without enrichment was only shown in five (16.13 %) of the responses. There were three (9.68%) "don't know" responses from large schools from medium and high deciles. From the responses to this question 11 out of 15 high decile schools gave an affirmative response, as did 10 out of 12 medium deciles, and two out of four low decile schools. Medium decile schools were more likely to offer enrichment with acceleration. The five negative responses came from all three decile groups. Small schools were more likely to provide enrichment with acceleration than were other types of schools. Enrichment and acceleration were most often provided in Year 7-15 schools.

Some explanation of examples of enrichment were provided with acceleration. At one school at the senior level students attended workshops such as GATE study days, at the junior level there were collaborative research projects with presentation of models and documentation which were judged by the school, and after school programmes such as a writing group and "Cuboro workshops with the Think Farm" (medium decile, medium size, Year 7-15).

Another school explained:

Overseas trips to French and Spanish speaking countries, marae visits, careers days with a Te Reo focus, 'Languages Sleepover' - annual event, food is culturally appropriate and English cannot be spoken, participation in music festivals, workshops with professional musicians (e.g., Shona Laing) (low decile, medium size, Year 9-15).

One school noted that "the IB [International Baccalaureate] programme (Y12-13) provides many opportunities for enrichment" (high decile, small size, Years 9-13). Another school provided an optional enrichment programme of "activities, workshops, conferences etc. are offered to all GATE students and students in high ability classes" (high decile, medium size, Year 7-15).

Other examples provided by different schools included:

- Peter Vardy Seminars, Julie Arliss Seminars;
- Philosophy classes, Future Problem Solving Programme;
- Marine Studies Camp, Deep Thought.

Some schools included competitions as one of their enrichment provisions, for example:

- Attending performances, doing competitions. Partaking of study skills and exam technique sessions;
- Co-curricular activities speech and drama, competitions, science badges, maths programmes.

The most frequently used enrichment responses from schools in the national survey were competitions (32, 96.97%) and differentiation (30, 90.91%). Outside speakers (26), visiting groups (26), clubs or lunchtime activities (25), class trips (23), projects

and interest groups (22), were also provided in most of the schools (see Table 18). Of interest is the high number of schools providing enrichment across all year levels.

Table 18: Enrichment Programmes Provided for Accelerated Students (N=33)

Enrichment	Year 9	Year 10	Year 11	Year 12	Year 13	Response Count
Competitions	30	31	28	27	28	32
Differentiated learning in class	29	30	24	23	21	30
Outside speakers	19	20	25	24	25	26
Visiting groups (e.g., drama performance)	24	25	24	21	22	26
Clubs or lunchtime activities (e.g., debating, P4C)	24	25	24	24	24	25
Class trips	20	22	20	19	19	23
Projects	21	20	7	9	8	22
Interest groups	19	19	19	19	20	22
Pull-out programmes	13	10	7	4	4	14

Note. Enrichment was provided for accelerated students, some of whom have not been identified as gifted and talented.

Pull-out programmes were the least likely enrichment programme to be used (14, 42.42%). Class trips were almost consistently used across all year levels with 23 (69.70%) responses.

Projects were used in Years 9 and 10 but tended not to be used as often in Years 11-13 because of NCEA and this pattern also occurred with pull-out groups. There was a small increase in the use of outside speakers in the senior school in Years 11-13. Two Year 7-15 schools, both medium size, from a high and a medium decile, offered all the named enrichment provisions at all year levels. One of these also explained they offered different types of service opportunities such as

community service where "students with passions to work in community-based projects get a chance to contribute."

One school (medium decile, large size, Year 9-15) offered enrichment opportunities only to Year 10 and these included differentiation, competitions, class trips, and clubs or lunchtime activities. Some of the forms of enrichment were specifically identified by individual respondents such as:

- Science and Maths fairs and quizzes;
- Scholars Society (roughly top 10% of academic achievers Y10-13) form this group which meets twice a term for outings and/or guest speakers focusing on cerebral/challenging topics shows etc.;
- Gifted and talented programmes run by the local university;
- Student conferences organised by other groups - e.g., Model UNs, GATE conferences.

One school indicated that their school provided out-of-school programmes as a form of enrichment.

> *Our school has opted for enrichment rather than acceleration. However, we do offer an extracurricular programme for the identified gifted and talented students that allows them to pursue tasks in their interest as well as doing advanced tasks for their age in subjects offered at school. However, this all happens outside of their usual timetabled classes. (low decile, medium size, Year 9-15)*

Concurrent Enrolment at University or Tertiary Institutions

Some schools (11 out of 34, 32.36%) noted that some of their students were currently enrolled in university or tertiary courses and some information was provided (see Table 19).

Table 19: University Subjects

School Type	Decile	School Size	Subjects (if stated)	Number of Students
Year 7-15	medium	medium	Philosophy	2
Year 7-15	medium	medium		1-3 (each year)
Year 7-15	medium	high	Philosophy	2
Year 7-15	high	medium	Calculus	1
			Music	1
Year 9-15	medium	high	Economics	3
			Te Reo	2
Composite	high	high		6
Year 9-15	medium	medium	Ethics	25 (approx.)

Most of the numbers were small. No student from low decile or small schools was currently enrolled in university study. One school explained: “I'm actually unsure of numbers as this is coordinated by someone else. But it's probably between 5 and 10 and the papers are a mixture of law, philosophy or biology” (high decile, medium size, Year 9-15).

Two of the three schools which did not have current students enrolled at university provided supplementary information. One small, rural Year 9-15 school stated that, “We have tried to do this on many occasions and been knocked back by the university but we have enrolled some advanced students in Open Polytech and Wintec.” Another small school had previously enrolled students in Theology.

4.9. Maintenance: Acceleration

Funding Acceleration Provisions

Eleven (37.93%) out of 29 schools made funding available for accelerated provisions. Half of the Composite schools (2 out of 4) and about half of the Year 7-15 schools (4 out of 9) which answered the question provided funding. However, there was less funding provided in Year 9-15 schools (6 out of 16).

STAR [Secondary Tertiary Alignment Resources] funding was noted as a source of funds by two schools. Other individual sources of funding were given as: Ministry funding for Correspondence School subjects not taught at the school, partially subsidised by the school, curriculum budgets or a "small quantity available to HODs" (medium decile, small school). One school source of funding was partially subsidised (not specified from where), and another source was provided by "the school funds gifted programmes. An application can be made by one Head of Department for more funding if the budget was exceeded and Senior Management are pretty supportive if it is for extending the students" (medium school, medium decile, Year 7-15). One school pointed out:

> *No funding as such - it's expected that classroom teachers cater to the needs of all students, and provide enrichment for gifted and talented students. Some faculties and teachers are more consistent with this than others. The only funding available is the MMA [Middle Management Allowance] for the gifted and talented coordinator. (low decile, medium size, Year 9-15*)

4.10. Evaluation: Acceleration

Evaluation of Acceleration Provisions

Schools used a variety of evaluation methods. Of the 25 schools which responded to the question on the evaluation of acceleration provisions almost all schools stated they used some form of evaluation. Most schools used multiple method evaluation with only one small school (high decile, Composite) using NCEA results evaluation as their single method of evaluation.

The majority of the 28 schools (25, 89.29%) evaluated NCEA results, regardless of school size or school type and most schools evaluated their provisions. Most schools which used NCEA evaluations also used teacher evaluations. Teacher evaluations (75.00%) were nominated by 21 of the 28 schools and were higher than student evaluations (64.29%) which were nominated by 18 schools and were most used by Year 7-15 schools and large and medium size schools. Just over half of the small schools used teacher evaluations. Some schools (9) used parent or caregiver evaluations (see Table 20).

Not all of the 28 schools offered NZ Scholarship level courses or the International Baccalaureate or Cambridge examinations. Of the 16 (57.1%) schools which evaluated NZ scholarship, eight (50%) were from high decile schools, seven (43.75%) were from medium deciles and one (6.25%) was from a low decile. Six of the ten large schools and six of the 11 medium schools evaluated and four of the seven small schools (including two rural schools) evaluated scholarship results. According to school type approximately half (eight of the 14) of Year 9-15 schools, half (five of the 10) Year 7-

15 and most (three of the four) Composite schools evaluated New Zealand Scholarship. Of the seven schools, from each of the three sizes, which evaluated international examinations almost half were Composite schools (3), two were Year 9-15, and two were Year 7-15.

Of the eleven (32.4%) schools that had students currently enrolled in university subjects, only three (10.7%) evaluated results. There were no Year 7-15 schools. There were two Composite schools from high deciles (one large and one medium size) and one medium decile, large size, Year 9-15 school which evaluated these results.

Only 17 (60.71%) out of 28 schools stated that competitions were evaluated. Higher decile Composite schools and Year 9-15 schools conducted more evaluations.

The gifted and talented coordinator (18, 64.29%) alongside other methods played an important role in the evaluation process (see Table 20). In addition, departmental evaluation (15, 53.57%), while below teacher evaluation (21, 75.00%), was higher than senior leadership evaluations (7, 25.00%). Composite schools did not use senior leadership evaluations, and neither did any small schools. A small number of schools (3, 10.71%) used external evaluation. One school used the "Midyis and Selis value-added evaluation" in addition to the use of six other methods of evaluation. One medium sized school which used nine different methods of evaluation also explained that acceleration was "part of the school-wide appraisal system." This had also included "in the past" evaluation of the coordinator by senior management and a named external reviewer with gifted and talented expertise. One large school indicated there was a difference between formal and informal evaluation. The school noted that nine methods of evaluation were

used and also commented that "Senior Management and HODs formally evaluate NCEA results. Other evaluation is not formally tabled regularly."

Schools use a range of evaluation tools and Table 20 shows the most common was NCEA results evaluation and the least common were external evaluation and evaluations of university results.

Table 20: Evaluation of Acceleration (N=28)

Provisions	Response Percent	Response Count
NCEA results evaluations	89.29	25
Teacher evaluations	75.00	21
Student evaluations	64.29	18
Gifted and talented coordinator evaluation	64.29	18
Competition results evaluations	60.71	17
NZ scholarship results evaluations	57.14	16
Department evaluations	53.57	15
Parent or caregiver evaluations	32.14	9
International examination results evaluations	25.00	7
Senior leadership team evaluations	25.00	7
Gifted and talented committee evaluation	14.29	4
University results evaluations	10.71	3
External evaluation	10.71	3
Other	0	0

Note. International examinations included (e.g., University of Cambridge International Examinations [CIE], International Baccalaureate [IB]).

4.11. Further Comments

Three respondents commented that they needed to meet the individual needs of students, including being flexible to do so. In addition, one school also commented on the timetable constraints.

> *We do not actively promote acceleration as we use a personalised approach based on student need. Whole class acceleration happens in Mathematics and*

we stream in Science from Year 9. The school has had extensive PD on differentiation for Social Studies and English departments. Our premise is that we RESPOND to need and exceptionality. This can be different for each child. One student has had whole year acceleration others are only accelerated by subject and this can be constrained by the timetable. Many discussions have to happen before a pathway is decided. (high decile, large school, Composite)

The culture of the school could affect what the school offered. One school commented on their cultural demographics and its implications for the school and gifted and talented students.

I teach at an all girls' school that also has a large cultural demographic. I believe that for girls in the Pasifika culture being identified as gifted and talented under the definitions that western institutions often attached to gifted and talented students has cultural implications and affects both the identification process and their participation in the programme. (low decile, medium size, Year 9-15)

Another school commented on the effects of school culture. They also commented on the difficulty of recording how the needs of students were met.

Size of school and the nature of culture mean that subject areas such as Maths and Science and Arts and more all do whatever they see is needed in each case. No central database of this but it would be massive if there was. (high decile, large size, Year 9-15)

One school was positive about their provisions for their students and explained that competitions were open to all students.

> *We have a wide range of sporting, cultural and academic programmes. We like the students to elect the competitions they would like to enter and all the competitions are also available to other students who would like to try them. (high decile, medium size, Year 7-15)*

Two schools expressed a need for improvement. One suggested the need for more money "specifically tagged to staff GATE." The other comment related to identification and the need to cater more for senior students.

> *We still need to do some more in-depth work in identifying and providing for gifted students across all age levels. We cater better for younger students although senior students do have the opportunity to attempt university papers where their teachers identify they have the ability. (low decile, small size, Year 9-15)*

4.12. Summary

This chapter reports on survey findings related to school-wide coordination, identification processes and provisions, including support and evaluation for gifted and talented students and those who have been accelerated. It also reports on the methods and forms of acceleration and their delivery methods.

It was found that most schools had a definition, a register, and a gifted and talented coordinator. Most used multiple methods for the identification of gifted and talented and

accelerated students. Enrichment was used by all schools and most used acceleration. Schools provided support personnel, the most prominent being the gifted and talented coordinator, the subject teacher and the school counsellor. Most schools provided subject acceleration as one of a range of forms. The two most favoured methods of acceleration were individual acceleration and providing an accelerate class. Multiple methods of evaluation were generally used for gifted and talented and acceleration provisions. Only half of the responses reported there was funding available for gifted and talented provisions with slightly less available for acceleration.

The national survey provided a description of provisions and practices. The findings from the three case studies of individual schools that follow in the next three chapters, not only describe, but provide explanations for their use of provisions and practices and comment on their effectiveness. Perspectives are reported from teachers, students and parents and caregivers and are shaped by their school context.

Chapter 5: Case Study One

Challenge High School (School C)

5.1. Introduction

The three case studies followed the national survey and are reported in the order that the schools were visited. Challenge High School (School C) was a Composite private fully registered school from Years 1-15, from the high decile range 8-10, and a large school of over 1000 students, with over 800 in the senior school. It was a school within a university city. There were 117 full-time teachers and 21 part-time teachers. Six teachers completed the international Gagné and Nadeau survey *Opinions About the Gifted and Their Education* (Gagné, 1991). Four teachers completed the researcher-constructed teacher survey, with their school roles described as classroom teachers, teacher in charge, head of department, gifted and talented and special needs coordinators. The gifted and talented coordinator, who was the school contact person, and two invited students, participated in individual interviews.

5.2. School Philosophy

School documents defined in detail the school's philosophy and climate. Public documents such as the Strategic Plan and the Learning Centre Brochure, and in-school documents such as school policies and procedures reinforced the same vision.

Strategic Plan and School Vision

The school's five-year Strategic Plan, published December 2011in the school magazine, provided the school's vision of personal learning. The vision for personal learning was developed with an individual focus, ensuring that the programme any student "experiences will be designed for and with her, to address her individual skills, needs, challenges and possibilities." The vision also referred to the importance of striving for excellence. It emphasised that "diverse learners' needs and talents are at the heart of teaching programmes" with the strategic initiative to expand the diverse learners' programme.

Learning Centre

The brochure on the Learning Centre (LC), available from the school website, explained the school's understanding of diversity as: "Diversity encompasses many characteristics including giftedness (learning enrichment), learning differences (specialised learning intervention) and ELL (English Language Learners)." Personalised Learning was "underpinned by a belief that students should have access to learning opportunities at the level best suited to them" and the function of the school's Learning Centre was "to provide structure to the process of identification and provision for these students."

At the school students spent the majority of their time in mainstream classes and every teacher was "a teacher of diverse learners." There was a focus on staff professional development and "in-class support and mentoring of classroom teachers."

Acceleration was an intervention which could be provided according to The Gifted and Talented Education Process and Procedures document for "students who achieve learning outcomes more quickly than their peers" and these students "may be accelerated though curriculum compacting, content acceleration or partial acceleration,

or in exceptional circumstances, movement to a higher year group." The school provided for gifted students, depending on individual need, "with a combination of enrichment and acceleration opportunities" according to the LC booklet.

The [named] programme for Years 7-10 included enrichment and acceleration depending on the timetable and availability of staff and there were also personalised learning plans. A number of activities were listed such as Future Problem Solving and Writing Workshops. The [named] programme for Years 11-13 specified subject acceleration in "certain subjects" depending on timetable restraints. Some examples of departmental programmes were: Brain Bee and Biology and Chemistry Olympiads. There was also an extensive co-curricular programme (which according to the ERO 2009 report, was "an extensive range of sporting, performing arts, cultural and community service activities.").

Specialised learning intervention for students with learning differences (including twice exceptionality) and English Language Learners and Thinking were offered at the school according to the LC brochure. In the New Zealand Curriculum, Thinking is a key competency and in the Thinking Section of the LC brochure the HOTT certificate (Higher Order Teaching/Thinking) for staff professional development was explained and the work of the LC which supported this.

Gifted and Talented Education Policy

The LC noted that "giftedness is found across all cultures and groups" and "provisions for gifted and talented students will acknowledge and reflect the Special Character of the College and encourages the inclusion of bi-cultural and multi-cultural dimensions." All teachers were to be informed of the characteristics of gifted and talented students.

Professional development needs and the provision of resources for gifted and talented students were budgeted for.

Gifted and Talented Education Process and Procedures

This document included definitions and information about the philosophical underpinnings for gifted and talented education in the school. It also included Principles of Identification. Gifted and talented identification, as explained:

- is school wide
- is systematic
- is dynamic and ongoing
- is justifiable
- provides for early identification and
- ensures students from different cultures and socioeconomic groups can be identified.

There was ongoing evaluation of the gifted and talented programmes through "survey/intranet evaluation and one to one feedback."

Gifted and talented students were one group of diverse learners in the school. There was a school-wide definition of gifted and talented in the LC leaflet (also included in the School's Gifted and Talented Education Policy) which stated:

> A gifted child as one who performs or who has the ability to perform at a level significantly beyond his/her chronologically aged peers. Giftedness can apply to either one or a variety of learning areas and across the multiple intelligences. Giftedness is found across all cultures and groups.

The LC and the Gifted and Talented Policy explained equity and opportunity in the following way: “Ongoing provision for exceptionally able children is a matter of equity and will help them to reach their optimum development and achieve emotional, physical and intellectual wellbeing.”

However, the gifted and talented coordinator regarded the term “gifted and talented” as having “fishhooks.” The school’s preferred term was “personalised learning” and she explained “that it is really about the individual child and catering for their specific needs.” Identification was kept “low key” because “we don’t do that with students who are struggling, so why should we do it with students who are above average. The only reason for me, the only reason why I can justify identification is for intervention.” At this school when a student was identified as gifted she needed intervention. If so, a personalised learning approach was used.

One of the interviewed students also had difficulties with the term “gifted and talented.” She was not sure what it meant to be gifted and talented but was aware she was “apparently” gifted and talented but was not sure how people are classified as gifted and talented. She had been identified as gifted and talented at a music training session. She also did not want to be classified as such. As she said: “I’m actually quite uncomfortable with that.” The other student interviewed found the term gifted and talented “like bragging.” However, she was aware that because of the exposure to the term and discussions and meetings that it was “okay” to be curious and go and find out about things. She noted that “the school is very accepting in terms of what you want to do and if you want to go further.”

In particular, Challenge High School had developed its own contextual model based on an understanding of the learner at the centre. As the gifted and talented coordinator explained: “I think it is very contextual, and so the model that would [work] in my previous schools simply does not work in this school.” A personalised approach and some form of enrichment in every subject was part of the school culture. The commitment to the school vision of personal learning and a commitment to excellence were both emphasised by the gifted and talented coordinator, the surveyed teachers and the students.

In addition, the high performing private school had its own culture. As the gifted and talented coordinator explained, “we have more kids who are able and that has complexities of its own.” As part of the school’s culture of learning and care the gifted and talented coordinator was responsible for “academic needs” of gifted students and their “intellectual stimulation” and she always referred students and concerns to the Dean.

“Multi-levelling” and “diverse learners” were the terms most used in the school rather than acceleration, and gifted and talented, according to the gifted and talented coordinator. “Learning Differences” rather than “Learning Needs” was also the preferred term. She explained that under the strategic plan the school was investigating how to make multi-levelling more effective. As she noted, “I’ve not come across negativity towards multi-levelling by anybody. It’s all around the technicalities,” such as timetabling technicalities and organisational issues, rather than philosophical opposition. There was an openness to discussion and there had been increasing awareness since 2004 in the school and nationally of “raising awareness of diversity.”

Parents' Perceptions of the High School

The school reported in the school magazine on a Stakeholder Survey of the High School family (N=700+) conducted in 2013 through a survey company. It surveyed both the junior and senior school. The topline measure is Overall CVM (a measure of overall perceived value for money) on a scale of 1-10 where 10 is the most positive. A score of 8 or higher is regarded as exceptional. Stakeholders perceived that Teaching and Learning was exceptional in relation to inspiring and dedicated teachers, learning environment, challenging students and educational resources. In the Curriculum area very positive scores were given for flexibility and choice (7.7) and for talented students (7.6). Co-curricular activities ranged from 7.6 to 8.1. Stakeholders also indicated an exceptional level of pastoral care of students and in encouraging excellence in personal and social development. Career education was very positive at 7.8.

Education Review Office Report

The Education Review Office is a government department which provides public reports on the quality of education in all New Zealand schools. The 2009 ERO report affirmed the school's promotion of academic excellence and its development of student potential. It recognised the school's foremost aim was "catering for the diverse abilities, aspirations and interests of students." The report was very positive about the link between teaching and learning and care for students and that there was a "rigorous programme of self-review" including student evaluations.

5.3. Overview: Teachers' Perspectives

Scores for surveys show a range from 1-5: below 2.00 usually indicates a very negative attitude, while above 4.00 indicates a very positive attitude. Scores between 2.75 and 3.25 can be interpreted as reflecting an ambivalent attitude of just negative to just positive.

Gifted and Talented

A sample of teachers were surveyed using Gagné and Nadeau's survey, *Opinions About the Gifted and Their Education* (Gagné, 1991) in relation to their views on the gifted at their school. Three of the six teachers who participated in the survey demonstrated a positive attitude towards the gifted and their education over six factors, with means ranging from 3.60 to 4.54. Two teachers were "ambivalent" as scoring between 2.75 and 3.25 (Gagné and Nadeau's choice of word and range) and one expressed a negative attitude at 2.53.The group score did indicate an overall positive attitude (3.41) across six factors.

In general, the survey respondents recognised that gifted children had needs but too often their needs were ignored in schools. They were very positive (4.83) that gifted students needed special education services and needed special attention if their talents were to be fully developed (4.00). Funding needed to be provided.

Half of the teachers felt that special classes were the best way to meet the needs of gifted students. However, the teachers were divided in their attitude towards ability grouping (3.00). Teachers' opinions were ambivalent as to whether students were often bored in school (3.17) and unsure whether their "intellectual curiosity was stifled by

regular school programmes" (3.00). However, five of the six teachers did not think that gifted students wasted their time in regular classrooms.

Most teachers felt students were not rejected or isolated because they were gifted. Five of the six teachers did not think that giving the gifted special attention resulted in their becoming "vain or egotistical." In addition, half of the teachers (3) did not believe that providing special programmes for gifted students resulted in "elitism." Three teachers did not feel that separating students and other students into gifted and other groups increased the "labelling of children as strong-weak, good-less good." The majority were positive that other students did not feel less valued (3.67). Teachers in this survey did not agree that students who had been identified as gifted had difficulty in making friends. However, they were ambivalent over the suggestion that gifted children were socially rejected because others were envious of them.

Four of the six respondents agreed (1) or partly agreed (3) that teachers in school do feel their authority threatened by gifted children (3.50). Teachers were divided in their opinions about parents' contribution to the talent development of their children. Three of the six did not agree that it was the parents who had the major responsibility to help "talent development."

Acceleration

Overall, teacher attitudes, in Gagné and Nadeau's survey, towards acceleration were positive (3.60). The majority of respondents either partially or totally agreed (4.33) that it was better to be accelerated than to be bored in class. Four of the six teacher responses were favourable to Factor F on acceleration and this was the only factor to have half of the responses with means that were very positive (4.00 and above). However, three

teachers did not think more students should be accelerated beyond the numbers the school currently accelerated and two teachers believed that, academically, students had gaps in their knowledge if they were accelerated. Five of the six teachers were very positive (4.17) that socially, gifted students who were accelerated by skipping a grade, did not "have difficulties in their social adjustment to a group of older students."

Gifted and Talented Students

According to the Gifted and Talented Education Process and Procedures document identification for a gifted and talented register involved teacher observation and nomination (checklist supplied for teachers). Standardised tests such as PAT, MidYis, asTTLe, ICAS and Probe Tests and examination results from NCEA and IB were also included. Peer, self and parent nomination data were also to be used as were psychological tests, if available. The register was updated in term 4 each year and at the end of term 1 for new students. Identification was specifically under the responsibility of the Deans and Heads of Departments, and the register was available to all teachers.

The gifted and talented coordinator explained that currently there were two registers, one for diverse learners and one for the gifted and talented (GATE) students. For the gifted and talented (GATE) register the gifted and talented coordinator selected 15 to 20 students per year level from a schoolwide database which included PAT results and a MidYis test. Information was also obtained from the admissions office material gathered at the beginning of Year 7 and Year 9. She was responsible for gathering the data on students and keeping a record of "how they're tracking and how they're progressing for our registers." However, analysis of that data was carried out by the school.

Her primary responsibility was for gifted and talented students. As she said:

> *That's my area of expertise within the diverse learners' category. So I work with students involved in the identification process and I look after the policies, the processes and procedures for gifted and talented within the context of a personalised learning model.*

In the senior school she kept the Deans informed regarding students and progress and approached individual teachers about students. Students could be identified or referred to the gifted and talented coordinator directly or indirectly. She noted that the school was investigating developing an electronic database with all teachers having access, but "there were concerns regarding student privacy."

Teacher Knowledge of Acceleration

Different teachers' perceptions were expressed in the researcher-constructed survey. Some teachers believed that the school had students who were accelerated, including both students who were gifted and talented and students who had not been identified as gifted and talented. However, the gifted and talented coordinator did not agree. She also did not agree that the school had a policy on acceleration, that it documented procedures on acceleration, or that it maintained longitudinal data on accelerated students. She explained that "policies are being created. Acceleration is accepted practice in some subject areas but it is not widely done. It is done on a case by case basis." Two teachers, in contrast, believed there was a policy on acceleration and one believed that there were documented procedures on acceleration.

Identification Methods

Selection of Gifted and Talented Students, and Students for Acceleration

The school used multiple sources for identification of gifted and talented students and accelerated students. There were slightly more methods used for the identification of gifted and talented students. One survey respondent selected 10 methods for the identification of gifted and talented students and six for the identification of accelerated students. For both accelerated and gifted and talented students, teacher observation or nomination was the most used method, followed by cognitive assessments such as standardised tests, student work and public examination results. There was some knowledge that students could nominate themselves for acceleration (2) or as being gifted and talented (1) and two teachers believed that parents or caregivers could request that students be accelerated or identified as gifted and talented. The school had also used the Raven's Progressive Matrices in the past, but it was now not used according to the gifted and talented coordinator.

One of the interviewed students first knew she had been identified for acceleration when the gifted and talented coordinator approached her because she had been informed she kept finishing work early. Discussion was held with the Deans and her parents regarding proposed courses. In general, she was aware that it was her decision regarding acceleration rather than her parents' decision as the parents had always let her choose regarding her "time and effort." They discussed it with her and made one visit to the school to discuss her proposed acceleration. The student also discussed with the Deans her reasons for wanting to be accelerated. Then it was a question of what could be made possible.

5.4. Acceleration Implementation

Acceleration Forms

Acceleration included some students who were multi-levelled (enrolled in subjects some at chronological year level and some in the year above), some in an accelerate class, some in an ability group within a class, some in a composite class and some accelerated individually. Different forms of acceleration were provided in line with the school's culture of appropriateness for personalised learning.

Year 9

2 students doing Year 11 French

Year 10

4 doing Level 1 Music

1 multi-levelled in 3 subjects – Spanish/Maths/Economics

3 multi-levelled in 2 subjects – Geography/Mathematics

2 multi-levelled into Level 1 History

Year 11

1 student in Year 12 English

1 student in Year 12 Geography and Mathematics

1 student in Year 13 Mathematics with Calculus

The 2013 information was provided by the gifted and talented coordinator. One Year 12 student was accelerated to Year 13 in all her subjects. At Years 9-11 there was one accelerated Mathematics class per level of between 21-24 students. At Year 12 there were six students studying Mathematics with Calculus.

Acceleration was offered in multiple ways in regular teaching practice according to the four teachers who participated in the survey. Pull-out groups were offered only at Years 9 and 10.

Single subject acceleration and scholarship were offered to students before they were in Year 13. Combined classes were available, as were extracurricular programmes. The school also offered correspondence courses and concurrent or dual enrolment and online learning opportunities. Single selection for grade-skipping, radical acceleration, individual or self-paced instruction, and curriculum compacting were all available. In comparison, neither mentoring, telescoping curriculum, or early entry to primary, intermediate or secondary schooling were offered.

Subject Acceleration

The most common subject for acceleration was Mathematics. Most teachers in the survey identified Year 9 and 10 Mathematics and two identified Years 11-13 Mathematics. The interviewed Year 11 students also identified single subject acceleration and one mentioned the possibility of attempting scholarship in Year 12 and studying for IB. The combination of scholarship and IB was also described by the gifted and talented coordinator, with scholarship classes arranged at a different time in the school day. Also some students could "just pick up a new subject" for scholarship, for example Geography.

Curriculum Delivery

Acceleration, Enrichment and Differentiation

The gifted and talented coordinator agreed that some form of enrichment in every subject was part of the culture of the school. This point was also specified in the LC Brochure. There were school-wide procedures and also individual classroom practices. For accelerated learners the four surveyed teachers used acceleration, enrichment and differentiation with less acceleration at Year 13 in their own teaching practice. One teacher who used acceleration, enrichment and differentiation noted "Accelerated students become assimilated into the level of students they have been accelerated to and should be offered enrichment and differentiation etc. just the same as the rest of the class."

One of the interviewed Year 11 students explained there was enrichment in her classes, especially in Science where she was studying "Double Science" at Year 11 (two options). But as she noted:

> *I much prefer acceleration to enrichment because it's a nice word but it's really, you feel almost punished, like you're given extra work and sometimes that means extra homework and having to put in extra time when no one else in the class is and that kind of makes you feel like, a punishment for being smart or for wanting to learn more.*

Design of Students' Courses

The gifted and talented coordinator who had undertaken postgraduate studies in gifted education explained that the school used "the DPI model - differentiate/

personalise/individualise." Consultation with the Deans was important. Four teachers who participated in the survey agreed that the Head of Department designed provisions for the classroom teacher. In addition three teachers identified the subject teacher and the gifted and talented coordinator. The gifted and talented coordinator also believed that the student and teacher together helped design classroom provisions.

Learning took place at the school inside regular classrooms. According to the gifted and talented coordinator (and supported by information in the LC Booklet) "our primary mandate for this place is that we'll first and foremost provide for students within the mainstream classroom programme" although some students could also be withdrawn from class. Acceleration was considered on a case by case basis, with discussion from a number of parties and academic and social and emotional needs were considered. In particular, as pointed out by the gifted and talented coordinator, able students needed to be monitored to prevent them taking on too much and suffering from burnout or stress. Multi-levelling was the school's preferred term.

Timetabling was described as an issue of practicality by the gifted and talented coordinator, as it could affect possibilities for acceleration for the following year. Therefore discussions started in term 3 for the following year. Both the interviewed students agreed there was discussion within the school, and then students made their own decisions, with parental support.

One of the interviewed Year 11 students also identified teachers and timetabling as a problem. She had been accelerated in Mathematics from Year 7 and in English acceleration from Year 10. Acceleration in Economics had been more difficult. She started Economics Year 11 in Year 9 in her Business Studies class, but with the teacher

leaving she worked on by herself. There were timetable problems the following year when she was in Year 10 which were finally solved in Year 11.

The second interviewed Year 11 student who was accelerated to Year 12 in five subjects in mixed ability classes also concurred that timetabling could prevent her taking all the subjects at a "high level" for IB in the following two years. Class numbers she noted could also affect subject acceleration. In some classes the "high level" was a different class from the standard level, but sometimes they occurred in the same class, as in history.

Acceleration and Extracurricular Involvement

Students who were accelerated were able to take part in the extracurricular life of the school regardless of their increased workload. The school offered many opportunities and there was much involvement according to the gifted and talented coordinator, three of the surveyed teachers, the LC Brochure and the school website. Three surveyed teachers also nominated extracurricular activities as an accelerated provision. Both interviewed accelerated students managed their learning and participated in many extracurricular activities such as Theatre Sports, Philosophy Club, Debating, Concert Bands and Jazz groups. One student also went to the gym five times a week, and Pilates after school twice a week. The second student, who was a boarder, undertook most of her extracurricular activities at school, except for Karate.

Pathways

One Year 11 student spoke of her academic pathway. She was 95% sure it was to be IB in the following year, instead of NCEA Level 3 and entering University a year earlier or

taking different subjects for NCEA Level 3. She explained, “I like school” and “it’s my comfort zone.” By selecting the IB course it would allow her have a broad range of subjects leaving all her pathways for a future career open. She would not have to drop any subjects as she would have to if she continued on the NCEA Level 3 pathway.

5.5. School Provisions and Practices: Support

Support for Students

Support: School Personnel

The role of the gifted and talented coordinator was the most significant according to the surveyed teachers, since it provided academic, social and emotional, and cultural support for gifted and talented students. The subject teacher also provided some support across all three categories.

The gifted and talented coordinator interviewed students on the GATE list in Years 9 and 10 about academic, social and emotional issues, as she felt that was where “the wheels fall off.” She found most of the issues that arose were subject based. She would then approach the head of that faculty, regarding students who felt unchallenged, and ask for more differentiation. These requests were well received. In term 3 she also spoke to the Year 9s about the gifted and talented register, informed them of her role and discussed the possibility of multi-levelling. She also worked individually with some students.

Social and emotional support was provided mostly by the tutor teacher and the school counsellor, and the gifted and talented coordinator, according to the surveyed teachers. There was some cultural support personnel identified.

