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**Exploring the Self-Concept and Sense of Belonging of
Academically Accelerated Gifted Male Adolescents in
a New Zealand Context**

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requirements for the degree of Masters in Educational Psychology

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Abstract

When it comes to provision for intellectually gifted students, acceleration – the introduction of curriculum early or at a faster rate than usual – is not a popular choice in New Zealand. This is despite overwhelming overseas research finding academic acceleration to be a very effective way of meeting the needs of gifted learners. Research has also identified that many parents and educators hold a common fear that accelerating children will negatively affect their social-emotional development. The current study aimed to explore the validity of this fear. A mixed-methods study with an explanatory-sequential design was used to explore the self-concepts and sense of belonging of a cohort of 30 male Year 13 students at a single-sex secondary school in New Zealand. The students were all dually-enrolled in a variety of 100-level courses through a local university. The participants completed the Piers-Harris Children’s Self-Concept Scale 2, with the results compared to the test norms; other than physical-self-concept, no significant differences were found between the norms and the cohort on the domains measured, with all scores within the “Normal” range. Five of the participants were then purposively selected for semi-structured interviews investigating self-concept and sense of belonging, and how their experiences in their school’s acceleration programme may have impacted upon these. All of the interviewees expressed a strong sense of belonging to the school and the acceleration programme, and felt that the programme had enabled them to develop socially. The questionnaire and interview results indicated that the accelerated students felt comfortable in their identity as “accelerates”, while also feeling accepted by their fellow students. These findings suggest acceleration classes to be a positive provision for gifted students that does not significantly impact their social-emotional development.

Keywords: acceleration, gifted, talented, self-concept, belonging, social-emotional

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“Ma whero ma pango ka oti ai te mahi” – Māori Proverb

“With red and black the work will be complete.”

I stumbled upon this proverb, and the message resonated with me. It speaks of the traditional colours of the marae, and how they come together to complete the kowhaiwhai pattern. This message of collaboration has been a treasured lesson I have learnt this year, as I would not have made it to this point without the assistance of others. I therefore take this time to thank the whero to my pango:

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Introduction

Giftedness in Aotearoa New Zealand

In the last 20 years, significant changes have been made in New Zealand's approach to gifted and talented learners, with much to celebrate (Bevan-Brown, 2012). In 1997, a working group of prominent educators and parent advocates were funded by the New Zealand government to investigate the state of gifted and talented education in the country; this work culminated in 2002 when the working group's recommendations informed the Government's gifted and talented education policy (McDonough & Rutherford, 2005). The National Education Guidelines were amended to include a clause requiring schools to prove that they were identifying and providing for the needs of their gifted and talented students, as they were already required to do for students with special needs and low-achieving students (McDonough & Rutherford, 2005). This move is reflective of current research: it emphasised the importance of gifted students receiving a differentiated curriculum and learning opportunities (Hertzberg-Davis, 2009; Pfeiffer, 2003); and it recognised that many gifted students require adequate support and guidance to achieve, let alone excel (Reis & Renzulli, 2009; Winebrenner, 2000).

The New Zealand Ministry of Education published the handbook, "Gifted and Talented Students: Meeting their Needs in New Zealand Schools" in 2000. It was updated in 2012 to aid schools in meeting the aforementioned policy requirements for gifted and talented students. The publication is heavily evidence-based, and provides a framework for schools to use when developing their supports for gifted and talented children. The Ministry of Education also recognises that giftedness is interpreted differently by different cultures (Pfeiffer, 2012); therefore the publication emphasises the importance of schools recognising

Māori perspectives on giftedness and incorporating them in their definitions. The Ministry states that schools must tackle five key components: “the concept of giftedness and talent, the characteristics of G&T [gifted and talented] students, how to identify them, programmes for these students, and ongoing self-review” (Ministry of Education, 2012, p. 8).

Providing Effective Support for Gifted and Talented Students

The Ministry of Education (2012) states that, “students who have been identified as gifted and talented require differentiated programmes to meet their needs” (p. 54). Differentiated instruction – whereby instruction is adapted to the individual differences of each student – has been identified as a crucial element to effectively support gifted students (VanTassel-Baska, 2005). Programmes for gifted education typically fall into two broad types: enrichment and acceleration. Enrichment can be considered a broadening of the curriculum for the student, by providing opportunities and challenges outside of their regular programme in areas of interest and talent (Ministry of Education, 2012). Enrichment activities can include independent inquiry and self-directed learning, involvement in competitions, clubs or elective groups outside the regular school environment, and field-trips to places of relevant interest. Acceleration can be viewed as a heightening of the curriculum, whereby the student is introduced to the curriculum earlier or at a faster rate than their age-group peers (Ministry of Education, 2012). This can be achieved through grade-skipping, concurrent enrolment in secondary or tertiary institutions, withdrawal programmes, and compression of the curriculum, early entrance, and cluster grouping. The Ministry of Education (2012) recommends integrating elements from both approaches to provide the best support for gifted students.

Acceleration in Aotearoa New Zealand

It is important to explicitly state the definition of acceleration for gifted students, as the New Zealand Ministry of Education has appropriated the term for other uses. The Ministry of Education has identified groups of “priority learners” who are struggling in primary school; this is due to New Zealand’s declining results on the Programme for International Student Assessment (PISA). In order to combat drops in mathematics and science literacy, these students have been “accelerated” through programmes such as Acceleration Learning in Literacy to raise their achievement to that of their normally achieving peers:

“Progress is considered to be accelerated when the student’s achievement has moved from well below to below, at or above a national standard, or from below to at or above [or] when the student’s progress is noticeably faster than might otherwise have been expected” (Noble-Campbell, 2015, p. 1).

This use of the term is completely unrelated to – and somewhat ignorant of – the definition that has been discussed in relation to gifted populations in academic literature since the early 20th century. The term acceleration (and its derivatives) is used throughout this thesis. Unless specified, its use refers to academic acceleration of gifted students. Similarly, it is important to recognise that people can be gifted in various areas. However in this thesis, unless otherwise stated, the term “gifted” will refer to academic/intellectual giftedness.

When it comes to meeting the needs of academically gifted students in New Zealand, acceleration is not a popular choice (Wardman, 2015), despite being a suggested approach by the Ministry of Education (2012). In 2004, research was undertaken into what

provisions were being employed for gifted learners in New Zealand schools, their effectiveness, and the fidelity of the school staff implementing them (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004). Nearly ten years later, Riley and Bicknell (2013) revisited the report with new research to explore any changes to provisions over the years. Between 2004 and 2013, the authors found an increase in the number of schools providing differentiated provisions for gifted students: within this, schools (66.1% in 2013) increasingly preferred using enrichment and acceleration in tandem, and were less likely to use either individually (Riley & Bicknell, 2013). Of the remaining schools, 32.1% in 2013 showed a preference for enrichment only, leaving 1.8% of respondents preferring an acceleration-only approach. Furthermore, provisions that provide direct acceleration opportunities were the least likely to be reported: fulltime special class placement (lowest reported) and dual enrolment (third lowest) decreased between 2004 and 2013, while early entry into secondary or tertiary increased but remained the second-lowest reported provision overall (Riley & Bicknell, 2013).

Confounding this is a finding from the 2004 report that some New Zealand schools who claimed to provide acceleration in their “accelerate” classes were often unwittingly providing a form of enrichment instead (Riley et al., 2004). This does not appear to have been revisited in more recent research, so it is possible that confusion between the terms still exists; the unpopularity of quintessential acceleration provisions reported by Riley and Bicknell (2013) suggests this could be so.

The Academic Effectiveness of Acceleration

The lack of acceleration provisions is counterintuitive to what research suggests about acceleration’s effectiveness as a support for gifted learners. Hattie (2009) compiled

the results of over 800 meta-analyses on education achievement, identifying 138 factors that have been thought to contribute to academic achievement and assessing their effectiveness by overall effect sizes using Cohen's *d*. Academic acceleration of gifted students had an effect size of $d = 0.88$, making it the 5th most powerful contributor to academic achievement out of the 138 factors studied (Hattie, 2009). The list has since been updated twice with newer studies; in the most recent update, acceleration ranks 12th overall out of 195 factors, with a drop in effect size to $d = 0.68$ (Waack, 2016). This is still within the "high" range of effect scores however. Interestingly, enrichment had a consistent effect size of $d = 0.39$ across all three editions, slotting in at 80th out of 195 (Waack, 2016); however, this analysis had no way of measuring the interaction between acceleration and enrichment, the recommended approach by the Ministry of Education (2012).

Other meta-analyses have produced similar results: Kulik and Kulik (1984) analysed the results of 28 studies that measured the achievement of accelerated and non-accelerated gifted youth through examination scores. Half of the studies compared accelerated gifted students with non-accelerated gifted students of equivalent intelligence and age; the accelerated students were found to significantly outperform their non-accelerated counterparts by almost an entire grade year, with an effect size of $ES = 0.88$. The other half of the studies consisted of non-accelerated gifted students a year older than the accelerated students. While no overall significant difference in grade level was found between these groups, Kulik and Kulik (1984) considered the fact the accelerated students matched – and in a few cases, surpassed – the results of the older gifted students impressive and telling. Another recent meta-analysis from Steenbergen-Hu and Moon (2011) analysed 38 studies, investigating the effects of various types of acceleration provisions on a range of academic

achievement variables. Consistent with previous research, they found acceleration to generally have a positive effect on gifted student's academic achievement compared with their peers. More specifically, the authors noted that "...accelerated students tend to outperform students who are not accelerated in their performance on standardized achievement tests, college grades, degrees obtained, status of universities or colleges attended, and career status" (Steenbergen-Hu & Moon, 2011, p. 1). Kulik (2004) notes that no educational intervention has as consistently high an impact on gifted student's learning as acceleration – a statement reminiscent of Hattie's (2009) results.

Other studies show benefits beyond schooling for accelerated students. A longitudinal study of 65 gifted American students who were enrolled into tertiary education at least two years earlier than usual (i.e. up to 17 years of age) found that the accelerated students graduated with a Bachelor's degree within the standard 4 years at comparable rates to their older, non-accelerated classmates. However, 32% of the early entrants graduated within three and a half years or less compared to 12% of the non-accelerated students, and the early entrants were more greatly represented than their non-accelerated counterparts at all Honours levels (Brody, Assouline, & Stanley, 1990). The authors also found that 12% of the early entrants went on to complete a Honours or Master's degree, compared to 1% of the non-accelerated students. Another longitudinal study by McClarty (2015) demographically matched 145 students who had been grade-skipped at some point in their schooling career with older, non-accelerated students. The author found that the accelerated students earned significantly higher secondary school grades and finished college with significantly higher grade-point averages than the non-accelerated students.

Why is Acceleration Unpopular?

With the literature endorsing acceleration so positively, why is it out of favour in New Zealand? Resistance ultimately boils down to fears that removing students from their age-group will have damaging effects on their social and emotional development (Robinson, 2004). A case study was undertaken in a New Zealand school, where teachers' attitudes towards gifted learners and gifted education were surveyed with a standardised questionnaire. The results were clear: the participants were generally positive about provisions for gifted learners, except in the case of acceleration (Watts, 2006). The author found that despite the teachers being in favour of gifted learners having specific provisions, and agreeing that gifted students get bored in the regular classroom, they did not wish to have more children accelerated or to have specific classes for gifted learners. Watts (2006) surmised this to be due to fear of damaging students' social-emotional development, but did not follow this up with the participants.

This phenomenon is not limited to New Zealand. A survey of over 500 American school staff (including gifted coordinators) found that overall the respondents felt acceleration was hazardous to the social-emotional development of gifted children, despite recognising that it was beneficial academically (Southern, Jones, & Fiscus, 1989). Another study assessing the attitudes of 334 secondary school teachers from the Netherlands found that the teachers who expressed negative attitudes towards acceleration did so on the grounds that the provisions may cause the students social or emotional damage (Hoogeveen, van Hell, & Verhoeven, 2005). Very similar findings have also been found in studies of Australian primary school teachers (Gallagher, Smith, & Merrotsy, 2011; Lassig, 2009).

These fears appear to have no basis in the literature. Steenbergen and Hu's (2011) previously mentioned meta-analysis of acceleration's academic effects also synthesised research on the social and emotional effects. Their analysis showed that acceleration had an overall positive effect on the social-emotional development of gifted children (albeit a very small effect size of $g = 0.076$). Studies comparing accelerated students to older or younger accelerated peers showed positive results for acceleration, while studies comparing them to mixed-age peers were negative; however, none of these results were significant. These results were consistent with previous meta-analyses that showed no significant difference in social skills or emotional development between accelerated and non-accelerated students (Kulik, 2004); in fact, any differences typically favour accelerated students (Robinson, 2004; Rogers, 1991). Steenbergen and Hu (2011) conclude that "Accelerants equal or surpass non-accelerants in self-concept, self-esteem, self-confidence, social relationships, participation in extracurricular activities, and life satisfaction" (p. 1), and Robinson (2004) states that "We can lay firmly to rest the myth that acceleration is inherently dangerous for gifted students" (p. 64).

Importantly, some evidence has shown that intellectually gifted children can be negatively affected if they are *not* accelerated. Gross (2006) conducted a longitudinal study of 60 exceptionally intellectually gifted people (i.e. an IQ score of 160+) over 15 years. The study indicated that the level of the participants' school and university academic success, job satisfaction, success in social and romantic relationships, and general life satisfaction were all positively correlated with the level of acceleration they received as students (Gross, 2006). The students who had been accelerated by at least three years (i.e. radical acceleration), and those who were accelerated by two years, reported experiencing more

lasting, warm friendships than those who had been accelerated by only one year or not at all. The highly accelerated students reported feeling a sense of belonging with their older peers, and feeling understood; the students who were minimally accelerated reported feeling isolated from their same age peers, and felt the need to camouflage their giftedness to be socially accepted.

Where are we now?

With regard to acceleration in New Zealand, there appears to be a disconnect between theory and practice. The academic literature is strongly in favour of acceleration provisions for academically gifted students, and the Ministry of Education (2012) recommends it; however, the reality does not match this, with accelerative provisions being the least likely to be employed by New Zealand schools (Riley & Bicknell, 2013). At the heart of this disconnect are misguided assumptions about how gifted students' social-emotional development may be affected. The majority of research into acceleration and gifted education as a whole has been performed overseas, particularly in the United States; this may help explain why some educators in New Zealand still hold on to preconceptions that are not supported by evidence. When Riley and Bicknell (2013) asked New Zealand schools what changes had most positively affected the development of gifted and talented education between 2004 and 2013, the overwhelming answer was the increase in understanding and awareness of gifted students' needs. This was in turn attributed to the aforementioned adaptations of the National Assessment Guidelines, professional development, and improved access to resources. While this growth has been positive, the work is not yet complete: Riley and Bicknell (2013) state that in order to make further progress in gifted education, New Zealand must invest in "...ongoing resources for funding,

professional learning and support, and, most importantly, encouragement to continue developing an evidence-base of effective practices” (p. 16).

The current study aims to contribute to this goal by adding to an evidence-base of New Zealand research on gifted education and academic acceleration. This mixed-methods study will investigate the effects of long-term academic acceleration on the self-concept and sense of belonging of a cohort of gifted young males from a single sex secondary school in New Zealand. The next chapter will review relevant literature around acceleration, self-concept, and sense of belonging, identifying gaps in the research. The third chapter will outline the design of the current study, including the methods, participants, analysis, and steps taken to ensure ethical research. The fourth chapter will present the results from the quantitative and qualitative phases of the study, integrating the findings. The fifth chapter will discuss the results in-depth with reference to the literature, considering the implications and making recommendations, while acknowledging the limitations of the study. Final conclusions will be made in the last chapter.

Literature Review

In this chapter, I have reviewed literature around the concepts of interest for the current study. Self-concept is defined, and its links to social-emotional development and health reviewed, followed by a review of literature investigating the self-concept of gifted students who have been accelerated. The concept of belonging is also reviewed, followed by literature linking self-concept with sense of belonging. Gaps in the literature are identified, which the current study has addressed.

Self-Concept Defined

A commonly employed construct used to assess an individual's social-emotional state is self-concept, broadly defined as how a person perceives themselves and how they believe other people perceive them. An individual's perceptions of themselves are generated through how they interpret their own life experiences, and what these interpretations say about them (Shavelson, Hubner & Stanton, 1976). Though differing theories of its structure exist, researchers agree that self-concept is a multifaceted, organised construct, whereby individuals classify their experiences into different categories, which together create an overall concept of self (Marsh, 1990; Hattie, 2004). For example, winning or losing an athletic event affects a person's *physical* self-concept, while performance on a mathematics test has a direct effect on their *academic* self-concept. Both of these may in turn affect the person's overall self-concept. Events can have an effect on more than one domain, and the domains that events are classified into can vary in nature due to cultural interpretations (Esteban-Guitart, Borke, & Monreal-Bosch, 2015). Research has typically moved into examining specific domains as opposed to general self-concept (Toledano, Wirch, & Wiens, 2015; Khan, Gagné, Yang, & Shapka, 2016); indeed, it has been

asserted that self-concept cannot be investigated without discussing the domains that are relevant to the context (Marsh & Shavelson, 1985; Marsh, 1990). Some of the most commonly cited domains are academic self-concept, physical self-concept, and social self-concept, among others.

It should be noted that there is some confusion between terms in the literature. Self-concept is frequently equated with self-esteem, and occasionally self-efficacy; this has been a topic of debate in recent years. One view espoused by some researchers is that self-concept is the “cognitive”, factual, or non-emotive side of self-perceptions, while self-esteem is the evaluative, value-laden, or emotive side (Baumeister, Campbell, Krueger, & Vohs, 2003). This theory has been criticised for a lack of empirical support, with some theorists saying that the cognitive and evaluative aspects of self-views are not empirically separable (Swann, Chang-Schneider, & McClarty, 2007; Burnett, 1993). This has led to the two terms being used interchangeably (Pajares & Schunk, 2001). Self-esteem has also been previously defined as a self-assessment of one’s worth (Schunk, 1991); this has regained traction in recent years, with Swann et al. (2007) suggesting self-concept and self-esteem be viewed as parts of a common group of “self-views”.

Self-efficacy is another related concept, defined as a self-assessment of one’s capability in a particular area (Pajares & Schunk, 2001). Questions of efficacy revolve more around the ability to perform specific tasks (e.g. “Can I write this poem?”), while questions of self-concept focus more on being or feeling (e.g. “How do I feel about myself as a writer?”). This means that self-concept is culturally bound, as what is valued by one’s culture has an influence on how they perceive themselves. On the other hand, self-efficacy is less influenced by culture and more by context; for example, a person who considers

themselves a good driver may nevertheless feel different levels of efficacy depending on the nature of the traffic, road, or vehicle they are driving (Pajares & Schunk, 2001). Self-efficacy has been found to predict how much effort individuals will put into a task, how much stress they experience, and whether they will engage with the task or avoid it.

Self-Concept, Age, and Gender

A person's general self-concept follows a reasonably stable, predictable path along one's lifespan (Wang & Su, 2013). Self-concept appears to decline from a young age and through most of preadolescence, plateaus towards the end of adolescence, and then finally increases through early adulthood (Marsh, Trautwein, Lüdtke, Kölle, & Baumert, 2005). Children begin to develop general self-concepts at an early age, and these become more differentiated and specific until they become more stable in adolescence (Marsh et al., 2005; Byrne & Shavelson, 1996). Early studies found males to have higher general self-concepts than females; however, evidence indicates that this is slowly decreasing, and researchers believe any gap can be explained by variations in specific self-concept domains between the genders (Marsh et al., 2005; Marsh & Yeung, 1998).

Areas of academic self-concept are the most commonly researched, and differences are apparent: females typically report higher verbal (or language) self-concept than males, while males' mathematical self-concepts are typically higher (Marsh et al., 2005; Skaalvik & Skaalvik, 2004; Jacobs, Lanza, Osgood, Eccles & Wigfield, 2002; Marsh & Yeung, 1998). Marsh et al. (2005) used structural equation modelling with extensive longitudinal data from two cohorts of 7th grade German students to examine the causal relationships between mathematics achievement, mathematical self-concept, and mathematics interest, with the aim of comparing this across genders. The first cohort was made up of 5,649 participants

with an average age of 13.4 years, and the second cohort had 2,264 participants with an average age of 13.7 years. The results indicated that prior mathematical self-concept had a significant effect on interest in mathematics, school grades, and (to a lesser degree) standardised test scores over a year later; achievement also had a smaller – but still significant effect – on self-concept, indicating a reciprocal relationship between the two variables. This model did not vary between genders. The results also indicated stereotypical differences in gender, with males having higher average mathematical self-concepts, mathematics interest, and standardised test results than females at all measurement points. Interestingly, while males had significantly higher mathematics grades than females at the initial collection point, this difference all but disappeared a year later (Marsh et al., 2005).

Another study by Marsh and Yeung (1998) was similar in design: longitudinal data from 24,599 Australian 8th grade students were collected in three waves over six years, and analysed. The researchers looked at both mathematics and English, investigating the possible relationships between self-concept, grades, standardised test scores, interest, and course selection for both subjects. The results indicated that self-concept in English and self-concept in mathematics had significant effects on the school grades of their matching subjects, and matching standardised test scores to a lesser degree. These relationships were strongly subject-specific: any relationship observed between mathematical self-concept and English grades or test scores (and vice versa) was in fact negative. Gender differences in self-concept went along stereotypic lines, with girls having significantly higher English self-concept scores and males having significantly higher mathematical self-concept scores (Marsh & Yeung, 1998), however, girls had higher grades in English while still matching males in mathematics grades.

Other studies analysed non-academic domains of self-concept and gender. Cairns, McWhirter, Duffy, and Barry (1990) analysed the stability of various measures of self-concept in a cohort of 2490 Northern Irish students with an average age of 17 years. They had completed a questionnaire 18 months earlier, and were then interviewed to investigate whether gender or situational variables had any effects on self-concept stability. The results indicated that both genders experienced relative stability across all of the measured domains and general self-esteem in later adolescence. Overall, males showed higher athletic and cognitive self-concept than females.

Cole et al. (2001) investigated the development and stability of multiple domains of self-concept by analysing measures of academic competence, physical appearance, behavioral conduct, social acceptance, and sports competence in two American cohorts (936 and 984 participants, respectively) over a period of five years, spanning Year 4 to Year 11 equivalent. They found all of the domains gradually increased at a consistent rate, however, all domains were lower during high school than they were in elementary or middle school. All domains but sport competence experienced a significant drop in the transition period from elementary to middle school, but recovered soon after. Males had significantly higher sport competence and physical appearance scores than females at all stages, while females had a significantly higher behavioural conduct scores than males throughout; no significant differences were apparent on the remaining scales (Cole, et al., 2001).

Effects of Self-Concept

Various domains of self-concept have been found to predict a range of outcomes, as well as being associated with various aspects of development. Academic self-concept has been found to be reciprocally related to academic achievement, while also positively

predicting future interest in specific academic domains (Marsh et al., 2005). Children's academic self-concepts have also been shown to be negatively associated with the amount of social exclusion experienced; however, a high academic self-concept has been shown to reduce the impact that experienced social exclusion or victimisation has on academic achievement (Buhs, 2005). Research has also noted that the positivity of an employee's self-concept is positively correlated with their job performance (Judge, Erez, & Bono, 1998).

Having a high self-concept has also been found to be a protective factor against the negative effects of bullying (Boulton & Smith, 1994), while adolescents who have suffered bullying display negative self-concepts in the behavioural adjustment, academic, and general happiness domains (O'Moore & Kirkham, 2001). Notably, adolescents who reported high rates of being aggressive and bullying others (both cyber and offline) also showed negative self-concepts in the same areas (O'Moore & Kirkham, 2001; Toledano, Wirch, & Wiens, 2015). Another study found that the success of high school students' offline social lives was positively correlated with their self-concepts (Khan et al., 2016). All of this research further indicates the usefulness of measuring self-concept domains to investigate the social and emotional development of adolescents.

Self-Concept of Accelerated Students

A number of studies have also investigated self-concept with gifted students who have been academically accelerated. A pre-post study by van der Muelen et al. (2014) assessed whether the Day a Week School – an accelerative withdrawal programme in the Netherlands – would be beneficial for the self-concept, academic achievement, school enjoyment, and behaviour of gifted students. A group of 89 Dutch students from third- to fifth-grade (between eight and 11 years of age), their teachers, and their parents completed

a number of questionnaires on various factors. A small number of the students at-risk to social-emotional issues and underachievement were also identified. Post-test results indicated that the cohort experienced small but significant positive effects on academic self-concept (Cohen's $d = 0.27$) and behaviour ($d = 0.33$); no significant differences were noted elsewhere. The at-risk cohort's academic self-concept ($d = 0.76$), behaviour ($d = 0.58$), school enjoyment ($d = 0.38$), worry ($d = 0.46$), and sleep problems ($d = 0.49$) all experienced small-to-medium positive effects. Parents of the entire cohort reported small but significant improvements in prosocial behaviour ($d = 0.22$), while parents of the at-risk cohort noted small-to-moderate decreases in emotional symptoms ($d = 0.42$), peer problems ($d = 0.36$), physical complaints ($d = 0.34$), and inattention ($d = 0.32$).