One of the interviewed students felt she had “heaps of support” from the gifted and talented coordinator, her dean, her friends and her form teacher. She was also supported by the Year 12 IB girls whom she had known from her Level 1 studies, by mutual friends and by mutual activities such as music bands or Brain Bee. Her closest friends were at Year 11 but her biggest group of friends were at Year 12 which was the level to which she has been accelerated academically. She felt that other students were accepting of students who were accelerated and if terms like smart, gifted or accelerated, tall poppy, geek or nerd were used it was “usually meant in a nice way.” She was also supported by her parents in her academic choices of subjects, and in their support transporting her to extracurricular events or activities.

Support: School Systems

The school also provided support through its practices and provisions. Three teacher survey participants agreed that the school provided a combination of individual interviews, education plans and subject counselling for the academic needs of gifted and talented students, and pastoral care for the social and emotional needs of students. Most support was centered around academic needs of students.

5.6. School Provisions and Practices: Evaluation

School Systems of Evaluation

Knowledge of the school's evaluation provisions for gifted and talented students was limited. In particular, two teachers were unaware of the review processes at the school. One teacher indicated the school provided evaluations of examinations, test results, and competitions, staff and parent evaluations and an external evaluation. The gifted and talented coordinator noted that school provisions were "reviewed each year as part of departmental review."

Three teacher survey respondents evaluated their practice for gifted and talented students using teacher and student discussion and they evaluated student examination and test results. Two teachers used teacher written evaluation, student oral and written evaluations and external evaluation. One teacher used class evaluation, and another parent evaluation. They also knew accelerated students were consulted through student evaluations (3). There was some knowledge of departmental evaluations (2), and consultation with teachers and parents or caregivers (1).

Other evaluations, as identified by the gifted and talented coordinator, were the evaluation of PD sessions, student evaluations of the gifted and talented coordinator's teaching subject which was Thinking, and her role as gifted and talented coordinator in the school.

Acceleration was evaluated in the school by an analysis of the achievement data and discussion by the person with academic responsibility in the school and by the gifted and talented coordinator. This was reassessed each year after consideration of whether the students were "coping" or not. The coordinator had specific responsibility for only "some of the accelerated students," those that were on the GATE register.

Achievement Data

The school's results in New Zealand Scholarship and the International Baccalaureate are consistently outstanding. (The International Baccalaureate is of a high academic standard and is regarded as an accelerate provision in some countries including the United States and it enables students to gain university credits.) Year 12 students also gain scholarships at the school. For example, as reported in 2014 results, there were six scholarships and one was at Outstanding level.

At this school the emphasis was on the individual learner. Courses can be fully or partially accelerated, with some students being offered one or more standards depending on their area of expertise.

There were more individual subject endorsements for accelerated students at NCEA Levels 2 and 3 than full course endorsements. In 2012 three endorsed NCEA Level 2 certificates, were gained by accelerated students who were studying above their year level. An endorsement can be gained from as few as two or three subjects (subject acceleration), or a full year's course (grade-skipped) to gain the required number of credits for endorsement. Most students who were accelerated at Levels 2 and 3 gained subject endorsements which meant they had gained at least 14 credits at Merit or Excellence, of which three had to be from an external standard.

Accelerated results were recorded in a number of subjects, with the most common being Mathematics. For example over twenty Year 11 students were entered a year ahead in Level 2 Mathematics, usually a Year 12 subject. Other subjects included History and Geography. The majority of students were awarded subject endorsement certificates.

Over 85% of those eligible gained Merit and Excellence endorsements and most were at Excellence.

However, NCEA results do not reflect the whole extent of acceleration nor other positive outcomes such as providing motivation, challenge and stimulation.

Evaluation of Provisions: Participants' Perspectives

Teacher Perceptions

In general, the four surveyed teachers were satisfied that the school's provisions for meeting the academic, social and emotional and cultural needs of gifted and talented students were effective. Three of the four teachers agreed, or strongly agreed, for Years 9, 10, 12 and 13 and all agreed for Year 11. One teacher disagreed that the needs were met at Years 9 and 10.

When teachers were asked how they felt they met the needs of the gifted and talented students in their own classes, three teachers provided a range of responses for academic needs from "Disagree" to "Neutral" to "Strongly Agree." They felt the social and emotional needs of students were mainly met but were neutral regarding cultural needs.

Three teachers agreed that Years 11 and Years 13 were the most successful in meeting their academic needs. However, one teacher did not agree that provisions at Years 9 and 10 were meeting academic needs. When the teachers offered their perceptions of acceleration meeting the academic needs of all accelerated learners the overall impression was of ambivalence.

There was a difference shown in teachers' perceptions of the effectiveness of the school at acceleration with gifted and talented learners and with all accelerated learners. In general, it was believed that the school catered for accelerated gifted and talented students more successfully in the senior classes of Years 11-13. Social and emotional needs were met for Years 12 and 13 students in both accelerated and gifted and talented learners.

Respondents were asked how satisfied they were that accelerated students in their classes had their academic, social and emotional and cultural needs met. One respondent noted that meeting academic needs was "incredibly complex and has not been monitored over a significant period of time to track the effects."

Student Perspectives

Both Year 11 gifted and talented students who had been accelerated were positive about their school journey. The Year 11 student, who was accelerated in three subjects, was very positive about acceleration, "I'm very happy." She believed that there was school support from the gifted and talented coordinator, the Deans and the Career Counsellor. She felt supported by her parents, her boarding and school peers. The other Year 11 students who was accelerated in five subjects believed that luck and hard work had contributed to her success. She also felt supported academically, socially and emotionally. She was confident about her future years at the school, especially with the IB programme. "I'm just excited, I'm just, I don't want to leave school" because she would have to make decisions about her future.

Academically, the student accelerated in three subjects was not bored during the school day. However, she would have liked to have had more acceleration at the beginning of

Year 9 in Economics and English. At the same time she also enjoyed, “if the student can stand it,” having an easy subject in mixed ability subjects at the current year level while being accelerated in other subjects. At school she knew that to meet one’s needs a student needed to “let it be known if you want more work, if you want to be challenged.”

The Year 11 student who was accelerated in five subjects spoke of her academic progress. In the current year she was gaining excellences in all subjects. Her performance was also confirmed by the gifted and talented coordinator. As the only Year 11 student accelerated in Economics she was getting top marks in Year 12 “which annoys the Year 12 girls quite a bit.” At the same time she acknowledged that the school’s academic culture was that merit and excellence were expected at the school and “if you don’t get excellence you don’t stay in a class.” However, she believed there was insufficient understanding by other students of what to do if they wanted to be multi-levelled. She had been awarded a scholarship and started at the school in Year 9. She did not feel challenged and indicated that at subject selection time for the following year, changing schools for Year 10 was a possibility. She reported that she was asked what could the school do for her that could make her stay. For Year 11, she chose acceleration in some subjects and more in-depth study in others after consultation with her parents and then the school. Her parents supported her decisions even when there were some reservations regarding what they described as difficult subjects, for example, Physics.

Socially and emotionally the student accelerated in three subjects was also very positive about her school, her workload and “I definitely have a life.” She also spent time out with other boarders during the week including her best friend who was a boarder. She

herself was a weekly boarder and did not normally have to do much work at weekends. She believed that she was able to connect more with Year 12 and 13 students because she was studying a year ahead, not just because she was a boarder. She had high self-esteem in that whatever the future held she believed she was going to be "successful." She was a boarder and summarised her satisfaction in this way: "I get to live with my best friend, I have wonderful parents, my classes are really going well in the work."

5.7. Summary

This chapter has offered a detailed focus on school-wide provisions for gifted students through the perceptions of the surveyed teachers, the gifted and talented coordinator and the interviewed students at Challenge High School. The main focus of the school was on personalising learning to meet students' needs. Acceleration was offered to some students in individual subjects and there were some accelerated classes, especially of Year 10 students.

Chapter 6: Case Study Two

Discovery High School (School D)

6.1. Introduction

Discovery High School (School D) was a decile 6, medium-sized secondary school for girls, Years 7-15, in a university city. It was a state-integrated school with Special Character. It had a teaching staff head count number of 65. Seventeen teachers answered the *Opinions About the Gifted and Their Education* survey by Gagné and Nadeau (Gagné, 1991). In the school, researcher-constructed survey responses were received from 15 teachers, nine students, four parents or caregivers. The 15 teacher respondents to the teacher survey included classroom teachers, heads of departments and teachers in charge of subjects, the gifted and talented coordinator and a member of the senior management team. Individual interviews were conducted with a member of the senior management team, four heads of department and the gifted and talented coordinator. There were two student focus groups of three and five participants respectively.

6.2. School Philosophy

The school formally explained its philosophy in its documents. The Special Character was part of the Catholic tradition and the Christian values and values that the school espoused. It was required to be "maintained and enhanced" in relation to the school's gifted and talented policy. In addition, according to the School Teacher Handbook on gifted students, the school's Special Character "was also integral to the pastoral care

programme of the College." The School Charter 2012-2014 included the aims of meeting the needs of students through a "culture of excellence" and the "achievement of potential" within the Catholic tradition of the College.

The Special Character was identified in both the student group interviews as being important, especially for the social and emotional well-being of the students. One of the students noted that the Catholic tradition of Special Character of the College helped socially and emotionally, "because when we go on a retreat and things like that ...it helps bring up that we are a big family we are not there just to solely do work." Other students felt it built something special, with prayers before class, masses, special feast days and retreats.

The Charter specifically addressed gifted students and acceleration in the strategic intentions for 2012. Programmes were to be provided for "gifted and academically challenged students" with the intention of establishing "the expectation that all top classes have an accelerate programme in place and inform parents." The Charter also emphasised the importance of reviewing "gifted and academically challenged programmes to ensure that accelerate classes have the opportunity to study at multi-levels" and consultation with students, parents and the pastoral team regarding monitoring students' specific learning needs. The Deputy Principal (DP) Curriculum acknowledged the culture of multi-level education and noted that, "we have a mandate within the college to have girls working at whatever level is suitable for them." This culture was confirmed by students, teachers and parents and caregivers.

As part of its school philosophy as specified in the School Charter the school was to provide a wide range of co-curricular activities which would "contribute meaningfully

to a holistic educational experience." This was known and understood by students. They also explained that the school encouraged extracurricular involvement, especially to develop leadership qualities in Year 13.

The Charter also pointed out to the need to cater for Māori and Pasifika students. This culturally diverse school was recognised in the ERO 2014 report as effectively promoting educational success for Māori, as Māori (12% of student population) and was continuing to focus on raising Pasifika achievement. The DP Curriculum noted that the school understood giftedness in a broad way. As she explained, Pasifika giftedness was recognised especially in song and dance and the arts, and Indian students had a culture of academic achievement. "We have to provide opportunities for both of those sets of girls to excel and to celebrate their differences and just, you know, see other people's ways of life" amongst the 53 different cultures represented at the school. Advice was offered in the Teachers Handbook on Gifted and Talented on how to adapt programmes to cater for cultural giftedness. For example: "Group giftedness is an important part of Māori culture and group activities should form a large part of the Māori syllabus." Teachers were also advised to encourage student participation in wider community cultural days and competitions.

Teacher professional development was well aligned to the school strategic plan and vision, according to the ERO 2014 report and the gifted and talented school policy had indicated it was to be "ongoing" as did the teacher handbook. Most teachers in the teacher survey indicated they had had some professional development, but in most cases it was limited on gifted and talented and acceleration. Some professional development was individually based. For example, the gifted and talented coordinator had completed some relevant university papers and worked with a gifted and talented adviser and

another teacher had attended a gifted course. Some in-school professional development occurred through staff meetings. The gifted and talented coordinator explained that she had run a Professional Learning Group (PLG) in the past, but they were not ongoing, as the current school focus for professional development was the use of achievement data.

The ERO report 2009 reported on a clear focus on student achievement within a supportive learning environment which was underpinned by the school's Special Character. ERO also reported in 2014 that the school Christian values were embedded in school life and "create a sense of unity, connectedness and belonging" and these values underpin the school's academically-focused curriculum. They confirmed that teachers knew their students. The Special Character and its effect on school climate was specifically identified by the Deputy Principal in charge of curriculum:

> *One of the things that we've actively tried to encourage over the years is a sense of community and a sense of worth of others, and so coupled with that is self-worth. And so we try and celebrate achievements of all sorts of people and celebrate differences.*

Defining gifted students as "those who excel, or have the potential to excel, in any ability area/areas compared to others of similar age, background and experience" the school emphasised in its policy that it could include those from minority groups and those with disabilities, and it was not "confined by language nor limited to high intellect."

Most teachers also knew the school had the following for gifted and talented education: a coordinator, a written policy, identification procedures, a register, guidelines for

identifying and working with gifted students at risk (e.g., underachievers, Māori). But only one teacher believed there was a committee.

The definition provided for acceleration within the teacher handbook on gifted and talented education informed teachers: " 'Acceleration implies moving faster through academic content, which typically includes offering standard curriculum at a younger than usual age' Davis and Rimm (2003), p 105."

Multi-levelled courses were embedded and accepted in the school to the extent that some students did not realise they had been studying at an accelerated level, according to the gifted and talented coordinator. Students who were interviewed were not aware how some of the others in the focus group were involved in accelerated courses until it was discussed in the interview. As one student, in particular, pointed out, at their school, "it's kind of like mixed so you get to see people of all different stages so you don't get singled out as being smart."

Most of the eight students in the focus group interviews and nine in the student surveys reported positive experiences of being categorised as gifted and talented and also of being accelerated. They had friends and were socially comfortable in the school with multi-levelled learning. As one student explained, "I think our school is pretty good in establishing cross-year level friendships." In general, as expressed in the interviews, students felt that school met their learning needs and they were accepted by their peers as being able to do whatever they would like to do. They still felt they were individuals and they were seen as individuals who were reasonably intelligent. They believed that this was part of their school culture.

Acceleration was one aspect of the school provisions for gifted and talented students. The 2009 Educational Review Office (ERO) Report recognised that the school was effective in that its "programmes for gifted students are well managed." The report also noted that data were used to provide well co-ordinated programmes for a range of learning needs including GATE students.

6.3. Overview Teachers' Perspectives

Scores for surveys show a range from 1-5: below 2.00 usually indicates a very negative attitude, while above 4.00 indicates a very positive attitude. Scores between 2.75 and 3.25 can be interpreted as reflecting an ambivalent attitude of just negative to just positive.

Gifted and Talented

Of the 13 fully completed responses to the survey *Opinions About the Gifted and Their Education* by Gagné and Nadeau (Gagné, 1991) only one response represented a very positive attitude towards the gifted and their education at the school. Teacher respondents were not asked to indicate their roles in the school. Three revealed a positive attitude (over 3.25) and seven recorded an ambivalent attitude (2.75 to 3.25). Two respondents showed a negative attitude. The group score suggested an ambivalent attitude within the school (combined mean of 3.16 [SD 0.44]).

Teachers were positive (3.68) that gifted students had needs and support to meet these needs was required, including funding. Teachers were "ambivalent" about academic provisions of ability grouping (2.92) and acceleration (2.85). They disagreed that gifted students were isolated by others in their immediate environment.

Teachers felt most strongly (4.46) that special education services should be offered to gifted children including funding. They agreed that special attention was needed to develop the talents of gifted children (3.69). However, nine out of 13 teachers believed (3.38) that it was the parents who had the major responsibility to help develop children's talents. "Major responsibility" was not the school's responsibility. Teachers believed that in school the needs of gifted students were too often ignored (3.85) and they did not agree that the gifted were always favoured in our schools (2.54).

Teachers felt gifted students were often bored in school (3.85) but most teachers were moderately positive (3.46) that creating special classes (for example ability classes or accelerate classes) for gifted students met the needs of gifted students. However, there appeared to be a contradiction in that they also believed, in general (3.31), that gifted students should remain in regular classes on the basis that they academically stimulate others. They were also not certain as to whether being in a regular class meant they were wasting their time or whether their intellectual curiosity was stifled by the regular school programme.

Eight teachers (61.54%) felt that special programmes for the gifted created elitism (3.15). At the same time they were not certain (2.92) that with special attention the gifted would become "vain and egotistical." They had mixed views as to whether other people rejected gifted students because they envied them (2.85). As a group the teachers did not agree that gifted students had more difficulty making friends. Teachers also expressed a concern about creating special classes because of the repercussions on other students.

Acceleration

The concept of acceleration in Gagné and Nadeau's survey provided the second to lowest mean (2.85) of all the factors and demonstrated an ambivalent attitude by teachers. The most important concern teachers expressed was in relation to parents pressuring students' acceleration by skipping a grade (3.54).

The majority of teachers were positive that it was better for a student to be accelerated by skipping a grade than to waste time in class. Six teachers (46.15%) did not want any more gifted students to be accelerated, and three were undecided. Nearly half of the respondents (46.15%) had concerns that gifted students would have gaps in their knowledge if they were accelerated, and three were undecided. Teachers also expressed some concern with acceleration as an intervention for gifted students because it affected their social relations with older students.

In the researcher-constructed teacher surveys most teacher respondents knew that the school accelerated students who are gifted and talented and also students who are not identified as gifted and talented. However, only some teachers believed there was a school policy on acceleration, documented procedures on acceleration and longitudinal data on accelerated students.

Identification Methods

Gifted students, as stated in the policy, were to be the responsibility of the gifted and talented coordinator and a key team. Identification of gifted and talented was by multiple methods. Formal identification procedures and practices were used, but in addition programmes could be adapted to student choice, and timetabling could be altered to fit option choices. These decisions were made by the principal, the dean, and the subject teacher.

The gifted and talented coordinator explained the identification procedures for the Talent Pool at each year level (although the use of the term "Talent Pool" was only used by the gifted and talented coordinator). Students were identified each year and the register updated. Students were then monitored, "constantly throughout the years" (personal communication, 1 May 2012), with anecdotal comments added each year on "things that need to be followed up on." Identification procedures included entrance literacy and numeracy tests, Raven's Progressive Matrices, asTTle (Assessment Tools for Teaching and Learning) and PATs, and NCEA excellence endorsements. There were also teacher nominations according to areas of student ability such as number and Science, literacy, physical, creative and leadership. The literacy coordinator and the gifted and talented coordinator kept staff informed of which students needed to be monitored and challenged.

Typically, identification of a student for acceleration was by teachers and was made through multiple methods. However, a student could ask to be accelerated.

Identification: Teacher Perspectives

From the teacher survey responses it was found that there was an emphasis on teacher observation or nomination, standardised tests, Raven's Progressive Matrices and competitions for the identification of gifted and talented students. Public examination results were important for acceleration. Self-nomination and peer nomination were not used for either forms of identification. Whanau identification was only used for gifted and talented.

Identification: Parent Perspectives

The three parents or caregivers who responded to the survey were also aware of multiple method identification. They all selected teacher observation or nomination for gifted and talented and acceleration identification. Other methods were selected including teacher rating scales or checklist. The Year 13 student's parent or caregiver selected most categories (4) and also identified standardised tests (e.g., PAT, CEM) and public examination results.

Identification: Student Perspectives

For acceleration seven out of eight students in the student survey identified teacher observation or nomination as the most common and the next highest ranking was the identification of public examination results and student work, each by three students. Students had more knowledge of identification procedures for gifted and talented. Most selected teacher observation or nomination, and the majority also nominated teacher rating scales or checklists, standardised tests, student work and competitions. Entrance test results and examination results were also confirmed in the student focus groups. They knew the school used the NCEA Level 1 endorsed results, "If we got excellence they assume that we're pretty smart," and were hence identified as gifted and talented, if they had not already been so.

6.4. Acceleration Implementation

Curriculum Delivery

Acceleration, Enrichment and Differentiation

Individual learning programmes that used acceleration, enrichment and differentiation were noted in the school policy, and differentiation and acceleration were encouraged in the gifted and talented policy and the teacher handbook. Eleven of the twelve surveyed teachers knew that the school used acceleration, enrichment and differentiation, and they also knew that acceleration was combined with enrichment.

Six out of eight teachers in the teachers' survey responded that in their own practice they used enrichment with acceleration. Five teachers used all three: acceleration, enrichment and differentiation and all of them had indicated that they taught accelerated learners. Three of these explained further:

> *I prefer a combination of approaches as this broadens students' opportunities allowing them choice and encourages decision-making skills. (Languages teacher)*

> *I tend to use mainly the following: differentiation, students can work at tasks at their own pace, tasks are varied according to ability. Students are accelerated through the level by compacting the curriculum. (Art teacher)*

> *Technology allows students to work at their own pace. Our topics often lead to enrichment where student interest is developed in a practical way. We also have multi-level classes at senior level where students are assessed at the appropriate level. (Technology teacher)*

Two teachers who did not use acceleration, provided enrichment and differentiation. As they noted:

Enrichment tasks that involve research and presentation or comparison with another text allow the student to have fun with learning and make deeper connections between texts and their own experiences. (English teacher)

I prefer enrichment to acceleration as it allows students to develop deeper and broader understanding. Acceleration may not promote this and students sometimes end up with superficial knowledge and understanding. (Mathematics teacher)

Only two of the teacher respondents used acceleration, enrichment and differentiation at Years 9 and 10.

Enrichment opportunities for gifted and accelerated students also included competitions and extracurricular after-school programmes. For example, the [named] Programme which was designed to challenge gifted students in Science and English for Years 7-10, run by subject experts either from the school or outside the school, was available one afternoon each per week.

The parents or caregivers of the two Year 11 students were in agreement that acceleration and enrichment were used for accelerated learners. Three students knew about the use of acceleration, enrichment and differentiation in their school. Six of the nine students selected acceleration and one, or both of, differentiation and enrichment. The most common opportunities students identified were competitions and two Year 11 students gave acceleration and enrichment as both occurring within that opportunity. One Year 11 student was accelerated by an individualised programme, full and part-

time special classes and by her mentor and one Year 13 student felt she was being enriched and was accelerated in ability grouping.

Acceleration Programmes: Design

Integral to acceleration in the senior school, as identified by teachers who were interviewed, was the role of the Deputy Principal (DP) curriculum who had an overview of teaching and learning and subjects within the school because of her knowledge of NCEA and the working of the timetable. She also facilitated acceleration by dual enrolment with the university. One student was studying Theology and through the Correspondence School some were studying Spanish and Māori. The school also worked with the neighbouring boys' school at Year 13 to offer appropriate courses to meet student need.

Acceleration was by student choice, when timetabling allowed. A flexible approach to the timetable was in place which made acceleration possible. For example, one Year 12 student was enrolled in the Year 13 Photography class taking Level 2 Photography because of option clash. Some subjects had a scholarship class on at a different time from the Level 3 course so that students who had been accelerated and completed the Level 3 courses could also sit scholarship as a new course in the following year. As the gifted and talented coordinator noted about the timetable–they "wiggle it," with the approval of the DP curriculum, and this flexibility was also confirmed by two HODs and students in their interviews.

Seven out of eight teachers in the teachers' survey nominated the teacher as the most important designer of learning provisions for the classroom. Four of the responses also indicated that students and teacher together, the gifted and talented coordinator and the

head of department also designed provisions for the classroom. One teacher also indicated, in her interview, that students worked with the teacher to determine which Level 2 standards and Level 3 standards could work together in a compacted course. Two Year 11 students stated they had been also been involved in planning their courses with the teacher.

Six out of the nine surveyed teachers believed that students could be withdrawn or included in accelerated provisions at any time during the year. This indicated a flexibility of approach to acceleration and meeting student needs. Ultimately it was student choice as the gifted and talented coordinator noted: "It is up to them as to whether they want to keep on being accelerated."

Acceleration Forms

Most of the teachers and students in the survey viewed subject acceleration as the most usual form of acceleration. Combined classes and extracurricular courses were also prominent for both teachers and students. Half of the teachers also put emphasis on correspondence courses and mentoring while half of the students selected individual or self-paced instruction. Students showed more knowledge of online learning opportunities.

Subject Acceleration

The most common subjects accelerated were Mathematics, Science and Art but other subjects were also offered. For example, Year 12 students studying at Year 13 were accelerated individually in a range of subjects including Art, Technology, Mathematics, Drama, Art History, and History. Religious Education and Theology were specified at

Year 13 as concurrent or dual enrolment. Because acceleration was catered for on an individual needs based system individual teachers were not familiar with all subjects being studied.

Accelerate Class

The gifted and talented coordinator provided information about the accelerate class in Year 9 and Year 10, each of approximately 20 students. Identification was based on literacy and numeracy (student testing) and position in that class was based on teacher selection. Talent Pool information was used. The coordinator emphasised that she would prefer two classes; one focussed on literacy and one on numeracy because some students missed out since they were not good in both areas. In the junior secondary school, Years 9 and 10, one or two top classes were referred to as "accelerated" classes. In these classes in some subjects, for example Mathematics and Science, the teaching was at a "higher level" as explained by the gifted and talented coordinator and students in the student interviews. Some students were accelerated, after discussion with the subject teacher and student, to sit the NCEA standards at Level 1 and they worked in ability groupings inside the class.

The gifted and talented coordinator believed assignment of teachers for these classes was important. "Teachers of those classes are ones that fully understand acceleration and enrichment." Three teachers and two students in the surveys also said teacher selection was important academically.

Grade-Skipping

Grade-skipping was rare, once every two years or so, according to the gifted and talented coordinator. However, one surveyed Year 11 student had been accelerated by skipping a grade in all subjects on the basis that she had come first in the entrance tests.

Cluster Grouping

The gifted and talented coordinator noted that within the accelerate Year 10 class some students had been accelerated as a group in Science. Four teachers and five students in the surveys also identified ability groups within the regular classroom.

Compacted Curriculum

In Art the subject leader had compacted the curriculum at Level 2 so students could gain excellences at Level 2 and Level 3, with the course designed in consultation with students. She had originally accelerated Level 2 students to Level 3 Art but students said they were missing out on the Level 2 excellences. In Year 13 if a student had been accelerated in some standards in Year 12 when they had finished the Level 3 Art course they were given time to go and work on their other subjects especially the sciences. This was the same pattern with technology.

Concurrent or dual enrolment

Students had been enrolled in English and in Religious Education in University papers. Currently one student was enrolled in Theology. The gifted and talented coordinator was investigating more dual enrolment with a University as some students at the school had been accelerated in three subjects prior to Year 13. However, socially and emotionally, she personally did not endorse GATE students going to University a year early because of a lack of maturity.

Acceleration Delivery Methods: Teacher Perceptions

Acceleration of students either individually or in a group were the methods most favoured by teachers.

Teachers were further asked about acceleration methods at different year levels. The gifted and talented coordinator indicated that all methods occurred across Years 9-13: individually, in a cluster group inside the regular classroom, both individually and in a group, as an accelerate class and in a pull-out group. However, the surveyed teachers emphasised the provision of an accelerate class at Years 9 and 10 as the most often used form of acceleration.

Teachers in the interviews specified that they used individual acceleration. Drama accelerated individually. The Music teacher accelerated individually and through school performances. She accelerated from Year 9 to Year 11 Level 1, "If they are mature yes, if they are good definitely." With music she tended to repeat the Level 1, "because I think it's not just technical things they need with music. It's as you mature you have experienced more things therefore the sound actually matures and you have more musicians, you have better musicians." However, she had accelerated one student from Year 10 to Level 2. She used competitions to extend students, and students were involved in NZ Chamber Music Concert Band and Jazz Band and often worked with the nearby Boys' College.

The Head of Department (HOD) technology in her subject had multi-level senior classes and used differentiation. Her subject also accelerated and enriched, depending on the individual. The choice of the same topic for the year across all levels facilitated the acceleration of students, for example the topic for 2012 was "fitness." Acceleration was

based on individual need. For example, one student was accelerated in Materials to Level 3 and "loving it," and one student had been accelerated because of the option lines. In ICT the highest achieving Level 3 student had a mentor in web design and had a real client (not just parents).

Acceleration Delivery Methods: Student Perceptions

Six of the eight surveyed students' experiences of acceleration had been individually, and also in a group. Only three had been in an accelerate class. Students did not necessarily use terms such as accelerate classes, but those in the interviews were all aware they had been taught slightly above their age level in Years 7-10 and there were "top classes" or "streamed classes" where acceleration could occur. These students were aware that in the streamed classes up to Year 10 the student had to be good at both English and Maths (literacy and numeracy).

Three of the students had maintained Mathematics acceleration in the senior school. They were streamed in Years 9 and 10 and learned Level 1 work. From their Year 10 class about three-quarters were enrolled in Level 1 assessments. Many then went on to Level 2 according to the students and some onto Level 3 in the subsequent year. In 2012 four of the Year 12 students in one focus group interview were studying Level 3 Mathematics with Statistics and one was studying Level 3 Mathematics with Calculus.

Students confirmed that acceleration could occur by student request. There was also discussion with staff who knew the students and their interests and ability. For example, one Year 12 student asked to be accelerated as she was interested in specific subjects. She asked to do Classics at Level 3 and was enrolled to study Spanish through the

Correspondence School. She also wanted to do Art History Level 2 but the school moved her to Level 3 because "they knew her."

The students knew that acceleration depended on the discretion of the Head of Department, the Principal, the Deans, the teacher, and the class, and decision was made on a case by case basis. They also knew that sometimes acceleration just happened. Because of combined classes "just being there" students could end up doing Level 3 and Level 2 at the same time, as, for example, in Photography. However, the Principal had the final say in the design of programmes or courses and some ran one year and not others.

Acceleration Delivery Methods: Parent Perceptions

Parents or caregivers also agreed that students were mainly accelerated in single subjects. However, one of the Year 11 daughters had also been accelerated across all subjects. The Year 13 daughter had been accelerated in Physical Education in a pull-out group. The two Year 11 daughters had been accelerated in Mathematics: one in pull-out groups in Years 10 and 11, and the other student had experienced acceleration individually, in a group and in a pull-out group and had been accelerated in Mathematics in Years 10 and 11 and Science in Year 11.

6.5. School Provisions and Practices: Support

Support: Personnel

The gifted and talented coordinator had responsibility for the gifted and talented programmes as specified in the gifted and education policy which was approved by the Board of Trustees. The coordinator worked with the literacy coordinator, the after-

school special programme tutors, the DP in charge of curriculum and the principal. She also maintained informal contact with students: "I don't interview them, they know me, I talk to them. I'll often just go to them and say, 'how's your Maths today' or something."

While the students in the interviews saw the role of the gifted and talented coordinator "as more of an Art teacher," the students in the surveys rated her as providing the most academic support (7). The subject teacher (5) was rated next highly. The interviewed students also believed that academic support was given by the deans who also kept an eye on their other subjects. Two teachers and two parent or caregivers identified the principal as providing support, however, none of the students nominated the principal.

Teachers in their survey identified a number of personnel who supported gifted and talented students socially and emotionally. The form or tutor group teacher was the most favoured and next in order were the counsellor, the gifted and talented coordinator, parents and caregivers, and a mentor.

One of the students in the interviews noted, "most people are quite supportive of us – students and teachers." However, the students in the interviews favoured the parents and gifted and talented coordinator as providing social and emotional support.

The students in the interviews knew the school counsellor could provide support as did the gifted and talented coordinator. Two students in the surveys received support from two additional personnel sources. One student had had support from the two Deputy Principals, one in charge of curriculum and one in charge of pastoral care. One Year 13 student named the adviser in gifted and talented education.

The three parents or caregivers described themselves as all providing social and emotional support and one also nominated the subject teacher and the school counsellor.

There was some cultural support at the school. Students who identified cultural support believed it was provided especially through the pastoral system and through parent and student consultation for individuals and classes. However, teachers felt there was little cultural support and no cultural support was identified by the parents or caregivers. They also identified a tutor group or homeroom teacher, another subject teacher, and the gifted and talented coordinator.

Support Systems

According to teachers the two most used methods of academic support were career counselling and individual education plans (IEPs).

However, in the student and parent survey the two most significant named items for academic support were career and subject counselling and parent or caregiver consultation for individuals. One student noted that "there might be IEP plans in place, but I am not aware of them (we are made to set goals though)." For four teachers and three students, pastoral care provided the most social and emotional support for students.

6.6. School Provisions and Practices: Evaluation

School Systems of Evaluation

According to the School Gifted Education Policy an annual review evaluated how effective the gifted and talented programme was at meeting "student needs." Indeed, the

evaluation of programmes for gifted students was set as a strategic intention in the School Charter for 2013. According to the Teacher Handbook on Gifted Students "Constant evaluation and up-dating of records, data, strategies, resources, knowledge and understanding" took place. The teacher surveys indicated evaluation processes did take place.

Teacher Perceptions

The school evaluated acceleration provision principally through NZQA results, also through competitions and department evaluations. Evaluations of university results, teacher evaluations, student evaluation, and senior leadership team evaluations also took place. The gifted and talented coordinator pointed out, "We don't have an evaluation process in our school for evaluating by class. However, subject leaders are expected to comment on provision for GATE students in their schemes and annual reports." She herself reported to the principal at regular intervals during the year and discussed students' progress. The gifted and talented coordinator said she did not, in general, interview GATE students but did some informal and formal monitoring and evaluation and held parent meetings in term 2 after identification had been completed. She felt there was ongoing evaluation of achievement results and wrote to teachers during the year enquiring about student progress. The Deputy Principal in charge of curriculum also referred to what she thought was a culture of evaluation which was in the school.

Eight of the ten surveyed teachers used multiple methods of evaluation in their own practice. Teacher and student discussion were deemed as the most effective in their own practice and five identified three provisions: teacher written evaluation, student oral

evaluation and evaluations of student examination and test results. Two used parent evaluations.

Student Perceptions

Three students had been involved with individual student evaluation of their learning. Subject counselling was also identified by three students. There was limited formal interaction with the gifted and talented coordinator and limited meetings for students and parents or caregivers. However, one Year 13 student indicated there had been a student meeting when she was in Year 10, a Year 11 student confirmed there had been a parent and student meeting in Years 9-11. Students did know that teachers used multiple methods for the identification of gifted and talented and accelerated students.