Wright and Leroux (1997) used a mixed-methods approach to assess the self-concept of a group of 25 gifted students in ninth-grade between 12 and 14 years of age, after they had spent a year in a full-time accelerated class with telescoping. Telescoping is also known as compression, where the standard curriculum is completed in a shorter space of time than in a mainstream classroom. At the start and end of the school year, the cohort completed a questionnaire where they rated the importance of, and their competence in, various self-concept domains: these included global self-worth, scholastic competence, close friendship, social acceptance, romantic appeal, physical appearance, athletic competence, job competence, and behavioural conduct. Six of the participants were also selected for 45-minute individual interviews that investigated how their self-concept development was affected by the social environment of the class.

The authors found that while self-concept had risen as a whole, the students' scholastic competence had dropped. The interviewees all experienced some self-doubt

about their academic ability, which was assumed to be a result of the programme's demands. The male interviewees tended to minimise the importance of the academic areas where they struggled. Females typically were more socially oriented in their recounts, while males were more egocentric. None of the interviewees wanted to be defined by their academic ability, and tended to focus on their individuality; however, their academic achievements became a greater source of pride over time. The authors concluded that full-time accelerative classes can positively impact the growth of gifted students' self-concepts, while recognising the predicament of students appreciating the opportunities and experiences gained in special classes, but not wanting to be defined by their placement in them (Wright & Leroux, 1997).

A survey study conducted by Plucker and Taylor (1998) assessed the physical ability and appearance, opposite and same-sex relations, honesty, parents, emotional stability, and general self-concept of 624 gifted students from fifth- to twelfth- grade, 114 of who were grade-skipped by at least one grade level. Measure of mathematics, verbal, and general school ability were also collected. The study found no significant difference in any areas of self-concept existed between accelerated and non-accelerated students. The authors concluded that acceleration via grade-skipping does not significantly impact the self-concept of gifted students (Plucker & Taylor, 1998).

Hoogeveen, van Hell and Verhoeven (2012) conducted a similar study that was broader in scope: 203 gifted students, ranging from four to 27 years of age (including university students), were assessed with an updated version of Plucker and Taylor's (1998) self-concept questionnaire. Of this cohort, 148 were grade-skipped, while the remaining 55 were not. The participants also kept a diary of the duration and nature of their daily social

interactions. Various environmental factors were also measured to assess their effects on self-concept. These included parents' and teachers' valuations of the student's behaviour (not collected for university students), parental interaction with school, and teacher demographics (e.g. age, gender, teaching experience, and class size). No significant differences between accelerated and non-accelerated students were found on any areas of self-concept; any minor differences that were noted favoured accelerated students. Interestingly, demographic and environmental factors had little impact on accelerated students' self-concepts; however, non-accelerated students' self-concepts were significantly affected by the same factors. The authors concluded that grade-skipping does not negatively affect gifted students, and may even prove beneficial for their social-emotional development (Hoogeveen, van Hell & Verhoeven, 2012).

Lee, Olszewski-Kubilius, and Thomson (2012) used an online survey to assess the peer-relationships, interpersonal competence, and self-concepts of 1,526 gifted American students between fifth- and twelfth-grade. Participants' demographic information, as well as the nature of their acceleration at school, was also collected. Results showed that gifted students had comparable peer relationships and interpersonal competence to a norm group of grade-equivalent students, however, they rated their social self-concepts lower than their global and academic. Females also considered themselves more competent socially than males. Notably, participants who experienced grade-skipping in at least one school subject had higher social skills than other students; the authors suggested this was because grade-skipping allowed them to interact with older, more mature students.

Arens and Watermann (2015) investigated how the self-concept of gifted students may be impacted by early transition to secondary school. They authors expected to find

evidence of the Big-Fish-Little-Pond-Effect (BFLPE), where a gifted student's academic self-concept is significantly lower in a high-ability group than a low-ability group (Marsh, 1987). The study specifically focused on contrast and assimilation effects: contrast effects occur when placement in a class with other similarly-gifted students negatively affects a learner's academic self-concept; while an assimilation effect is when a placement with similarly-gifted students raises a learner's academic self-concept, due to being aware and proud of being part of a select group. Arens and Watermann (2015) aimed to find these effects in 1,757 German gifted fourth-grade students who experienced early transition to sixth-grade¹, while also comparing their academic self-concept to 3,168 similar fourth-grade students who transitioned at normal pace. Academic achievement and self-concept were measured with a survey after transition and at the end of the school year. At the beginning of the year, early transitioned students experienced greater assimilation than contrast effects; by the end of the year, however, this had reversed. While both early and normally transitioned students' academic self-concepts gradually lowered as the school year progressed, this drop was larger for early-transitioned students. This was presumed to be the result of the early-transitioned students beginning to compare themselves solely to their older classmates, rather than other students their age.

Shepard, Nicpon, and Doobay (2009) also investigated the effects of early transition on the self-concept of gifted students. In this case, the transition was from secondary to tertiary. The cohort consisted of 21 American students between 16 and 18 years of age, who had attended an American university's early entrance programme. The participants completed a self-concept questionnaire after their first and last weeks of college. General self-concept had not significantly changed between pre- and post-test. A significant increase

¹ Secondary school in Germany begins at grade 6, equivalent to New Zealand's year 7.

of physical appearance scores was noted (Hedge's $g = 0.47$), however, large confidence intervals made any conclusions tentative. A slight drop in Intellectual and School Status ($g = -0.30$) was also found; despite not being statistically significant, the finding's consistency with previous research on the BFLPE was noted.

A longitudinal study conducted by Vogl and Preckel (2014) investigated whether the self-concept and school-related attitudes of gifted students was affected by full-time grouping in high-ability classes. A cohort of 99 accelerated students was matched with regular students of similar cognitive ability, socioeconomic status, gender, and school. Questionnaires were used to measure the participants' acceptance, assertiveness, interest in school, perceptions of their student-teacher relationships, and feelings of social tension at four different points: the end of fourth grade, the start of fifth grade, the middle of fifth grade, and the middle of sixth grade. The accelerated cohort experienced a more significant boost to their self-concept at the start of fifth grade than the non-accelerated cohort, however, this difference diminished over time. Non-accelerated students reported a gradual decrease of their interest in school and teacher-student relationships, while this remained consistently high for the accelerated students. The authors concluded that the initial jump in self-concept experienced by the accelerated students was an example of an assimilation effect, and that longer instruction time and smaller class sizes explained the sustained positive attitudes to school and teachers.

A study by Robertson (2013) investigated whether differences in subjective well-being exist between gifted students subject to different versions of acceleration. The self-concepts and attitudes to school of 280 gifted students from tenth- to twelfth-grade were assessed with standardised questionnaires. Of this cohort, 224 students were dually-

enrolled in regular high school and a Governors' School that provides extension in a variety of areas for gifted students. The remaining 56 students were in accelerated classes in regular secondary schools. The questionnaire results indicated that the general self-concepts of all participants were not significantly different from the norm scores, and there was no significant difference in self-concept between the two groups within the cohort. Despite reporting a lower academic self-concept at the Governors' School, the students were more positive towards their Governors' School than their regular secondary school. Overall, Governors' School's students reported higher school satisfaction than the students in accelerated classes at regular secondary school.

A mixed methods design was utilised by Yeo and Garces-Bacsal (2014) to investigate how the academic self-concept of gifted Singaporean girls in Singapore was impacted by placement in full-time acceleration classes. A cohort of 30 accelerated and 61 non-accelerated girls completed a questionnaire of academic self-concept at the start and end of the school year. Individual semi-structured interviews were conducted with four each of the accelerated and non-accelerated students, in order to more deeply investigate their self-concepts. The accelerated students were found to have higher academic self-concepts than the non-accelerated students for the duration of the school year; however, the self-concept of the non-accelerated students remained stable throughout, while the accelerated students' scores had significantly lowered by the end of the year. The accelerated interviewees reported higher competition and pressure to perform than the non-accelerated interviewees. Both groups of interviewees claimed they compared marks with peers to gauge their academic ability, and believed that their level of effort was the primary determinant of success or failure. This was in contrast with previous research which noted

that American students attributed success or failure with natural ability (Wright & Leroux, 1997). Yeo and Garces-Bacsal (2014) suggested that this was a cultural difference in understanding giftedness.

Overall, the literature indicates that self-concept is a central element of identity that develops with age, becoming more differentiated and stable through childhood and adolescence. Gender differences exist, with males typically having higher physical self-concepts than females, while females behavioural self-concept is generally higher than males. Within academic self-concept, males have higher mathematics self-concept, and females have higher English self-concept; notably, females grades are typically higher in both areas. Domains of self-concept are strongly related to various outcomes, including academic achievement and motivation, behaviour, and social success.

Research has consistently found that accelerated students do not significantly differ from non-accelerated students (gifted or non-gifted) on various domains of non-academic self-concept; any differences that are found tend to favour accelerated students. Accelerated students tend to have lower academic self-concepts than non-accelerated students. This is a consistent, robust finding known as the Big-Fish-Little-Pond Effect, which tends to result from social comparisons. Research has also noted a relationship between self-concept and sense of belonging. This is discussed next.

Self-Concept and Sense of Belonging

Sense of belonging has been conceptualised as a marker of social self-concept in some studies (Greenwood, Long, & Cin, 2013), the assumption being that a strong sense of belonging to a group results in more positive interactions and connections with other

members of the group, which contributes to the development of a more positive social self-concept. Brewer and Gardner (1996) alluded to the idea of belonging playing a part in social self-concept, suggesting that “...connectedness and belonging are not merely affiliations or alliances between the self and others but entail fundamental differences in the way the self is construed” (p. 83). This suggests that the groups we belong to help make up our identity as a person. This is especially relevant for collectivist cultures (such as Māori) who typically define themselves in relation to the people or groups in their lives (Markus & Kitayama, 1991).

Tarrant, MacKenzie and Hewitt (2006) found that adolescents who identify strongly with a school-based friendship group show much higher self-concept in all domains than those who experience less identification with their peer-group; the difference was most noticeable in the non-academic self-concept domains. High-identifiers also had greater general self-esteem than low-identifiers (Tarrant, MacKenzie, & Hewitt, 2006). Research on members and fans of sports teams has shown that those who feel they belong to the team have higher self-esteem than those who do not (Branscombe & Wann, 1991). Studies among American youth of various ethnicities found having a strong sense of ethnic identity – a component of which was sense of belonging – to be a strong predictor of self-esteem (Phinney, Cantu, & Kurtz, 1997; Blash & Unger, 1995).

Belonging to multiple groups could also have a cumulative effect on social self-concept: a study of deaf individuals and how strongly they identified with the “deaf” and “hearing” cultures revealed that not only did a lack of sense of belonging to either culture predict low overall and social self-concept, but individuals who expressed a positive sense of belonging with both cultures had a higher self-concept than those who belonged to just one

of the cultures (Cornell & Lyness, 2005). All of these findings suggest that feeling a sense of belonging to peer groups, organisations, and cultures can have a positive impact on the way in which we view ourselves.

Sense of Belonging Defined

Sense of belonging has become a widely-investigated psychological concept, but is often not clearly defined due to its seemingly self-explanatory nature (Lähdesmäki et al., 2016). In an attempt to provide some consistency of definition, Mahar, Cobigo, and Stuart (2013) reviewed 40 studies that investigated sense of belonging in various disciplines and contexts. These studies were analysed for common themes that could be used to produce a transdisciplinary conceptualisation of sense of belonging.

Five components fundamental to a multidisciplinary definition were identified: *subjectivity*, indicating the importance of the individual feeling they fit in, are valued, and respected, outside of objective or literal membership ; *groundedness*, which states that there must be an identifiable referent group for the individual to belong to; *reciprocity*, referring to having a sense of relatedness to others in a group through shared beliefs, experiences, values, and, to a lesser degree, characteristics; *dynamism*, which is a reference to how a sense of belonging can be enabled or hindered by various factors in the social or physical environment; and *self-determination*, which recognises the role of the individual in deciding whether they desire to belong, or feel they are capable of belonging (Mahar et al., 2013).

An important underlying aspect of this conception is its reliance on social interaction: Mahar and colleagues (2013) note that while common physical characteristics

or literal membership to a group can provide some semblance of belonging, it is the sharing of perspectives, understandings, and experiences – all achieved through interacting with others – that most effectively engender a sense of belonging. Individuals can also feel they belong to more than one group, and these feelings can clash and be contradictory. This conceptualisation provides a reliable framework that can be applied to different disciplines and contexts.

Sense of belonging has been alluded to as an important element of psychological well-being in early health literature (Annant, 1967), and others. In his famous hierarchy of needs, Maslow (1943) theorised belongingness to be the third-most important need for life satisfaction and happiness, after physiological and security needs were met. Baumeister and Leary (1995) state that relatedness is a psychological need that is necessary for healthy functioning and behaviour. This is supported by research from an extensive longitudinal study which found that people who had experienced chronic social isolation as children were at much greater risk to cardiovascular disease and general poor health as adults (Capsi, Harrington, Moffitt, Milne, & Poulton, 2006). This link was found to persist even after childhood trauma, childhood obesity, socioeconomic status as a child, and unhealthy lifestyle choices were all accounted for.

Through conducting multiple studies of various methodologies, Lambert and colleagues (2013) found that an individual's sense of belonging is positively correlated with their perception of how meaningful their life is, and that sense of belonging also predicted perceptions of life meaningfulness three weeks later. They also found that being primed to feel a sense of belonging caused people to feel more meaningfulness in their lives, and produced a greater effect than other social phenomena (Lambert et al., 2013). Survey

research with the elderly found that having more reasons to live was predicted by having a higher sense of belonging (Kissane & McLaren, 2006). Notably, responsibility to family, child-related reasons, and survival and coping skills were the reasons most strongly linked to sense of belonging, further indicating the importance of social links to belongingness.

Sense of Belonging to School

Sense of belonging has often been researched in terms of how strongly and positively students feel they belong to their school. This same research has noted that feeling a strong sense of belonging towards their classroom and school can have beneficial effects, particularly for adolescents. This sense of belonging has been found to be underpinned by a student's relationships with their fellow students and the school faculty. Catalano, Berglund, Ryan, Lonczak, and Hawkins (2004) assessed the factors of effective positive youth development programmes, finding that a sense of belonging to the school community, fostered by strong bonds with peers and teachers, was a critical element of young teens' positive development. Qualitative study has further strengthened this argument, with young adolescents detailing how important it is to have unrelated adults and peers playing supporting roles in their lives (Drolet & Arcand, 2013).

Having a positive sense of belonging to the school has been shown to have protective effects. One study found among a cohort of urban Native American students that those with a stronger sense of belonging to their school had significantly lower rates of alcohol, cigarette, and illicit drug use, as well as a later age of onset into these activities than those with a weaker sense of school belonging (Napoli, 2003). Another study of a diverse sample of 733 adolescents found sense of belonging to be negatively related to the exhibition of internalising and externalising of behaviours (Newman, Lohman, & Newman,

2007). Furthermore, of the subset of adolescents who claimed that belonging to a peer group was very important to them, those who did not have a positive sense of belonging had considerably more behaviour problems, than those who did.

A students' sense of school belonging is also related to their academic results. In a comprehensive review of the literature, Juvonen (2006) concluded that sense of belonging is not only affected by school achievement and academic motivation, but also reciprocally influences these as well. She demonstrates that a sense of belonging unmet by the school environment could instead be sated by a peer group that does not value achievement or hard work; this can ultimately alter a students behaviour (Juvonen, 2006). Her conclusions support the theory that social relations at school (including peer-to-peer and peer-to-teacher relationships) underpin the sense of school/classroom belonging.

Other studies also support the link between belonging and academic achievement. Faircloth and Hamm (2005) found belonging to account significantly for the relationship between motivation and academic success for students from four ethnic group. They also found relationships with teachers to be an important element of belonging for all ethnic groups, and relationships with peers to be important for European-Americans and Latino-Americans. Goodenow (1993) found that interpersonal relationship strength and belonging both mediated the relationship between motivation to achieve and actual academic achievement. Coleman and Wellborn (1991) also noted that although motivation had a causal effect on predicted achievement, variance in motivation was significantly explained by measures of relatedness. This research supports Ostermann's (2000) claims that schools have a responsibility to create a sense of community that engenders a sense of belonging, as it will increase motivation, increase achievement, and promote positive behaviour; failure

to do so may result in students seeking belonging from groups that encourage antisocial behaviours (Juvonen, 2006).

Sense of Belonging of Accelerated Students

Considering the significant amount of literature demonstrating the importance of belonging for students, there is very little literature that investigates how a sense of belonging may affect the social-emotional development or academic achievement of gifted students. There is a particular need for such research, given that feeling “different” from their age cohort, thinking they are “weird” or “abnormal”, and not belonging are among the most significant difficulties that gifted children and adolescents face (Gross, 1998; Galbraith, 1985).

In summary, sense of belonging is viewed as an important aspect of life, and is defined by five key elements: subjectivity, groundedness, reciprocity, dynamism, and self-determination. The concept is strongly correlated with self-concept; research shows that not only is a positive sense of belonging with a group related to a positive self-concept, but positively belonging to multiple groups appears to have a cumulative effect on self-concept. Adolescents’ sense of belonging has been found to be a protective factor against various negative health and behavioural outcomes, and has an impact on their academic motivation and achievement. This review of literature did not yield any studies investigating gifted or accelerated students’ sense of belonging.

Limitations of the Current Literature

A very apparent limitation of the aforementioned literature is the lack of studies undertaken in New Zealand. The majority of the research on acceleration has been

conducted in the United States, as well as some in Great Britain and Europe. It is notable that the study by Yeo and Garces-Bascal (2014) – the only mentioned study on self-concept in accelerated students performed in Singapore, a country with a non-Western dominant culture – had a unique finding that the authors believed could be explained by cultural attitudes. Cultural differences in attitudes towards acceleration, giftedness, ability, and achievement exist in various countries and make it difficult to confidently generalise from overseas results. Though New Zealand is broadly a “Western” country, there may be specific attitudes and views that make generalisability difficult. With a history of egalitarianism in education and subsequent rejection of elitism (Moltzen, 2004; Simon, 1994), as well the pervasive effects of the notorious “tall poppy syndrome” – a reportedly Australasian phenomenon where conspicuously high-achievers are viewed with suspicion or hostility and can be “cut down” by others (Mouly & Sankaran, 2000) – local research will be important to take these possible variables into account. The current study was conducted in New Zealand with accelerated New Zealand students, making the research more relevant to New Zealand educators.

Another noticeable deficiency in the previous literature is a lack of studies with qualitative elements. While quantitative studies can work with large amounts of data and produce contextual statistics, the context of the statistics can be stripped away, meaning valuable information can be lost (Punch, 2012). This ties in with previously mentioned studies: Yeo and Garces-Bascal (2014), and Wright and Leroux (1997) both found attitudes that could be explained by cultural differences through semi-structured interviewing - a qualitative method of data collection. The current study will also be a mixed methods design, to make the study more sensitive to unique New Zealand cultural effects.

As previously mentioned, no studies assessing sense of belonging did so with gifted populations. This is despite previous research indicating that gifted students often struggle to feel like they belong in their classroom and with their peer groups (Gross, 1998; Galbraith, 1985). The current study will be the first of its kind in New Zealand in this respect, investigating the sense of belonging of the accelerated students in the study and whether the acceleration programme contributes to their sense of belonging.

Methodology

This chapter will expand on the methodology employed in the research. The three broad frameworks for research – quantitative, qualitative, and mixed methods – will be initially discussed, and the current study's framework described. The methods of data collection will then be described in detail, followed by the participants and the methods of analysis. The steps taken to ensure the conduct of ethical research are then described, and finally a personal statement on my background and its influence on the study is provided.

Research Design

Research in the social sciences can take a quantitative approach, a qualitative approach, or a blend of both. Quantitative research seeks to understand human behaviour by operationally defining constructs of interest as variables, and then obtaining numerical data by measuring these variables; the data are then transformed into analysable statistics (Vogt, 2007; Punch, 2012). This data can be collected through various methods such as questionnaires, surveys, and standardised tests. Stemming from scientific positivism, quantitative analysis of data is typically, though not exclusively, used to investigate hypotheses of the presence, nature, or strength of relationships between variables (Sale, Lohfeld, & Brazil, 2002). Researchers often try to control the possible confounding effects of peripheral variables by standardising the environment in which measurement occurs (Punch, 2012). By defining human behaviour as measurable numbers, and controlling the conditions in which it is measured, quantitative approaches strip away context from the data in order to produce exact results that enable clear conclusions and generalisation to

larger populations (Vogt, 2007). The disadvantage of this approach is the social and cultural context that is removed may be necessary to understand certain human phenomena, meaning the data may be too contrived and the conclusions misrepresentative of specific populations (Punch, 2012).

In contrast, qualitative research attempts to understand human behaviour by examining it within naturalistic settings, and forming understandings and concepts based on the human experience. Rather than looking at one or two particular variables in standardised conditions, qualitative research seeks a holistic understanding of the phenomena it examines (Corbin & Strauss, 2015). Qualitative data is typically in the form of written and spoken word, and is predominantly collected through observation, participant observation, interviews, and documents (Punch, 2012). Analysis of this data involves searching for patterns, trends, and themes between different sets of data, and then making conclusions on how these trends help us better understand social phenomena. This analysis often generates tentative concepts and hypotheses of social phenomena, creating new areas of inquiry for future research (Corbin & Strauss, 2015). Qualitative research is therefore typically exploratory in nature, in contrast to the confirmatory approach of quantitative research (Punch, 2012). Qualitative research provides in-depth understanding of the reasons, meanings, and significance of behaviour in social worlds, while also creating new hypotheses to investigate. However, it is more time-consuming than quantitative research, and demands smaller sample sizes; this makes any conclusion difficult to generalise to the wider population (Punch, 2012).

It is possible to take elements of both qualitative and quantitative approaches, collect both types of data, and combine them in research: this is called mixed-methods

research (Creswell & Plano Clark, 2007). It is an appealing approach, as it makes use of the strengths of both qualitative and quantitative approaches, which in turn compensate for the weaknesses of the other, to provide a comprehensive understanding of the topic of interest (Punch, 2012; Creswell, 2013). It also has the potential to both generate *and* answer research questions (Johnson, Onwuegbuzie & Turner, 2007). The design of a mixed-methods study depends largely on the nature of the topic of interest, and what the researcher intends to achieve (Creswell, 2013). In order to design the study, Punch (2012) states that the researcher must determine whether the quantitative and qualitative components of the study will be given equal emphasis, whether they will be separate or integrated, and whether they will be conducted simultaneously or sequentially.

The current study employed a mixed-methods design, using techniques from both quantitative and qualitative research to investigate the social-emotional effects of acceleration in a New Zealand context. Specifically, it adopted an explanatory sequential design: quantitative data was initially collected and analysed, with the results providing a contextual base and informing further exploration by qualitative means (Creswell, 2013). The quantitative measure provided an indication of how the social-emotional development of the participants compares to overseas norms, while the qualitative measure allowed an in-depth investigation into the topic within the sociocultural context of New Zealand. A standardised measure of self-concept was employed for the quantitative phase of the research, and semi-structured interviews were employed in the qualitative phase.

Methods

The *Piers-Harris Children's Self Concept Scale 2nd Edition* (Piers-Harris 2), a self-report questionnaire on self-concept was used for the purpose of collecting the quantitative data of participants' perception of self-concept. The scale is designed to be employed with children/adolescents between 7 and 18 years old, and can be administered in around 15 minutes (Piers & Herzberg, 2002). The survey consists of 60 items: each item is a first-person statement that the participant answers with a "yes" or "no", depending on whether they perceive the statement as indicative of themselves or not (e.g. "My friends think I have good ideas").

The scale provides a summary measure of the participant's total self-concept (TOT), while also providing six domain measures:

- Behavioural Adjustment (BEH)
- Intellectual and School Status (INT)
- Physical Appearance and Attributes (PHY)
- Freedom from Anxiety (FRE)
- Popularity (POP)
- Happiness and Satisfaction (HAP) (Piers & Herzberg, 2002).