One of the parents and caregivers noted that she had used some evaluation by "monitoring and open discussions" with her daughter. The three parents did not indicate any other form of evaluation apart from their knowledge of some of the identification measures based on achievement data.

Achievement Data

The 2014 ERO report acknowledged the school used student achievement data for the identification and provisions for able students and this showed a commitment to high expectations for their progress and achievement. Longitudinal achievement results from the gifted Talent Pool information for the 2012 Year 13 students (N=27), the year of the study, were provided by the school. Five students had single level NCEA Certificate Endorsements with Excellence (four at Level 1) and nine students had been endorsed with Excellence at Levels 1 and 2.

NCEA Level 1

In 2012 over 70 standards at NCEA were entered by students below Year 11. For the accelerated students two subjects, Science and Spanish, offered a full course of at least 14 credits where one was an external. In the Science course for students below Year 11 there were five standards recorded, and 33.4% (10) students gained Merit or Excellence subject endorsements.

Students were also entered in individual standards. For example 12 Year 10 students entered in two standards in a Level 1 Accounting/Economics course. In English 30 students below Year 11 entered one standard and 70% gained either Merit or Excellence.

More acceleration took place at Level 3 than at Level 2. The Year 12 results showed that subject acceleration led to achievement and academic success for students with almost half gaining endorsements, mostly at Merit level. All students who were entered in an accelerated course, including a Year 11 student in a Level 3 course, gained 14 or more credits at achieved or better. There were individual results in a range of subjects, and multiple entries in Mathematics with Calculus and Mathematics with Statistics. The top grade of Excellence in Calculus at Level 3 was gained by a Year 12 student, and Year 12 students also gained one of the three Excellences in Level 3 History, and the top Merit grade in Level 3 Materials Technology. A Year 11 student gained Merit at Level 3 in Japanese.

Three different ethnicities (in addition to New Zealand European) could be identified in the subject endorsements statistics. In particular for the two accelerated Māori students, one Year 11 student gained a subject endorsement with Merit at Level 2 and one Year

12 gained a subject endorsement with Merit at Level 3. One Pasifika Year 11 student gained 14 credits in a Level 2 subject.

Of the eleven Asian students one Year 11 student gained a subject endorsement endorsed with Merit at Level 3 and a number of Year 12 students gained subject endorsements at Level 3 including Excellence and Merit in Mathematics with Calculus, and Merit in Art History and Classics. Some students also gained 14 credits and were eligible, but not endorsed. Subjects included Mathematics with Statistics, Spanish and Japanese.

Evaluation of Provisions: Participants' Perspectives

In the teacher survey seven teachers agreed that acceleration met the academic needs of gifted and talented learners at each year level (3.66). They also agreed that acceleration met the needs of all learners who were accelerated. The teacher evaluation of how acceleration met the social and emotional needs of gifted and talented learners also indicated a moderately positive attitude (3.25) with the highest for Year 9 and Year 10 (3.43). The evaluation of the cultural needs of gifted and talented being met by acceleration provided the biggest division amongst the seven teachers' views. The highest rating average was at Year 9 and Year 10 (3.29) with an overall mean from the rating averages as 3.12 which, suggested "ambivalence."

Individual surveyed teachers believed that they were more effective at meeting the needs of their students than the school did as a whole. Nine of the ten teachers who answered the questions on acceleration felt that the needs of their accelerated students were met more than the needs of their gifted and talented students. The highest level of

satisfaction was with how the school met the academic needs of the students, then cultural needs.

The gifted and talented coordinator was concerned that acceleration was not available in all subjects or by all teachers, regardless of students' needs. She also noted that there needed to be more evaluation and all staff to be fully committed to gifted and talented. However, she did believe that catering for gifted and talented students was embedded in the school, "it's like a natural thing, it's just something that happens."

In general the surveyed students were positive (3.29) about their school's provisions for gifted and talented students and acceleration had been a positive experience. According to one student, "It was nice to feel not so worthless, and it helped make learning much more easier because there was no need to wait for the slower learners in the class." However, one Year 13 student believed that "better learning support" would have improved her experiences as an accelerated learner at the school.

Student Perceptions

The majority of the surveyed students believed that the identification methods of selection for acceleration were appropriate and academically students generally felt that acceleration met their needs. One student explained that "acceleration has meant I am learning at a level suited to my capabilities and [that] has interested and engaged me more." However, the school did not provide acceleration in all subjects. Students were positive about teacher use of achievement data. For example: "our teacher kept results from every test/assessment we've done and then selected from the results" (student accelerated in Japanese [Years 9 and 10] and Art [Years 9-13]).

The highest rating showing very positive satisfaction (4.00) in relation to meeting academic needs were recorded at Year 13. Some reasons were provided:

> *I was able to develop my own ideas rather than follow a set course. (Year 13)*
>
> *[It] helps to develop and encourage students who have the ability to further themselves more than the opportunities that are provided in class. (Year 13)*

Academically, acceleration saved time and gave more choices. The students in the interviews believed that they did not know what they wanted to do so being accelerated in some subjects gave them room to find out what subjects they liked or did not like and more choice at Year 13. Academically they were achieving and the workload was acceptable. "It's a challenge but doable," as one noted. Acceleration was worthwhile: "Because it's kind of like you are already learning at that level so we might as well get standards."

Students were confident that their needs were met over all year levels. In general there was social acceptance in accelerated classes. Responses ranged from "definitely accepted by the older group," another said "most of the time," and one said not in her technology subject (this was a small class and students worked individually). Being accelerated according to Year 13 students did not cause social and emotional problems as one explained "I was able to mix with other people of the same ability." Students also commented on an advantage of being accelerated only in some subjects. Academically, socially and emotionally that "sometimes it is good to stay normal" and not get too stressed.

All students agreed there was social and emotional support including support from the subject teachers, the deans and subject counsellors. As they were accelerated, they were aware teachers kept an eye on them and were approachable and as students they would have no concerns about approaching them regarding workload. One student also explained there were "discussions on stress management, motivation, time management etc. ..learned how to have a balanced lifestyle." All the accelerated students interviewed were "very happy," they had friends and were looking forward to being in Year 13 in the following year, and being able to "wear the long skirt." They felt recognised as individuals and their learning needs were being met.

Surveyed students felt at Year 11-13 that information and consultation regarding subject choice was appropriate but not at Years 9 and 10. The students were positive when interviewed that acceleration opened pathways for their next year level.

Parent or Caregiver Perspectives

There were three mixed parents' views as to the effectiveness of school provisions for accelerated learners. One responder with a Year 11 student was neutral about their effectiveness for acceleration, "I would say that they are okay, but perhaps more consultation could take place between teachers, parents and student to work together in motivating the students to realize that they are actually gifted and talented." She did agree that provisions for gifted and talented girls in the school were effective in Years 10 and 11. The other responder with a Year 11 daughter was positive about acceleration. However, she disagreed that provisions for gifted and talented in the school were effective as "there is little done at the school other than to allow her to take classes above her academic year." However, both parents or caregivers of the Year 11 students

who had been identified as gifted and talented agreed that being accelerated had been a positive experience for their daughters. One explained because it “has helped expand her thinking, and as another noted “she needs the stimulation.”

All three parents and caregivers felt that more communication was needed between the school and home as “there is very little proactive communication to parents.” In relation to timetabling, one parent or caregiver believed that “there have been clashes with other activities like sport after school. Perhaps another time needs to be set aside during school hours for acceleration.” Another parent or caregiver suggested that “more could be done by moving the accelerated learners into a smaller class rather than placing them in a class with others.”

The three parents had differing opinions as to whether there had been appropriate advice and consultation for subject choice. One Year 11 parent agreed that “They have lessons during class time, specifically designated for careers and future thinking.” The other Year 11 parent or caregiver disagreed as there “hasn't been any.”

6.7. Summary

This chapter reported on views of giftedness and acceleration at Discovery High School. A detailed focus on school-wide provisions for gifted students was offered through the perceptions of the surveyed teachers and students, the gifted and talented coordinator and the interviewed teachers, students and senior manager. It was found that acceleration was offered to some students in individual subjects and some accelerated classes were timetabled. There was a culture of learning and care which participants

believed led to the effectiveness of the school's provisions to meet individual student needs.

Chapter 7: Case Study Three

New Light High School (School N)

7.1. Introduction

New Light High School (School N) was a large size, decile 7, state-not integrated secondary school Years 9-15 in a non university city. The headcount for teachers in 2012 was 92. Fourteen teachers answered the *Opinions About the Gifted and Their Education* survey by Gagné and Nadeau (Gagné, 1991). School researcher-constructed surveys were answered by 32 teachers, 26 students and 12 parents or caregivers. The teacher respondents included classroom teachers, heads of departments and teachers in charge, and members of the senior management team. Individual interviews were held with the senior manager with responsibility for gifted education and the principal. Focus Group interviews included: one of teachers (5), two of parents or caregivers (3 and 3), and two group interviews with students (6 and 5).

7.2. School Philosophy

The Mission Statement in the School Charter 2012-2014 clarified the importance of meeting the academic, cultural, sporting and personal needs of its students, advocating that individuals were to be enabled to fulfil their potential through the provision of learning experiences "in a challenging yet supportive environment." The charter also reported that "accelerated and multi-level learning opportunities are available for gifted and talented students." It described the supportive environment as including "a strong guidance team who provide a range of pastoral and career services."

There were no written school policies, procedures or definitions on gifted and talented or acceleration. As the principal explained:

> *We don't have any current policies/procedures relating to our acceleration of gifted/talent students because what we do has now become embedded and systemic. It's a part of our ethos and philosophy to offer learning opportunities to students that will extend and challenge them at every level. Students doing multi-level courses across the curriculum has become the norm rather than the exception and it's not unusual for students to top subjects a level ahead. (email communication, 26 September 2012)*

However, there appeared to be generally understood or accepted "policies" as 18 teachers believed there was a policy on acceleration as did some teachers in the focus group interview. Seven out of 12 parents or caregivers also believed that there was a gifted and talented policy and a definition of gifted and talented, and guidelines for identifying and working with gifted students at risk (e.g., underachievers, Māori).

"Extension classes," as referred to in the 2009 ERO report, was the term used in preference to 'accelerate classes' as shown in the school *Curriculum Booklet Year 10 & Senior* documentation. However, the preferred term in school usage by teachers, parents or caregivers and students, was 'accelerate classes.' The school Prospectus contained a specific reference to achievement, multi-levelling and acceleration in 2012:

> Thirty-eight NZ Scholarships and seven Outstanding Scholarships were awarded to students across 16 subjects in 2012. A feature of the academic success of our students is the multi-level learning and accelerate programme that enabled 73

> students to achieve a National Certificate in Educational Achievement (NCEA) at a level above their school year level.

The climate of the school was one of academic challenge and a positive recognition of academic success. The Managing National Assessment Report 2012 reported that:

> School spirit means that students value NCEA certificates, course endorsements and Scholarship as academic awards. Students are encouraged to strive by seeking the schools' Scholar and Honours Awards.

The principal believed that the increase in numbers of scholarships showed "that our multi-level learning programme and the opportunities that we provide our academically able and gifted students have played a significant role." The principal explained that there was general acceptance of gifted and talented and acceleration. Those who were accelerated were not seen as elitist, and as one parent or caregiver explained "it's not the culture of the school, the school is to extend, you know, the culture is to excel and do your best." The school also provided many opportunities for the gifted and talented including the range of subjects and extracurricular activities according to the principal and teachers in the school.

The school worked to create a "supportive environment" facilitated by the school's pastoral network. The network's prime concern was caring for the needs of individual students and supporting their learning. The Deputy Principal with responsibility for gifted and talented noted "that the girls are very confident here because of the pastoral care and because it's single-sex."

Gifted and talented provisions in the school had been helped by external funding from a Ministry of Education funded contract, *Extending High Standards Across Schools* (EHSAS), for gifted and talented students for Years 7-10, 2007-2009. The funding had enabled the development of procedures for gifted and talented students and for professional development.

Professional Development

Professional learning and development for staff was ongoing. As the Deputy Principal (DP) with responsibility for gifted and talented indicated, it was time to provide some more professional development at staff briefings. Some surveyed teachers (9) responded they had had some in-school professional development (PD), and some (8) indicated that they had had none. Four teachers provided examples of out-of-school PD: subject associations and reading, attendance at a gifted and talented course and two had attended Pam Hook's courses on Solo Taxonomy. One teacher explained that she had had personal experience as a parent and another had learnt by mentoring gifted and talented students. Two teachers had completed some tertiary study in gifted and talented education.

The Education Review Office (ERO) report 2009 identified an area of strength as "access to multi-level courses in Years 10 to 13; and "high expectations of students as learners and achievers." The report recognised that there were "extension (GATE) classes" to meet the needs of identified gifted and talented students who have "high levels of achievement" in Year 10-13. The report referred to quality teaching as "teachers working with extension and support classes have appropriate skills and strategies to engage students so they can achieve to their academic potential." The ERO

report also confirmed acceleration as "a significant number of these students achieve National Certificates of Educational Achievement (NCEAs) at levels higher than their year group and some undertake university papers in Year 13."

7.3. Overview: Teachers' Perspectives

Scores for surveys show a range from 1-5: below 2.00 usually indicates a very negative attitude, while above 4.00 indicates a very positive attitude. Scores between 2.75 and 3.25 can be interpreted as reflecting an ambivalent attitude of just negative to just positive.

Gifted and Talented

From responses to Gagné and Nadeau's survey on *Opinions about the Gifted and their Education* (Gagné, 1991) teachers were positive (3.83) that gifted students had needs and they needed support from special education services, and funding, to meet those needs. They also believed (3.57) that gifted persons were useful to society. Teachers were not entirely positive about gifted students and they had some objections (2.90) based on their views ("ideology") and what they thought was important ("priorities"). In terms of academic provisions for gifted students they were not certain ("ambivalent") about the effectiveness and use of ability grouping (2.89) or acceleration (2.80).

Overall, teachers at School N did not believe the needs of the gifted were adequately met in schools and seven out of eleven teachers were agreed that gifted students' needs were too often ignored in the school. However, they also believed that parents have the major responsibility to help talent development in children (3.45).

Six teachers believed that academically their intellectual curiosity was stifled by regular school programmes and they were often bored in school. However, teachers could not agree on the point that gifted students were wasting their time in regular classrooms.

The most important concern was related to special programmes which were perceived as creating elitism (3.91). However, socially and emotionally seven of the eleven teachers at School N did not agree that students are often rejected because people are envious of them. The same number disagreed that students who had been identified as gifted had more difficulty in making friends.

Most of the teachers were positive (3.45) that the best way to meet the needs of the gifted was to organise special classes for them. But the teachers also believed special classes had negative effects on other students. Approximately half of the teachers (6) had concerns that it meant other students, socially and emotionally, felt devalued. Some felt that by separating students into gifted and other groups, the labelling of children as "strong-weak, good-less good" and so forth, was enhanced.

Acceleration

The strongest concern raised about acceleration was that by skipping a grade students had gaps in their knowledge and teachers did not believe more gifted students at their school should be accelerated. Over half of the teachers felt accelerated students had difficulties in social adjustment to older students. But in contradictory fashion, half disagreed that students who had been identified as gifted had more difficulty in making friends. Of interest is the point that most teachers also felt that it was parents who usually pressured gifted students to skip a grade.

In School N there was a known difference between gifted and talented and accelerated. All of the twenty-six teachers (28.26% of the total staff) who answered the researcher-constructed teacher survey questions on acceleration knew the school had gifted and talented students who had been accelerated and most knew that the school also had accelerated students who had not been identified as gifted and talented.

Identification

In general, teachers and parents or caregivers knew there were personnel and procedures for the identification of gifted and talented students. Over half of the teachers believed there was a coordinator, a committee and a register. The Deputy Principal (DP) Pastoral had responsibility for NZQA and the gifted and talented. However, she did not define her role as the gifted and talented coordinator: "We used to have a gifted and talented coordinator and we would like to appoint another one." Almost half (13) teachers knew there were guidelines for identifying gifted students at risk including underachievers and Māori. The principal and the teachers in the focus group believed that the school did not identify all of the gifted and talented and missed, for example, the twice exceptional. There was a need for review. There was also a concern that the acceleration class identification methods missed some gifted and talented students.

Over half the teachers (17) did not know whether longitudinal data on accelerated students (for monitoring) were recorded. However, the Mathematics department maintained longitudinal data on students' progress.

Some parents were aware of the personnel involved with gifted students. Nine out of 12 parents knew there were identification procedures and a person in charge and four knew there was a register and a committee.

Identification Methods

Teacher Perspectives

Identification involved multiple methods for gifted and talented and accelerated learners. It was an ongoing process. The DP with responsibility for gifted and talented learners explained that the school used:

> *... obviously our enrolment information, teacher recommendation from their feeder schools, parental recommendation, peer recommendation, and we also look at all the diagnostic data. We do the Ravens testing, and then again half way through the year we will often do another round.*

Over three-quarters of the teachers who participated in the survey selected teacher observation or nomination and standardised tests as the most used strategies for identification. Because acceleration was mainly available from Year 10 there was a different emphasis on some items, for example school enrolment form and Raven's Progressive Matrices test conducted in Year 9. Teachers believed parent or caregiver nomination or request was less influential for acceleration than for gifted and talented. For the identification of gifted and talented students national and international testing and teacher observation or nomination were the most used methods. Previous school identification followed.

Parent or Caregiver Perspectives

Most of the parents or caregivers also nominated teacher observation or nomination as the most used method for identifying gifted and talented and accelerated students. However, they also chose students' work as having equal prominence with teacher

nomination or observation for accelerated learners. Some parents were not familiar with identification processes, but there was also evidence of knowledge about a wide range of procedures as some parents also noted previous school identification, peer nomination, Raven's Progressive Matrices, public exam results, teacher made tests and competition results.

Student Perspectives

Students knew selection was based on their grades earned in Year 9. Students also selected teacher observation or nomination as the foremost method for their identification as accelerated students (20 out of 24) and gifted and talented students. For acceleration almost half (10) of the students selected competition results before teacher rating scale or teacher checklist (9).The next three most favoured for the identification of gifted and talented students were student work (10), standardised tests [e.g., PAT, CEM] (9) and teacher rating scales or checklist (8).

7.4. Acceleration Implementation

Accelerate Forms

The most common forms of acceleration, identified by 23 teachers of the 26 teachers who participated in the survey, were grade-skipping and subject acceleration. Scholarship before Year 13 was identified by 20 teachers. Over half of the respondents also knew about combined classes (17) and concurrent or dual enrolment (16). The principal explained that acceleration for the academically gifted occurred within the school curriculum. She noted that there were about 46 students being accelerated in Level 2 in 2012.

Of the 24 students who participated in the student survey slightly more had experience of grade-skipping (18) than subject acceleration (16). Five students indicated that they had been enrolled in correspondence courses. One student (Year 10) had experienced two forms of acceleration (grade-skipping and combined classes), the remaining students had experienced from three to eight different forms.

Parents or caregivers also believed that subject acceleration was the most dominant school provision. This was closely followed by grade-skipping (10), concurrent or dual enrolment (9) and scholarship prior to Year 13 (9). All of the daughters of the eleven parents or caregivers who participated in the survey had experienced combined classes. Grade-skipping (8), subject acceleration (7) and curriculum compacting (6) were the next most common experiences. Individual or self-paced instruction, telescoping the curriculum and extracurricular programmes were nominated by four parents or caregivers.

Subject Acceleration

The two subjects most identified by surveyed teachers were English and Mathematics at all Year levels 9-13. There were fewer subjects accelerated in Year 9; however, the core subjects and Māori were identified. At Year 10 acceleration occurred most often in the core subjects, and most often in the accelerate class. However, there was also one "Learning Enabled Class" at Year 10 which offered some acceleration in the core subjects. Ten teachers identified all four core subjects of English, Mathematics, Science and Social Studies and all these subjects were referred to as extension classes in the Curriculum Booklet. One student explained the process of acceleration in the core subjects in Year 10 as:

This meant in maths we did half Year 10 half Year 11, in Science it meant skipping Year 10 completely, in English we did full Year 11 and we did a bit of all the Social Sciences (Geography, Economics, Social Studies and History).

Some teachers explained that students could be accelerated in any appropriate subject, especially in the senior school and one teacher included University papers in Year 13.

Accelerate Class

The dominant method of acceleration delivery was believed to be in an accelerate class. Individual and group or cluster acceleration within a class were selected by approximately half the teachers. Twenty-five of the students had been accelerated in an accelerate class. Nine had also been accelerated in a group or cluster within a class (ability grouping). Three had experienced both individual and group acceleration.

The five focus group teachers, the principal and the deputy principal, all described the process. The identification process for the accelerated class in Year 10 started with identification for the Learning Enabled classes in Year 9 using data. There was broad banding based on entrance tests and information from the previous school. Before the end of Year 9 examinations achievement data were analysed for students in the core subjects and teachers were also asked for nominations. Selected students and parents or caregivers were invited to an information meeting about academic programmes and social and emotional issues, how students could withdraw, resit subjects in the next year and future pathways. The parents or caregivers and the students then had the choice to accept or reject the school nomination for the class. However, as parents in both interviews pointed out, it was their daughter's choice. The DP noted there was probably

only one every year or so who turned down the invitation. In the following year, Year 11, there were only some accelerated classes, for example English and Mathematics.

The accelerate Year 10 class was different from the other Year 10 classes, as the principal explained, only in terms of "the learning programmes that they have. I mean they still have the same timetable structure, and they have the same opportunities for options and their main core as all other students." She also explained:

> *They need to be together because their needs, their learning needs are quite unique to them. And when you spread these students out amongst the mainstream they go underground and they go quiet, and they don't have that same level of competition, because they're highly competitive this group, they know down to the last grade who's got what and they're vocal and they're comfortable because they're with like-minded students.*

However, different staff views were seen in the focus group interview. Academically, the focus group teachers expressed some concerns about the accelerate class size, initially set up smaller, but now there were too many students added in to make the class the same size as the other classes and the additional students did not cope well with acceleration.

One participant believed parents pressured students to go into the class because they wanted their daughter to be with the other "lovely girls" and also believed that students wished to be included in the accelerated class because of peer pressure that their friends were also in the class. She also noted "I just don't see any great advantage in getting a scholarship a year ahead" and she believed that the school was "a little bit trapped into the prestige of having scholarships a year ahead." Some teachers in the focus group

expressed the concern that a few students were leaving school after Year 12, or that students were pressuring teachers to sit scholarship from Year 12, even though they were gaining scholarships.

Parent and Student Perspectives

Year 10 parents or caregivers pointed out that socially and academically it was good for their daughter to mix with students of the "same ability" and to "embrace the challenge" of the accelerate class. A Year 13 parent pointed out the friendship support from peers and teachers in the accelerate class, while "at Year 9 she had struggled to fit in." However, another Year 12 parent or caregiver explained that there were academic, and social and emotional issues:

> *In some ways it was positive. She got the better teachers, all the children in her class were keen to work, so no time wasted dealing with discipline issues. But ... they still seemed to get a condensed version of what they would have got in a class at a lower level. They were conscious all the time of the time constraints, and lots of pressure.*

The students in both focus groups reported that they enjoyed the accelerate Year 10 class academically because there was less disruption and more motivation. They did feel there were "expectations of academic success by teachers and others of excellence" which was something they felt they learnt to cope with, even though it was hard at first, "your self-esteem kind of takes a bit of a battering for it really, like oh I didn't get an excellence, I'm not good enough." There were also class discussions on self-esteem and coping strategies held with the tutor teacher. They enjoyed it, especially socially,

"you're kind of going to have those friends for the rest of your life," and "it's really cool as well because the whole class just helps each other out."

Teacher Selection

Teacher selection for subjects where students were accelerated as a class was the responsibility of the principal. As she reported:

> *I think it's important to match the staff and in terms of teaching [the accelerate class], those are gifted academically able students and I believe that they need to have gifted academically able teachers and that's a bit of a thorn in the side of some staff who think they should have a turn.*

As one teacher also explained, it was understood that "if you were an academically able teacher you relate to academically able students."

The principal believed that the tutor teacher had an academic, social and emotional role and cultural role. In particular, for the accelerate class "the tutor group teacher must also teach the cohort. That relationship and that monitoring and support is really important." This tutor class was ongoing (unlike all other tutor groups) and students who had been accepted for the accelerate class in Year 10 were kept together as a tutor class until they left school regardless of whether they were still accelerated or not. The student could choose to change tutor classes.

Acceleration, Enrichment and Differentiation

All thirty teachers who answered the survey believed that the school used acceleration by itself or in combination with enrichment. In their own classes 28 of the 30 surveyed

teachers used differentiation. Fifteen teachers believed they used acceleration, enrichment and differentiation. Just over half (16) said they used acceleration and enrichment. Some comments showed different views, often subject dependent or student dependent. One Mathematics teacher nominated differentiation "but preferred classes to be streamed so enrichment and acceleration can occur among like levels." In music acceleration was offered most commonly for performance. But "differentiation is essential in Music. Every student at every level is on a different pathway and knowledge levels are vast in Year 9. I have multi-level tasks and teaching/learning in all classes." An English teacher offered enrichment first and then acceleration.

Course Design

The subject teacher had the most input into the design of provisions for the gifted and talented students in their class, according to 17 out of 21 surveyed teachers. Collaboration between students and teachers (8) was also believed to occur and the head of department (7) also had input. There was limited input from the gifted and talented coordinator (3). Students who participated in the survey also indicated they were part of the course design in Year 9 (5), Year 10 (9), Year 11 (5) and Year 12 (3).

Individual Education Plans

Some students were on Individual Education Plans. The DP noted that because of the many multi-level courses, "we might have individuals who have their individual learning plan in certain areas." She also explained that there were also gifted and talented students who were on programmes but not in the accelerate class. In addition, in the teacher focus group it was pointed out that a few accelerated students were put on individual education plans, especially in Year 11, if they found the workload stressful.

Withdrawal

Some teachers (10) knew there was provision for withdrawal from acceleration. Parents and caregivers and students also knew that students could withdraw. Students also knew they could repeat the subject in which they had been accelerated in the next year if they wanted to improve their grade.

Pathways and Goal Setting

Pathways were set in place for students who were gifted and talented. There was a goal setting programme in place for the whole school and there were goal setting advisers in addition to the tutor teacher, the careers advisers and the guidance counsellors. The accelerated Year 10 were interviewed by a selected group of teachers who knew them well. They worked with the students to evaluate and monitor their progress and set pathways for future achievement.

7.5. School Provisions and Practices: Support

Support: Personnel

For those who had been identified for acceleration the teachers believed support was provided. The year level Dean also provided support but no category was indicated. According to teachers the subject teacher provided the most support academically. There was also considerable support provided by the tutor group teacher (14) and the gifted and talented coordinator (11). Social or emotional support was offered by the tutor group teacher (21) and the parent or caregiver (19). Cultural support, teachers believed, was provided in the first instance by the parent or caregiver. At this school the

principal was also seen as providing some support for student needs over all three categories.

While there was consultation through parent or caregiver communication the accelerate Year 10 tutor teacher also provided ongoing communication with parents and support for students. As he explained, they "get academic feedback obviously from their teachers. I'm in constant telephone communication with their parents, and by email, and I take the group away." These practices were part of building the social and emotional bonds of the group for support.

The principal also pointed out that students who were working on university papers were supported by the Gateway coordinator, and that "in some cases teaching staff provide some support but mostly it's by correspondence extramurally."

Most of the surveyed parents or caregivers (10 out of 12) identified the subject teacher as providing the most academic support. At least half of the respondents identified the gifted and talented coordinator and the tutor teacher. Most of the parents and caregivers saw themselves and the tutor teacher as providing the most social and emotional support and half identified the school counsellor. Parents and caregivers knew from the consultation meeting about the accelerate class that support could be obtained from the DP with responsibility for gifted and talented and from the tutor teacher. Less cultural support was identified. The principal was also seen as offering academic, social and emotional, and cultural support. Most parents did not know whether a mentor was used or not (8).

Parents or caregivers saw their roles as supporting their daughters. These were described as supporting her socially and emotionally, financially and attending class

meetings, teacher interviews and subject counselling. Responses ranged from "minimal," and "encouraged at home but not pushed" from some Year 10 parents or caregivers, to "significant, especially so in regard for subject choice and preparation for assessment. I believe that I am the first person my daughter seeks advice from" (Year 12 parent or caregiver). The nature of the support was also dependent on other factors such as NCEA and the daughter's acceptance of support.

Support: Systems

More parents and caregivers knew more about the support systems than the school personnel. Parents felt that most support was academic with less available for social and emotional needs and none for cultural needs. Most were aware that the school selection of the subject teacher and the tutor teacher were also designed by the school to provide academic support. Approximately half felt there was parent consultation about individuals and their classes. The main social and emotional support was identified as the school pastoral care system. Students believed that school support was ongoing through subject counselling and goal setting.

7.6. School Provisions and Practices: Evaluation

School Systems for Evaluations

The deputy principal provided the information that **"**we evaluate usually every year and that will be student evaluation, parent evaluation, teacher evaluation." SurveyMonkey was the programme used to analyse these evaluations. There was a detailed yearly school evaluation of NZQA results.

Gifted and Talented Provisions: Evaluation

The most common evaluation of gifted and talented provisions in teachers' own practice was the evaluation of student examination and test results. Teacher and student discussion, student written evaluations, student oral evaluations and class evaluations were also noted. Teachers also provided written evaluations. The school was evaluated externally. The school also evaluated its own provisions for gifted and talented students through examination and test results, student evaluations and staff evaluations.

Acceleration Provisions: Evaluation

Most evaluations of acceleration provisions were conducted inside the school. Evaluation of NZQA results was the most commonly used form. Teacher and department evaluations, student consultation, evaluations from senior management and parents also featured. Most teachers did not know whether there was evaluation of university courses or competitions.

Student Perceptions of Participation in Evaluation Systems

Almost all of the students believed that subject counselling was the major method for subject planning and evaluation. Over half (14) of the students had had an interview with the careers adviser at one or more levels. The role of the gifted and talented coordinator was seen as limited. Some planning of the course by student and teacher had occurred for nine students at one or more levels and eight students had taken part in individual student evaluations at one or more levels. Four students had taken part in student meetings. Some students had been involved with parent and student meetings at

Year 9 (6), Year 10 (9), and Yr 11 (2). Students also noted that the goal setting days were also used for them to evaluate their progress.

Achievement Data

New Zealand Scholarship

The academic achievement for students at the school in New Zealand Scholarship increased over the years from 13 in 2005 (two Outstanding), to 33 in 2011 (one Outstanding) to 45 in 2012 (seven Outstanding). The 2011 results showed that 13 of the 33 scholarships were awarded to Year 12 students who had been accelerated in a range of subjects.

NCEA Endorsed Certificates Awarded at Levels 1-3

One hundred and fifty-six Year 10 students gained credits in NCEA in 2012. There were 28 Year 11 students who were awarded NCEA Level 2 certificates: six were endorsed with Excellence, 14 were endorsed with Merit and eight students gained the certificate with no endorsements. (Level 2 certificates are usually gained by Year 12 students.) The school reported in their NCEA and Scholarship results analysis on the 2013 results for 28 accelerated Year 10 students for NCEA Level 1 and there were eighteen with Merit endorsement and eight with Excellence endorsement. In this report it also stated: "It is difficult to make comparative analyses with the number of accelerate and multi-level courses we run."

Seventeen Year 12 students gained NCEA Level 3 certificates. Seven students gained NCEA Level 3 Endorsed with Excellence, three gained NCEA Endorsed with Merit and seven students were awarded a Level 3 certificate.

Overall, for accelerated students there were 65 Excellence subject endorsements across all levels, with 166 Merit endorsements. Of the 344 students who were eligible the majority at each level were achieving at a high level, obtaining subject endorsements with the highest percentage for Level 1 with 73.72% (Merit 87, Excellence 28), then Level 2 at 61.98%, and Level 3 at 61.19%.

Ethnicity

Accelerated achievement from students of different ethnicities was evident. Three New Zealand Māori were awarded an NCEA Certificate at an accelerated level, one New Zealand Māori from Year 12 gained an NCEA Level 3 Certificate and two in Year 11 were awarded an NCEA Level 2 Certificate. Four Asian students gained an NCEA Level 2 Certificate, two were endorsed with Excellence and two were endorsed with Merit. Achievement by gaining at least 14 credits in individual accelerated subjects was over 81% for New Zealand Māori, over 87% for Asian and over 28% for "Other" ethnicities.

Evaluation of Provisions: Participants' Perspectives

Teacher Perspectives

Participants in the teachers' survey believed that the school provisions for gifted and talented students over all year levels were effective (3.78) and were even more positive that in their own practice the academic needs of their gifted and talented learners were met (4.11). They were also positive about meeting social and emotional needs (3.45) and cultural needs (3.30).

Surveyed teachers were more positive about acceleration meeting the academic needs of gifted and talented students in their school than meeting the academic needs of all accelerated learners. However, while they were positive the school met the social, emotional and cultural needs of accelerated learners they were more ambivalent about meeting those needs for gifted and talented learners.

Parent or Caregiver Perceptions

Two-thirds (8) of the twelve parents or caregivers in their survey believed that for their daughters, being identified as gifted and talented had been a positive experience.