Two scores that assess the validity of the responses are also obtained: Inconsistent Responding (INC) identifies random responses, while Response Bias (RES) identifies when a participant has an inclination towards answering "yes" or "no", regardless of the nature of the item.

All of the items that are answered in such a way that they contribute to a positive self-concept are totalled to provide raw scores for each scale. These raw scores are then transformed into normalised T scores as instructed by the manual. Each scale has a mean of 50T and a standard deviation of 10T. The Piers-Harris 2 has an extensive norming population of 1,387 participants from Grades 2 to 12, with an age range of 7-18 years. Despite this population being based in the United States, the questionnaire has been used with multiple cultures and in multiple countries (Winters, Myers, & Proud, 2002; Su, Lou, Zhang, Xie, & Lui, 2002; Flahive, Chuang, & Li, 2011), including New Zealand (Eggleston, Hanger, Frampton, & Watkins, 2012). Its norms have been found to translate to other countries.

Self-concept and social-emotional effects of acceleration were further investigated through individual interviews. Interviews can have various levels of structure. Fully-structured interviews involve the participant answering predetermined, closed questions focusing on a specific line of inquiry (Punch, 2012). Sometimes open-ended questions are employed, but overall flexibility is minimised and the interviewer plays a dispassionate role. The opposite of this is unstructured interviewing: in-depth, organic discourse unrestricted by categorisation (Punch, 2012), where the discussion is conversational and driven by the participant rather than the interviewer (Longhurst, 2010). Semi-structured interviews lie in between these, borrowing features of both styles (Punch, 2012). The interviewer has preset questions that allow them to explore a particular line of inquiry, however, these questions are typically open-ended, allowing room for detailed explanations by the participant and further exploration by the interviewer (Longhurst, 2010).

In the current study, the effects of acceleration on the students' sense of belonging were explored through individual semi-structured interviews. The participants' sense of

belonging was specifically investigated, with questions based on findings in the literature; sense of belonging was explored within the transdisciplinary framework proposed by Mahar et al. (2013). The participants' perceptions of the adequacy of the Piers-Harris 2 were also investigated. Some of the interview questions were directly informed by the participants' results on the Piers-Harris 2. This was so the participants could provide their perspectives on the self-concept scores obtained, and any unusual or interesting findings could be explored. This approach is known as integration through building, whereby the results of the first stage of data collection influence how data is collected in the second stage (Fetters, Curry, & Cresswell, 2013). The pre-planned interview questions can be found in Appendix A.

Participants

The participants for this study were 30 male students who are enrolled in an acceleration programme at a single sex school in the Central North Island. All of the participants are 17 years old, except for one 18 year old. All of these students are dually enrolled in a university, doing a variety of 100-level (or 'first year') courses. The acceleration programme offers students single-subject acceleration in selected subjects i.e. the students complete the appropriate curriculum one school year advanced in their chosen accelerated subjects. Radical acceleration is available, but is determined on an individual basis. The students are given the opportunity to take first-year university courses in Year 13 courtesy of the school's close working relationship with a local university.

The school is a large single-sex secondary school in the central region of the North Island, New Zealand. It is advertised as a traditional boys' school, and prides itself on maintaining and respecting traditional practices: these include daily whole-school assemblies, reciting the Lord's Prayer before assemblies, marching competitions between

the school clubs, and standing for teachers when they enter the classroom. There is also a respect for the school’s history, and all students participate in the school’s Anzac Day memorial service where past students who served in war are remembered.

Table 1 below provides the numbers of participants enrolled in University courses relevant to each subject. Of the 30 participants who reported their subjects, ten were enrolled in 2 accelerated subjects, five in 3 subjects, nine in 4 subjects, five in 5 subjects, and one student in 6 subjects. Of this cohort, five students were purposively selected to take part in the individual interviews. All five of the interview participants had been accelerated since year 9, and had experienced various acceleration and enrichment provisions at primary and intermediate. The aim was to select students currently studying different curriculum areas; the five interviewees chosen covered all of the subjects taken by the cohort, except for Classics and biology. Students in the selected school’s acceleration programme are commonly called “accelerates”, and henceforth will be referred to as such.

Table 1

Total Number and Percentage of Participants Enrolled in Relevant 100-level University Courses for Each Subject

Subject	Number of participants enrolled in relevant University course	% of total participants
Calculus	19	63.3
Physics	14	46.7
Chemistry	12	40.0
History	12	40.0
English	9	30.0
Statistics	9	30.0
Biology	7	23.3
Accounting	5	16.7
Computer Science	3	10.0
Anthropology	2	6.7
Economics	2	6.7
Philosophy	2	6.7

Psychology	2	6.7
Classics	1	3.3
Creative Writing	1	3.3
Religious Philosophy	1	3.3

The Piers-Harris 2 was administered simultaneously to all of the participants in the school library, taking 20 minutes. Participants also provided their age and the subjects they were accelerated in, and indicated whether or not they were interested in taking part in the interview stage. Five selected participants were individually interviewed for one session each that lasted between 18 and 30 minutes. The interviews were audiotaped for later transcription and analysis.

Analysis

The Piers-Harris 2 forms were scored manually. Interpretation of scores was undertaken by the researcher with guidance from supervisors. Mean scores and standard deviations were calculated for each domain, and *t*-tests were used to determine whether statistically significant differences existed between the cohort's mean scores and the scores of the age-equivalent participants from the Piers-Harris 2 standardisation sample (17-18 years sub-cohort, [n=165]). Effect sizes in the form of Hedge's *g* were also calculated to quantify the size of the differences between the means.

The interview data was subject to thematic analysis, whereby data is carefully perused to find "themes" (or patterns) which are then categorised. The goal is to find common themes within different blocks of data (in this case, different interviews) in order to help describe and understand a topic or phenomenon (Braun & Clarke, 2006). This is achieved through a six-step process: data familiarisation, generation of initial codes,

categorising codes into potential themes, reviewing themes, defining and naming themes, and production of the report (Braun & Clarke, 2006). This analysis was undertaken with guidance from supervisors.

The quantitative and qualitative findings were analysed separately, and then integrated through the use of a joint display that grouped relevant themes from the interviews with relevant scales from the Piers-Harris 2.

Ethics

A review of the ethical considerations indicated that this study was low-risk and notification was lodged with the Massey University Human Ethics Committee (Ethics Notification Number: 4000015805).

In order to ensure informed consent, all possible participants were provided with forms that contained all of the information on the design and nature of the research, and the Piers-Harris 2. This form can be found in Appendix B. They were also informed they had the right to refuse participation in the study. This was provided with adequate time before the study commenced, and all participants needed to provide written consent in order to take part. They were also assured that their answers and information would be kept confidential, with only the researcher and his supervisors having access to the data. Though some demographic data was collected for the Piers-Harris 2, no names were collected from the participants unless they expressed interest in being interviewed. This interest was acquired on a separate form that could not be linked to their Piers-Harris 2 response sheet.

The participants who took part in the interviews were informed of the nature of the interviews beforehand, and needed to provide written consent before taking part.

Participants were informed that they had the right to stop the interview at any time, and to deny their results being used. They were also told that they had the right to listen to the audio recordings of their interviews, and ask for the removal of any section of the recording if they wished. The participants were assured of their anonymity, as they were to be given pseudonyms that have been used in all written records since. They were also assured that only the researcher and his supervisors would have access to the interview tapes and the transcripts. The interviewees were offered the opportunity to see the transcripts of their own interviews for editing, however, only two took up this offer. They were also informed that the audio tapes and transcripts would be kept only as long as necessary, and would be destroyed within a year of the collection date.

My Perspective

I am a graduate of the school involved in the study, and was a part of the acceleration programme throughout my time there. I researched New Zealand's approach to gifted and talented education last year for a university assignment. It struck me that acceleration was an unpopular choice for meeting the needs of intellectually gifted students, despite the vast majority of research finding acceleration to be excellent – if not the best – provision for intellectually gifted students. Further research on my part highlighted that a fear of social or emotional damage to accelerated students was the most cited reason for not employing acceleration. I found this to be strange as it did not match my own experiences in the acceleration programme. I remember enjoying my time in the programme and having the opportunity to talk with like-minded peers. I also remember having plenty of non-accelerated friends outside the programme who I enjoyed good

relationships with. Overall I felt that I and my accelerated peers were well-adjusted. Clearly my experiences did not match the fears that were espoused by educators.

I felt the need to find the accelerated student's voice – something the literature is largely lacking. This encouraged me to take a mixed methods approach. I also used the Piers-Harris 2 as I had experience in using the test, and understood self-concept to be a widely-measured construct when studying social-emotional development. I also considered this an opportunity to assess the adequacy of the Piers-Harris 2 with a gifted population. I did recognise that my previous affiliation could lead to bias, therefore I ensured that I probed for negative aspects of acceleration during the interviews.

Summary

The current study seeks to investigate the possible effects of academic acceleration on the self-concepts and sense of belonging of a cohort of gifted male adolescents at a single sex school. An explanatory sequential design was employed to achieve this, with the results from an initial quantitative phase being investigated further by a qualitative phase built upon the quantitative findings. The results of this study are presented in the next chapter.

Results

This chapter will present the results from the quantitative and qualitative phases of data collection. The results from the Piers-Harris 2 will be introduced first, followed by presentation of the data from the interviews. These will be integrated at the end for discussion.

Questionnaire Results

The participants' mean T scores and standard deviations in each domain, as well as the descriptive range that each score falls into, are provided in Table 2. The mean scores on each domain for the 17-18 year olds from the norming population are also provided. All of the participants' mean domain scores were lower than the norm population's scores, except for the Behavioural Adjustment scale (where the scores were equal). All of the participants' domain scores fell within the "average" range i.e. within the range of 45T-55T, as outlined in the Piers-Harris 2 manual (Piers & Herzberg, 2002). One participant's results could not be used, as they had too many unanswered items. This left a total sample of 29.

A limitation of this analysis should be noted here: the entire norm population of the Piers-Harris 2 consists of 1,387 American students from Grades 2 to 12, with an age range of 7-18 years. Raw mean scores and standard deviations for each domain of the standardisation sample were calculated from the results. These were then transformed into normalised T-scores, giving each domain a mean of 50T and a standard deviation of 10T (Piers & Herzberg, 2002). It is widely accepted that self-concept follows a consistent pattern of change over one's lifespan (Marsh et al, 2005; Byrne & Shavelson, 1996), therefore it was decided that the cohort's results would be compared only to the T scores of the 17 and 18

year olds in the standardisation sample, in order to make more valid comparisons. While the manual provides means for this age group for each domain, it does not provide specific standard deviations. In order to allow for the completion of *t*-scores and effect sizes, the decision was made to assume a standard deviation of 10T for each of the mean scores of this age-equivalent norm group. It was assumed that the age-equivalent sample's standard deviations would not vary significantly from the norms of the entire standardisation sample; however, care must be taken when interpreting these results.

Table 2

Cohort Mean Scores, Standard Deviations, and Descriptors for Each Scale of the Piers-Harris 2, and Age-Equivalent Norm Group Mean Scores for Each Scale

Scale	Participants			Mean of Age-equivalent Norm Group
	Mean	Standard Deviation	Descriptor*	
Total Self-Concept	45.97	7.81	Average	49.1
Behavioural Adjustment	50.10	8.73	Average	50.1
Intellectual and School Status	46.41	7.73	Average	49.2
Physical Appearance and Attributes	45.28	8.49	Average	49.5
Freedom from Anxiety	47.72	7.71	Average	48.8
Popularity	47.90	8.05	Average	48.6
Happiness	46.10	7.63	Average	48.8

Note. * Descriptors of the scores are obtained from the Piers-Harris 2 manual

The cohort's results on each scale were tested for normality, in order to determine whether use of parametric *t*-tests (which assume normally distributed samples) was appropriate. The Shapiro-Wilk was chosen as it was originally designed to be used with

samples smaller than 50 (Shapiro & Wilk, 1965), and has high statistical power compared to other normality tests (Razali & Wah, 2011).

The scores on the Behavioural Adjustment scale were the only set that was found likely to not be normally distributed, $W = 0.918$, $p < .05$, however, this could be explained by the way the Piers-Harris 2 is scored. As there are only a finite number of answer combinations on the questionnaire, there are a finite number of possible individual T-score outcomes. Of the possible outcomes on the Behavioural Adjustment scale, only two sit above the mean of 50.1T, while the remainder sit below. The current cohort was roughly evenly split either side of the mean, however, this resulted in significant clustering on the two scores above the mean, skewing the distribution. Due to the nearly even split of the cohort either side of the mean, it was decided that the use of parametric t -tests was appropriate.