With regard to being identified for acceleration parents or caregivers (11) in the survey were moderately positive. However, views were mixed:

> *She has found it harder as she went through school, once the classes were split and they went into mixed age classes, as it was no longer a class for gifted students, but just an ordinary class, with distractions from disinterested students, hostility from older girls, and the pressure of working harder while going through the usual teenage emotional angst. (Year 12, Don't Know)*

> *It has given her more confidence, good friends, excellent teachers on the most part, ability to work at her level. (Year 13, Agree)*

Parents could not agree if acceleration met the academic, social and emotional, and cultural needs of their daughters across all year levels. There were some concerns such as lack of teacher expertise in a subject for scholarship level, teacher availability for a subject, a daughter experiencing social isolation in senior classes, and missing "large chunks" of basic knowledge. However, one participant in the survey noted acceleration

was “wonderful.” Other positive views included providing challenge, being with “like-minded girls” in focussed classes, the selection of most effective subject teachers for the core subjects in the accelerate class, “good time management” skills had been developed including time for daughters to be “busy with sport.” For costs to parents or caregivers it was viewed that the cost of NCEA had just come a year earlier.

Eleven parents or caregivers in the survey were positive (3.64) that communication regarding acceleration had been effective. They also believed there was information and consultation for subject choice from Years 9-13 (3.64). Comments ranged from a positive “the school has always communicated well, access to the teachers has been easy, the tutor teacher and deans have been very helpful whenever contacted” (Year 13 daughter), and a comment on the usefulness of the subject booklet (Year 12 daughter) to “minimal parental involvement” (Year 10 daughter) to “too many ill informed counselors giving self-serving advice” (Year 10 daughter).

Student Perceptions

Fifteen of the 25 surveyed students believed that being identified as gifted and talented had been a positive experience. Seven were unsure and three Year 13 students did not agree. Most students did believe that the methods for identification for acceleration were “accurate” and “fair.” Provisions for gifted and talented students at all school year levels were deemed effective (3.52). As one Year 11 student explained, the school “provided for the gifted students, giving them the best teachers, and putting them all in one class (tutor group).” Students agreed over five levels in their survey (n=22) that information and consultation had been appropriate and useful (3.60).

Fifteen of the 23 students who participated in the survey agreed that acceleration had been a positive experience, four disagreed, and four did not know. Surveyed students agreed with parents' and caregivers' points about the presence of like-minded peers and personal challenge. The accelerate class climate was also one where "everyone's really nice." One Year 13 student stated the accelerate class "has also kept school interesting and given me a sense of responsibility for my own education." The focus group participants were also positive about acceleration and the accelerate class. They could see that academically there would be more options available at Year 13 and socially and emotionally they would have learnt skills to cope at university. However, four students believed that pressure and stress affected their experience.

Acceleration and Social and Emotional Needs

Teacher Perceptions

The surveyed teachers were ambivalent (3.20) about whether, in their school, acceleration met the needs of their gifted and talented students. For example:

> *Social and emotional needs are best met within a student's peer level and extended academic pursuits can limit the pursuit of other social and recreational activity important in providing a life activity balance.*
>
> *Placed in a group of like-minded individuals, but this has some issues of social isolation and distancing from interactions with less motivated people. This can lead to somewhat distorted points of view about social issues.*

The surveyed teachers did not believe that the social and emotional needs of all accelerated learners were met as effectively as were academic needs. Some reasons

provided related to: the inability of the tutor teacher of the accelerated class to meet the emotional and social needs of a whole tutor group, and student social and emotional immaturity to "deal with the pressures when faced with higher level studies."

Parent Perceptions: Social and Emotional

One Year 13 daughter had noted a "feeling of acceptance and comfort for her and her group of gifted friends." However, another Year 10 parent or caregiver noted her daughter found social isolation and a climate of arrogance and snobbery within the accelerate cohort.

Student Perceptions: Social and Emotional

However, in relation to meeting their social and emotional needs, students like the parents and caregivers and the teachers in their survey, were ambivalent (3.05). Students who disagreed or were neutral commented on stress or pressure, high workload affecting social life and high expectations from teachers and families. However, only four of 23 surveyed students felt that their social and emotional needs were not being met in the current 2012 year.

Acceleration and Cultural Needs

The surveyed teachers were ambivalent (3.16) about whether acceleration in their school met the cultural needs of their gifted and talented students and they were also slightly more ambivalent over all year levels for accelerated learners. One teacher noted that for gifted and talented students cultural needs were met "not through school policy or procedure but (for the very few gifted and talented in cultural areas) via the energy and enthusiasm of a couple of teachers and extracurricular activities." Another teacher

pointed out there was a culture bias in the composition of the accelerate class, because of the identification procedures. One parent or caregiver also commented on the ethnic mix of the accelerate class that it was predominately "white middle class, and not a true representation of gifted and talented students."

7.7. Pathways Future

Parents or caregivers agreed that future pathways were provided (3.55). Some comments were very positive about the "excellent careers department" and the provision of subject and career counsellors. Others felt it was "minimal," "limited" or "just okay." Students (n=22) in their survey also felt that future pathways for university or tertiary education or careers after secondary school had been appropriate and useful, especially at Year 13 (4.50).

7.8. Summary

The first part of this chapter described practices and provisions in relation to giftedness and acceleration at New Light High School. Perceptions of teachers, students and parents or caregivers and the person in charge of gifted and talented and the principal were reported. The findings showed that the school's focus was on the provision of an accelerate class starting in Year 10. However, it was part of the multi-level approach to provisions. For gifted and talented students acceleration also occurred individually, available in a range of subjects across all levels in the school.

The next chapter will provide a discussion of the findings from the national survey and the three case studies.

Chapter 8: Discussion

8.1. Introduction

This chapter discusses the findings presented in the previous chapters. Comparing and contrasting the varied experiences of acceleration by the participants, teachers, parents or caregivers and students, allows for the development of insights which are grounded in the data. Linking these to literature allows deeper understandings to emerge.

To maintain consistency, the topics discussed in this chapter follow the research questions and headings used in the previous chapters. The discussion chapter starts with the specific questions and is followed by the overarching question.

8.2. Specific Research Question One

> ***How are acceleration processes being designed, implemented, maintained and evaluated in single-sex girls' secondary education in New Zealand?***

Design: Identification

According to Cross (2013) multiple criteria for the identification of gifted and talented are recommended. In contrast to ERO's (2008a) findings that less than half of all schools have multi-categorical identification procedures in place, in this study all except one, out of 39 schools, in the national survey had multi-categorical identification procedures and almost all had created a definition for gifted and talented in their school. In New Zealand the use of multiple methods (formal and informal) for identification of gifted and talented students, with the inclusion of multi-cultural appropriate methods,

along with evidence of potential and demonstrated performance, is described as "good practice" (Education Review Office, 2008a; Ministry of Education, 2012).

Teacher judgment is the most favoured method of identification by teachers of gifted and talented students (Freeman et al., 2010; Riley & Bicknell, 2014). However, teachers may have lack of knowledge of students (Bianco, Harris, Garrison-Wade, & Leech, 2011) or they may not be supportive of gifted students (Kronborg & Plunkett, 2013) or supportive of acceleration and be hesitant about recommending students to be accelerated (Rambo & McCoach, 2012). Practices in the Unites States reveal a continuing strong emphasis on formal assessment and testing to identify gifted and talented students (McClain & Pfeiffer, 2012), despite an increased use of context-specific measures (Callahan, Moon, & Oh, 2013; Dai, Swanson, & Cheng, 2011). In New Zealand teacher identification and formal assessment practices are used as identification methods of choice for gifted and talented students (Riley & Bicknell, 2014) and in the current study these two methods were used equally to identify gifted and talented students and students for acceleration. However, they were typically used alongside other methods. For example, out-of-school methods, such as school enrolment information, were used four times more frequently than in Riley and Bicknell's (2014) research. The use of multiple methods confirmed that schools were using more than academic results in their nominations of students for acceleration or gifted programmes or provisions (Kaman & Kronborg, 2012). Yet nominations are only part of the process. Students need to want to be accelerated (Lupkowski-Shoplik et al., 2015; Stanley, 1973b, 1979; VanTassel-Baska, 1991). Invitations were extended to identified students for acceleration and the choice was theirs to accept.

Identification processes may miss identifying gifted students. For example, gifted minority students' identification may be missed through test bias, and lack of teacher referrals (Silverman & Miller, 2009b, p. 116). Gifted girls, in particular, may not only be missed; they may be invisible in the regular classroom (Kerr & McKay, 2014). Cultural differences may be apparent in the meaning of giftedness (Webber, 2011). Briggs, Reis, and Sullivan (2008) have argued that gifted students from low socioeconomic backgrounds may also miss identification, as have Olszewski-Kubilius and Thomson (2010) and Payne (2011). This latter point may be the case in the current study.

Professional development is essential for the provision of appropriate programmes or provisions for gifted learners, especially with regard to acceleration (Croft & Wood, 2015). Teachers in the case study schools reported limited professional development about the gifted and talented or acceleration practices that had occurred or were occurring. They did not know about multipotentiality, and possible internal and external barriers to achievement (Reis, 1998, 2013b). Rambo and McCoach (2012) have argued that teachers are more likely to refer students for acceleration if they have had some training in gifted education, or experience teaching accelerated students. This is an important issue because identification may be inaccurate if teachers are not trained to recognise giftedness or the different characteristics of giftedness, for example, giftedness with a disability (Bianco & Leech, 2010). Twice exceptional students may not therefore have the opportunities for appropriate programmes of intervention (Foley-Nicpon & Cederberg, 2015).

In this study approximately a quarter of the schools had no procedures in place for identifying students from different cultural or ethnic groups or gifted and talented

underachievers and a half had no identification procedures for gifted and talented twice exceptional students. In addition, since few teachers, as reported in the case studies, had undertaken gifted education, a number of referrals for identification may have been inaccurate or missed.

As part of the multiple methods of identification schools did consult with teachers, students and parents or caregivers. However, for a school to be culturally responsive whanau consultation is also needed (Bevan-Brown, 2002, 2003). This study found that only a quarter of schools consulted with whanau regarding identification. Educational requirements referring to National Standards report on a multicultural basis at primary levels (Ministry of Education, 2013b), and NCEA statistics at secondary level (New Zealand Qualifications Authority, 2015).

Design: Forms of Acceleration

The forms of acceleration, according to Kanevsky (2011), which take precedence in schools are content-based delivery models rather than service delivery models which shorten time at school (Schiever & Maker, 2003). This claim was supported by the findings of the study. The numbers of gifted students involved in Rogers' (2015) research synthesis also confirm large numbers of subject-based acceleration options (over 50,000) in comparison to grade-based options (close to three thousand). The form of acceleration needs to be appropriate for "the learning, social, and psychological characteristics and needs of the accelerant" (Rogers, 1991b, p. 25) and is dependent on school context (Southern & Jones, 2015). In this study the form of acceleration appeared to focus on matching the academic, and social and emotional needs of the students. It was also dependent on what forms of acceleration the school offered at

various levels. Feasibility from the perspective of the school, its systems and personnel, was matched with appropriateness for the student.

Forms of Acceleration

Colangelo, Assouline, and Gross (2004a) have argued that subject acceleration is easier for schools to offer and it does not generate the same level of social and emotional concerns as grade-skipping. However, the type of acceleration and the method of delivery can affect the social and emotional development of students (Cross et al., 2015). Wells, Lohman, and Marron (2009) pointed out that, in a context of a continued reduction in funding for gifted education subject acceleration may increase. Decreased funding in a context of NCEA flexibility points to a tendency to favour subject acceleration (Wardman 2010) in New Zealand. In this study three-quarters of the schools provided subject acceleration. Subject acceleration, however, is not without issue. Two problems, identified by Wardman (2010) that may arise from subject acceleration occur if a student, having successfully achieved a level, has to repeat a subject in the following year because the next level of the subject is not available, or if a student has to study a new subject which is not of their choice. However, only few students in the case studies, identified subject choice as a difficulty. None were in the position of having to resit a subject (unless they wanted to improve their grade).

Most subject acceleration reported in research has occurred in Mathematics (Rogers, 1999; Stanley, 1973b, 1991a). For gifted girls, Mathematics and Science have been particularly endorsed as essential subjects for careers and gender equity (American Association of University Women, 2010; Heilbronner, 2013; New Zealand Institute of Economic Research, 2013; Reis & Graham, 2005; VanTassel-Baska, 2008) and also for

students from different cultures or ethnicities (New Zealand Institute of Economic Research, 2013; President's Council of Advisors on Science and Technology, 2010). As with the international research, in this study acceleration by class occurred mostly in Mathematics, and then in the Sciences and English. This pattern and sequence have been earlier identified within New Zealand research (Winsley, 2000). There was no evidence that students in the case studies received negative reactions from peers for taking some subjects, such as Science and Mathematics, as has been reported in Händel, Vialle, and Ziegler's research (2013).

Wardman (2010) has argued that grade-skipping is rarely used in New Zealand. In comparison, this study shows more willingness to offer grade-skipping. However, radical acceleration for highly gifted students was rarely used as a provision although the process has been recommended in the research (Gross, 2004; Jung & Gross, 2015; VanTassel-Baska, 2004b). Schools were not asked how they defined levels of giftedness within their schools. Some schools claimed that radical acceleration was offered as a gifted provision where appropriate, but there were few confirmed cases of its use.

Early entrance to university is a viable option according to the research (Brody & Muratori, 2015; Gross & Van Vliet, 2005; Neihart, 2007; Southern & Jones, 2004; Wardman, 2010; Wardman & Hattie, 2012), especially for students who are grade-skipped. Dual enrolment (Horsley, 2013) is also an option. Accelerated students in the case studies in this study explained that they wanted to stay at school and planned to opt for dual enrolment in preference to early entry to university. Just under half of the schools in the national survey offered dual enrolment. New Zealand Scholarship, an examination, by its nature, developed for gifted students (Horsley, 2009a), was used by a third of the schools as an acceleration provision and usually in Year 12.

Acceleration does not appear to prevent students who have been accelerated participating in extracurricular activities (Kaman & Kronborg, 2012; Steenbergen-Hu & Moon, 2011). In this study schools also indicated they used extracurricular activities extensively as accelerative provisions, but comments provided suggested that, for some schools, these were used as enrichment provisions for students who were academically accelerated. Sporting and cultural experiences were central to extracurricular enrichment.

Rogers (2010) has shown that mentoring provides positive social effects as an accelerative option. Mentoring has also been recommended for gifted and talented students (Cutler et al., 2010). Mentoring may occur either short term or long term for gifted girls as either an in-school or out-of-school provision (Reis, 1998). In this study a third of the schools provided mentoring as an acceleration provision. This finding contrasts with Wardman's (2010) description of mentoring as an important complement to acceleration, rather than as an accelerative provision. Some school also used other forms of acceleration recommended in research such as curriculum compacting [12] , and telescoping the curriculum [5] (Rogers, 2010), the correspondence school [18] and combined classes [13] (Kanevsky, 2011). The International Baccalaureate (IB) which has a high mean effect size as an acceleration provision (Rogers, 2010) is generally not recognized by New Zealand universities for gaining university credits. However, nationally a small number of schools offer IB (12) to high ability students at secondary level, and nearly a half of these are single-sex girls' schools.

Implementation

School administration systems are instrumental in the implementation of acceleration provisions and maintenance. On the other hand, teachers, students and parents and caregivers are significant figures in the acceleration design process (Wardman, 2010). In this study school systems facilitated implementation, including staffing provisions and timetabling flexibility. As Merrotsy (2002) has argued, acceleration is greatly assisted by flexibility of school organisations and, as VanTassel-Baska (1992, 2004a) has added, in particular it is assisted by the flexibility of entrance and exit requirements and grouping options. Most of the schools in the study were flexible in offering withdrawal from acceleration provision. Re-entry was offered by at least half the schools.

Delivery: Provisions

Acceleration, Enrichment and Differentiation

Internationally, according to Freeman, Raffan, and Warwick (2010), enrichment is the most favoured provision for gifted and talented students. Enrichment provides richer, more varied educational experiences, according to Kulik (1992), and according to VanTassel-Baska and Stambaugh (2006) students should be accelerated first and later enriched. Acceleration and enrichment as a combined strategy are supported in the literature (Rogers, 1991b; Townsend, 2011; Wai, 2015), and recommended by the Ministry of Education (2012). But the combination may vary, according to Larnder's (2010) New Zealand research, which found that enrichment was provided twice as frequently as acceleration. This study found a combination in use by three-quarters of the schools, a finding only slighter higher than in Riley and Bicknell's research (2014).

Freeman (2002) recommended competitions (see also Omdal & Richards, 2014; Riley & Karnes, 1998/1999) for gifted and talented students. In this study competitions were the most common form of enrichment offered to gifted and talented and students who had been accelerated. This finding supported the findings of Riley and Bicknell (2014). Most schools also offered enrichment to all gifted and talented students. A range of enrichment activities including outside speakers, visiting groups e.g., drama, class trips, clubs and projects were offered. Pull-out programmes were offered across junior and senior class levels for enrichment and also as an accelerative form. Challenging in-school and out-of-school activities aid talent development, according to Olszewski-Kubilius and Lee (2004), and they may also be accelerative in function. However, schools did not elaborate beyond enrichment.

Internationally 65% of practitioners describe curriculum differentiation as the "keystone to success" (Freeman et al., 2010, p. 10). It is also recommended internationally (Kaman & Kronborg, 2012; Kronborg & Plunkett, 2006, 2008) and nationally (Riley, 2013a). According to the national survey, differentiation was used in almost all girls' schools in the current study. However, differentiation, with acceleration and enrichment, is not consistently offered from Year 9 to Year13.

Implementation: Delivery of Acceleration

Schools offered acceleration usually in a number of ways. Over half the schools reported that they accelerated individually, and in an accelerate class. Few schools indicated that they accelerated only individually, with most indicating some form of group acceleration either as an accelerate class, a cluster or ability group within a class, or a pull-out group with only a quarter indicating that their provisions were outside a

classroom situation. In the views of Kulik and Kulik (1982) and Rogers (1993, 2002b), grouping of gifted students of similar ability has positive effects for both the cognitive and affective domains. These views are also supported in Australian research (Kaman & Kronborg, 2012; Kronborg & Plunkett, 2006). Feldhusen and Moon (1992) have also recommended grouping as long as it was flexible.

Class acceleration, using curriculum compacting and a differentiated curriculum, is shown in SEAL and other programmes in Australia. In Victoria, Australian SEAL schools accelerate by class in core subjects (the number is dependent on school context) and join other students in regular classes for the rest of their subjects from Years 7-10 (NZ 8-11). Students are then mainstreamed for Years 11 and 12 or have accelerated subjects in the last two years of school, or can apply for early entry to university (Kaman & Kronborg, 2012; Plunkett & Kronborg, 2007a). This pattern of inclusiveness was shown in the findings of this study in some schools with the numbers of students in class acceleration, especially in Years 10-12. However, numbers of students indicating classes were not as high in some schools past NCEA Level 1, Year 11.

While Wardman's research (2009) had indicated that the term "accelerate class" may mean a "streamed" class or a class where mainly enrichment occurred, this does not seem the case in the current study. In this study accelerate class usually referred to one subject or a number of subjects. Some students did indicate that, for them, in a so-called accelerate class, the curriculum was accelerated but students were offered the choice to sit the assessments at the accelerated level.

Schools in this study did not comment on whether provisions were designed to be culturally appropriate. While one student in recent New Zealand research (Macfarlane et

al., 2014) expressed acceleration as a positive cultural experience, Bevan-Brown (2004a) has argued that Māori students, in general, prefer to be accelerated in content in a regular class with the support of their peers rather than in an accelerate class (Bevan-Brown, 2004a). As noted above, some schools - a third - did provide acceleration in a group or cluster within a class (that is, ability grouping within a class).

Implementation and Maintenance: Supportive Systems and Supportive Personnel

Gifted and talented students require support through systems and personnel (Merrotsy, 2002) especially as the gifted are deemed to be vulnerable (Silverman, 1997) and need guidance and support (Kerr & McKay, 2014). Schools maintained their provisions through supportive systems and personnel. This point is discussed further under Research Question Two.

Evaluation

Self-review or evaluation is "the most critical concern of all schools" (Callahan, 2006, p. 523), but it is not automatic. A recent United States study (Callahan, Moon, & Oh, 2014) reported less than two-thirds of high schools in the districts which had mandatory programme evaluation requirements, evaluated their gifted programmes. However, in the current study most schools, using multiple methods, conducted some form of evaluation of gifted and talented provisions. This is an increase on the three-quarters of schools which considered they evaluated their gifted and talented provisions by ERO (2008a), and much more than the 30% identified by Riley and Bicknell (2014) and the few schools identified by Jarvis and Henderson (2012). However, few schools used both internal and external evaluation.

Most schools used achievement data, such as NCEA results, to evaluate acceleration provisions. Three-quarters of the schools also recorded and analysed data for gifted and talented students including performance or results during their secondary school years. Multiple methods used included: teacher evaluations, department evaluations, gifted and talented committee and coordinator's evaluations. Student voice has been identified as important (Department of Education, 2007) and Miliband (2006) recommends input from both parents and students to maximise learning. While most schools used student evaluations only a few used parent evaluations. Competition results were more commonly evaluated as part of accelerated provisions.

8.3. Specific Research Question Two

> ***In what ways does the school climate and philosophy match the academic, social, emotional and cultural needs of gifted girls in single-sex schools in secondary education in relation to acceleration?***

A school's philosophy is expressed through its vision and values for education (Ministry of Education, 2007b) and its climate and culture reflects its organisation and interpersonal relationships. A positive school climate is "associated with and/or predictive of academic achievement, school success... [and] students' healthy development (Cohen et al., 2009, p. 181). ERO (2014) referred to the distinctive quality of a good school as having "a culture of care and well-being" (no page given) and school structures have been reported as having the most significant effect on students (Shulruf et al., 2008). Findings from United States research on high schools and student engagement released in 2013 (Holmgren, 2015; National Coalition of Girls Schools, 2013) acknowledged single-sex girls' schools for providing experiences that support

learning. Kronborg and Plunkett (2006, 2008) reported on an ability grouped Extended Curriculum Programme (ECP) in a single-sex girls' Australian city school. The programme was academically challenging but also provided a safe learning environment and met the social and emotional needs of students according to teachers, parents and students.

In this study schools demonstrated a range of structures or systems designed to create a culture of care and well-being to enable students to succeed academically. Specifically, the study participants indicated that a safe and educationally challenging learning and achieving environment was created. In the case studies the schools' philosophies described formally in documents and reports and described anecdotally by participants, were also positive. Through their stated philosophies, schools showed a commitment to providing for gifted and talented education in an enriching environment.

In particular, schools had in place a range of systems through which they supported gifted and talented students, including accelerated students. However, they reported that systems provided more academic support than social and emotional and cultural support. In contrast, teachers in the case study schools perceived that most support was provided by personnel who offered social and emotional support in the first instance, then academic support. Considerable less cultural support was offered although most personnel were seen as providing support in more than one category.

Support from home is important for gifted girls (Reis, 1998) and Silverman (2013b) believed parents were instrumental in the development of gifted children. Jolly and Matthew (2012) reported that many schools appear to fail to deliver what parents want for their gifted children. However, in this study most parents believed that being

identified as gifted and talented and being accelerated were positive experiences for their daughters and themselves and that the necessary social and emotional support was provided.

Communication is recommended and consultation between teachers, and parents or caregivers in relation to acceleration and gifted students (McCoach et al., 2010; Merrotsy, 2002). In New Zealand, parents, families and whanau, want communication, through a range of forms, using a variety of methods, about their children's education (Colmar Brunton, 2012). The most favoured method in this study regarding communication and consultation about acceleration was an interview with the student and parent or caregiver, or a phone call discussion. The inclusion of the gifted and talented student in the planning and decision-making about their learning, is endorsed by research (Flutter, 2007; Freeman, 2001a; Rudduck & Flutter, 2000; Russell & Riley, 2011). Individual interviews and individual education plans (IEPs) were typically offered by schools, as were meetings, subject counselling and evaluations.

Briggs and Wohlstetter (2003) have argued that the support of the principal is important for a successful learning environment and the collaboration between classroom teacher and principal has been shown to facilitate success (VanTassel-Baska & Brown, 2007). Some schools in this study also identified the principal as providing support for accelerants in a range of categories.

Academically, the selection by the school of the subject teacher and the tutor teacher was considered to be important for gifted and talented and accelerated students and in some schools the teacher also provided social and emotional and some cultural support. This finding supports research that teachers do make a difference to academic

achievement (Goodwin et al., 2014; Hattie, 2003; Hoogeveen, 2015), especially if the teacher has had some training in gifted and talented education for gifted students (Rowley, 2012) and is able to create a supportive environment where "it's safe to be smart" (Hébert et al., 2014, p. 95). Teacher-student relationships have been identified as critical for student achievement (Hattie, 2009) and providing guidance for future selection of subjects (Watters, 2010).

Career counselling has been recommended for gifted students (Chen & Wong, 2013; Maxwell, 2007; Silverman, 1993a) and especially for gifted girls (Kerr, 1988; Kerr & McKay, 2014). Most schools provided career and subject counselling for gifted and talented and accelerated students.

The gifted and talented coordinator plays a significant role in gifted and talented programmes (Kronborg & Plunkett, 2006). In this study almost all schools had appointed a gifted and talented coordinator with responsibility for gifted education, the "go-to person for all manner of guidance" (Kerr & McKay, 2014, p. 153), and over a third had also appointed a gifted and talented committee. These findings correspond to Riley and Bicknell's findings (2014). Robinson, Reis, Neihart and Moon (2002) endorsed the need for "supportive relationships with caring adults" (p. 275) to provide social and emotional support and in this study this was provided particularly by the gifted and talented coordinator and the tutor teacher.

An effective pastoral care network is regarded as good practice (Education Review Office, 2008b) as it addresses "student's psychosocial and development needs" (Agee & Dickinson, 2008, p. 358). Such care has strong implications for academic achievement

(Murphy, 2011). Schools' pastoral care systems also provided academic, social, emotional and cultural support.

School counsellors are often needed to provide support for gifted students, including gifted girls (Pepperell et al., 2012; Peterson, 2006a). In this study most identified the school counsellor as providing the most social and emotional support along with some academic and cultural support. None of the schools in the survey or case studies reported that the counsellor was ineffective because of a lack of training in gifted education or acceleration (Blackett, 2006; Elijah, 2011; Hurst & Riley, 2014; Wood et al., 2010).

Mentoring has been identified as a source of support to gifted and talented students and students who have been accelerated in their learning (Cutler et al., 2010; Hurst & Riley, 2014; Wardman, 2010). The findings in this study supported the research in that schools nominated the mentor as a principal means of support to students across all school levels. Peer relationships including same age and older friends (Kerr & McKay, 2014; Kerr & Nicpon, 2003; Lee et al., 2012; Reis, 2006; Rueger et al., 2008) are important for adolescent girls (Reis, 1998). Students and parents or caregivers confirmed findings from other research (Dai, 2002; Rogers, 2007) that learning with like-minded peers has positive effects on academic achievement. Socially and emotionally students felt supported by their peers.

Research has shown that cultural support and a culturally responsive environment is needed for gifted and talented students. In New Zealand they are significant for gifted and talented Māori (Bevan-Brown, 2005, 2009) and Pasifika students (Faaea-Semeatu & Faitaua, 2013; Frengley-Vaipuna, 2007; Frengley-Vaipuna et al., 2011). Three-

quarters of the schools in this study appear to be partially addressing this requirement. The number of personnel identified as providing this support was less than the number identified as providing academic and social and emotional support. Only one school nominated a Māori and Pasifika coordinator.

Being a single-sex school was part of the school's culture and climate. Single-sex schools have been recommended by Kerr (1997b) for gifted girls and this recommendation is supported by the fact that single-sex girls schools in Australasia have records of high academic achievement (Australian Council for Educational Research, 2008). In the United States report on girls in single-sex and coeducational schools entitled Hi*gh School Survey of Student Engagement* (National Coalition of Girls Schools, 2013), in the single-sex environment girls were more engaged in learning. In single-sex schools there were no 'gender distractions,' as identified by Kerr (1997b) and Reis (1998).

School Cultures and Acceleration

Figure 3 is offered as a model for a sustainable programme of acceleration at secondary school for gifted girls. There are two cultures which affect the needs of gifted girls and provide positive outcomes for academic, social and emotional and cultural needs. First, the culture of learning, excellence and challenge affects the delivery of the curriculum and second, the culture of care and well-being affects the student to whom it is delivered. The interlocking arrows demonstrate that successful implementation of acceleration affects all needs, academic, social and emotional and cultural, as they are interdependent in a person (Vialle et al., 2001). Communication and consultation are key factors.

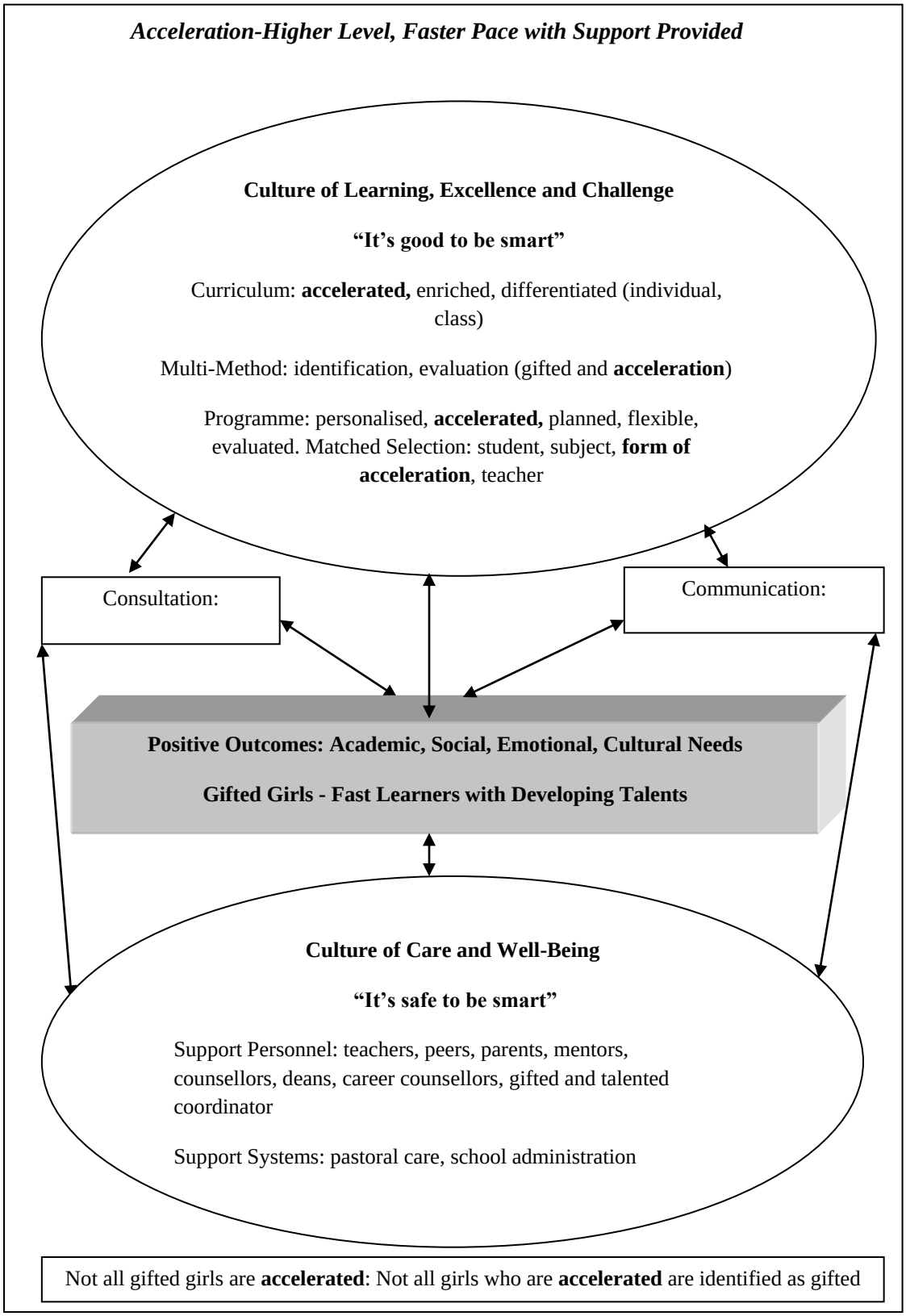

Figure 3: School Cultures Which Support Accelerated Students

8.4. Specific Research Question Three

How effective is acceleration as an intervention for raising achievement and supporting social, emotional and cultural development of individuals and/or groups of gifted girls in single-sex schools in secondary education in New Zealand?

New Zealand research (Bevan-Brown, 1993, 2002; Education Review Office, 2008a; Riley et al., 2004; Riley & Bicknell, 2014) has revealed that there is room for improvement in provisions and practices for gifted and talented students. The Education Review Office (2008a), in particular, reported that only 13% of secondary schools had good provision for gifted and talented students. In general, in this study, schools reported that their provisions were effective for gifted and talented girls and girls who were accelerated. Few teachers, parents or caregivers or students disagreed. Schools demonstrated that they were endeavouring to provide what could be described as responsive pedagogy in that schools were meeting individual needs within a responsive learning environment (Ministry of Education, 2012) with a personalised approach. Ultimately, acceleration was the student's choice to accept or decline.

Almost all schools followed recommended research practices to the extent that they had constructed a definition for gifted and talented and multi-method and multi-categorical identification procedures have been recommended by Cross and Coleman (2014), Robinson, Shore, and Enerson (2007) and the Ministry of Education (2012).

Underachievement has been identified as a problem for gifted girls, because of internal and external barriers to academic progress (Reis, 1998, 2001). Schools showed an

awareness of this problem in that almost three-quarters of schools were able to identify gifted and talented underachievers.

Most schools reported consultation between teachers, students and parents or caregivers regarding identification, provisions and evaluation. Nationally, communication and consultation has been recommended (Bevan-Brown, 2002, 2003, 2011a; Si'ilata, 2014a) principally because of underrepresentation in gifted programmes (Education Review Office, 2008a; Niwa, 1999; Webber, 2011) of students from different cultures and ethnicities. The current study supports the findings of Bevan-Brown, McGee, Ward, and MacIntyre (2011) that strong community cultural relationships were not always forged.