Unpaired t tests using alpha levels of 0.05 were used to determine whether the differences between the cohort's and the norm group's means were statistically significant. Effect size for each difference was also calculated using Hedges g . This measure was employed as it accounts for large discrepancies in sample size between groups (Grissom & Kim, 2012). As this analysis consisted of multiple t -tests, the probability of finding a significant difference between two groups when it does not exist (i.e. making a Type I error) was inflated (McDonald, 2014). However, the decision was made not to correct the p -value of the t -tests, for various reasons: firstly, seven tests was not considered an unusually large number; secondly, there was interest in finding any differences that may have approached significance, but not necessarily attained it; and thirdly, correcting the p -value would have

simultaneously increased the chance of not finding a significant difference when one actually exists i.e. making a Type II error (McDonald, 2014).

The resulting *t*-scores and Hedge’s *g* values are recorded below in Table 3. The average score of the cohort (M=45.28, SD=8.49) on the Physical Appearance and Attributes scale was significantly lower than the norm group (M=49.5, SD=10.0) score, $t(193) = 2.44$, $p < .05$, $g = 0.43$. No significant differences were found between the mean scores of the cohort and the norm group on the remaining scales.

Table 3

Output t-scores and Hedge’s g Values from Analysis of Differences Between Mean Scores of Participants and Age-Equivalent Norm Group on All Scales of the Piers-Harris 2

Scale	<i>t</i>	<i>g</i>
Total Self-Concept	1.63	-0.32
Behavioural Adjustment	0.00	0.00
Intellectual and School Status	1.45	-0.29
Physical Appearance and Attributes	2.17*	-0.43
Freedom from Anxiety	0.56	-0.11
Popularity	0.36	-0.07
Happiness	1.41	-0.28

Note. Degrees of freedom for all *t*-tests was 193

* indicates statistical significance (i.e. $p < 0.05$)

The results of the Piers-Harris 2 were explored in more depth in the interviews. The distribution of responses in particular items was specifically probed.

Interview Results

The interview results have been analysed and presented using a variety of themes which arose from the Piers-Harris results, as well as specific questions about belonging. Two individual items from the Piers-Harris were probed further in the interviews, and from these discussions two important themes arose: banter and uniqueness.

Banter. For the statement, “My classmates make fun of me”, 10 of the 29 participants in the questionnaire answered “Yes”, however, one of the participants qualified this by writing beside his answer, “But it’s just banter”. The five interviewees were asked about whether they agreed with this, and their responses were mixed. Two of the five interviewees felt that the teasing and mocking that sometimes went on in their classes was not light-hearted. Tito said, “It’s still making fun of someone”, but added, “If the other ones who are getting made fun of still think of it as banter, then maybe not.” Michael said, “For some people it’s banter, but for the people who are receiving it, it’s quite often not, and especially for the people who are not confident”. He claimed that academic results and ability were often the subjects of banter in the accelerated class, and felt that this banter could affect the students who were not confident in their ability:

“The confident people are the ones who think it is banter, and they have jokes like ‘I got 98% and you got 90 so I’m smarter’. And it really affects the people who aren’t as confident because they feel like they would be better off with the normal population.” – Michael

The two remaining interviewees agreed that banter was light-hearted, and rarely crossed over into the territory of genuine insults. Jackie said, “In the moment you just have a bit of a

laugh, like the stupid stuff you do in class ... it's not malicious most of the time." Jermaine agreed, saying "...people make fun of me, but it's not really picking on me, and I make fun of these people who make fun of me equally". He felt that the other accelerates were comfortable with banter as they knew each other well, however, he did say, "We understand the people who can't take a joke".

Uniqueness. 27 of the 29 questionnaire participants answered "Yes" to the item, "I am different from other people". The interviewees were asked whether they felt this level of response was unique to the accelerated students. All five interviewees provided different answers. Jackie felt that accelerates tend to "get involved in a lot of stuff" more than non-accelerates: "Not just sport, but music and everything". He felt this contributed to the accelerates' sense of uniqueness. Marlon believed that non-accelerates would be more likely to assert they were different from other people. He hypothesised that non-accelerates would "try to be unique [and] stand out" in non-accelerate classrooms, thinking that the accelerate programme already gave accelerates a point of difference.

Tito believed the opposite of Marlon, thinking accelerates were more likely to assert their uniqueness than non-accelerates "...because they've been removed from the rest of the year group the whole time, they talk differently, they've been with each other the whole time so it's kind of like 'speciation'". Jermaine said, "[I] expected 30 people to say yes, because everyone's so unique". He did suggest that the question could be interpreted as, "Are you different from every other individual or are you different from the crowd?" He mused that non-accelerates may be more likely to interpret it as the latter. Michael felt that there was a unique difference with academically gifted people:

“It seems that people who are academically very capable tend to be unusual, or have quirks, or have ... a sense of one with fellow people of similar ability ... It’s often difficult to talk to people who don’t have the same interests as you.” – Michael

Given the boys’ expressed views of difference, it was important to explore their responses to the ‘average’ results of their cohort on a measure of self-concept. The next sections explore the participants’ explanations for average ranged overall self-concepts, and their views of the Piers-Harris as a measure of self-concept.

Explaining ‘average’ overall self-concept. A major theme of the interviews was a lack of surprise over the accelerated students’ “Average” results on the Piers-Harris 2. None of the interviewees thought it to be unusual. As Marlon put it: “It scored a normal range for a reason I guess”. He believed it to be a good thing that the results were in the ‘Normal’ range:

“I think it’s a good thing that we scored that ... We should try not to take it that we are special compared to other people, like the staff already give us special attention, so the least we can do is try not to act above the rest of the school.” – Marlon

Michael again talked about people with and without confidence, positing that there are “two extremes” in the accelerate programme that explain the ordinary mean scores. He felt that there are some who “are not confident like myself, so they work harder, but people who are more confident [who] tend to be less hard-working”. He suggested that these two extreme groups explained the average results on the Piers-Harris 2. Tito had another theory, suggesting that the accelerated students were confident “... with academics and stuff ... but they also know [they are] not as socially comfortable or actively ‘out there.’”

The Piers-Harris 2 results contradict Tito, as neither of the scores on the Intellectual and School Status and Popularity scales (which represent academic and social self-concept respectively) were significantly different from their norms. When queried about the accelerated students' normal academic self-concept, none of the interviewees were particularly surprised. All five interviewees believed they were comparing their academic ability with the other accelerated students in their classes, as they spent most of their academic time with them. Jackie said, "You get used to people around you being as smart as you, or smarter". Michael also suggested that the expectations of "other people" could affect academic self-concept. He claimed to be better at English than mathematics or science, but felt that people expected him to achieve highly in all areas, "And when people expect you to be getting those top marks and it just wasn't happening, that's when the academic confidence drops."

Adequacy of the Piers-Harris 2. The students were also asked for their opinion on the adequacy of the Piers-Harris 2 as a measurement of self-concept. All five interviewees found the instrument to be clear and understandable. Marlon said, "It seemed pretty straightforward", while Tito felt, "It covered most of the things I think about when analysing myself". All five interviewees claimed that the questionnaire improved their understanding of self-concept, partly because most of them had never heard of the term before. Tito, however, stated that the questionnaire covered more topics than he previously would have considered: "Stuff about work, and the way I behave, and the way others see me as well."

The students were also asked if they had any criticisms of the Piers-Harris 2. A common theme here was dissatisfaction with the binary answer format. Four of the five interviewees felt that just having "Yes" or "No" as possible responses made answering some

questions difficult. Michael said, "...there were times it was more in the middle." Jackie thought, "A scale would have been decent", a view shared by the other three interviewees who felt "Yes or No" was inadequate.

The subjectivity of some of the items was also highlighted by the interviewees, saying some questions were difficult to answer. Marlon recognised that questions such as 'I'm often sad', 'I'm smart', 'I'm shy', or 'I'm often cheerful' may differ depending on the test-taker's mood at the time. He also specified the item, "My parents are disappointed in me", suggesting that a test-taker's cultural background may impact on how they respond to it. Jermaine felt that some questions simply did not apply to him, such as 'I am lucky' ("How do I answer that?").

The Piers-Harris 2 provided only one measure of self-concept, and given the boys' results and responses to the measure, it was important to delve further into their conception of self-concept, as the next section explores.

Defining self-concept. The interviewees were asked to provide their own definition on self-concept, giving a variety of responses. Michael viewed it as, "How you feel about yourself, and how you feel you belong in the greater sense of things". Tito said it was, "What I think about myself, how I look at myself". Jackie thought it was about being reflective and "seeing what type of person you are, seeing where you could improve". Marlon viewed it as "self-worthiness, a sense of self, like being aware of where you belong or you want to belong". Jermaine considered it as your self-view and "how you fit into ... the world and everything." Themes are both thinking and feeling about oneself, as well as self-worth and self-improvement. Michael and Jermaine both mentioned a sense of belonging when defining self-concept, while Jermaine mentioned a sense of fit.

These definitions of self-concept link directly to the concept of belonging, another important element of this research. The next two sections explore what the boys identified as enablers and barriers to belonging in school. This follows with their views on their sense of belonging in relation to the accelerated programme.

Enablers to belonging. The interviewees were asked whether they felt a sense of belonging to their school. All five interviewees said they felt comfortable at school, and four of them said they felt like members of the school. Marlon did not however, saying he did not take high school that seriously. All five interviewees identified knowing and interacting with other students at school as a major enabler of a sense of belonging. Jackie said that the culture of the school contributed, saying that "...you can get along with people you barely know". The shared experiences of tradition were also suggested to foster belonging. Michael felt that this contributed to his belonging:

"As I've gotten older at [school], at the start all the tradition, it was really boring and I didn't really care for it. But as I've got older, it might still be boring but ... everyone has done it and it just creates a sense of belonging. All of us, together, doing it." –
Michael

Jackie felt that the school house competition between the six houses provided a common cause for the students which may help foster belonging. Jermaine also considered tradition to be an enabler, adding that it is not enjoyable to be against the traditions of the school. He also said that while some of the traditional practices are not enjoyable, he accepts them because "...I get the other good parts of the school."

Four of the interviewees also considered teachers as potential enablers. Jermaine felt that the teachers were aware of the students and would help them if needed, while Jackie appreciated that, “they actually try to make sure you know what you’re doing instead of ‘just do this.’” Tito said, “When I achieve better because of a teacher, it makes me like the teacher better, and when I do better it makes me like the school more.” Marlon considered having good relationships with teachers more important for fostering belonging than relationships with other students. He also felt that the biggest enabler to belonging was personal academic achievement. Achieving well and getting recognised made him feel comfortable and accomplished, which motivated him to achieve further.

Barriers to belonging. The interviewees were asked what barriers existed that weakened or prevented them from feeling a sense of belonging with the school. Three of the five interviewees could not identify anything that negatively affected their belonging. Michael was one of the two who did. He noted that divisions between social groups (or “popular and unpopular kids”) could affect belonging, but felt this was not unusual in most schools. Marlon said that the school’s focus on tradition could be a barrier, feeling it was forced on the students. He also felt that the school unfairly advantaged the students at the ends of the academic spectrum “...and the people on the middle ground get left behind sort of. It’s just not really fair for everyone, not everyone gets equal opportunities.” He also felt that the school promoted a sense of elitism among the students, making them feel like they were better than those from other schools:

“...the rector always says to behave and stuff like that, and we are ... pretty good compared to other schools. Some may say we deserve to be proud ... but I think the

best way to get a sense of pride is to let other people know [through our actions] ... rather than boasting about it.” – Marlon

Belonging and acceleration. The interviewees were also asked about their sense of belonging to the acceleration programme, and whether this had an impact on their sense of belonging with the school as a whole. All five interviewees felt like they belonged to the acceleration programme, and four of the five interviewees felt it contributed to their sense of belonging to the school. In fact, Tito and Jermaine felt that “they kind of go hand-in-hand”, as they both spend a majority of their time with accelerate students.