Academically, acceleration is effective as shown in the academic outcomes in examination results, self-reporting by schools, and in the positive outcomes of academic challenge and stimulation for students. However, there was no evidence in this study that longitudinal data were being recorded by schools. As one case study school reported, "it is difficult to make comparative analyses with the number of accelerate and multi-level courses we run."

Teacher Perceptions (Case Study Schools)

The Education Review Office (2008a) reported that approximately half of all schools were "highly effective or effective in promoting positive outcomes for their gifted and talented students" (p. 40). In this study two-thirds of teachers surveyed in the case study schools perceived that their schools provided effective provisions for all accelerated learners, including the gifted and talented students across all year levels, especially in Years 10-12. Outcomes in this study over all participants were generally positive.

Effective acceleration meets the academic, social and emotional needs of gifted students and accelerated students (Kulik & Kulik, 1984a; Rogers, 2010; Steenbergen-Hu & Moon, 2011). In general, teachers' perceptions confirmed that academic needs were met. However, while still positive, teachers expressed some concerns that social and emotional outcomes may not always be achieved. Some teachers raised concerns including the point that other students might feel devalued academically, unstimulated with the removal of gifted students (Gross et al., 2011) or students may not fit in socially with older students (Southern & Jones, 1991). A point to emphasise from this research is that the students, themselves, did not voice social adjustment problems.

Providing special programs for gifted students has led to criticisms of elitism (Braggett, 1992; Ford, 2012; Gagné, 2011). Contrasting views have been voiced in relation to equity for all students including the gifted and talented (Assouline et al., 2014; Benbow & Stanley, 1996). Teachers did not show negative attitudes to the gifted, as has been reported in Geake and Gross' (2008) research. Nor did they express concerns towards acceleration as a provision for gifted and talented education (Hoogeveen, Hell, & Verhoeven, 2005). Most teachers in the study do not appear to know about the research on acceleration.

Kerr (1997b) has argued that for gifted girls "grade-skipping and acceleration are far less harmful than the alternative-staying in the regular classroom" (p. 250). Teachers were convinced that it was more detrimental for a gifted student to waste time in class than to skip a grade. As with gifted provisions, teachers were highly positive about the effects of acceleration provisions in the senior school, Years 11-13. However, while most agreed, in principle, with acceleration, they were not convinced that there should

be an increase in the number of accelerated gifted students (see Vialle et al., 2001; Watts, 2006). The explanation given related to social and emotional concerns.

Student Perceptions (Case Study Schools)

All students sampled in the schools had been identified as gifted and talented and had been accelerated in one or more levels. Two-thirds of students surveyed in the case studies perceived that being identified as gifted and talented had been a positive experience, academically and socially, some did not know but few disagreed. All interviewed students agreed it had been a positive experience. In general, students did not find their giftedness, or the label of giftedness, prevented them from making and having friends (see Lee et al., 2012). While Reis (1998) had suggested that most gifted girls are "eager to conform and to be indistinguishable from the rest of the crowd, learn to pose as average girls" (p. 127) this did not appear to be the case in the interviews or the surveys. Significantly, students did not feel they had to "keep quiet" about their giftedness, as in Tapper's (2014) research.

Accelerated students usually perform academically towards the top of the accelerated class (Kulik & Kulik, 1984b) and this was demonstrated in most cases with academic achievement earning mainly merits and excellences in their accelerated subjects. Students provided reasons which were supported by the research, for the success of acceleration as an intervention. These include lack of boredom (Evans, 1996; Kulik & Kulik, 1984b), academic challenge (Kaman & Kronborg, 2012; Rogers, 2010), being interested, having choice and enjoying learning (Owens, 2014). The findings for this study supported Jaggar's (1999) findings that very few of the students who had been accelerated would have preferred to have stayed with their same age peers and students

were positive about being accelerated. Students were most positive academically about being placed or grouped with other academically focused students of similar ability. Lack of choice has been identified as a concern in the senior school (Wardman, 2010) and some students agreed with the concern, although some pointed out it was an initial problem with their first accelerated class in the school, and that this had improved.

Career advice is important academically especially for gifted girls (Fox, 1976; Kerr & McKay, 2014). Schools were mostly effective in providing choice and students in this study who were accelerated were mostly positive, believing that they had had appropriate information and consultation for school subject pathways and future pathways for career and university or tertiary education especially at university level and were particularly positive at Year 13.

However, not all students were as positive as the students in Wardman's (2010) research about the social and emotional benefits of acceleration, especially in the senior school. This study also reported conflicting gifted and talented student perceptions, including lack of time for social and sporting activities, yet others, supporting research by Kerr and McKay (2014), explained that they were involved in a wide variety of out-of-school activities. Acceleration according to Kerr and McKay (2014), does not hinder students from being elected as school leaders and this was the case in this study.

Acceleration has been criticised for inducing pressure and stress (Foust et al., 2009). In addition while high teacher expectations can aid student success (Horsley, 2012; Mahuika, 2007), they can also create pressure for gifted students, including pressure the students put on themselves (Robinson & Campbell, 2010). High teacher expectation can prove a motivating force for gifted and talented learners (Horsley, 2012), but for some

students, including those from different ethnicities (Ford, 2013), it can also create pressure. In this study some students did agree that academic workload created pressure and stress and there was also pressure from teacher expectations. However, the overall perspective of students was that being accelerated or being gifted and talented was positive. Slightly more students believed that being accelerated was a more positive experience than being identified as gifted and talented.

Parent or Caregiver Perceptions (Case Study Schools)

Freeman (1998) reported that parents disagreed with acceleration. However, parents in Wardman's (2010) study of students who had been grade-skipped, approved of acceleration, academically, socially and emotionally as did parents in a study undertaken by Noble, Childers, and Vaughan (2008) on parents of early entrants to university. In this study few parents or caregivers in the case studies disagreed and most parents or caregivers perceived that, first, being identified as gifted and talented, and second, being accelerated, was a positive experience for their daughters. According to Hertzog and Bennet (2004), parents want their children to be challenged and stimulated, and, in general, they believed the school provided effective acceleration provisions and that their daughters were supported socially and emotionally.

Most parents or caregivers in the study felt cultural needs did not apply to their daughters. There was, however, one acknowledgement that gifted students from different cultures were not represented in acceleration provisions. This perception supports international research (Borland & Wright, 2000; Ford, 2010, 2014a, 2014b; Olszewski-Kubilius & Thomson, 2010) and research undertaken nationally (Bevan-Brown, 1993, 1999; Faaea-Semeatu & Faitaua, 2013; Webber, 2006, 2011).

There are different views regarding the involvement of parents. Weeds (2013), for example, found that parents felt unsure how to support their gifted children and were not sure about career and study pathways beyond school. However, other research has described parental involvement as critical (Freeman et al., 2010; Wardman, 2010, 2014). Most parents or caregivers in the current study believed that their input was important. They provided a range of support including academic, social and emotional support with the latter being most offered. In addition, parents or caregivers were mainly positive about future pathways for their daughter's learning.

8.5. Overarching Research Question

> ***What are the acceleration methods and provisions that increase, or aim to increase, achievement and meet the academic, social, emotional and cultural needs of gifted and talented girls in single-sex schools which offer secondary education?***

Acceleration as an academic provision is usually offered to students who are identified as gifted and talented (Rogers, 1992). However, a student who is accelerated does not have to have been first identified as gifted and talented (Institute for Research and Policy on Acceleration (IRPA), National Association for Gifted Children (NAGC), & Council of State Directors of Programs for the Gifted (CSDPG), 2009, p. 1). This aspect was also reported by some schools in this study. Acceleration provisions and gifted and talented provisions did not generally appear to be affected by school decile, school size or whether a school was rural or urban, although, in the New Zealand context, findings from the Education Review Office (2008a) had indicated such differential effects for school type and size. The findings from this study support Luyten's (2014) conclusion

that “it does not seem likely that the relation between school size and academic achievement is very strong” (2014, p. 219).

Gagné’s theory of talent development and its application to this study is shown through the findings to the research questions which include the perceptions of teachers, parents and students. The gifted student with natural abilities during their school years is exposed to an educational developmental process. How effective this process is (overarching question and research question three) depends on the combined environmental catalysts including the ‘milieu’ of the school climate and culture (research question two), the school provisions, including acceleration and enrichment, and the support personnel (research question one) and their interaction with the intrapersonal catalyst, the individual and their physical, social, emotional and psychological makeup. Behind the natural gifts the student has, and the catalysts and developmental process is chance. This study especially showed the importance of the environmental catalysts and how they were being used in the developmental process and the school’s supportive cultures and climate provided for individuals, that is the intrapersonal catalysts.

The methods and provisions offered by schools during the second decade of the 21st century are reflected in both of the macro models developed in the 1970’s, specifically Stanley’s Talent Identification Development Model and Renzulli’s Schoolwide Enrichment Triad Model. The combined models, offering enrichment and acceleration, provide a “continuum of services” based on “student demographics and service need” (Brown & Stambaugh, 2014, p. 60).

Identification follows the Schoolwide Enrichment Model (SEM), but especially the use of multi-methods. The case study schools indicated that there was teacher selection, both for acceleration and for students who were gifted and talented and the use of achievement tests, but there was consultation and communication over student readiness. The use of selection based on creativity was not offered by schools or teachers.

The emphasis on subject acceleration in this study follows the Stanley Model. In particular, the case study descriptions of an accelerate class in a core subject or subjects align with the description in this model. The emphasis on the smorgasbord of acceleration methods, again follows the Stanley Model. Curriculum flexibility was shown in the provision of different forms to students at different levels, for example, class acceleration was often followed by further acceleration in classes, or ability grouping within a class,or individual programmes or provisions. Acceleration provided ongoing opportunities for students.

At the same time schools offered enrichment to accelerated students and in doing this followed some of the principles of the SEM model, especially at the highest level of the model. All schools offered some forms of enrichment with acceleration both in-school and out-of-school. However, as Kulik and Kulik (1992) have pointed out, enrichment does raise the level of achievement but acceleration does more.

In terms of models for gifted girls as posed by Reis (1998) and Kerr (1997b; Kerr & McKay, 2014) both identify support as necessary for gifted girls because of internal and external barriers to achievement. As Kerr suggested, gifted girls need to be identified, challenged, and guided. In addition, they need to be loved and to be allowed time alone

to explore their own interests. This study looked at gifted girls through a female lens, at the sociocultural and socioeconomic environment, at the importance of supportive relationships, the need for independence and the encouragement of risk-taking. It has shown girls using their developing talents and supported to do so.

Schools provided support networks through systems and personnel, including counselling and pastoral care, and teachers, parents or caregivers. Students, for their part, acknowledged this support was provided and was effective. The recommendation for mentors (Kerr & McKay, 2014; Reis, 2013b) was followed by some schools. Career advice because of multipotentiality is critical (Kerr & McKay, 2014) and academically, there was evidence that schools were providing career and subject advice. Acceleration provided academic challenge, as recommended by Reis and Graham (2005), especially in Mathematics and Science. The choice of these subjects confirmed the similarity of career ambitions of high ability girls and boys in single-sex schools as found by Watson, Quatman, and Edler (2002). Students acknowledged the support of high-achieving peers (Reis et al., 1995). They also acknowledged the support of parents, as did the teachers and the parents themselves.

Girls did not identify the internal barriers that have been identified by Reis (1998, 2002a). In particular, they did not reveal a "dilemma about abilities and talents, personal decisions about family, ambivalence of parents and teachers toward developing high levels of competence, or decisions about duty and caring (meeting the needs of others before one's own)" (Reis, 2002a, p. 125). They did not need to hide their ability. They did not fear success because of effects on peer relationships. Nor did they report they had destructive perfectionism or were "fledgling perfectionists" (Ramsay, 2002).

Kerr and McKay (2014) have expressed concerns about the underrepresentation of students from minority cultures in gifted programmes. These same concerns have been raised by New Zealand researchers (Bevan-Brown, 2004a; Webber, 2011). In this study most schools in the survey identified gifted students from different cultural ethnic groups. In the case study schools, students and teachers, in particular, reported that cultural support was provided, but recognised it was provided to a lesser extent than academic, and social and emotional support.

8.6. Conclusion

In summary, each question contributed a response to the overarching question. There were provisions for gifted girls in New Zealand single-sex schools at secondary level.

In this study acceleration was generally effective in raising achievement and some support was provided for the social and emotional development of gifted girls. Teachers, students and parents or caregivers, in general, perceived that they were informed about the school's practices and planning, delivery and evaluation of provisions and were generally positive about acceleration, especially subject acceleration, delivered as either an individual or accelerate class provision.

Chapter 9: Conclusions

9.1. Concluding Remarks

The emphasis in New Zealand education policy on personalised learning, high standards, high achievement and a commitment to equal opportunity for all students (Ministry of Education, 2007a) played out within the research schools. Gifted education in the research schools can be perceived as leading the way in personalised learning through collaboration, in evaluation processes and in consultation between teachers, students and parents or caregivers. This was particularly demonstrated in the case study schools. Importantly, as the case study schools demonstrated, gifted education not only enhances academic outcomes, it also enhances social outcomes and prospects for the future.

9.2. Barriers or Enablers

Barriers and enablers to identification and provision are those factors that prevent or assist student growth. Such factors may have opposite effects in different contexts (Riley & Bicknell, 2014; Wardman, 2010). In this study there were many more enablers than there were barriers.

Barriers

Lack of funding has been identified as a barrier to gifted provisions and to professional development for staff. However, in this study lack of funding was not raised as a deterrent and schools tended either to allocate dedicated funding for gifted and talented

or acceleration. This was an interesting finding given the reduced Ministry of Education funding available since 2009. It could be suggested that costs for gifted and talented provisions and acceleration, delivered either individually or in groups, have become embedded in school financial systems. Access to services for gifted and talented students, identified as a concern by Riley and Bicknell (2014), was not raised as a problem.

In this study schools in the national survey, and teachers in the case study schools did not identify lack of professional learning and development as a barrier. Interestingly teachers, in general, did not include gifted organisations or the gifted online website as sources of professional support. There was some indication from students and parents and caregivers that teacher subject knowledge was not always at the academic level required for accelerated gifted and talented students. In particular, the findings of this study indicate there is need for professional development, especially to increase student participation in gifted programmes and enhance understanding of giftedness in students from different cultures, as well as those who are twice exceptional.

Enablers

The Ministry of Education supports gifted and talented education by requiring schools to identify students with special needs including gifted and talented students, to provide teaching and learning strategies to meet their needs, and to evaluate progress and achievement. Administration systems and the senior management teams at schools supported gifted and talented education and acceleration as a provision by providing academic and social and emotional support. Pastoral care systems provided a programme of care to support these students who have been accelerated. Mentors were

used in some schools. The support of parents, caregivers and the gifted and talented coordinator were identified as significant for gifted girls.

Acceleration is a low cost intervention and therefore funding is not a barrier. In this study it was not emphasised that acceleration was used as a school marketing strategy. Some schools placed an emphasis on teacher allocation for gifted students. Communication processes within the school and between school and home facilitated wider acceptance of acceleration. Importantly, schools recognised that acceleration was not the best option for all students. In addition, students who had been accelerated could withdraw, and could often re-enter an academic programmes. Timetable flexibility enabled schools to offer acceleration. Multi-levelling of courses has been facilitated by NCEA (the national qualification) and has also made subject acceleration more feasible. Academic pathways, including dual enrolment, were generally open and subject and career advice was provided.

9.3. Limitations of the Research

The researcher had limited access to some information, particularly information relating to assessment data. NCEA databases do not show acceleration results for students below Year 11 at year of attainment. While schools record such data, this information was not readily available to the researcher. In the case study schools access to assessment data and information regarding school provisions and practices varied according to the culture of the school, school type and its organisation. In the national survey schools were asked for information on their provisions and practices. They were not asked directly for academic assessment data or evaluative comments on their provisions and

practices although participants were given an opportunity to provide supplementary comments.

The research focused only on single-sex girls' schools within a New Zealand context. This research context may affect the generalisation of findings to other contexts. In addition, only three case studies were involved in the research. Distribution of information regarding participation in surveys and interviews was different in each of these schools. Teachers who chose to participate were generally in favour of acceleration. A further limitation concerned the perceptions of students and their parents and caregivers. These perceptions were provided at different levels of a student's schooling and it is important to be aware that perceptions may change over the course of a student's schooling.

9.4. Future Research and Implications for Practice

Future areas for research could include provisions and practices for acceleration and gifted and talented students in coeducational and single-sex boys' schools. It would be interesting to undertake research that compared gifted girls in single-sex with gifted girls in coeducational schools. Further, it would be valuable to conduct international comparative research in relation to acceleration provision.

Implications for school practice include:

- the gathering and analysis of longitudinal data of gifted and talented students and students who have been accelerated in school;
- the linking of evaluation to programme goals;
- greater efforts to include more Māori and Pasifika in gifted programmes;

- an increase in the provision of acceleration for gifted and talented students;
- the provision of more teacher professional development to enable teachers to gain more knowledge and understanding of the characteristics and needs of gifted students, including those from different ethnicities, and those gifted students who are underachievers or who have disabilities and
- an increase in government funding for gifted and talented education to enable schools to offer professional development.

9.5. Contribution to the Research

This research makes a number of significant contributions. These can be summarised as follows.

- No national study has focused attention on gifted girls in single-sex schools.
- No national study has focused on secondary education for gifted girls in single-sex schools.
- No national study has focused on acceleration, with a range of options, as an educational provision within single-sex girls' schools.
- No national study has shown the positive implementation of acceleration by school administration, teachers, students and parents.

Contribution to Research on Gifted Girls

The research shows that internal barriers, previously identified, are not at the forefront for gifted girls. For example, barriers identified previously, such as perfectionism, or hiding ability, did not manifest in this study. If gifted girls do have traits such as multipotentiality these traits are not creating difficulty for girls.

The research shows the importance of constructive and supportive relationships for adolescent gifted girls thus providing a safe learning environment. In particular, academic, social, emotional and cultural support from teachers, peers, and parents are critical.

The research shows that gifted girls regard school as providing a learning experience rather than an assessment experience. In other words, they consider school as a challenging and enjoyable journey, with a personal and academic focus rather than a focus on high grades and achievement.

Contribution to Research on Acceleration

The research shows that support from government through its education portfolio and legislation for gifted and talented education, encourages and facilitates the use of best practices within schools. Hence government facilitates the use of acceleration as a provision. In particular these can be identified as:

- educational philosophies: "personalising learning" and "learning for success;"
- educational legislation: schools must identify and provide for gifted and talented learners because they have special needs;
- educational assessment system: NCEA provides for multi-level courses with endorsements for excellence and
- educational pathways provided by the Universities.

The case schools offering single-sex education reveal how acceleration and support is provided through its systems such as timetabling, multi-levelling courses, flexible entry systems and subject pathways, and through personnel and systems of care.

This research demonstrates that acceleration can be used successfully regardless of school size, decile or school type. What makes it work is a culture of improving learning in the school and a culture of care for students. Acceleration is offered through facilities and pastoral care, including social and emotional and cultural support.

9.6. Final Words

This study found that, in general, schools placed the student at the centre of the acceleration experience. The school provides enablers, and it is the student, in the context of support from home and school, who is given the opportunity to capitalise on those enablers. Every student has the right to learn and achieve at her potential.

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Glossary: Acceleration and Gifted Girls

Ability group (streaming) is creating classes by intelligence (Hallam, 2002). Ability grouping my occur between classes or within a class.

Acceleration is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

BOT is the Board of Trustees which is responsible for the governance of the school.

CEM tests are provided by the Centre for Evaluation and Monitoring (CEM), University of Canterbury, New Zealand, and schools can purchase tests to use as entrance tests in English, Mathematics and Reasoning for students entering Year 7 or Year 9. They can be used for class placement and identifying individual student strengths and areas for development. Marking and reporting are done by the Centre.

Concurrent or dual enrolment is university or tertiary study while still enrolled at school.

Curriculum compacting is the elimination of already mastered curriculum with the replacement of more challenging content (Reis & Renzulli, 1992).

Cluster group is grouping for ability inside a class.

Differentiation is the adaption of content and pace to fit the needs of the individual student.

Enrichment is an activity(ies) which are designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e. wider, same level).

Gifted and talented learners are those with exceptional abilities relative to most other people (within their age group). These individuals have certain learning characteristics that give them the potential to achieve outstanding performance. They require different learning opportunities and may need emotional and social support to realise their potential (Ministry of Education, 2002). **Gifted or talented** where the term is differentiated-giftedness is usually associated with high intelligence or aptitude, whereas talent is usually related to a high level of performance in such areas as music, art, craft, dance or sport (Ministry of Education, 2004).

IEP is an individual education plan agreed to by the school, the student and parents or caregivers.

Mentors are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

NCEA is the National Certificate of Educational Achievement. It is internally and externally assessed at three levels from Level 1 to Level 3, usually starting in Year 11 at Level 1 and run by **NZQA**, the New Zealand Qualifications Authority.

PATs are Progressive Achievement Tests which assess students' Mathematics, Listening Comprehension, Punctuation and Grammar, Reading Comprehension, and Reading Vocabulary. They are a series of standardised tests developed specifically for use in New Zealand schools by the New Zealand Council for Educational Research (NZCER).

PTSA is the Parent, Teacher, Student Association in the school.

Pull-out programmes are withdrawal programmes.

STAR is the Secondary Tertiary Alignment Resource which provides additional Operational Grant funding to all State and State-Integrated schools in New Zealand for students in Years 11-13+ to help provide vocational pathways.

Ravens Progressive Matrices is a non verbal test of general intelligence. The questions consist of visual geometric design with a missing piece.

TEFA is the Targeted Funding for Educational Achievement. Decile ratings are based on TEFA indicators which identify schools from low socioeconomic communities. The lower the school decile the more funding it receives.

Appendices

Appendix A: Range of Accelerative Options

Type of Accelerative Option	Description
Early entrance to school	The student is admitted to school prior to the age specified for normal entry to first year of schooling
Grade-skipping	The student is moved ahead of normal grade. This may be done during an academic year or at year end.
Continuous progress	The student is given material considered appropriate for current achievement as the student becomes ready.
Self-paced instruction	The student is presented with materials that allows him or her to proceed at a self-selected pace. Responsibility for selection of placing is the student's.
Subject-matter acceleration	The student is placed for a part of a day with students at more advanced grade levels for one or more subjects without being assigned to higher classes
Combined classes	The student is placed in classes where two or more grade levels are combined. This arrangement can be used to allow younger children to interact with older ones academically and socially.
Curriculum compacting	The student is given reduced amounts of introductory activities, drill, review and so on. The time saved may be used to move faster through the curriculum.
Telescoping curriculum	The student spends less time than normal in course of study (e.g., completing a 1-year course in 1 semester, or finishing high school in less years)
Mentorships	The student is exposed to a mentor who provides advanced training and experiences in a content area.
Extracurricular programs	The student is enrolled in course work or summer programs that confer advanced instruction and /or credit for study (e.g., fast paced language or mathematics courses offered by universities).
Concurrent enrolment	The student is taking a course at one level and receiving credit for successful completion at a parallel course at a higher level.
Advanced placement	The student takes a course in high school that prepares him or her for taking an examination that can confer university credit for satisfactory performances.
Credit by examination	The student receives credit (at high school or university level) upon successful completion of an examination.
Correspondence courses	The student takes high school or university courses by mail through video and audio course presentation.
Early entrance into high school or university	The student is admitted with full standing to an advanced level of instruction (at least one year early)

Note. Adapted from "Academic Acceleration: Background and Issues" by W. Thomas Southern and Eric D. Jones, 1991, *The Academic Acceleration of Gifted Children*, pp2-3. Reprinted by permission of the Publisher. From W. Thomas Southern and Eric D. Jones, eds., *The Academic Acceleration of Gifted Children*, New York: Teachers College Press. Copyright © 1991 by Teachers College, Columbia University. All rights reserved.

Appendix B: National Administration Guideline 1

Each board of trustees is required to foster student achievement by providing teaching and learning programmes which incorporate The National Curriculum as expressed in *The New Zealand Curriculum 2007* or *Te Marautanga o Aotearoa*.

Each board, through the principal and staff, is required to:

(a) develop and implement teaching and learning programmes:

(i) to provide all students in years 1-10 with opportunities to achieve for success in all areas of the National Curriculum;

(ii) giving priority to student achievement in literacy and numeracy, especially in years 1-8;

(iii) giving priority to regular quality physical activity that develops movement skills for all students, especially in years 1-6.

(b) through a range of assessment practices, gather information that is sufficiently comprehensive to enable the progress and achievement of students to be evaluated; giving priority first to:

(i) student achievement in literacy and numeracy, especially in years 1-8; and then to

(ii) breadth and depth of learning related to the needs, abilities and interests of students, the nature of the school's curriculum, and the scope of The National Curriculum as expressed in *The New Zealand Curriculum* or *Te Marautanga o Aotearoa*;

(c) on the basis of good quality assessment information, identify students and groups of students:

(i) who are not achieving;

(ii) who are at risk of not achieving;

(iii) who have special needs (including gifted and talented students); and

(iv) aspects of the curriculum which require particular attention;

(d) develop and implement teaching and learning strategies to address the needs of students and aspects of the curriculum identified in (c) above;

(e) in consultation with the school's Māori community, develop and make known to the school's community policies, plans and targets for improving the achievement of Māori students; and

(f) provide appropriate career education and guidance for all students in year 7 and above, with a particular emphasis on specific career guidance for those students who have been identified by the school as being at risk of leaving school unprepared for the transition to the workplace or further education/training.

Retrieved from
http://www.minedu.govt.nz/theMinistry/EducationInNewZealand/EducationLegislation/TheNationalAdministrationGuidelinesNAGs.aspx

Appendix C: Talent Development Model of Eminent Women

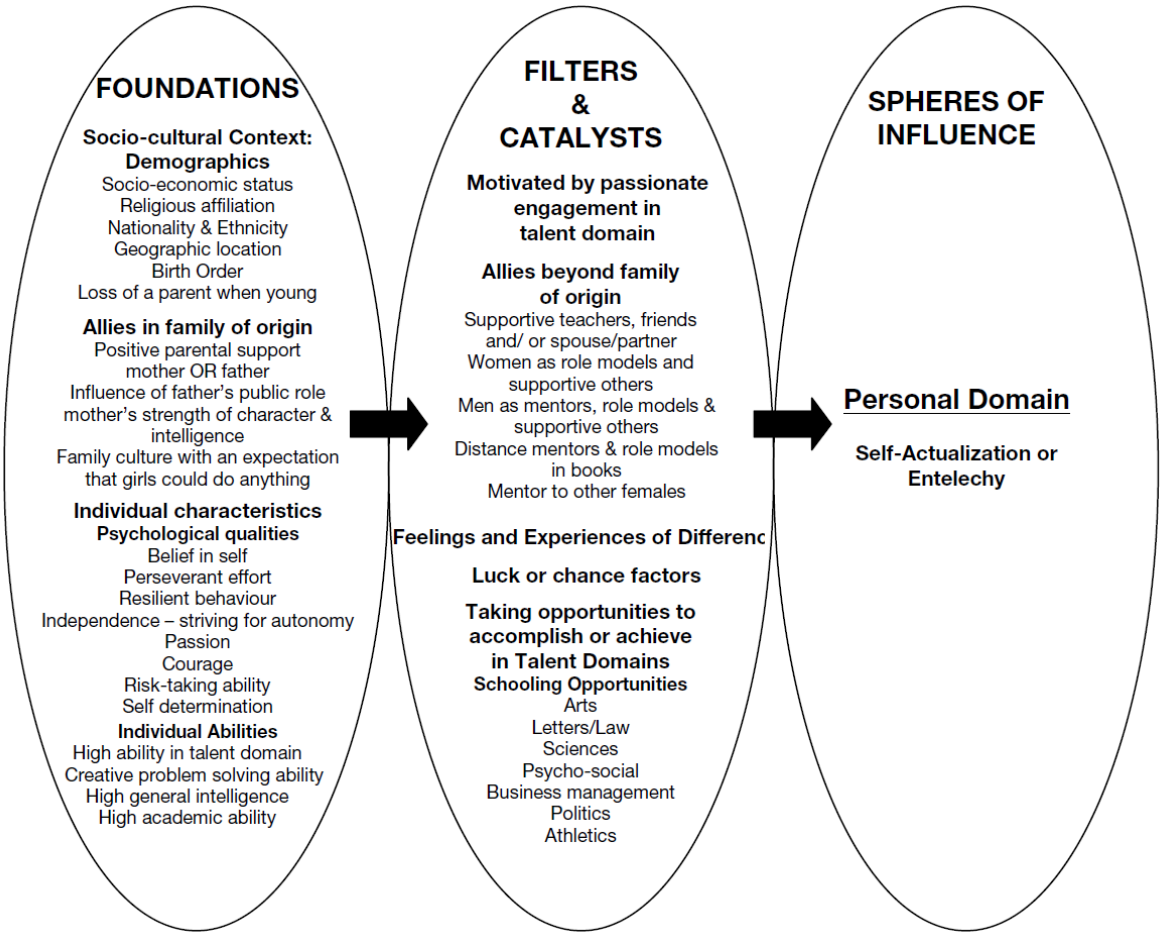

Figure sourced from "What Contributes to Talent Development in Eminent Women?" by L. Kronborg, 2010, *Gifted and Talented International*, 25, 2, p. 24. Copyright 2010, by the World Council for Gifted and Talented Children.

Appendix D: Beehive of Smart Girls

Type of Bee	Characteristics	Role in the Culture	Specific Focus
Queen Bee	Intelligence	Transform	Visionary
	Creativity		
	Emotional Intelligence		
	Spiritual Intelligence		
Procreator Bee	Intelligence	Create	Innovator
	Creativity		
Honey Bee	Intelligence	Nourish & heal	Leader
	Emotional Intelligence		
Forager Bee	Intelligence	Gather/share Knowledge	Scholars
	Specific abilities		
Worker Bee	Intelligence	Maintain	Professionals
	Broad abilities		

Note. Adapted from "Beehive of Smart Girls Diagram," described as "A summary of each of the bee types, along with their characteristics, the role they play in our society, and their specific, work related focus" by B. A. Kerr and R. McKay, 2014, *Smart Girls in the 21st Century: Understanding Talented Girls and Women*, pp16-17. Reprinted by permission of Great Potential Press, Inc., from *Smart Girls in the 21st Century: Understanding Talented Girls and Women.*

Appendix E: Scope of the Literature Review

The key search words used were acceleration, gifted, gifted girls, gifted females, and gender. A search was done of the Massey University Catalogue and the electronic databases for A+Education, Academic Search Elite, Australia/New Zealand Reference Centre, and EBSCOhost data bases (including ERIC), Discover, ProQuest Dissertation and Theses and NZCER. Different sites were searched on the internet, using the same keywords, examples of sites were Te Kete Ipurangi (TKI), American Association of University Women (AAUW), John Hopkins Centre and the Belin-Blank Center. The literature search involved a search of the following refereed gifted and talented journals for published research: *Journal of Secondary Gifted Education* (now called *Journal of Advanced Studies*), *High Ability Studies, Gifted and Talented International, Gifted Child Quarterly, Gifted Child Today, Roeper Review, The Australasian Journal of Gifted Education, Apex, and Mai Review (2006-2011).* The reference lists supplied in journal articles also signposted important articles and searches were made under the names of important writers and researchers in gifted education. Other journals were also used such as reviews of educational research including: *Educational Researcher, American Educational Research Journal, Review of Educational Research, Journal of Mixed Methods Research* and *SET*, a New Zealand Research journal.

Appendix F: Massey University Human Ethics Committee Approval

MASSEY UNIVERSITY

15 April 2011

Margaret Crawford
89 Waitara Road
RD42
WAITARA

Dear Margaret

Re: HEC: Southern B Application – 10/71
Acceleration and gifted girls in single-sex girls' schools for secondary education in New Zealand

Thank you for your letter dated 9 April 2011.

On behalf of the Massey University Human Ethics Committee: Southern B I am pleased to advise you that the ethics of your application are now approved. Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Dr Nathan Matthews, Acting Chair
Massey University Human Ethics Committee: Southern B

cc A/Prof Tracy Riley
School of Curriculum & Pedagogy
PN900

Dr Brenda Bicknell
School of Curriculum & Pedagogy
PN900

Dr Alison Kearney, HoS
School of Curriculum & Pedagogy
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Mrs Roseanne MacGillivray
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Te Kunenga
ki Pūrehuroa

Appendix G: Advisory Group Letter

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

89 Waitara Rd
RD 42
Waitara 4382

30 April 2011

Dear

I am an EdD student at Massey University and I am currently working on the thesis on "Acceleration and Gifted Girls in Secondary Education in New Zealand." My research proposal has been accepted and I have MUHEC ethics approval. I am asking a group of researchers to review the survey documentation (using Survey Monkey) before it is sent to schools. I am inviting you to be a member of the Review Group. My research supervisor from Massey University is Dr Tracy Riley (t.l.riley@massey.ac.nz).

This research has two foci, acceleration and gifted girls. Acceleration is underused as a provision for gifted education in New Zealand and abroad despite evidence of its effectiveness. Gifted girls are regarded as a special population with special needs. There is little research on either of the two focus areas in the New Zealand context.

The aim of the research is to find answers to the overarching question:

> **What are the acceleration methods and provisions that increase, or aim to increase, achievement and meet the academic, social, emotional and cultural needs of gifted and talented girls in single-sex secondary education in New Zealand (Years 9-13)?**

The research involves: a national survey of all girls' single-sex schools offering secondary education about acceleration and gifted girls, followed by more in–depth study of up to four schools where acceleration is an educational provision.

In each case study school, selected as providing or allowing for acceleration, there will be:

- a national survey;
- an attitude survey developed by Gagné and Nadeau (1995);
- three surveys of teachers, students, and parents or caregivers;
- focus group discussions from these groups;
- interviews: senior manager; significantly accelerated student(s) (optional);
- document analysis.

Te Kunenga ki Pūrehuroa

School of Curriculum and Pedagogy
Private Bag 11222, Palmerston North 4442, New Zealand T +64 6 356 9099 F +64 6 351 3472 www.massey.ac.nz

The specific research questions are:

1. How are acceleration processes being designed, implemented, maintained and evaluated in single–sex girls' secondary education in New Zealand?
2. How important is the school climate and philosophy for the academic, social, emotional and cultural needs of gifted girls in relation to acceleration?
3. How effective is acceleration as an intervention for raising achievement and supporting social, emotional and cultural development of individuals and/or groups of gifted girls in single–sex schools in secondary education in New Zealand?

This project aims to provide examples of current practice, including good practice, for acceleration and gifted girls.

Ethics Approval has been given. This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

The review of the surveys is to review whether the wording and clarity is apparent for the respondent. It is also to evaluate the competency and to estimate the length of the survey, or the time it will take to complete the survey.

Each researcher in the Review Group is asked to review two of the surveys. The estimated time for each survey is less than 30 minutes.

Please review National Survey and Teacher Survey.

The links to the surveys are:

National Survey For All Girls' Secondary Schools:
http://www.surveymonkey.com/s/WSKMB56;

Teacher Survey: http://www.surveymonkey.com/s/WSPLYTN;

Parent/Caregiver Survey: http://www.surveymonkey.com/s/WR7DJ9F;

Student Survey: http://www.surveymonkey.com/s/WT9VPRB.

After completing the surveys could you please complete the Survey Review Sheets (attached). Either complete one which refers to both surveys, or complete one for each specific survey.

Please return these review(s) by email to Margaret Crawford (margaret.crawford@xtra.co.nz) or by mail to the researcher's address at 89 Waitara Rd as at the beginning of the letter.

I have also attached PDF files of the surveys (if required).

Thank you for reviewing the documentation.

Please complete the review by 17 May 2011.

If you do not wish to be a member of the review group please contact the researcher, by email (margaret.crawford@xtra.co.nz), or by mail to the researcher's address at 89 Waitara Rd as at the beginning of the letter.

Yours sincerely

M E Crawford

Margaret Crawford

Survey Review Sheets-see attachment

Name of Review Group Member _____

Please tick the survey(s) to which this Survey Review applies:

☐ **National Survey;** ☐ **Teacher Survey;** ☐ **Parent Survey;** ☐ **Student Survey.**

Survey Review for 'Acceleration and Gifted Girls'

(adapted from Iraossi, Smart Survey Design, 2010, p19)

1. Are the objectives of the survey clear? If not how could the objectives be clarified?

2. Please suggest any improvements (re wording, grammar, punctuation).

3. Were the instructions for the survey clear and was the layout appropriate for ease of use?

4. Do any of the items require the respondent to think too long or hard before responding? Which ones?

5. Will the respondents feel comfortable answering the questions? If not which specific questions may cause discomfort?

6. Please identify any items that might produce irritation, embarrassment, or confusion.

7. Do any of the questions generate response bias? Which ones?

8. Is the survey too long? (e.g., estimated time)

9. Were any answer choices missing?

10. Have any important issues been overlooked? What are they?

Appendix H: National Survey

National Survey of Acceleration and Gifted Girls in Single-Sex Schools in

1. National Survey of Girls' Secondary Education

The purpose of this national survey is to find out how secondary schools are providing for their gifted and talented girls in years 9-13, what works and what could be improved. In particular the survey wishes to find out about academic acceleration and its implementation and effectiveness as a provision for gifted and talented girls. Your school's response is important as current research has indicated that acceleration is a controversial provision.

The survey is being conducted as part of a research project for an EdD (Doctorate of Education) being undertaken by Margaret Crawford (margaret.crawford@xtra.co.nz) at Massey University. The research supervisors are Dr Tracy Riley, t.l.riley@massey.ac.nz and Dr Glenda Anthony, G.J.Anthony@massey.ac.nz.

Information from the survey will be confidential to the research process and presentations from the research, including any publications that eventuate from the research study. Schools will not be identified by name.

The survey should take no longer than 30 minutes to complete.

Consent is assumed by the completion of the survey; however, you may decline to answer any particular question simply by leaving it blank.

Comment boxes are optional. If you wish to navigate back and forth through your responses, please use the "Prev" and "Next" buttons provided within the survey. The survey is completed by clicking the "Submit" button at the end. You won't be able to re-enter the survey once you have exited it, so please make sure you finish all your answers in one session. If you would like to leave the survey at any time, click "Exit this survey" at the top of the survey.

If you have any queries about this research, please contact the researcher, Margaret Crawford, margaret.crawford@xtra.co.nz.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

2. School Demographics

1. What is your school decile and school roll?

School decile ☐

School roll ☐

2. How does the Ministry of Education define your single sex girls' school which offers secondary education? (Please tick one)

- ◯ Secondary school from Years 9-15
- ◯ Secondary school from Years 7-15
- ◯ Composite private fully registered school from Years 1-15
- ◯ Special school

3. Is your school rural or urban?

- ◯ Rural
- ◯ Urban

3. Schoolwide Coordination

Page 1

National Survey of Acceleration and Gifted Girls in Single-Sex Schools in

1. Does your school have a person responsible for gifted and talented education?

- ◯ Yes
- ◯ No

If yes, what is the position of this person? (e.g., principal, associate principal, deputy principal, special needs coordinator, teacher)

2. Does your school have a committee or coordinating team for gifted and talented education?

- ◯ Yes
- ◯ No

3. If you have answered yes to the previous question, who is on the committee or coordinating team? (Tick all that apply)

- ☐ Principal
- ☐ Associate principal(s) or deputy principal(s)
- ☐ Learning support coordinator
- ☐ Special needs coordinator
- ☐ Designated teacher of gifted and talented
- ☐ Head(s) of department
- ☐ Teacher(s)
- ☐ School counsellor
- ☐ Parent or caregiver
- ☐ Community member(s)
- ☐ Other (please specify below)

Other

4. Gifted and Talented Definition, Identification and Provision

The following questions relate to your school definition, identification and provision for gifted and talented education. Please answer questions which are relevant to your school.

1. Does your school have a definition of giftedness and talent?

- ◯ Yes
- ◯ No

2. Does your school have a gifted and talented register?

- ◯ Yes
- ◯ No

National Survey of Acceleration and Gifted Girls in Single-Sex Schools in

3. Does your school have procedures for identifying gifted and talented students?

- ◯ Yes
- ◯ No

4. What are the procedures for identifying gifted and talented girls at your school? (Tick all that apply)

- ☐ Teacher observation or nomination
- ☐ Teacher rating scales or checklist
- ☐ Achievement tests (e.g., PAT, CEM)
- ☐ IQ tests (e.g., Ravens)
- ☐ Teacher-made tests
- ☐ Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- ☐ Student work (e.g., portfolios)
- ☐ Parent or caregiver nomination
- ☐ Self-nomination
- ☐ Peer nomination
- ☐ Whanau nomination
- ☐ School enrolment form
- ☐ Previous school identification
- ☐ Other (please specify below)

Other

5. Does your school have procedures in place to identify gifted and talented students who are: (Tick one response for each item)

	Yes	No
Underachievers?	○	○
From different cultural and ethnic groups?	○	○
Twice exceptional (gifted with a disability)?	○	○

6. Does your school have individual student profiles for gifted and talented students? (i.e., information file, IEP or ILP)

- ○ Yes
- ○ No

7. Does the school record and analyse data of gifted and talented students' performance or results before their secondary school years?

- ◯ Yes
- ◯ No

If the answer is yes, how is this recorded, analysed, or both?

8. Does the school record and analyse data of gifted and talented students' performance or results during their secondary school years?

- ◯ Yes
- ◯ No

If the answer is yes, how is this collected, recorded, or both?

9. What provisions does your school offer for gifted and talented students? (Tick all that apply)

- ☐ Acceleration* (definition below)
- ☐ Enrichment* (definition below)
- ☐ A combination of acceleration and enrichment
- ☐ Other (please specify below)

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e., wider, same level).

Other

10. Is funding available for gifted and talented provisions?

- ◯ Yes
- ◯ No

If funding is available, what is its source and what does it support?

11. Who provides support for your gifted and talented students and is this support academic, social, emotional, and cultural? (Tick all that apply)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Gifted and talented coordinator	☐	☐	☐	☐
Parent or caregiver	☐	☐	☐	☐
Mentor	☐	☐	☐	☐
School counsellor	☐	☐	☐	☐
Principal	☐	☐	☐	☐
Subject teacher	☐	☐	☐	☐
Tutor, group, or homeroom teacher	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Other

12. What support does your school provide for your gifted and talented students? (Tick all that apply)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Individual interviews	☐	☐	☐	☐
Individual education plans (e.g., IEP or ILP)	☐	☐	☐	☐
Parent or caregiver consultation for individuals	☐	☐	☐	☐
Parent or caregiver consultation for classes	☐	☐	☐	☐
Subject counselling	☐	☐	☐	☐
Career counselling	☐	☐	☐	☐
Pastoral care	☐	☐	☐	☐
School selection of subject teacher	☐	☐	☐	☐
School selection of tutor group or homeroom group	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Other

13. What evaluation or review processes does your school have specifically for gifted and talented provisions? (Tick all that apply)

- ☐ Examination or test results evaluations
- ☐ Student evaluations
- ☐ Staff evaluations
- ☐ Parent evaluations
- ☐ Gifted and talented coordinator evaluation
- ☐ Gifted and talented committee evaluation
- ☐ External evaluation
- ☐ Competition results evaluations
- ☐ Other (please specify below)

Other

5. Acceleration

The following questions relate to identification and provision for acceleration. Please answer questions which are relevant to your school.

1. Does your school have an acceleration policy or procedures?

- ○ Yes
- ○ No

2. What forms of acceleration does your school use at each year level? (Tick all that apply)

	Year 9	Year 10	Year 11	Year 12	Year 13
Grade-skipping (moving up a year level across all subjects)	☐	☐	☐	☐	☐
Radical acceleration (skipping levels, or year level acceleration, by 2 or more years)	☐	☐	☐	☐	☐
Subject acceleration (single subject)	☐	☐	☐	☐	☐
Individual and self-paced instruction	☐	☐	☐	☐	☐
Combined classes (e.g., Years 12 and 13 in the same	☐	☐	☐	☐	☐

	Year 9	Year 10	Year 11	Year 12	Year 13
class)					
Curriculum compacting* (definition below)	☐	☐	☐	☐	☐
Telescoping curriculum (teaching 3 terms work in 1)	☐	☐	☐	☐	☐
Mentoring* (definition below)	☐	☐	☐	☐	☐
Extracurricular programmes	☐	☐	☐	☐	☐
Correspondence courses	☐	☐	☐	☐	☐
Concurrent or dual enrolment (studying university or tertiary papers while enrolled at school)	☐	☐	☐	☐	☐
Early entrance into secondary school	☐	☐	☐	☐	☐
Scholarship prior to year 13	☐	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐	☐

Curriculum Compacting* is the elimination of already mastered curriculum with the replacement of more challenging material by enrichment activities or acceleration (Reis & Renzulli, 1992).

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

3. In school-based subjects how are students accelerated? (Tick all that apply)

- ☐ Individually
- ☐ In a group or cluster within a class (i.e., ability grouping within a class)
- ☐ Both individually and in a group
- ☐ In an accelerate class
- ☐ Pull-out group (i.e., withdrawn from the normal class to do other activities)
- ☐ Other (please specify below)
- ☐ Don't know

Other

4. How does the school consult with parents or caregivers before acceleration

provisions are introduced? (Tick one response for each item)

	Yes	No
Interview with parent or caregiver	○	○
Interview with parent or caregiver and student	○	○
Meeting with parents or caregivers of a group or class	○	○
Meeting with parents, or caregivers, and students of a group or class	○	○
Letter of information informing parent or caregiver that acceleration has taken place	○	○
Letter of information from school requesting acceptance or refusal	○	○
Phone call discussion	○	○
Other (please specify below)	○	○

Other

5. Are students able to withdraw from the accelerated provisions at any time?

○ Yes

○ No

If the answer is yes, please describe the withdrawal process.

6. Are they able to reenter or resume the provisions at any time?

○ Yes

○ No

Please add any information as to how and when they are able to resume or reenter.

7. How are students chosen for acceleration? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Achievement tests (e.g., PAT, CEM)
- [ ] Iowa Acceleration Scale
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Other (please specify below)

Other

8. Approximately how many students are accelerated at each level in the current academic year?

Year 9	
Year 10	
Year 11	
Year 12	
Year 13	

9. In which subjects are students accelerated? (Select from the drop down menu)

	subject 1	subject 2	subject 3	subject 4	subject 5	subject 6
Year 9						
Year 10						
Year 11						
Year 12						
Year 13						

Other (level and subject)

10. Does the school provide enrichment* for students who have been accelerated*?

- ◯ Yes
- ◯ No
- ◯ Don't know

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e., wider, same level)

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

If the answer is yes please give some examples.

11. What forms of enrichment does the school use? (Tick all that apply)

	Year 9	Year 10	Year 11	Year 12	Year 13
Pull-out programmes	☐	☐	☐	☐	☐
Projects	☐	☐	☐	☐	☐
Differentiated learning in class	☐	☐	☐	☐	☐
Outside speakers	☐	☐	☐	☐	☐
Interest groups	☐	☐	☐	☐	☐
Clubs or lunchtime activities (e.g., debating, P4C)	☐	☐	☐	☐	☐
Class trips	☐	☐	☐	☐	☐
Visiting groups (e.g., drama performance)	☐	☐	☐	☐	☐

	Year 9	Year 10	Year 11	Year 12	Year 13
Competitions	☐	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐	☐

Other

12. Are students currently enrolled in university or tertiary courses?

- ◯ Yes
- ◯ No

If the answer is yes, how many students, at what year level, and in what subjects are they enrolled?

13. Is there funding available for accelerated learning provisions?

- ◯ Yes
- ◯ No

If funding is available, what is its source and what does it support?

14. What evaluation processes does your school have for acceleration provisions? (Tick all that apply)

- ☐ NCEA results evaluations
- ☐ NZ scholarship results evaluations
- ☐ International examination results evaluations (e.g., University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- ☐ University results evaluations
- ☐ Competition results evaluations
- ☐ Student evaluations

- [ ] Teacher evaluations
- [ ] Parent or caregiver evaluations
- [ ] Department evaluations
- [ ] Senior leadership team evaluations
- [ ] Gifted and talented coordinator evaluation
- [ ] Gifted and talented committee evaluation
- [ ] External evaluation
- [ ] Other (please specify below)

Other

6. Further Comments

Add any further comment you would like to make about acceleration and gifted girls.

1. Add any further comment

7. Next stage of research

The next stage of the research is case study research of schools who volunteer to take part.

1. Would your school like to be involved as a case study school in the next stage of the research?

- ◯ Yes
- ◯ No

If you would like to be involved as a case study school please email the researcher, Margaret Crawford, with the name of your school and the name of a contact person (margaret.crawford@xtra.co.nz).

Thank you for completing the survey.

Appendix I: National Survey Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

National Online Survey

28 July 2011

Dear Principal or Gifted and Talented Coordinator,

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I would like to invite you to participate in research on acceleration and gifted girls in single-sex secondary education in New Zealand. The purpose of the research is to examine the educational provisions for gifted girls and in particular, if acceleration is used, how it is used and evaluated.

The research has three stages: a review of the research literature; a survey of single-sex girls' secondary schools in New Zealand; and case studies of schools with significant acceleration provisions.

The survey has been sent to 37 girls' secondary schools Years 9-15, and 17 Years 7-15. It has also been sent to the 7 composite schools Years 1-15 and 1 Special School.

Purpose of the Research.

There are two areas of interest for the research. Acceleration is an underused provision according to national and international research despite its reported educational benefits. There are at least 18 different types of acceleration and New Zealand schools may not realise they are using acceleration.

Gifted girls have been described as a special population who have special needs. Schools may meet their academic, social and emotional and cultural needs in many ways. Does acceleration meet the needs of your gifted students? If your school does not accelerate what provisions have been found to be the most successful for your gifted girls? The information you provide will help schools to reflect on their own practices and attitudes towards acceleration, provisions for gifted girls, and provide examples of effective practice.

I invite you to participate in an online survey using Survey Monkey. The questionnaire should take no more than 30 minutes to complete. It may be completed by an individual (e.g., your school's gifted and talented coordinator) or a group (e.g., your school's committee for gifted and talented). If the school wishes your school may volunteer as a case study school for more in-depth investigation and participation. The invitation to participate as a case study school is at the end of the survey.

Te Kunenga ki Pūrehuroa

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Every effort will be made to ensure confidentiality and anonymity (e.g., the use of pseudonyms). However, some information, for example, provisions for gifted and talented or acceleration may mean a school could, or might, be identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the single-sex girls' schools offering secondary education.

Completion of the survey implies consent. You have the right to decline to answer any particular question. You may withdraw at any time, or discontinue your participation by choosing not to submit your competed survey.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The project supervisors are Dr Tracy Riley and Dr Glenda Anthony. Their contact details are below: t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625; G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8600.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

The online national survey for all girls' secondary schools is located at

http://www.surveymonkey.com/s/WSKMB56.

Please complete by **16 August 2011**

Thank you for your participation.

Yours faithfully

Margaret Crawford

Appendix J: Principal and Board of Trustees Case Study Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Information sheet for Principal and Board of Trustees: Case Study Schools

Dear Principal and Board of Trustees

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I am conducting research though Massey University on acceleration and gifted girls in single-sex secondary education in New Zealand. The purpose of the research is to examine the educational provisions for gifted girls and in particular, if acceleration is used, how it is used and evaluated. The research has three stages: a review of the research literature; a survey of single-sex girls' secondary schools in New Zealand; and multiple case studies of schools with significant acceleration provisions.

The survey of girls' school which offer secondary education has been completed and your school has volunteered to be one of the case study schools for an in depth investigation. Your school was selected because of the significant provisions you offer for acceleration, and your identification procedures and provisions for gifted girls. The information gathered about your school is to be used for research purposes to improve practice, not for assessing or judging your school.

Each case study school's staff, students and parents or caregivers is asked to complete some questionnaires before a two day visit by the researcher. Schools will be asked to make documentation (e.g., policies and procedures) regarding acceleration and gifted girls available to the researcher whether before or during the school visit.

When you confirm acceptance, the school will be sent a teacher opinion survey on attitudes to aspects of gifted education. This is an international research instrument developed by Gagné and Nadeau (1991). With your permission, this is to be distributed to 20% of the teaching staff, randomly selected, and conducted online or a hard copy can be requested. Completion of the questionnaire implies consent. Staff have the right to decline to answer any particular question. Their confidentiality and anonymity are assured.

The next stage would be to conduct online surveys for teaching staff, parents or caregivers, and students using Survey Monkey to be completed. The survey will include an invitation to take part in a focus group interview.

I would like to visit the school for two days, for the following purposes:

- conduct the focus group interviews (out of school time);
- conduct an interview with a Senior Manager with responsibility for Gifted and Talented, or the Gifted and Talented Co-Coordinator;
- I would like access, and where applicable, photocopies of any written documentation such as policies, strategic and action plans, registrars etc for the purpose of document analysis.

Te Kunenga ki Pūrehuroa

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Findings from the case studies will be reported in broad themes. Your school will not be named or identified in the final research report. Every effort will be made to ensure confidentiality and anonymity (e.g., the use of pseudonyms). However, some information, for example, provisions for gifted and talented or acceleration may mean a school could, or might, be identified.

Completion of surveys, by those over 16, implies consent. Informed consent will be requested of each member of the focus groups or individual interviews and parents/ caregivers will also be asked for consent for students who participate regardless of student age of participation. The interviews will be tape-recorded and then transcribed. Interviewees will have the transcribed interviews available for checking on accuracy and for further comment if they so wish. The findings of the research will be used for the research project and for any other publications or presentations which may arise. Data will be stored for five years in accordance with Massey University Human Ethics Committee procedures.

You are under no obligation to accept this invitation. If you decide to participate, the staff, parents or caregivers, and students have the right to:

- decline to answer any particular question;
- withdraw from the study;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your school name will not be used;
- be given access to a summary of the project findings when it is concluded;
- ask for the recorder to be turned off at any time during an interview.

It is not intended that students feel pressured to participate because they have been identified as accelerated or gifted and talented students. Participation or non participation by students should not affect their current or future schooling (e.g., school grades, class placement or leadership positions) and students will be informed of this.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors.
The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Please sign the enclosed consent form and return by _____ to the researcher, Margaret Crawford, 89 Waitara Rd, RD 42, Waitara 4382, in the enclosed envelope.
Thank you for your time.

Yours faithfully

Margaret Crawford

Appendix K: Permission to Access Database Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

Permission to Access School Database Information

Dear Principal

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I am conducting research though Massey University on acceleration and gifted girls in single-sex secondary education in New Zealand. Letters of information and consent forms have been sent to the Board of Trustees and yourself asking for permission to conduct the research in your school as a case study school.

I am requesting permission for access to relevant information from the school database to be used for the research. The request for information from the database will be made to, and through, the senior manager with responsibility for gifted or talented, or the teacher in charge of gifted and talented. Information requested such as names and addresses or other non-publically available data, such as junior examination results, may be requested as part of the research.

Information given will be confidential to the research and any publications resulting from it. Anonymity will be kept as far as possible.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz). The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Please sign the enclosed consent form and return by 19 SEPTEMBER to the researcher, Margaret Crawford, 89 Waitara Rd, RD 42, Waitara 4382, in the enclosed envelope.

Yours faithfully
M Crawford 11/09/11
Margaret Crawford

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Appendix L: Principal Consent Form for Case Study

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Project Title
Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

PRINCIPAL CONSENT FORM FOR CASE STUDY

I have read the information sheets and questionnaires for the research on "Acceleration and Gifted Girls in Single-Sex Girls in Secondary Education" to be undertaken by Margaret Crawford.

The project is to focus on the question:

> **What are the acceleration methods and provisions that increase, or aim to increase, achievement and meet the cognitive, affective, social and cultural needs of gifted and talented girls in secondary education in New Zealand?**

Permission has been sought from the Board of Trustees for the project to be undertaken.

Permission for the study to continue can be withdrawn at any time if there are concerns that the research may be harmful to the school or the participants.

Information given will be confidential to the research and any publications resulting from it. Anonymity will be kept as far as possible.

The raw information from the study will be stored securely for five years and then destroyed.

This project has been reviewed and approved by the Massey University Human Ethics Committee.

If you have any questions about the project please contact the researcher and/or the supervisors.

The researcher can be contacted by email margaret.crawford@xtra.co.nz.

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or T.L.Riley@massey.ac.nz; telephone 06 3560900, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3560900, ext 8860.

Te Kunenga ki Pūrehuroa

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I agree to the research on "Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand" being undertaken in my school.

Principal

Signed_____

Name_____ (Please print)

Date_____

Name of School_____

Appendix M: Board of Trustees Consent to Case Study

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

BOARD OF TRUSTEES' CONSENT FOR CASE STUDY

The Board of Trustees has read the information sheets and questionnaires.

This project is under the supervision of Massey University Staff and follows the Massey University Human Ethics Code.

I understand that.....

Permission is hereby given by the Board of Trustees for the study to proceed.

Permission will be sought from the Principal and the Staff to undertake the research.

Permission for the study to continue can be withdrawn at any time if there are concerns that the research may be harmful to the school or the participants.

The Board of Trustees will receive a summary of the research findings.

The Board of Trustees agrees to the research being undertaken in their school.

Board of Trustees Chairperson

Signed_____

Name_____(Please print)

Date_____

Name of School_____

Te Kunenga ki Pūrehuroa

School of Curriculum and Pedagogy
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Appendix N: Principal Consent to Access Database

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

PRINCIPAL CONSENT TO ACCESS TO SCHOOL DATABASE INFORMATION

I have read the information sheets for the permission to access school database material for research on "Acceleration and Gifted Girls in Single-Sex Girls in Secondary Education" to be undertaken by Margaret Crawford.

Permission has been sought from the Board of Trustees for the project to be undertaken.

Permission for the study to continue can be withdrawn at any time if there are concerns that the research may be harmful to the school or the participants.

Information given will be confidential to the research and any publications resulting from it. Anonymity will be kept as far as possible.

The raw information from the study will be stored securely for five years and then destroyed.

This project has been reviewed and approved by the Massey University Human Ethics Committee.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher can be contacted by email margaret.crawford@xtra.co.nz. The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or T.L.Riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

I agree to the researcher, Margaret Crawford, having access, through the senior manager with responsibility for gifted education, or the teacher in charge of gifted and talented to relevant school database material for research on "Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand."

Principal

Signed_____

Name_____(Please print)

Date_____

Name of School_____

Te Kunenga ki Pūrehuroa

School of Curriculum and Pedagogy
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Appendix O: Case Study Teacher Opinions of the Gifted Survey

Teacher Attitude Survey Using Gagné and Nadeau, 1991

1. Teacher Attitude Survey Using Gagné and Nadeau, 1991

The purpose of the survey is to obtain an overall view of teacher attitudes and opinions about giftedness in your school.

The survey is being conducted as part of a research project for an EdD (Doctorate of Education) being undertaken by Margaret Crawford (margaret.crawford@xtra.co.nz) at Massey University. The research supervisors are: Dr Tracy Riley, t.l.riley@massey.ac.nz and Dr Glenda Anthony, G.J.Anthony@massey.ac.nz.

Your school has offered to be a case study school in the next stage of the research following a national survey. A 20% sample of the teaching staff in your school have been invited to complete this survey to give a 'snapshot' of teachers' views of gifted education in your school.

Information from the survey will be confidential to the research process and presentations from the research, including any publications that eventuate from the research study. Schools and teachers will not be identified by name.

The survey should take no longer than 15 minutes to complete.

Consent is assumed by the completion of the survey; however, you may decline to answer any particular question simply by leaving it blank.

You may leave the survey at any time by clicking 'Exit Survey' at the top of the survey. You may not return to your answers once you have exited the survey, so please make sure you finish all your answers in one session.

If you have any queries about this research, please contact the researcher, Margaret Crawford, margaret.crawford@xtra.co.nz.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

2. Opinions About the Gifted and Their Education

This survey was created by Françoys Gagné, Ph.D. and Lorraine Nadeau, M.A., Université du Québec á Montréal (Canada), in 1991 and was called "Opinions about the Gifted and Their Education." It is used with Gagné's permission. It has been typed into Survey Monkey for analysis and distribution purposes. If you wish to complete the survey and calculate your score at the end of the survey please email Margaret Crawford (margaret.crawford@xtra.co.nz) for a hard copy of the survey, or request a hard copy through the senior manager in charge of gifted and talented. Please return the survey in the reply envelope.

Teacher Attitude Survey Using Gagné and Nadeau, 1991

Survey Instructions

The following statements concern gifted children and their education; they were taken from newspaper articles, books and other sources. We would like to know the extent of your agreement or disagreement with each of them. There are no correct or incorrect answers. Please feel free to express your personal opinion in your choice of descriptor.

1. Use the scale below to give your opinion.

2. Tick beside each statement the descriptor which best represents your opinion.

3. Answer as spontaneously as possible.

4. Please answer all questions.

5. Use the descriptor "undecided" as little as possible.

SCALE:Totally Disagree=1;Partially Disagree=2;Undecided=3;Partially Agree=4;Totally Agree=5.

3. Survey Questions

1. Our schools should offer special educational services for the gifted.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

2. The best way to meet the needs of the gifted is to put them in special classes.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

3. Children with difficulties have the most need of special educational services.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

4. Special programs for gifted children have the drawback of creating elitism.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

5. Special educational services for the gifted are a mark of privilege.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

6. When the gifted are put in special classes, the other children feel devalued.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

7. Most gifted children who skip a grade have difficulties in their social adjustment to a group of older students.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

8. It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

9. Gifted children are often bored in school.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

Teacher Attitude Survey Using Gagné and Nadeau, 1991

10. Children who skip a grade are usually pressured to do so by their parents.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

11. The gifted waste their time in regular classes.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

12. We have a greater moral responsibility to give special help to children with difficulties than to gifted children.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

13. Gifted persons are a valuable resource for our society.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

14. The specific educational needs of the gifted are too often ignored in our schools.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

15. The gifted need special attention in order to fully develop their talents.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

16. Our schools are already adequate in meeting the needs of the gifted.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

17. I would very much like to be considered a gifted person.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

18. It is parents who have the major responsibility for helping gifted children develop their talents.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

19. A child who has been identified as gifted has more difficulty in making friends.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

20. Gifted children should be left in regular classes, since they serve as an intellectual stimulant for the other children.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

21. By separating students into gifted and other groups, we increase the labelling of children as strong-weak, good-less good, etc.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

22. Some teachers feel their authority threatened by gifted children.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

Teacher Attitude Survey Using Gagné and Nadeau, 1991

23. The gifted are already favoured in our schools.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

24. In order to progress, a society must develop the talents of gifted individuals to a maximum.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

25. By offering special education services to the gifted we prepare the future members of a dominant class.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

26. Tax-payers should not have to pay for special education for the minority of children who are gifted.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

27. Average children are the major resource of our society; so, they should be the focus of our attention.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

28. Gifted children might become vain or egotistical if they are given special attention.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

29. When skipping a grade, gifted students miss important ideas (they have "holes" in their knowledge).

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

30. Since we invest supplementary funds for children with difficulties, we should do the same for the gifted.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

31. Often, gifted children are rejected because people are envious of them.

◯ Totally Disagree ◯ Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

32. The regular school program stifles the intellectual curiosity of gifted children.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

33. The leaders of tomorrow's society will come mostly from the gifted of today.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

34. A greater number of gifted children should be allowed to skip a grade.

◯ Totally Disagree ◯ Partially Disagree ◯ Undecided ◯ Partially Agree ◯ Totally Agree

Teacher Attitude Survey Using Gagné and Nadeau, 1991

Thank you very much for your help in this research project by answering the survey by Gagné and Nadeau, 1991.

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Appendix P: Teachers' Opinions on the Gifted Information Letter

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Case Study School: Survey of a Sample of Teachers' Opinions on the Gifted and their Education

Dear Colleague

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I am conducting research under Dr Tracy Riley and Dr Glenda Anthony as the research supervisors. I would like to invite you to participate in research on acceleration and gifted girls in single-sex secondary education in New Zealand. The purpose of the research is to examine the educational provisions for gifted girls and in particular, if acceleration is used, how it is used and evaluated.

The research has three stages: a review of the research literature; a survey of single-sex girls' secondary schools in New Zealand; and case studies of schools with significant acceleration provisions.

Your school has volunteered to be a case study school.

Purpose of the Research:

There are two areas of interest for the research. Acceleration is an underused provision according to past New Zealand research but there are at least 18 different types of acceleration and schools may not realise they are using acceleration. Gifted girls have been described as 'a special population' who have special needs. Schools may attempt to meet these needs in many ways. The study asks the broad question, 'What happens when gifted girls are accelerated?'

Your School and Gifted Education: Snapshot Survey of Teacher Attitude

I invite you to participate in a teacher survey using Gagné and Nadeau's (1991) international research survey "Opinions about the Gifted and Their Education." The questionnaire should take no more than 10-15 minutes to complete. It is measured using a Likert scale. 20% of teachers at your school are being surveyed and you have been randomly selected based from the staff list. The survey is available online.

The information you provide will help determine further questions for the research in your school. Schools. This information will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the survey findings will be sent to research participants.

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Massey University Human Ethics Committee procedures will be followed for all data handling. Once the survey has closed the information provided in the online survey will be downloaded onto the researcher's computer. The data will be stored for five years and then destroyed.

Your participation is voluntary and confidentiality and anonymity are assured. Completion and return of the questionnaire implies consent. You have the right to decline to answer any particular question.

The teacher attitude survey can be found at http://www.surveymonkey.com/s/LTCYQKW

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Please complete the survey by **28 September 2011.**

Thank you for your time.

Yours faithfully

M Crawford 11/9/11

Margaret Crawford

Appendix Q: Teacher Survey Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Teacher Online Survey on Acceleration

Case Study School

Information Sheet

Dear Colleague

My name is Margaret Crawford and I am a research student in the EdD degree programme (Doctor of Education) at Massey University. I would like to invite you to participate in research on acceleration and gifted girls in single-sex secondary education in New Zealand for years 9-13. The purpose of the research is to examine the educational provisions for acceleration in single-sex girls' schools and, in particular, how schools provide for their gifted girls. If acceleration is not used how do schools cater for their gifted girls?

Your school has volunteered to be a case study school after a national survey has been conducted on this subject. The Principal and the Board of Trustees have agreed to the research being conducted in your school. The research has three stages: a review of the research literature; a survey of single-sex girls in secondary education in New Zealand; and case studies of schools with significant acceleration provisions.

Purpose of the Research:

There are two areas of interest for the research. Acceleration is an underused provision according to national and international research, despite its reported educational benefits. There is limited New Zealand research and in-depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in years 9-13 in single-sex education, and an examination, in more depth, of case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may meet their academic, social, emotional and cultural needs in many ways. Does acceleration meet the needs of your gifted students? If your school does not accelerate what provisions have been found to be the most successful for your gifted girls? The information you provide will help schools to reflect on their own practices and attitudes towards acceleration, provisions for gifted girls, and provide examples of effective practice.

Te Kunenga
Ki Purehuroa

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I invite you to participate in an online survey using Survey Monkey. The questionnaire should take no more than 30 minutes to complete.

Confidentiality and anonymity are assured. For the survey, closed questions will be analysed using Survey Monkey and the open-ended questions will be coded to identify patterns or trends across different deciles, regions and school types. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to research participants.

Massey University Human Ethics Committee procedures will be followed for all data handling. Once the survey has closed the information provided in the online survey will be downloaded onto the researcher's or research assistant's computer. The data will be stored by the researcher for five years and then destroyed.