All of the interviewees felt that being in classes with a similar group of people throughout high school contributed to their sense of belonging. Jackie felt this promoted their social development because, “When you’ve been in a class for five years you’re really good friends with pretty much all of them. Not necessarily close, but you know their name, so your social skills don’t lag behind.” He also said that being a part of a large group of accelerates means “you couldn’t get separated out from the rest of the people” which provides a sense of normality to school life. Michael also discussed the social side, saying that most of the accelerates “have groups of friends within the programme”. He said that many of the accelerates go up to Massey together, and enjoyed hanging out with people who shared this experience. Marlon said it was “reassuring knowing that you are in the top 60 in the school in this full year group academically”, which promoted comfort within the school. It also promoted a sense of importance, as he knows that their high results reflect well on the school. He felt that as their achievements contribute to the school’s prestige, the school was “returning the favour by paying for Massey papers.” Michael felt that this

drive to succeed was a common cause for the accelerates, and that it contributed to their sense of belonging as “...we are all together trying to push ourselves to the next year”.

The boys’ sense of belonging extended beyond the accelerate programme, as they spent time in other classes, as well as extracurricular activities, which are explored in the following sections.

Associating with non-accelerates. The interviewees were also asked how often they associate with non-accelerated students, and what their experiences with them were like. Four of the interviewees said they engaged with non-accelerates on a regular basis. For three of the five participants, sport was the main domain in which they socialised with non-accelerated students. Jackie and Tito both mentioned they had friends who were non-accelerates from previous schools.

The interviewees did identify some barriers to socialising with non-accelerates. Michael suggested that there were some “top” accelerates who struggled somewhat to interact with people who did not have the same interests, or would not discuss them on the same intellectual level:

“I know one of my friends ... gets annoyed with people who don’t understand him. He speaks at quite a high academic level; I mean he uses words that I sometimes don’t even know! He just can’t cope with people who don’t talk about politics or whatever. He just can’t understand why people aren’t interested in the things he’s interested in.” – Michael

Marlon’s comments reflected this, saying, “I don’t have any – um – stupid friends”. He said that he had nothing against people with less intellectual ability, but that “past a certain

point, these people are hard to talk to.” Jermaine said he rarely had anything to do with non-accelerate students at school. He did, however, play in a hockey team where he was the only accelerate student. He said while it was a different experience, he has known most of them for a long time and has no problem fitting in or getting along with them.

Belonging in extracurricular groups. The interviewees’ sense of belonging within their extracurricular groups was also explored. All five interviewees were involved with a number of extracurricular pursuits, including squash, basketball, hockey, chess, World Vision, debating, and being a school prefect. The interviewees cited many of the same previously mentioned enablers to belonging. Jermaine enjoys debating as it is full of “interesting intellectual discussion” and a similar group of people have been part of it throughout his school life. All of the interviewees viewed sport as a social activity, and were friends with many of the accelerated and non-accelerated people in their teams.

All of the interviewees experienced moments when their senses of belonging to their extracurricular groups and academics “clashed” i.e. they had to commit to one activity over the other. However, the interviewees felt they were “minor things” that were “easy to work around”. Two of the interviewees cited times they had to miss a match or training session to complete an assignment, but their team mates “understand” and so their relationships were not affected.

Again, few barriers were mentioned. Michael mentioned that he sometimes struggles to interact with some of his non-accelerated team mates as, “...they are more sporty so their interests are different. Their interests are more pop culture, and I’m interested in different things...” He went on to say it is still a good friendship where, “they

have taught me things and I have taught them stuff". Tito said there were times in his squash club when his sense of belonging was challenged by a more skilled player:

"...you feel comfortable there but there might be someone who's better at squash, more comfortable there, who – not belittles you, but makes you feel like you're not as good and ... not as involved in the whole squash community." – Tito

This feeling of inadequacy appears similar to the feelings felt by some of the less-confident accelerates when they are subject to seemingly innocent "banter" about academic results. Jermaine claimed that he did not feel a particular sense of belonging with the school prefects. He felt that it was not a cohesive unit; rather it consisted of a few smaller groups:

"I interact with maybe half of them on a regular basis, and half of them ... I know their names but nothing about them. I know they play rugby but I don't know what team they are in, so they are sort of a different group." – Jermaine

This is reflective of Michael's earlier comment on social divisions being detrimental to a sense of belonging.

Experiences in non-accelerated classes. The interviewees were asked if they were in any non-accelerate classes and if so, what their experiences were like. Four of the five interviewees were in non-accelerate Year 13 classes. All of them found the classes to be different from their expectations in some way. Jackie felt comfortable in his non-accelerate class and said the experience was not much different other than, "People don't do their work as much ... just the work ethic is the difference". He was already friends with some of his classmates, which he felt helped him settle in. Michael found his class to be less stressful and enjoyed the chance to help non-accelerate students with their work:

“It’s weird ... last year was probably the hardest year academically doing Level 3 and I was one of the people who was not confident and I was working really hard ... [feeling] that everyone else was above me. Whereas now I have got my good grades and I’ve passed and I’m calm, and now other people are struggling with the same subject and they’re asking me for help! I feel a lot more confident knowing I can help other people.” – Michael

Michael also found his class a good opportunity to socialise with non-accelerates. Marlon’s experience in his non-accelerate class was characterised by boredom and surprise at the level of work:

“It’s not embarrassing or anything ... but it’s really boring. We’re doing Level 3 English and I still remember the first lesson we did, and I told my parents because I was so shocked. We were going to learn about verbs and I was like ... how did they pass Level 2?!” – Marlon

Like Michael, he did say that he enjoyed the social side of the class. Tito’s experience in his non-accelerate class was “quite the wake-up call”, saying he was surprised at the “general unruliness” of his classmates. He said that he is not used to it and therefore “[feels] more reserved ... there’s that mob mentality. Once you get in there you can start doing it, but you don’t feel so comfortable doing it because you’re just not used to it”.

All four of the interviewees felt that their experiences in their respective non-accelerate classes had a positive impact on their academic self-concept. Jackie said it “made him feel more intelligent”, while Michael claimed he is “far more confident in his ability now”, and it made him feel like he belonged in the accelerate programme. Marlon and Tito

also claimed it boosted their academic confidence; however, they felt it was detrimental to their self-views and motivation. Marlon felt it made him complacent, saying "...you should strive to compare yourself to people better than you, not people ... less capable due to circumstance. It seems a bit self-righteous." Tito felt, "The teachers don't have as high expectations [as they do for accelerates]" and, "Within that class, the standards [of achievement] are lower". He said this made him much less motivated to achieve highly: "Being in that class has made me focus more on my other subjects, and realise that I don't want to try there". Jermaine was the only interviewee who had no classes with non-accelerates. He did mention that he was in an accounting class that had Year 12 accelerated students doing NCEA Level 3, but he said, "I still count them as accelerates in my mind". His explanation spoke to a unique accelerate experience at the school saying, "They're doing what I was doing last year and some of them are taking exactly the same subjects as me. Okay I've been there, I've done that". Despite this, and other experiences of feeling a sense of belonging, all of the interviewees claimed that there were times that they felt separate from the other students in the school, as the next section explores.

Feeling separate. All of the interviewees spoke of feeling separate at some time in their schooling, but most did not view these experiences as negative. Jackie said the only time he experienced this sense of separation was when his non-accelerate friends might share a joke or comment on something he was not aware of because he is not in that class. He did not see this as a major problem however, saying it had no real effect on his sense of belonging with them or the school. Michael mentioned that timetable differences and the academic expectations of the acceleration programme made him feel separate from his non-accelerate friends as, "I was busy in the weekends a lot and couldn't get involved as

much". Now that he is on semester break however, "They're all doing internals and they're stressed out while I'm relaxed". Although this made him feel separate from his friends, he felt that it was "just something that has to happen" and didn't affect his sense of belonging. Tito said he noticed that the accelerates had a different school experience to the non-accelerate students:

"I'd say during uni study, as I sit there in the library, doing whatever we want, seeing the other classes come and work on the computer, and then get told [what to do] by the teacher, and realising that we're quite separated from that." – Tito

Jermaine claimed that he felt separate "most of the time", as he had little to do with non-accelerates in both his academic and extracurricular activities. He also said that he was not always interested in some of the big school events that other students were, such as the boxing tournament. He said that he does not consider these feelings negative. Marlon said he liked to think that the accelerates were not separate from the rest of the school. He felt that the school occasionally separated them out on purpose, but didn't think it was a good thing. He used an example of how the school went about solving overcrowding in the school hall:

"Year 12 accelerates now get to sit on stage [at assemblies]. The stage is above the normal ground level, and they get more comfortable seats. I think it gives them an ill-placed sense of superiority over other students and I don't think it's right. Assemblies are pretty crowded but I don't think that's a good way to go about it." – Marlon

He felt that the school already “boosts our ego a lot” through provisions such as opportunities for university study and unsupervised study time. He thought that separation during assemblies was unnecessary and created “social divisions”.

Summary

The quantitative results show that there were no significant differences between the average scores of the current cohort and the Piers Harris 2 norm scores on any scale, except for the Physical Attributes and Abilities scale; the cohort score was significantly lower than the norm group’s score. A number of themes related to self-concept and belonging emerged from the qualitative results. Table 4, below, integrates the Piers-Harris 2 scales and the themes that relate to them, along with data excerpts from the interviews. As this joint display shows, sense of belonging was a theme that was related to various scales from the Piers-Harris 2; it was also specifically mentioned when the interviewees were asked to define self-concept. The discussions of banter were directly related to academic self-concept, as well as the interviewees’ experiences in non-accelerated classrooms. The acceleration programme was associated with social benefits, and the interviewees’ overall self-concepts were represented by a sense of uniqueness. The themes in Table 4 are discussed in-depth in the next chapter.

Table 4

Integration of Quantitative Statistical Data and Themes from the Qualitative Interview Data

Piers-Harris Scale (Cohort mean T score)	Relevant themes identified	Interview data excerpts
Total Self-Concept (45.97)	Sense of belonging	“Self-concept, self-worthiness, a sense of self, like being aware of where you belong or you want to belong”
	Uniqueness	“[The accelerates have] been removed from the rest of the year group the whole time, they talk

		differently, they've been with each other the whole time so it's kind of like 'speciation'"
Intellectual and School Status (46.41)	<p>"Average" academic self-concept</p> <p>Banter</p> <p>Academic motivation</p> <p>Non-accelerated classes</p>	<p>"You get used to people being as smart as you or smarter"</p> <p>"The confident people are the ones who think it is banter, and they have jokes like 'I got 98% and you got 90 so I'm smarter'. And it really affects the people who aren't as confident because they feel like they would be better off with the normal population"</p> <p>"You should strive to compare yourself to people better than you"</p> <p>"Within that [non-accelerated] class, the standards are lower and I feel less inspired to do well"</p>
Popularity (47.90)	<p>Social advantages</p> <p>Sense of belonging</p> <p>Associating with non-accelerates:</p> <ul style="list-style-type: none"> - Enablers - Barriers 	<p>"When you've been in a class for five years you're really good friends with pretty much all of them. Not necessarily close, but you know their name, so your social skills don't lag behind"</p> <p>"Well, we're always in the same classes, so we feel, like, a sense that we are all together trying to push ourselves to the next year"</p> <p>"Less so within the school itself, but like extracurricular, like sports and groups and music"</p> <p>"The [school] culture here is pretty good...you can get along with people you barely know"</p> <p>"I don't have any – um – stupid friends. Past a certain point, these people get hard to deal with"</p>
Physical Appearance and Attributes (45.28)	<p>Extracurricular</p> <p>Sense of belonging</p>	<p>"[Accelerates] just do a lot of things I suppose...not necessarily sport because obviously..."</p> <p>"Like at squash sometimes...there might be someone who's better at squash, more comfortable there, who...acts like you're not as good and makes you feel you're not as involved in the whole squash community"</p>

Discussion

The aims of the current study were to investigate the effects that academic acceleration had on the self-concept and sense of belonging of academically accelerated gifted male students. The Piers Harris Self-Concept Scale 2 was used to investigate the self-concept of a cohort of 29 accelerated adolescent males; five participants from this cohort were then selected to take part in semi-structured interviews to gain further insights into self-concept and sense of belonging. This chapter interprets the quantitative and qualitative results of the study, relating them to the literature. The implications of these findings are considered, with recommendations for future research discussed. The limitations of the current study are also discussed.

Non-Academic Self-Concept

The cohort's mean scores on all of the Piers-Harris 2 scales were not significantly different from any of the norm group's mean scores, except for Physical Appearance and Attributes. This was the only quantitative result that was not consistent with the literature; males typically have reasonably high physical self-concepts (Cole et al., 2001). Little research exists on gifted students and physical self-concept, however. Research on the media representations of "nerds" in films and television has found that intellectual characters are typically portrayed as physically unattractive, and that viewers are more likely to perceive a character as unattractive if the viewer identifies them as a nerd (Cardiel, 2012). Accelerated and gifted students may identify themselves as nerds and could be influenced by these media depictions, affecting their body image and physical self-concept. Cardiel (2012) also mentions that nerds are not portrayed as athletic. Similarly, when asked whether the accelerates are involved in extracurricular activities, Jackie said with a laugh that they were

but, “not necessarily sport because obviously...” This implied that accelerated students tend to not get involved in sport as much. Despite all of the interviewees playing some form of sport, none of the interviewees played sport at a high level. This lack of sporting prowess could negatively affect a student’s view of themselves physically.