Completion of the questionnaire implies consent. You have the right to decline to answer any particular question. You may withdraw at any time, or discontinue your participation by choosing not to submit your completed survey.

If you wish, you may also volunteer to be a member of a small focus group of teachers for an interview. The details are available at the end of the survey.

The survey can be found at http://www.surveymonkey.com/s/WSPLYTN.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 or G.L.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Please complete the survey by _____(fortnight given)

Thank you for your time.

Yours faithfully

Margaret Crawford

Appendix R: Parent or Caregiver Survey Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Parent or Caregiver Online Survey on Acceleration

Case Study School

Information Sheet

Dear Parent or Caregiver

My name is Margaret Crawford and I am a research student in the EdD degree programme (Doctor of Education) at Massey University. I would like to invite you to participate in research on acceleration and gifted girls in single-sex secondary education in New Zealand for years 9-13.The purpose of the research is to examine the educational provisions for acceleration in single-sex girls' schools and, in particular, how schools use acceleration for their gifted girls. If acceleration is not used how do schools cater for their gifted girls?

Your school has volunteered to be a case study school after a national survey has been conducted on this subject. The Principal and the Board of Trustees have agreed to the research being conducted in your daughter's school. You have been nominated by the school as a parent or caregiver of a student who is gifted and talented or accelerated in her learning.

The research has three stages: a review of the research literature; a survey of single-sex girls in secondary education in New Zealand; and multiple case studies of schools with significant acceleration provisions.

Purpose of the Research:

There are two areas of interest for the research. Acceleration is an underused provision according to national and international research. There is limited New Zealand research and in-depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in years 9-13 in single-sex education, and an examination, in more depth, of case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may meet their academic, social, emotional and cultural needs in many ways. Does acceleration meet the needs of your gifted daughter(s)? If your school does not accelerate what provisions have been found to be the most successful for your gifted girl(s)? The information you provide will help schools to reflect on their own practices and attitudes towards acceleration, provisions for gifted girls, and provide examples of effective practice.

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I invite you to participate in an online survey using Survey Monkey. The questionnaire should take no more than 30 minutes to complete.

Confidentiality and anonymity are assured. For the survey, closed questions will be analysed using Survey Monkey and the open-ended questions will be coded to identify patterns or trends across different deciles, regions and school types. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the research participants.

Massey University Human Ethics Committee procedures will be followed for all data handling. Once the survey has closed the information provided in the online survey will be downloaded onto the researcher's or research assistant's computer. The data will be stored by the researcher for five years and then destroyed.

Completion of the questionnaire implies consent. You have the right to decline to answer any particular question. You may withdraw at any time, or discontinue your participation by choosing not to submit your completed survey.

If you wish, you may also volunteer to be a member of a small focus group of parents or caregivers for an interview. The details are available at the end of the survey.

The survey can be found at http://www.surveymonkey.com/s/WR7DJ9F.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Please complete by _____(fortnight given)

Thank you for your time.

Yours faithfully

Margaret Crawford

Appendix S: Student Survey Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KURENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Student Online Survey on Acceleration

(student, as identified by school as gifted and talented and/or accelerated in their learning)

Case Study School

Information Sheet

Dear Student

My name is Margaret Crawford and I am a research student in the EdD degree programme (Doctor of Education) at Massey University. I would like to invite you to participate in research on acceleration and gifted girls in single-sex schools in years 9-13 in New Zealand. The purpose of the research is to gather information about the educational provisions for acceleration in single-sex girls' schools and, in particular, how schools use acceleration for their gifted girls. If acceleration is not used how do schools cater for their gifted girls?

Your school has been selected as a Case Study School after a National Survey has been conducted on this subject. You have been nominated by your school as a student who is gifted and talented and/or accelerated in her learning.

The research has three stages: a review of the research literature; a survey of single-sex girls' in secondary education in New Zealand; and multiple case studies of schools with significant acceleration provisions. Within the case study school there will be questionnaires, focus group interviews, and an interview with a senior manager. The information you provide will provide examples of what schools are doing for students who are gifted and talented.

Purpose of the Research:

There are two areas of interest for the research. Acceleration is an underused provision according to New Zealand and International research. There is limited New Zealand research and in-depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in secondary education, but in the context of single-sex education, then to examine in depth, some case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may attempt to meet these needs in many ways. What happens when gifted girls are accelerated or not accelerated? How can the education for gifted girls be improved?

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I invite you to participate in an online survey using Survey Monkey. The questionnaire should take no more than 30 minutes to complete. It is not intended that you feel pressured to participate because you have been identified as accelerated or gifted and talented students. Participation or non participation by students should not affect their current or future schooling (eg., school grades, class placement or leadership positions) and schools have been informed of this.

For the survey, closed questions will be analysed using Survey Monkey and the open-ended questions will be coded to identify patterns or trends across different deciles, regions and school types. Confidentiality and anonymity are assured. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the single-sex girls' schools offering secondary education.

Massey Ethics procedures will be followed for all data handling. Once the survey has closed the information provided in the online survey will be downloaded onto the researcher's and /or research assistant's computer. The data will be stored for five years and then destroyed.

Completion of the questionnaire implies consent. You have the right to decline to answer any particular question.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

The consent form signed by the parent or caregiver and student needs to be returned to the school before the link to the student survey on Survey Monkey can be provided.

Thank you for your time.

Yours faithfully

Margaret Crawford

Appendix T: Student Survey Link

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Notification of Student Survey Monkey Link

Dear _____

Thank you for returning the consent form signed by yourself and your parent or caregiver for student participation in research on acceleration and gifted girls in New Zealand.

Information regarding the student survey was given in the original letter. There is additional information at the beginning of the survey. Your participation is voluntary, and your anonymity and confidentiality are assured. You have the right to decline to answer any questions.

Please keep this link confidential as students need to have parent or caregiver permission before they can take part in the survey.

The survey link is https://www.surveymonkey.com/s/9JV2YCX

Please complete the survey by **30 September 2011.**

Thank you for your time.

Yours faithfully

14/09/11

Margaret Crawford

Te Kunenga ki Pūrehuroa

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Appendix U: Parent or Caregiver Consent for Student Survey Participation

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

PARTICIPANT CONSENT FORM – student survey: Survey Monkey

Parent or Caregiver Consent

I have read the Student Information Sheet and understand the details of the student survey using Survey Monkey.

I agree/do not agree that my daughter may be given the link to the Survey and may complete the survey if she wishes.

I agree/do not agree that my daughter may participate in this research survey under the conditions set out in the Information Sheet.

Parent or Caregiver Signature ..... **Date** .....

Full Name - printed .....

Daughter's Full Name ..... **Age**.....

Name of School .....

Te Kunenga ki Purehuroa

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Appendix V: Case Study Teacher Survey

Teacher Survey

1. Teacher Survey: Case Study School. Acceleration and Gifted Girls

The purpose of this teacher survey is to find out how secondary schools are providing for their gifted and talented girls in year 9-13, what works and what could be improved.

In particular the survey wishes to find out about academic acceleration and its implementation and effectiveness as a provision for gifted and talented girls. Gifted girls have special needs which may or may not be met. Your response is important as current research has indicated that acceleration is a controversial provision.

The survey is being conducted as part of a research project for an EdD (Doctorate of Education) being undertaken by Margaret Crawford (margaret.crawford@xtra.co.nz) at Massey University. The research supervisors are Dr Tracy Riley, t.l.riley@massey.ac.nz and Dr Glenda Anthony, G.J.Anthony@massey.ac.nz.

Your school has offered, or been invited, to be a case study school in the next stage of the research following a national survey.

Information from the survey will be confidential to the research process and presentations from the research, including any publications that eventuate from the research study. Schools and teachers will not be identified by name.

The survey should take no longer than 30 minutes to complete.

Consent is assumed by the completion of the survey; however, you may decline to answer any particular question simply by leaving it blank.

Comment boxes are optional. If you wish to navigate back and forth through your responses, please use the "Prev" and "Next" buttons provided within the survey. The survey is completed by clicking the "Submit" button at the end. You won't be able to re-enter the survey once you have exited it, so please make sure you finish all your answers in one session. If you would like to leave the survey at any time, click "Exit this survey" at the top of the survey.

If you have any queries about this research, please contact the researcher, Margaret Crawford, margaret.crawford@xtra.co.nz.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

2. Teacher's Professional Background and Roles

1. What is your role in the school? (Tick all that apply)

- ☐ Classroom teacher
- ☐ Teacher in charge (TIC)
- ☐ Head of department
- ☐ Gifted and talented coordinator
- ☐ Special education coordinator
- ☐ Associate principal or deputy principal
- ☐ Principal
- ☐ Other (please specify below)

Other

Page 1

Teacher Survey

2. How many years of teaching experience have you had?

- ◯ 0-3 years
- ◯ 4-7 years
- ◯ 8-12 years
- ◯ 13-17 years
- ◯ 18-30 years
- ◯ more than 30 years

Teacher Survey

3. Are you male or female?

- ◯ Male
- ◯ Female

4. What subjects do you currently teach and at what levels? (Select from the drop down menu)

	Subject 1	Subject 2	Subject 3
Years 9-10			
Years 11-13			

3. Your Teaching Practice

1. Are you currently teaching or have you taught the following? (Tick all that apply)

	Year 9	Year 10	Year 11	Year 12	Year 13
Gifted and talented girls	☐	☐	☐	☐	☐
Accelerated learners	☐	☐	☐	☐	☐

2. Do you use the following in your class(es)? (Tick one response for each item)

	Yes	No
Acceleration*?	◯	◯
Enrichment*?	◯	◯
A combination of acceleration and enrichment?	◯	◯
Differentiation*?	◯	◯

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate or at a younger age than their peers.

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, understanding which is beyond the basic programme which is provided.

Differentiation* is the adaption of content and pace to fit the needs of the individual student at the same level.

Please comment on your preferred approach(es) in your classes.

Teacher Survey

3. What, if any, professional development, training, and qualifications have you had in gifted education or acceleration?

4. Schoolwide Practices in Gifted and Talented Education

1. In regards to gifted and talented education, does your school have the following? (Tick all that apply)

	Yes	No	Don't Know
Coordinator	☐	☐	☐
Committee	☐	☐	☐
Written policy or procedures	☐	☐	☐
Definition	☐	☐	☐
Identification procedures	☐	☐	☐
Register	☐	☐	☐
Guidelines for identifying and working with gifted students at risk (e.g.,underachievers, Māori)	☐	☐	☐

Teacher Survey

2. What are the procedures for identifying gifted and talented girls at your school? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Standardised tests (e.g., PAT, CEM)
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Parent or caregiver request
- [ ] Other (please specify below)
- [ ] Don't know

Other

Teacher Survey

3. What provisions does your school offer for for gifted and talented students? (Tick all that apply)

- ☐ Acceleration*
- ☐ Enrichment*
- ☐ A combination of acceleration and enrichment
- ☐ Differentiation*
- ☐ Other (please specify below)
- ☐ Don't know

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate or at a younger age than their peers (i.e., higher level, faster pace).

Enrichment* is an activity(ies) which are designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e., wider, same level).

Differentiation* is the adaption of content and pace to fit the needs of the individual student.

Other ☐

4. Who provides support for your gifted and talented students and is this support academic, social, emotional, and cultural? (Tick all that apply)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Gifted and talented coordinator	☐	☐	☐	☐
Parent or caregiver	☐	☐	☐	☐
Mentor*	☐	☐	☐	☐
School counsellor	☐	☐	☐	☐
Principal	☐	☐	☐	☐
Subject teacher	☐	☐	☐	☐
Tutor group, or homeroom teacher	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other ☐

Teacher Survey

5. What support does your school provide for your gifted and talented students? (Tick all that apply)

	Academic	Social, Emotional or Both	Cultural	Don't Know
Individual interviews	☐	☐	☐	☐
Individual education plans (e.g., IEP or ILP)	☐	☐	☐	☐
Parent or caregiver consultation for individuals	☐	☐	☐	☐
Parent or caregiver consultation for classes	☐	☐	☐	☐
Subject counselling	☐	☐	☐	☐
Career counselling	☐	☐	☐	☐
Pastoral care	☐	☐	☐	☐
School selection of subject teacher	☐	☐	☐	☐
School selection of tutor group or homeroom group	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐
Don't know	☐	☐	☐	☐

Teacher Survey

	Academic	Social, Emotional or Both	Cultural	Don't Know

Other

6. Please indicate how strongly you agree or disagree with this statement: The school provisions for gifted and talented girls are effective. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please comment on the effectiveness of your school's provisions.

7. Please indicate how strongly you agree or disagree with this statement: The academic, social, emotional, and cultural needs of my gifted and talented learners are met. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Academic needs	○	○	○	○	○	○
Social needs	○	○	○	○	○	○
Emotional needs	○	○	○	○	○	○
Cultural needs	○	○	○	○	○	○

Please give reasons for your selections.

Teacher Survey

8. How do you evaluate provisions for gifted and talented learners in your class? (Tick all that apply)

- [ ] Teacher written evaluation
- [ ] Teacher and student discussion
- [ ] Student examination and test results evaluations
- [ ] Student oral evaluation
- [ ] Student written evaluation
- [ ] Class evaluation
- [ ] Parent evaluation
- [ ] External evaluation
- [ ] Other (please specify below)

Other

9. What evaluation or review processes does your school have for gifted and talented provisions? (Tick all that apply)

- [ ] Examination and test results evaluations
- [ ] Student evaluations
- [ ] Staff evaluations
- [ ] Parent evaluations
- [ ] Gifted and talented coordinator evaluation
- [ ] Gifted and talented committee evaluation
- [ ] External evaluation
- [ ] Competition results evaluations
- [ ] Other (please specify below)
- [ ] Don't know

Other

5. Acceleration

Teacher Survey

1. In regard to acceleration does your school have the following? (Tick one response for each item)

	Yes	No	Don't Know
Gifted and talented students who are accelerated	○	○	○
Students who are accelerated who are not identified as gifted and talented	○	○	○
Policy on acceleration	○	○	○
Documented procedures on acceleration	○	○	○
Longitudinal data on accelerated students	○	○	○
Other (please specify below)	○	○	○

Other

Teacher Survey

2. What forms of acceleration does your school use? (Tick all that apply)

- [ ] Grade-skipping (moving up a level across all subjects)
- [ ] Radical acceleration (skipping levels, or year level acceleration, by 2 or more years)
- [ ] Subject acceleration (single subject)
- [ ] Individual or self-paced instruction
- [ ] Combined classes (e.g., Years 12 and 13 in the same class)
- [ ] Curriculum compacting* (definition below)
- [ ] Telescoping curriculum (teaching 3 terms work in 1)
- [ ] Mentoring* (definition below)
- [ ] Extracurricular programmes
- [ ] Correspondence courses
- [ ] Concurrent or dual enrolment (studying university or tertiary courses while enrolled at school)
- [ ] Early entrance into secondary school
- [ ] Early entrance into primary or intermediate school
- [ ] Scholarship prior to Year 13
- [ ] Online learning opportunities
- [ ] Other (please specify below)
- [ ] Don't know

Curriculum compacting* is the elimination of already mastered curriculum with the replacement of more challenging material by enrichment activities or acceleration (Reis & Renzulli, 1992).

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other

Teacher Survey

3. In school-based subjects how are students accelerated? (Tick all that apply)

- [ ] Individually
- [ ] In a group or cluster within a class (i.e., ability grouping within a class)
- [ ] Both individually and in a group
- [ ] In an accelerate class
- [ ] Pull-out group (i.e., withdrawn from the normal class to do other activities)
- [ ] Other (please specify below)
- [ ] Don't know

Other

4. In what year levels and in what subjects are students accelerated? (Select from the drop down menu)

	subject 1	subject 2	subject 3	subject 4	subject 5	subject 6
Year 9						
Year 10						
Year 11						
Year 12						
Year 13						

If there are other subjects or levels please indicate below.

Teacher Survey

5. How are students chosen for acceleration? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Standardised tests (e.g., PAT, CEM)
- [ ] Iowa Acceleration Scale
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Parent or caregiver request
- [ ] Other (please specify below)
- [ ] Don't know

Other

Teacher Survey

6. Does the school use enrichment for accelerated learners?

- ◯ Yes
- ◯ No
- ◯ Don't know

7. Please indicate how strongly you agree or disagree with this statement: In your school acceleration meets the ~~academic~~, needs of gifted and talented students. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	◯	◯	◯	◯	◯	◯
Year 10	◯	◯	◯	◯	◯	◯
Year 11	◯	◯	◯	◯	◯	◯
Year 12	◯	◯	◯	◯	◯	◯
Year 13	◯	◯	◯	◯	◯	◯

Please give reasons for your selected responses.

Teacher Survey

8. Please indicate how strongly you agree or disagree with this statement: In your school acceleration meets the social and emotional needs of gifted and talented students. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please give reasons for your selected response.

9. Please indicate how strongly you agree or disagree with this statement: In your school acceleration meets the cultural needs of gifted and talented students. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please give reasons for your selected responses.

Teacher Survey

10. Please indicate how strongly you agree or disagree with this statement: In your school acceleration meets the academic needs of all accelerated learners. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please give reasons for your selected responses.

11. Please indicate how strongly you agree or disagree with this statement: In your school does acceleration meet the social and emotional needs of all accelerated learners. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please give reasons for your selected responses.

Teacher Survey

12. Please indicate how strongly you agree or disagree with this statement: In your school acceleration meets the cultural needs of all accelerated learners. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please give reasons for your selected responses.

Teacher Survey

13. How is acceleration evaluated for effectiveness? (Tick all that apply)

- [ ] NZQA results evaluations
- [ ] International examination results evaluations (e.g., University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] University results evaluations
- [ ] Competition results evaluations
- [ ] Student evaluations
- [ ] Teacher evaluations
- [ ] Parent or caregiver evaluations
- [ ] Department evaluations
- [ ] Senior leadership team evaluations
- [ ] External evaluation
- [ ] Other (please specify below)
- [ ] Don't know

Other

Teacher Survey

6. Regular Classroom Teaching Practices

1. At what levels are you using acceleration, enrichment, and differentiation? (Tick all that apply)

	Acceleration	Enrichment	Differentiation
Year 9	☐	☐	☐
Year 10	☐	☐	☐
Year 11	☐	☐	☐
Year 12	☐	☐	☐
Year 13	☐	☐	☐

2. How are students accelerated? (Tick all that apply)

	Year 9	Year 10	Year 11	Year 12	Year 13
Individually	☐	☐	☐	☐	☐
Cluster group inside the regular classroom	☐	☐	☐	☐	☐
Both individually and in a group	☐	☐	☐	☐	☐
As a class	☐	☐	☐	☐	☐
Pull-out group (withdrawn from the normal class to do other activities)	☐	☐	☐	☐	☐

3. Who designs provisions for gifted and talented students in your class? (Tick all that apply)

- ☐ Teacher
- ☐ Student(s) and teacher
- ☐ Head of department
- ☐ Gifted and talented coordinator
- ☐ Other (please specify below)

Other

4. Are students able to be withdrawn or be included in accelerated provisions at any time during the school year?

- ◯ Yes
- ◯ No
- ◯ Don't know

Teacher Survey

5. Please indicate how strongly you agree or disagree with this statement: The academic, social, emotional, and cultural needs of my accelerated learners are met. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Academic	○	○	○	○	○	○
Social	○	○	○	○	○	○
Emotional	○	○	○	○	○	○
Cultural	○	○	○	○	○	○

Please give reasons for your responses.

7. Further Comments

Add any further comment you would like to make about acceleration and gifted girls.

1. Add any further comment

8. Next Steps for Research

1. Would you like to be involved in a small group focus interview of teachers in the next stage of the research?

○ Yes

○ No

If you would like to be involved as a teacher in a focus group please email the researcher, Margaret Crawford, with the name of your school, and your contact name and details (margaret.crawford@xtra.co.nz).

Thank you for completing the survey.

Appendix W: Case Study Parent or Caregiver Survey

Parent or Caregiver Survey

1. Parent or Caregiver Survey: Case Study. Acceleration and Gifted Girls

The purpose of this parent or caregiver survey is to find out how secondary schools are providing for their gifted and talented girls in years 9-13, what works and what could be improved. In particular the survey wishes to find out about academic acceleration and its implementation and effectiveness as a provision for gifted and talented girls. Your response is important as research has indicated that gifted girls have special needs which may or may not be met.

The survey is being conducted as part of a research project for an EdD (Doctorate of Education) being undertaken by Margaret Crawford (margaret.crawford@xtra.co.nz) at Massey University. The research supervisors are: Dr Tracy Riley, t.l.riley@massey.ac.nz and Dr Glenda Anthony, G.J.Anthony@massey.ac.nz.

Information from the survey will be confidential to the research process and presentations from the research, including any publications that eventuate from the research study. Schools, teachers, parents or caregivers, students will not be identified by name.

The survey should take no longer than 30 minutes to complete.

If you have more than one daughter in secondary education who is gifted and talented or an accelerated learner please complete one survey for each daughter.

Consent is assumed by the completion of the survey; however, you may decline to answer any particular question simply by leaving it blank.

Comment boxes are optional. If you wish to navigate back and forth through your responses, please use the "Prev" and "Next" buttons provided within the survey. The survey is completed by clicking the "Submit" button at the end. You won't be able to re-enter the survey once you have exited it, so please make sure you finish all your answers in one session. If you would like to leave the survey at any time, click "Exit this survey" at the top of the survey.

If you have any queries about this research, please contact the researcher, Margaret Crawford, margaret.crawford@xtra.co.nz.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729,01 5799 x 6929, email humanethicsouthb@massey.ac.nz.

2. General Information

1. How many gifted children do you have? (Select from the drop down menu)

2. How many daughters do you have at secondary school and what year level are they?

	Number of Daughters
Year 9	
Year 10	
Year 11	
Year 12	
Year 13	

For more than 5 please specify number and year levels.

3. Survey for One Daughter

Page 1

Parent or Caregiver Survey

If parents or caregivers have more than one accelerated daughter then please complete a survey for **each** daughter. The link to complete another survey will be at the end of this survey.

1. What is your daughter's year level?

- ◯ Year 9
- ◯ Year 10
- ◯ Year 11
- ◯ Year 12
- ◯ Year 13

2. Has your daughter been identified as gifted and talented?

- ◯ Yes
- ◯ No
- ◯ Don't know

3. Has your daughter been accelerated?

- ◯ Yes
- ◯ No
- ◯ Don't know

4. Gifted and Talented

Parent or Caregiver Survey

1. How has your daughter been identified as gifted and talented? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Standardised tests (e.g., PAT, CEM)
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Parent or caregiver request
- [ ] Other (please specify below)
- [ ] Don't know

Other

Parent or Caregiver Survey

2. When was your daughter identified as gifted and talented? (Tick all that apply)

- ☐ Early childhood
- ☐ Primary
- ☐ Intermediate
- ☐ Secondary

3. What experience do you have with giftedness? (Tick all that apply)

- ☐ Have a gifted child(ren)
- ☐ You yourself are gifted
- ☐ You have gifted parents
- ☐ Belong to a gifted parents' group
- ☐ Have undertaken tertiary study in giftedness
- ☐ Have read literature or research about giftedness
- ☐ A family member is gifted (e.g., sibling, aunt)
- ☐ A friend is gifted
- ☐ Other (please specify below)

Other

5. My Daughter's School Practices and Provisions

1. In regards to gifted and talented education, does your school have the following? (Tick all that apply and tick one response for each item)

	Yes	No	Don't Know
Coordinator (person in charge)	☐	☐	☐
Committee	☐	☐	☐
Written policy or procedures	☐	☐	☐
Definition	☐	☐	☐
Identification procedures	☐	☐	☐
Register	☐	☐	☐
Guidelines for identifying and working with gifted students at risk (e.g., underachievers, Māori)	☐	☐	☐

Parent or Caregiver Survey

2. At your daughter's school who provides support for her academic, social, emotional and cultural needs? (Tick all that apply and and tick one response for each item)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Gifted and talented coordinator	☐	☐	☐	☐
Parent or caregiver	☐	☐	☐	☐
Mentor (an expert adviser)	☐	☐	☐	☐
School counsellor	☐	☐	☐	☐
Principal	☐	☐	☐	☐
Subject teacher	☐	☐	☐	☐
Tutor, group, or homeroom teacher	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Other

3. What support does your school provide for your gifted and talented daughter? (Tick all that apply)

	Academic	Social, Emotional or Both	Cultural	Don't Know
Individual interviews	☐	☐	☐	☐
Individual education plans (e.g., IEP or ILP)	☐	☐	☐	☐
Parent or caregiver consultation for individuals	☐	☐	☐	☐
Parent or caregiver consultation for classes	☐	☐	☐	☐
Subject counselling	☐	☐	☐	☐
Career counselling	☐	☐	☐	☐
Pastoral care	☐	☐	☐	☐
School selection of subject teacher	☐	☐	☐	☐
School selection of tutor group or homeroom group	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐
Don't know	☐	☐	☐	☐

Other

Parent or Caregiver Survey

4. Was being identified as gifted and talented a positive experience for your daughter?

- ◯ Yes
- ◯ No
- ◯ Don't know

Please comment on her experience.

Parent or Caregiver Survey

5. Please indicate how strongly you agree or disagree with this statement: The provisions for identified gifted and talented girls in my daughter's school are effective. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	☐	☐	☐	☐	☐	☐
Year 10	☐	☐	☐	☐	☐	☐
Year 11	☐	☐	☐	☐	☐	☐
Year 12	☐	☐	☐	☐	☐	☐
Year 13	☐	☐	☐	☐	☐	☐

Please comment on the effectiveness of your school provisions.

6. Acceleration

Parent or Caregiver Survey

1. What forms of acceleration has your daughter experienced? (Tick all that apply)

- [ ] Grade-skipping (moving up a year level across all subjects)
- [ ] Radical acceleration (skipping levels, or year level acceleration, by 2 or more years)
- [ ] Subject acceleration (single subject)
- [ ] Individual or self-paced instruction
- [ ] Combined classes (e.g., Years 12 and 13 in the same class)
- [ ] Curriculum compacting* (definition below)
- [ ] Telescoping curriculum (teaching 3 terms work in 1)
- [ ] Mentoring* (an expert adviser, further definition below)
- [ ] Extracurricular programmes
- [ ] Correspondence courses
- [ ] Concurrent or dual enrolment (studying university or tertiary courses while enrolled at school)
- [ ] Early entrance into secondary school
- [ ] Early entrance into primary or intermediate school
- [ ] Scholarship prior to Year 13
- [ ] Online learning opportunities
- [ ] Other (please specify below)
- [ ] Don't know
- [ ] N/A

Curriculum compacting* is the elimination of already mastered curriculum with the replacement of more challenging material by enrichment activities or acceleration (Reis & Renzulli, 1992).

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other, or add a comment about your daughter's acceleration.

Parent or Caregiver Survey

2. Indicate the years in which, to your knowledge, your daughter has been accelerated. (Tick one response for each item)

	Yes	No	Don't Know
Year 9	○	○	○
Year 10	○	○	○
Year 11	○	○	○
Year 12	○	○	○
Year 13	○	○	○

3. Indicate when your daughter has been accelerated before secondary school. (Tick one response for each item)

	Yes	No	Don't Know
Early childhood	○	○	○
Primary school	○	○	○
Intermediate	○	○	○

Please comment if acceleration was a continuation from the previous school.

Parent or Caregiver Survey

4. What forms of acceleration does your school use? (Tick all that apply)

- [ ] Grade-skipping (moving up a year level across all subjects)
- [ ] Radical acceleration (skipping levels or year level acceleration, by 2 or more years)
- [ ] Subject acceleration (single subject)
- [ ] Individual or self-paced instruction
- [ ] Combined classes (e.g., Years 12 and 13 in the same class)
- [ ] Curriculum compacting* (definition below)
- [ ] Telescoping curriculum (teaching 3 term's work in 1)
- [ ] Mentoring* (an expert adviser, further definition below)
- [ ] Extracurricular programmes
- [ ] Correspondence courses
- [ ] Concurrent or dual enrolment (studying university or tertiary courses while enrolled at school)
- [ ] Early entrance into secondary school
- [ ] Early entrance into primary or intermediate school
- [ ] Scholarship prior to Year 13
- [ ] Online learning opportunities
- [ ] Other (please specify below)
- [ ] Don't know

Curriculum compacting* is the elimination of already mastered curriculum with the replacement of more challenging content (Reis & Renzulli, 1992)

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other

Parent or Caregiver Survey

5. How does your school accelerate students? (Tick all that apply)

- [ ] Individually
- [ ] In a group or cluster within a class (i.e., ability grouping within a class)
- [ ] Both individually and in a group
- [ ] In an accelerate class
- [ ] Pull-out group (i.e., withdrawn from the normal class to do other activities)
- [ ] Other (please specify below)
- [ ] Don't know

Other

Parent or Caregiver Survey

6. How are students chosen for acceleration? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Standardised tests (e.g., PAT, CEM)
- [ ] IQ tests (e.g., Ravens)
- [ ] Iowa Acceleration Scale
- [ ] Teacher-made tests
- [ ] Public examination results (e.g.,NCEA, University of Cambridge International Examinations [CIE],International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Parent or caregiver request
- [ ] Other (please specify below)
- [ ] Don't know

Other

Parent or Caregiver Survey

7. Does the school use acceleration and enrichment* for accelerated learners?

- ◯ Yes
- ◯ No
- ◯ Don't know

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, understanding which is beyond the basic programme which is provided.

If the answer is yes, how is this provided?

8. In school-based subjects how has your daughter been accelerated? (Tick all that apply)

- ☐ Individually
- ☐ In a group or cluster within a class (i.e., ability grouping within a class)
- ☐ Both individually and in a group
- ☐ In an accelerate class
- ☐ Pull-out group (i.e., withdrawn from the normal class to do other activities)
- ☐ Other (please specify below)
- ☐ Don't know

Other

Parent or Caregiver Survey

9. In what subject(s) has, or is, your daughter being accelerated? (Select from the drop down menu)

	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7
Year 9							
Year 10							
Year 11							
Year 12							
Year 13							

Subject 1 Subject 2 Subject 3 Subject 4 Subject 5 Subject 6 Subject 7

Please indicate of your daughter has contiued the same subject for a number of years.

10. Has your daughter withdrawn from the acceleration provisions?

- ◯ Yes
- ◯ No

If the answer is yes, please provide a reason(s) for withdrawal.

11. Has your daughter ever been enrolled in university or tertiary study?

- ◯ Yes
- ◯ No

If the answer is yes, include subjects below with level of subject, and the year level at the time of study.

7.

1. Please indicate how your daughter's tertiary or university study relates to her secondary schooling by selecting one of the responses below.

- ◯ Her study replaces a school subject.
- ◯ Her study is in addition to her other school subjects.
- ◯ Her study progresses naturally from her progression through the secondary school curriculum.

8. Evaluation of Accelerated Provisions for Your Daughter

Parent or Caregiver Survey

1. How much academic, social, emotional and cultural involvment have you had in your daughter's acceleration learning?

2. Please indicate how strongly you agree or disagree with this statement: The provisions for accelerated learners in my daughter's school are effective.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

Please comment on the effectiveness of the provisions.

3. Please indicate how strongly you agree or disagree with this statement: Information and consultation regarding pathways for subject choice for my daughter at each level in the school have been appropriate and useful.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Year 9-13	○	○	○	○	○

How and why has this been appropriate or not appropriate?

Parent or Caregiver Survey

4. Please indicate how strongly you agree or disagree with this statement: Information and consultation about future pathways for university, tertiary education, or careers after secondary school have been appropriate and useful.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Year 9-13	○	○	○	○	○

How and why has this been appropriate or not appropriate?

5. Does acceleration meet the academic, social, emotional and cultural needs of your daughter? (Tick one response for each item)

	Yes	No	Don't Know	N/A
Year 9	☐	☐	☐	☐
Year 10	☐	☐	☐	☐
Year 11	☐	☐	☐	☐
Year 12	☐	☐	☐	☐
Year 13	☐	☐	☐	☐

6. How and why does acceleration meet, or not meet, the academic needs of your daughter?

7. How and why does acceleration meet, or not meet, the social and emotional needs of your daughter?

Parent or Caregiver Survey

8. How and why does acceleration meet, or not meet, the cultural needs of your daughter?

9. Please indicate how strongly you agree or disagree with this statement: Communication between the school and home regarding acceleration has been effective.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9-13	○	○	○	○	○	○

How and why has the communication been effective or not effective?

10. Please indicate whether you agree or disagree with this statement: Being accelerated for my daughter has been a positive experience.

- ○ Agree
- ○ Disagree
- ○ Don't know

Please comment on her experience.

11. How could your daughter's experience as an accelerated learner at secondary school have been improved?

Parent or Caregiver Survey

9. Further Comments

1. Add any further comment

10. Next Steps for Research

If you would like to be involved as a parent or caregiver in a focus group interview (about 6-8), please email the researcher, Margaret Crawford, with the name of your school, your name and contact details (margaret.crawford@xtra.co.nz).

If you have more than one daughter in secondary education who is gifted and talented and an accelerated learner please complete one survey for each daughter. Please close the window and reuse the survey link.

Thank you for completing the survey.

Appendix X: Case Study Student Survey

Student Survey

1. Student Survey: Case Study School. Acceleration and Gifted Girls

The purpose of this student survey is to find out how secondary schools are providing for their gifted and talented girls in years 9-13, what works and what could be improved. In particular the survey wishes to find out about academic acceleration and its implementation and effectiveness as a provision for gifted and talented girls. Your response is important as research has indicated that gifted girls have special needs which may or may not being met.

The survey is being conducted as part of a research project for an EdD (Doctorate of Education) being undertaken by Margaret Crawford (margaret.crawford@xtra.co.nz) at Massey University. The research supervisors are Dr Tracy Riley, t.l.riley@massey.ac.nz and Dr Glenda Anthony, G.J.Anthony@massey.ac.nz.

Information from the survey will be confidential to the research process and presentations from the research, including any publications that eventuate from the research study. Schools, parents or caregivers, and students will not be identified by name.

The survey should take no longer than 30 minutes to complete.

Consent is assumed by the completion of the survey; however, you may decline to answer any particular question simply by leaving it blank.

Comment boxes are optional. If you wish to navigate back and forth through your responses, please use the "Prev" and "Next" buttons provided within the survey. The survey is completed by clicking the "Submit" button at the end. You won't be able to re-enter the survey once you have exited it, so please make sure you finish all your answers in one session. If you would like to leave the survey at any time, click "Exit this survey" at the top of the survey.

If you have any queries about this research, please contact the researcher, Margaret Crawford, margaret.crawford@xtra.co.nz.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

2. Student's Background and Experiences

1. What is your age?

2. What year level are you at school?

◯ Year 9 ◯ Year 10 ◯ Year 11 ◯ Year 12 ◯ Year 13

3. What is your ethnicity? (Tick all that apply)

☐ New Zealand European ☐ Māori ☐ Pasifika ☐ Asian ☐ Other

Other (please specify)

4. How would you describe your ability?

Page 1

Student Survey

5. At your school who provides support for gifted and talented and accelerated learners and is this support academic, social, emotional, and cultural? (Tick all that apply)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Gifted and talented coordinator	☐	☐	☐	☐
Parent or caregiver	☐	☐	☐	☐
Mentor* (an expert adviser, further definition below)	☐	☐	☐	☐
School counsellor	☐	☐	☐	☐
Principal	☐	☐	☐	☐
Subject teacher	☐	☐	☐	☐
Tutor group, or homeroom teacher	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Student Survey

	Academic	Social, Emotional, or Both	Cultural	Don't Know

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other

6. What support does your school provide for gifted and talented and accelerated learners? (Tick all that apply)

	Academic	Social, Emotional or Both	Cultural	Don't Know
Individual interviews	☐	☐	☐	☐
Individual education plans (e.g., IEP or ILP)	☐	☐	☐	☐
Parent or caregiver consultation for individuals	☐	☐	☐	☐
Parent or caregiver consultation for classes	☐	☐	☐	☐
Subject counselling	☐	☐	☐	☐
Career counselling	☐	☐	☐	☐
Pastoral care	☐	☐	☐	☐
School selection of subject teacher	☐	☐	☐	☐
School selection of tutor group, or homeroom group	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐
Don't know	☐	☐	☐	☐

Other

Student Survey

7. Have you been given academic, social, emotional or cultural support in your learning and from whom have you received that support? (Tick all that apply)

	Academic	Social, Emotional, or Both	Cultural	Don't Know
Gifted and talented coordinator	☐	☐	☐	☐
Parent or caregiver	☐	☐	☐	☐
Mentor	☐	☐	☐	☐
School counsellor	☐	☐	☐	☐
Principal	☐	☐	☐	☐
Subject teacher	☐	☐	☐	☐
Tutor group or homeroom teacher	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐

Other

8. Have you been identified as gifted and talented?

- ◯ Yes
- ◯ No
- ◯ Don't know

Student Survey

9. How have you been identified as gifted and talented? (Tick one response for each item)

- [ ] Teacher obesrvation or nomination
- [ ] Teacher rating scale or checklist
- [ ] Standardised tests (e.g., PAT,CEM)
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Parent or caregiver request
- [ ] Other (please specify below)
- [ ] Don't know

Other

Student Survey

10. What provisions does your school offer for gifted and talented students? (Tick all that apply)

- ☐ Acceleration*
- ☐ Enrichment*
- ☐ A combination of acceleration and enrichment
- ☐ Differentiation*
- ☐ Other (please specify below)
- ☐ Don't know

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e., wider, same level).

Differentiation* is the adaption of content and pace to fit the needs of the individual student at the same level.

Other ☐

11. What opportunities (accelerated,* or enriched,* or both) have you had within your secondary schooling? (Tick all that apply)

	Accelerated	Enriched
Individualised programme(s)	☐	☐
Full time special class(es)	☐	☐
Part time special class(es)	☐	☐
Competitions	☐	☐
Mentoring (defintion below)	☐	☐
Ability Groups inside the regular classroom	☐	☐
Other (please specify below)	☐	☐

Acceleration* is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

Enrichment* is an activity(ies) which is(are) designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e., wider, same level).

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other ☐

Student Survey

12. Please indicate whether you agree or disagree with this statement: Being identified as gifted and talented has been a positive experience.

- ◯ Yes
- ◯ No
- ◯ Don't know

Please comment on your experience.

13. Please indicate how strongly you agree or disagree with this statement: The provisions for gifted and talented girls at my school are effective. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	◯	◯	◯	◯	◯	◯
Year 10	◯	◯	◯	◯	◯	◯
Year 11	◯	◯	◯	◯	◯	◯
Year 12	◯	◯	◯	◯	◯	◯
Year 13	◯	◯	◯	◯	◯	◯

Please comment on the effectiveness of your school provisions.

3. Acceleration

Student Survey

1. Acceleration is an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace).

When were you accelerated prior to secondary school? (Tick all that apply)

- ☐ Early childhood
- ☐ Primary
- ☐ Intermediate

Please comment if acceleration was a continuation from the previous school.

Student Survey

2. What forms of acceleration have you experienced? (Tick all that apply)

- ☐ Grade-skipping (moving up a year level across all subjects)
- ☐ Radical acceleration (skipping levels, or year level acceleration, by 2 or more years)
- ☐ Subject acceleration (single subject)
- ☐ Individual or self-paced instruction
- ☐ Combined classes (e.g., primary school, Years 3 and 4 in the same class)
- ☐ Curriculum compacting* (definition below)
- ☐ Telescoping curriculum (teaching 3 terms work in 1)
- ☐ Mentoring* (an expert adviser, further definition below)
- ☐ Extracurricular programmes
- ☐ Correspondence courses
- ☐ Concurrent or dual enrolment (studying university or tertiary courses while enrolled at school)
- ☐ Early entrance into secondary school
- ☐ Early entrance into primary or intermediate school
- ☐ Scholarship prior to Year 13
- ☐ Online learning opportunities
- ☐ Other (please specify below)
- ☐ Don't know

Curriculum compacting* is the elimination of already mastered curriculum with the replacement of more challenging content (Reis & Renzulli, 1992).

Mentors* are high level achievers who help gifted and talented students experience activities in their fields, and offer insights, guidance and encouragement about entering the field (Feldhusen, 2005).

Other

Student Survey

3. Please indicate the year levels during which you were accelerated. (Tick one response for each item)

	Yes	No	Don't know
Year 9	○	○	○
Year 10	○	○	○
Year 11	○	○	○
Year 12	○	○	○
Year 13	○	○	○

4. What kinds of accelerated provisions have you experienced in school-based subjects? (Tick all that apply)

- ☐ Individual programmes
- ☐ In a group or cluster within a class (i.e., ability grouping within a class)
- ☐ Both individually and in a group
- ☐ In an accelerate class
- ☐ Pull-out group (i.e., withdrawn from the normal class to do other activities)
- ☐ Other (please specify below)
- ☐ Don't know

Other

Student Survey

5. Have you been involved in the planning and evaluation of your learning? (Tick all that apply)

	Year 9	Year 10	Year 11	Year 12	Year 13	NA
Planning of course with teacher	☐	☐	☐	☐	☐	☐
Individual education plan (e.g., IEP, ILP	☐	☐	☐	☐	☐	☐
Individual student evaluation	☐	☐	☐	☐	☐	☐
Students' meeting for class or group	☐	☐	☐	☐	☐	☐
Parents and student meeting for class or group	☐	☐	☐	☐	☐	☐
Interview with career's adviser	☐	☐	☐	☐	☐	☐
Subject counselling by staff	☐	☐	☐	☐	☐	☐
Gifted and talented coordinator interview with student	☐	☐	☐	☐	☐	☐
Gifted and talented coordinator interview with student and parents or caregivers	☐	☐	☐	☐	☐	☐
Other (please specify below)	☐	☐	☐	☐	☐	☐

Student Survey

	Year 9	Year 10	Year 11	Year 12	Year 13	NA

Other

6. In what year level and in what subject(s) have you been accelerated? (Select from the drop down menu)

	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7
Year 9							
Year 10							
Year 11							
Year 12							
Year 13							

Other (please specify)

Student Survey

7. How were you chosen for acceleration? (Tick all that apply)

- [ ] Teacher observation or nomination
- [ ] Teacher rating scales or checklist
- [ ] Standardised tests (e.g., PAT, CEM)
- [ ] Iowa Acceleration Scale
- [ ] IQ tests (e.g., Ravens)
- [ ] Teacher-made tests
- [ ] Public examination results (e.g., NCEA, University of Cambridge International Examinations [CIE], International Baccalaureate [IB])
- [ ] Student work (e.g., portfolios)
- [ ] Competition results
- [ ] Parent or caregiver nomination
- [ ] Self-nomination
- [ ] Peer nomination
- [ ] Whanau nomination
- [ ] School enrolment form
- [ ] Previous school identification
- [ ] Other (please specify below)
- [ ] Don't know

Other

Student Survey

8. Have the methods of selection for accelerated learning provisions been appropriate?

- ◯ Yes
- ◯ No
- ◯ Don't know

Please comment if the methods were appropriate or inappropriate.

9. Have you ever been enrolled in university or tertiary study?

- ◯ Yes
- ◯ No

If the answer is yes, include subjects below with level of subject, and year studied.

4.

1. Please indicate how your university or tertiary study relates to your secondary school by selecting one of the responses below.

- ◯ Your study replaces a school subject.
- ◯ Your study is in addition to your other school subjects.
- ◯ Your study progresses naturally from your progression through the secondary school curriculum.

5. Evaluation of Acceleration Provisions

Student Survey

1. Please indicate how strongly you agree or disagree with this statement: Acceleration meets, or has met, my academic needs. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please comment on how your needs have been met or not met.

2. Please indicate how strongly you agree or disagree with this statement: Acceleration meets or has met my social and emotional needs. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Year 9	○	○	○	○	○	○
Year 10	○	○	○	○	○	○
Year 11	○	○	○	○	○	○
Year 12	○	○	○	○	○	○
Year 13	○	○	○	○	○	○

Please comment on how these needs have been met.

3. How and why does acceleration meet, or not meet, your academic needs?

Student Survey

4. How and why does acceleration meet, or not meet, your social and emotional needs?

5. Have you withdrawn from acceleration provisions?

- ◯ Yes
- ◯ No

If the answer is yes, why did you withdraw?

6. Please indicate how strongly you agree or disagree with this statement: Information and consultation regarding pathways for subject choice at each level in the school have been appropriate and useful. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Year 9	◯	◯	◯	◯	◯
Year 10	◯	◯	◯	◯	◯
Year 11	◯	◯	◯	◯	◯
Year 12	◯	◯	◯	◯	◯
Year 13	◯	◯	◯	◯	◯

How and why has this been appropriate, or not appropriate?

Student Survey

7. Please indicate how strongly you agree or disagree with this statement: Information and consultation about future pathways for university or tertiary education, or careers after secondary school, have been appropriate and useful. (Tick one response for each item)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Year 9	○	○	○	○	○
Year 10	○	○	○	○	○
Year 11	○	○	○	○	○
Year 12	○	○	○	○	○
Year 13	○	○	○	○	○

Student Survey

Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

How and why has this been appropriate?

8. Please indicate whether you agree or disagree with this statement: Being accelerated has been a positive experience.

- ☐ Agree
- ☐ Disagree
- ☐ Don't know

Please comment on your experience.

9. How could your experiences as an accelerated learner at secondary school have been improved?

6. Further Comments

1. Add any further comment

Student Survey

7. Next Steps for Research

1. Would you like to be involved as a student in a small group focus interview of students?

- ◯ Yes
- ◯ No

If you would like to be involved as a student in a small group focus interview (about 6-8) please email the researcher, Margaret Crawford, with the name of your school, your name, your contact details, your parent or caregiver's name, and contact details (margaret.crawford@xtra.co.nz).

Thank you for completing the survey.

Appendix Y: Focus Group Themes Teachers

1. Knowledge and understanding of school procedures for identification and programmes for: gifted girls and acceleration

2. Knowledge and understanding of gifted girls and acceleration in this school.
   What are the academic needs? Are they being met?
   What are the social and emotional needs? Are they being met?
   What are the cultural needs? Are they being met?

3. What Identification processes do you undertake?
   gifted and talented;
   accelerated learners;
   students of different ethnicities;
   underachievers;
   students who are twice exceptional.

4. How effective are the identification processes, specifically for acceleration?

5. Different Subjects affect gifted girls. Do all subjects follow the same practices for identification and programmes, specifically acceleration?

6. Support for gifted and accelerated learners: academic, social and emotional, cultural. What offered?

7. Decision making about provisions and specifically acceleration. Who makes the decisions? Is there a negotiated curriculum- student, teacher, and parent or caregiver?

8. Professional development – how much has there been in gifted and talented education and specifically acceleration. How effective has it been? What collegial support?

9. Tracking and evaluation of provisions and programmes. Methods? Results? Longitudinal data? Student profiles – school and subject?

10. Evaluation of acceleration at each year level. What indicators of success? What concerns? What support provided or needed (e.g., school culture, personnel, parents or caregivers involvement, finance)?

11. Next steps. Is the school going to consolidate the practices and provisions for acceleration and gifted girls or are they going to introduce new practices and provisions?

Appendix Z: Focus Group Themes Parents or Caregivers

1. Knowledge and understanding of school procedures for identification and programmes for: gifted girls and acceleration

2. Knowledge and understanding of their daughter(s) and acceleration in this school.
   What are the academic needs? Are they being met?
   What are the social and emotional needs? Are they being met?
   What are the cultural needs? Are they being met?

3. How effective are the identification processes, specifically for acceleration?

4. Different Subjects affect gifted girls. How has acceleration been provided in different subjects and has this been effective?

5. Decision making about provisions and specifically acceleration. Who makes the decisions? How much interaction in decision making between daughter(s), teacher(s), and parent or caregiver?

6. Support for gifted and accelerated learners: academic, social and emotional, cultural. What support provided, or needed (e.g., counselling, IEPs, finance, careers' advice)? How effective?

7. Evaluation of acceleration at each year level. What indicators of success? What concerns?

8. Would you recommend, or not recommend, acceleration as a provision given your daughter's experiences at this school?

Appendix AA: Focus Group Themes Students

1. Own experience as gifted and talented student, specifically acceleration

2. Knowledge and understanding of their needs and acceleration in this school.
   What are the academic needs? Are they being met?
   What are the social and emotional needs? Are they being met?
   What are the cultural needs? Are they being met?

3. How effective are the identification processes, specifically for acceleration?

4. Different Subjects affect gifted girls. How has acceleration been provided in different subjects and has this been effective?

5. Decision making about provisions and specifically acceleration. Who makes the decisions? How much interaction in decision making between student, teacher(s), and parent or caregiver?

6. Support for gifted and talented and accelerated learners: academic, social and emotional, cultural. What support provided, or needed (e.g., counselling, IEPs, finance, careers' advice)? How effective?

7. Evaluation of acceleration at each year level. What indicators of success? What concerns?

8. Would you recommend, or not recommend, acceleration as a provision given your own experiences at this school?

Appendix BB: Teacher Focus Group Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Teacher Focus Group

Case Study School

Information Sheet

Dear Teacher

Your school has been selected as a Case Study School after a National Survey has been conducted on this subject. The research is being undertaken as a thesis for an EdD through Massey University under the supervision of Dr Tracy Riley and Dr Glenda Anthony.

The research has three stages: a review of the research literature; a survey of single-sex girls' in secondary education in New Zealand; and multiple case studies of schools with significant acceleration provisions. Within the case study school there will be questionnaires, focus group interviews, and an interview with a senior manager. There may be an interview(s) with radically accelerated students. The information you provide will provide examples of what schools are doing for students who are gifted and talented.

Purpose of the research: There are two areas of interest for the research. Acceleration is an underused provision according to New Zealand and International research. There is limited New Zealand research and in-depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in secondary education, but in the context of single-sex education, then to examine in depth, some case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may attempt to meet these needs in many ways. What happens when gifted girls are accelerated or not accelerated? How can the education for gifted girls be improved?

I invite you to participate in a small focus group of teachers. The purpose of the focus group interview is to get a further understanding of your school's identification procedures and provisions for acceleration, and for gifted and talented girls. The focus group interview will be conducted at school, out of class time, and will take no more than one hour.

During the focus group the following themes will be discussed:

- the school wide provisions for gifted and talented students;
- school provisions for acceleration;
- the academic, social and emotional, and cultural needs of gifted and talented students;

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- support for gifted and talented students;
- evaluation and next steps.

The findings from the case studies will be described against themes. In the final report, the school nor you will be named or identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the single-sex girls' schools offering secondary education and to participants who are in the focus groups, using contact details as provided by the school.

The interview will be tape-recorded and transcribed for analysis. You will be given a consent form to be signed before the focus group interview. The transcribed interview will be available for checking through the school for accuracy and any further comments.

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study (i.e., focus group interview);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the audiotape to be turned off at any time during the interview.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099 ext 8860.

Yours faithfully

Margaret Crawford

Appendix CC: Parent or Caregiver Focus Group Information

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Parent or Caregiver Focus Group

Case Study School

Information Sheet

Dear Parent or Caregiver

Your school has been selected as a Case Study School after a National Survey has been conducted on this subject. The research is being undertaken as a thesis for an EdD through Massey University under the supervision of Dr Tracy Riley and Dr Glenda Anthony. A glossary of terms has been included with this information sheet.

The research has three stages: a review of the research literature; a survey of single-sex girls' in secondary education in New Zealand; and multiple case studies of schools with significant acceleration provisions. Within the case study school there will be questionnaires, focus group interviews, and an interview with a senior manager. The information you provide will provide examples of what schools are doing for students who are gifted and talented.

Purpose of the research: There are two areas of interest for the research. Acceleration is an underused provision according to New Zealand and International research. There is limited New Zealand research and in-depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in secondary education, but in the context of single-sex education, then to examine in depth, some case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may attempt to meet these needs in many ways. What happens when gifted girls are accelerated or not accelerated? How can the education for gifted girls be improved?

I invite you to participate in a small focus group of parents or caregivers. The purpose of the focus group interview is to get a further understanding of your school's identification procedures and provisions for acceleration, and for gifted and talented girls. The focus group interview will be conducted at school, out of class time, and will take no more than one hour.

During the focus group the following themes will be discussed:

- the school wide provisions for gifted and talented students;
- school provisions for acceleration;

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- the academic, social and emotional, and cultural needs of gifted and talented students;
- support for gifted and talented students;
- evaluation and next steps.

The findings from the case studies will be described against themes. In the final report neither the school nor you will be named or identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the single-sex girls' schools offering secondary education and to participants who are in the focus groups, using contact details as provided by the school.

The interview will be tape-recorded and transcribed for analysis. You will be given a consent form to be signed before the focus group interview. The transcribed interview will be available for checking through the school for accuracy and any further comments.

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study (i.e., focus group interview);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the audiotape to be turned off at any time during the interview.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email(margaret.crawford@xtra.co.nz). The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riiley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Yours faithfully

Margaret Crawford

Appendix DD: Student Focus Group Information Sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Student Focus Group

Case Study School

Information Sheet

Dear Student

Your school has been selected as a Case Study School after a National Survey has been conducted on this subject. The research is being undertaken as a thesis for an EdD through Massey University under the supervision of Dr Tracy Riley and Dr Glenda Anthony. A glossary of terms has been included with this information sheet.

The research has three stages: a review of the research literature; a survey of single-sex girls' in secondary education in New Zealand; and multiple case studies of schools with significant acceleration provisions. Within the case study school there will be questionnaires, focus group interviews, and an interview with a senior manager. There may also be an interview(s) with radically accelerated students. The information you provide will provide examples of what schools are doing for students who are gifted and talented.

Purpose of the research: There are two areas of interest for the research. Acceleration is an underused provision according to New Zealand and International research. There is limited New Zealand research and in depth investigation has been done of only a small number of students. The aim of the research is to look at a large group nationally, gifted girls in secondary education, but in the context of single-sex education, then to examine in depth, some case study schools.

Gifted girls have been described as 'a special population' who have special needs. Schools may attempt to meet these needs in many ways. What happens when gifted girls are accelerated or not accelerated? How can the education for gifted girls be improved?

I invite you to participate in a small focus group of students. The purpose of the focus group interview is to get a further understanding of your school's identification procedures and provisions for acceleration, and for gifted and talented girls. The focus group interview will be conducted at school, out of class time, and will take no more than one hour.

During the focus group the following themes will be discussed:

- the school wide provisions for gifted and talented students;
- school provisions for acceleration;

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- the academic, social and emotional, and cultural needs of gifted and talented students ;
- support for gifted and talented students;
- evaluation and next steps.

The findings from the case studies will be described against themes. In the final report neither the school nor you will be named or identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the single-sex girls' schools offering secondary education and to participants who are in the focus groups, using contact details as provided by the school.

The interview will be tape-recorded and transcribed for analysis. You will be given a consent form to be signed by you and your parent or caregiver. The transcribed interview will be available for checking through the school for accuracy and any further comments.

You are under no obligation to accept this invitation. It is not intended that participation or non participation will affect your current or future schooling (eg., school grades, class placement or leadership positions) and your school has been informed of this. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study (i.e., focus group interview);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the audiotape to be turned off at any time during the interview.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. . They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Yours faithfully

Margaret Crawford

Appendix EEA: Glossary for Student, Parent or Caregiver Interview Participants

Glossary of Terms: Parent or Caregiver, and Student Information Sheet

Acceleration Students study at a higher education or curriculum level and at a faster pace than students of similar age. It may include individual acceleration by subject(s) or by year level (s). There are 18 different forms of acceleration including starting school early and studying university subjects while still at school.

Case study An example or small sample which has been selected for close examination as part of a research study.

Closed questions Questions which require a simple or short answer, such as 'yes' or 'no.'

Coded data Information from the research is analysed by identifying the recurrent words, concepts or themes.

Decile A decile is a 10% grouping. It provides information about the socio-economic mix of the school and is based on Census data.

Educational provision Programmes which a school has set up for students.

Focus group A small group interview about an issue or topic.

Gifted and talented learners "Gifted and talented learners are those with exceptional abilities relative to most other people. These individuals have certain learning characteristics that give them the potential to achieve outstanding performance," (Ministry of Education, 2002).

Human Ethics Ethics are a set of moral values or standards. The Human Ethics Committee investigates how research is to be conducted and its possible effects on the researcher and the people involved in the research.

Focus group A small group interview about an issue.

Open-ended questions Questions that usually require a longer response than a simple answer such as yes or no. They often ask for opinions or feelings.

Practice How the school provides education for its students.

Review of the literature The reading and evaluation of published and unpublished material on a research topic.

Appendix FF: Teacher Consent Focus Group

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FOCUS GROUP PARTICIPANT CONSENT FORM-Teacher

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree not to disclose anything discussed in the Focus Group.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

Name of School .....

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Appendix GG: Parent or Caregiver Consent Focus Group

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Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

FOCUS GROUP PARTICIPANT CONSENT FORM-Parent or Caregiver

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree not to disclose anything discussed in the Focus Group.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

Name of School.....

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Appendix HH: Student Consent Focus Group

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TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

FOCUS GROUP PARTICIPANT CONSENT FORM-Student

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree not to disclose anything discussed in the Focus Group.

I agree to participate in this study under the conditions set out in the Information Sheet.

Student Signature: ..... **Date:** .....

Full Name - printed .....

Parent or Caregiver Signature: ..... **Date:** .....

Full Name - printed .....

Name of School .....

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Appendix II: Senior Manager Gifted Interview Themes

1. What roles and influence do the following individuals have on provisions for gifted and talented education in your school?
2. Senior Manager, or coordinator responsible for gifted and talented education in the school
3. Principal
4. Board of Trustees
5. What is the history of gifted and talented education in your school since the change to the NAG in 2005?
6. Please describe the history of acceleration in your school including the different practices utilised. A definition sheet will be provided which outlines the different forms of acceleration.
7. Is enrichment also provided to complement acceleration? How?
8. 82% of gifted and talented students have their needs met in regular, inclusive classrooms according to national research (Riley et al., 2004). Please describe how your school meets the needs of gifted and talented students in all classrooms.
9. How are differentiation, enrichment and acceleration provided in inclusive classrooms?
10. Do you cluster group? (Definition will be provided)
11. What subjects offer acceleration and at what year levels? How and why?
12. Do you have accelerated classes in one or more subjects?
13. Are there clear pathways for students to move through academic levels in school and beyond secondary education?
14. What academic support is provided for accelerated students? By whom and how?
15. What social and emotional support is provided for accelerated students? By whom and how?
16. What academic counselling and careers support is provided for accelerated students? By whom and how?
17. How does your school communicate with students, teachers, and parents or caregivers, when students are accelerated?
18. How does your school formally and informally evaluate the effectiveness of acceleration?
19. What impact does evaluation have on your school's acceleration practices, programmes and provisions?
20. Please describe successful cases of acceleration in your school (for individuals or groups of students).
21. Please describe problematic cases of acceleration in your school (for individuals or groups of students) and how these were resolved.
22. What recommendations would you make for the continuation of acceleration in your school?

Appendix JJ: Student Individual Interview Themes

1. What does gifted and talented mean to you?
2. How do you feel about being labelled or called gifted and talented?
3. How would you describe your own abilities in relation to other students of your age in your school and across New Zealand?
4. When did you know you were gifted and talented? Were you identified as a young child in primary, intermediate, or secondary school? Please describe y our experiences.
5. What opportunities have you had to develop your gifts and talents during secondary school: Year 9, Year 10, Year 11, Year 12, Year 13?
6. How much influence have you had on the way your educational journey has been structured?
7. Acceleration means an intervention that moves students through the curriculum or education levels at a faster rate, or at a younger age, than their peers (i.e., higher level, faster pace). Have you been accelerated? How were decision made about your acceleration?
8. Enrichment means an activity (ies) which are designed to broaden or develop a student's interests, knowledge, and understanding beyond the basic programme which is provided (i.e. wider, same level). Have you had opportunities for enrichment? Please describe these.
9. Differentiation is the adaption of content and pace to fit the needs of the individual student, that is, different things, for different people, in different ways (e.g., enrichment, a variety of learning and challenging experiences). If you have been accelerated to a higher year level did you also have differentiation to meet your needs at the accelerated level?
10. How do you prefer to learn? Do classes, the delivery of the content and method of delivery suit your learning preferences?
11. What is your future career? How has, or is, your school preparing you for this?
12. How much academic, social and emotional support has your school given you (e.g., teachers, counsellors, career advisers, tutor group or homeroom teacher, principal)?
13. Who else has provided you with academic and social and emotional support?
14. Has being accelerated affected your relationships with students who have, or have not been, accelerated?
15. Have you experienced extra curricula or out of school provisions which you have found interesting and challenging? Please describe these.
16. What would you like to have changed in your learning journey?
17. What suggestions can you make for other gifted and talented learners in this school?

Appendix KK: Senior Manager Interview Information Sheet

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Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Case Study School: Senior Manager In-Depth Interview

Information Sheet

Dear Senior Manager

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I am conducting research though Massey University on acceleration and gifted girls in single-sex secondary education in New Zealand. The purpose of the research is to examine the educational provisions for gifted girls and in particular, if acceleration is used, how it is used and evaluated. The research has three stages: a review of the research literature; a survey of single-sex girls' secondary schools in New Zealand; and multiple case studies of schools with significant acceleration provisions.

Your school has been selected as a case study school after a national survey has been conducted on this subject. Your Principal and the Board of Trustees have agreed to be a case study school.

Within the case study school there will be questionnaires, focus group interviews with teachers, students, parents or caregivers, and an interview with a senior manager. There may be an interview(s) with radically accelerated student(s) if any are identified in your school. The information your school provides will give examples of what schools are doing for students who are gifted and talented, and specifically accelerated.

I would like to invite you to take part in an individual interview, at a time and location convenient for you. The purpose of the interview is to gain a further understanding of the school and its context, organizational strategies and educational provisions for acceleration and gifted girls. During the interview the following themes for gifted education will be discussed:

- Roles in the school for gifted education;
- History of gifted and talented in the school;
- Acceleration and Enrichment;
- Practices (e.g., inclusion in regular classrooms, special classes, withdrawal);
- Educational pathways for students;
- Academic, social and emotional, cultural support;
- Communication with teachers, students, parents or caregivers;
- Evaluation of practices and provisions.

The interview will take no more than an hour at a time for up to two hours and be taped and transcribed for analysis. The transcription of the interview will be made available to you for checking for accuracy and further comment. Upon completion the data will be stored securely by the researcher.

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In the final report neither the school, nor you, will be named or identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to participating schools. Participants who are interviewed will also be sent a copy of the research findings using contact details as provided by the school.

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study (interview);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the audiotape to be turned off at any time during the interview.

A consent form and reply envelope are enclosed with this letter. If you decide to participate the consent form needs to be signed by yourself, and returned to the researcher, Margaret Crawford, before the interview.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors. The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Yours faithfully

Margaret Crawford

Appendix LL: Student Individual Interview Information Sheet

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COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

Case Study School: Student In-Depth Interview

Information Sheet

Dear Student

My name is Margaret Crawford and I am a student in the EdD degree (Doctor of Education) at Massey University. I am conducting research though Massey University on acceleration and gifted girls in single-sex secondary education in New Zealand. The purpose of the research is to examine the educational provisions for gifted girls and in particular, if acceleration is used, how it is used and evaluated. The research has three stages: a review of the research literature; a survey of single-sex girls' secondary schools in New Zealand; and multiple case studies of schools with significant acceleration provisions. A glossary of terms has been included with this information sheet.

Your school has been selected as a case study school after a national survey has been conducted on this subject. Your Principal and the Board of Trustees have agreed to be a case study school.

I would like to invite you to participate in an interview, as a student who has been accelerated. The information you provide will give examples of what schools are doing for students who are gifted and talented and specifically accelerated.

During the interview the following themes for gifted education will be discussed:

- Learning styles and learning needs for a gifted and talented student;
- School provisions across the year levels;
- Acceleration and enrichment in regular classroom or elsewhere;
- Support provided by school, parents or caregivers, community member;
- Meeting of academic, social and emotional needs and cultural needs;
- High points and room for improvement.

The interview will take no more than an hour and be taped and transcribed for analysis. The interview will be held at a time and location convenient for you. The transcription of the interview will be made available to you for checking for accuracy and further comment. Upon completion, the data will be stored securely by the researcher for five years.

In the final report neither the school, nor you, will be named or identified. Information you provide will only be used for the purposes of this research and any publications or presentations that arise from it. A summary of the research findings will be sent to the research participants using participant

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contact details as provided by, and discussed with the school, as to the most appropriate method (i.e., participant email, or home or school postal address).

You are under no obligation to accept this invitation. It is not intended that participation or non participation will affect your current or future schooling (e.g., school grades, class placement, and leadership positions) and your school has been informed of this. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study (interview);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the audiotape to be turned off at any time during the interview.

You may bring a support person(s) if you wish. Please inform the researcher before the interview as numbers may affect the choice of venue for the interview.

A consent form is enclosed with this letter. If you decide to participate the consent form needs to be signed by yourself, and your parent or caregiver, and returned to the teacher in charge of gifted and talented in your school before the interview time and venue are set.

Ethics Approval:
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/71. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

If you have any questions about the project please contact the researcher and/or the supervisors.

The researcher, Margaret Crawford, can be contacted by email (margaret.crawford@xtra.co.nz).

The supervisors are Dr Tracy Riley and Dr Glenda Anthony. They can be contacted through the School of Curriculum and Pedagogy, Massey College of Education, Private Bag 11222, Palmerston North, or t.l.riley@massey.ac.nz; telephone 06 3569099, ext 8625 and/or G.J.Anthony@massey.ac.nz; telephone 06 3569099, ext 8860.

Yours faithfully

Margaret Crawford

Appendix MM: Individual Consent Interview

MASSEY UNIVERSITY
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TE KUPENGA O TE MATAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree/do not agree to the interview being sound recorded.

I agree/do not agree to the interview being image recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

Name of School .....

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Appendix NN: Student Consent Interview

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TE KUPENGA O TE MĀTAURANGA

Acceleration and Gifted Girls in Single-Sex Girls' Schools for Secondary Education in New Zealand

PARTICIPANT CONSENT FORM – student in-depth interview

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree/do not agree to the interview being sound recorded.

I agree/do not agree to the interview being image recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: _____ **Date:** _____
Age_____
Full Name - printed _____

Parent or Caregiver Signature_____

Name of School_____

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Appendix OO: Research Assistant Confidentiality Agreement

MASSEY UNIVERSITY
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TE KUPENGA O TE MĀTAURANGA

Project Title
Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

CONFIDENTIALITY AGREEMENT
Research Assistant

I ..... (Full Name - printed)

agree to keep confidential all information concerning the project .....

.....

.....

..... (Title of Project).

I will not retain or copy any information involving the project.

Signature: _____ **Date:** _____

Te Kunenga ki Pureluroa

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Appendix PP: Transcriber Confidentiality Agreement

MASSEY UNIVERSITY
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TE KUPENGA O TE MĀTAURANGA

Project Title
Acceleration and Gifted Girls in Single-Sex Secondary Education in New Zealand

TRANSCRIBER'S CONFIDENTIALITY AGREEMENT

I ..... (Full Name - printed) agree to transcribe the recordings provided to me.

I agree to keep confidential all the information provided to me.

I will not make any copies of the transcripts or keep any record of them, other than those required for the project.

Signature: _____ **Date:** _____

Te Kunenga ki Pūrehuroa

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