It should be noted that the cohort’s physical self-concept mean score still fell within what Piers and Herzberg (2002) define as the “average” scoring range, and the effect size ($g = -0.43$) was small. So, although the difference was statistically significant, it is not considered to be an unusually low-score and on its own would not demand any attention.

The remaining quantitative results were consistent with past research: no significant differences were found between the cohort and the norm group on the Behavioural Adjustment, Freedom from Anxiety, Popularity, and Happiness scales. Past studies have failed to find consistent evidence that academic acceleration effects the non-academic domains of gifted students’ self-concept (Robertson, 2013; Kulik, 2004). Accelerated students are no more at risk – and possibly less so – to behavioural problems (Hoogeveen, van Hell, & Verhoeven, 2005), and have similar, if not slightly better, social skills (Lee, Olszewski-Kubilius, & Thomson, 2012; Neihart, 1999; Wright & Leroux, 1997) than non-accelerated students. Gifted students also experience less test anxiety than non-gifted students (Zeidner & Schleyer, 1999). All of the interviewees said they had no problems socialising with other people, and four of the five had regular social interaction at school with friends who were not accelerated.

Academic Self-Concept

The finding that the cohort's mean score on the Intellectual and School Status was not significantly different from the norm group's was also consistent with research. The interviewees were unanimous in their explanations, suggesting that the accelerates compared their academic ability to their fellow accelerates, as opposed to the perceived ability of non-accelerates. This is consistent with research into the mechanisms of the well-documented Big-Fish-Little-Pond-Effect (BFLPE), the phenomenon where gifted students in environments with similar high-ability peers will have a significantly lower academic self-concept than gifted students in environments with mixed-ability peers (Marsh & Seaton, 2013). A reverse of the BFLPE was also noted in the current study: all four of the five interviewees who were enrolled in Year 13 non-accelerated classes for one of their subjects claimed that being in the class boosted their academic self-concept. Jackie said, "[it] makes you feel more intelligent, honestly".

Placement in non-accelerated classes also had other unexpected effects. Tito claimed that he felt "less inspired to do well" in the non-accelerated class, while Marlon said the work was too easy and made him feel complacent in his academic ability. He went on to say he would prefer to compare himself to people "better than me". This suggests that while these students may experience an increase in their academic self-concept as a result of being with non-gifted peers, they may also experience a decrease in motivation. Tito felt that this was due to the "lower standards" in his non-accelerated class, and also felt his teacher in his non-accelerated class had lower expectations than his teachers in his accelerated classes. Studies have noted that teachers' expectations of student performance

are positively associated with student motivation (Jasmi & Hin, 2014; Griffing, 2006), and their grades (Wentzel, 2002).

Sense of Belonging

When asked to define self-concept, two of the five interviewees mentioned having a sense of belonging in their definitions, while another talked about having a sense of where you fit in the world. Previous research has shown correlations between self-concept and sense of belonging (Tarrant, MacKenzie, & Hewitt, 2006; Cornell & Lyness, 2005), while another study simply assumed that sense of belonging was a component of social self-concept (Greenwood, Long, & Cin, 2013). The fact that three of the interviewees considered belonging or fit to be a part of self-concept suggests that these assumptions may not be unfounded. It is possible that sense of belonging is a component of social self-concept, due to social interactions playing a primary part in engendering a sense of belonging (Lähdesmäki, et al., 2016; Brewer & Gardner, 1996).

Four of the five interviewees claimed to feel a sense of belonging with the school. Marlon did not, feeling he did not need to “take high school that seriously”. However, he did express that he felt comfortable at school. All of the interviewees highlighted socialising with other students as a major enabler of sense of belonging. Both supportive teachers and high achievement were also considered enablers.

All of the interviewees felt they belonged to the acceleration programme and that it contributed to their school sense of belonging. Tito and Jermaine said that their acceleration and school belonging went “hand-in-hand”, as they spent so much time in the acceleration programme. Michael felt that the accelerates had a shared sense of belonging because they

had shared experiences through high school. He also mentioned, “A lot of the accelerates...want to talk to people doing the same classes as them”, saying the accelerates often travel together to university. Emphasis was placed on shared experiences and values that engendered a sense of belonging, matching Mahar et al.’s (2013) key element of reciprocity in developing belongingness. Marlon said, “It is reassuring knowing that you are in the top 60 of the school in this full year group”. He also noted having the chance to achieve highly enhanced his belonging.

Interaction with Non-Accelerates

Marlon noted that he sometimes struggled to engage with peers who were on a significantly different intellectual level. Michael also mentioned an accelerate friend who had highly-intellectual interests and conversational ability, who struggled to engage with non-accelerates. In her research on radical acceleration, Gross (2006) noted that a girl who experienced early entrance to university said she felt “such a sense of belonging” (p. 427) when she was with people who were interested and “passionate” about the same things. The acceleration programme in the current study appears to have provided the accelerates with like-minded peers who share similar intellectual interests, which is important for engendering a sense of belonging (Mahar, Cobigo, & Stuart, 2013). Interestingly, Tito said he felt “uncomfortable” in his non-accelerated class. When asked why, he said he was not used to the way his classmates acted, calling it “a wake-up call”. He felt this experience challenged his idea of what school was, and therefore challenged his sense of belonging. This again shows the importance of shared experiences and values in developing a sense of belonging (Mahar et al., 2013).

Wright and Leroux (1997) noted that the gifted students in their study wanted to be able to express their individuality, but also desired social acceptance and to not be seen as “nerds”. In the current study, the interviewees felt that they had ample opportunities to interact with non-accelerates. They felt that elements of the school enabled this, including traditional practices and the school culture. Michael stated that while some of the school traditions were boring and seemed pointless, the fact that all of the students participate creates shared experiences between accelerates and non-accelerates alike. Jackie also felt that the school culture allowed easy socialisation between students who had never met before.

Extracurricular groups proved to be fertile ground for socialisation between accelerates and non-accelerates, especially sports. All of the interviewees interacted with non-accelerates in their sports teams or groups, and claimed to have little trouble mixing and interacting with them. However, none of the students felt that their extracurricular groups contributed to their school sense of belonging, in contrast to the acceleration programme. This is likely because they interpreted “school sense of belonging” to apply to the regular aspects of the school day.

Even though all of the interviewees experienced times where their senses of belonging with different groups ‘clashed’, they all viewed them as fairly easy to overcome. It was noticeable that, when there was a clash between their academics and sport (e.g. needing to study for a test over going to a practice), they would favour their academics over their sporting code without consternation. Their non-accelerate sporting peers understood and accepted this. However, none of the interviewees played their sport at a high level, with all of them indicating that they were mostly social experiences. Clashes may have been

more contentious if the students were in teams of higher competitiveness and importance to the school.

It was notable that very few barriers to belonging were mentioned; three of the interviewees could not mention any. Michael said that he recognised conflicts between “popular and unpopular” students during intervals and lunchtimes, and felt these affected his belonging. He did not believe this was unique to his school. Marlon felt that the school made efforts to celebrate the accelerated students which sometimes smacked of elitism. He cited the Year 12 accelerates being allowed to sit on stage during school assemblies as an example, feeling it gave them an “ill-placed sense of superiority”. Elitism – or even the appearance of it – is a commonly-cited fear of teachers about acceleration programmes, even when they support acceleration (Gallagher, Smith, & Merrotsy, 2011; Hornby, Witte, & Mitchell, 2011).

Positively Unique

Nearly all of the students answered the item “I am different from other people” with Yes. The Piers-Harris 2 manual dictates that a Yes answer is scored as 0, meaning it is not considered to be endorsing a positive social self-concept. However, when asked about this particular item, all of the interviewees believed it to be positive to consider yourself different from others. Jermaine said he expected everyone to answer Yes “because everyone’s so unique”. Marlon agreed, saying, “Being the same as every other person would be boring and monotonous”. Tito, however, suggested that the acceleration programme had created a kind of founder effect: “[the accelerates] have been removed from the rest of the year group the whole time. They talk differently, they’ve been with each other the whole time, so it’s kind of like – speciation”.

The interviewees appeared to interpret the question as whether you viewed yourself as positively unique, recognising your abilities and strengths. The scoring of the test indicates that Piers and Herzberg (2002) intended the item to ask whether you viewed yourself as different in a negative way i.e. abnormal or weird. All of the interviewees recalled times that they had felt separate from the non-accelerates. However, four of the five interviewees did not view these as negative experiences. Given that peer acceptance and “fitting in” have long been recognised as incredibly important for adolescents (Kreager & Staff, 2009; La Greca & Lopez, 1998), this is a fascinating finding. Wright and Leroux (1997) found that gifted students in a full-time accelerated class found it to be a positive social experience, and over the course of a year increasingly viewed their academic ability as a source of pride. In the interviews, Jackie stated that having “so many people” in the acceleration programme meant that you “couldn’t get separated so much from the rest of the people”. A commonly-cited problem that some gifted students face is the need to disguise their giftedness in order to fit in with their fellow students (Neihart, Pfeiffer, & Cross, 2015; Gross, 2006). This can lead to significant underachievement, and have lasting psychological effects (Gross, 2006). The current study’s findings suggest that the acceleration programme has provided the accelerates with an environment where they can “fit in” and still feel comfortable exhibiting their giftedness.

Banter and the BFLPE

Another interesting finding from the questionnaire was that a third of the participants answered “Yes” to the item “My classmates make fun of me”. However, one of the participants said, “It’s just banter”. The concept of banter has been a topic of interest in pragmatics, and has been defined as playful teasing that is used not to abuse, but to

generate rapport (Miles & Carwile, 2009). Debates exist over whether it genuinely leads to social cohesion in groups or is actually harmful (Dynel, 2008). This debate was clear in the interviewees' responses: Jackie and Jermaine agreed that any "making fun" of others was typically light-hearted banter with no malice intended, whereas Tito and Michael felt that banter could take on a more insidious nature, negatively affecting those with low confidence. These two opposing perspectives have been demonstrated in research: Mills and Carwile (2009) and Dynel (2008) show that banter and teasing between equal partners can be used to show intimacy and affection, generating solidarity and cohesion in a social group. By contrast, Kruger, Gordon, and Cuban (2006) found that a tease that has no cruel intentions can still be interpreted as an attack by the target, changing the nature of the tease. Tito also thought this could be the case, saying, "...people who make fun of them would think it's a joke, but the people who get made fun of take it seriously".

Michael felt that the acceleration programme consisted of academically confident students and less academically confident students, and that banter more negatively affected the students lower in confidence. He also said that much of the teasing in the acceleration programme was focused on academic results, and that teasing on this subject can affect the students with low confidence "who feel like they would be better off with the normal population". Research into the BFLPE has recognised that social comparisons with academically superior peers can have both positive and negative effects on academic self-concept (Hueget, et al., 2009). Negative contrast effects occur when a student compares themselves to a superior classmate, and experiences a drop in academic self-concept; a positive assimilation effect occurs when the comparison boosts academic self-concept

(Preckel & Brüll, 2010). The BFLPE is the net result of these two effects, with contrast effects typically outweighing assimilation effects.

Assimilation effects occur when a student deliberately compares with a higher-ability student. Comparisons that result in assimilation effects also occur when the comparison is less absolute and more relative i.e. they do not compare based on salient indicators of ability such as test marks (Preckel & Brüll, 2010). This may explain the complacency and lack of motivation that Tito and Marlon felt in their non-accelerated classes: a lack of others with high-ability to compare and look up to may have affected their drive to achieve. Marlon did say he wanted to compare to people of higher-ability, indicating a desire for deliberate comparisons that lead to assimilation effects.

On the other hand, contrast effects are believed to occur when social comparisons are forced, such as when a teacher reads students' grades out in class. The banter about academics that is described by Michael could be considered forced comparisons of academic ability, which could result in students being exposed to negative contrast effects. Even more interesting is Michael's assertion that some students "...mentally think they should not be in accelerate", and that banter about academics can make this worse. This suggests that misplaced teasing can damage a person's self-concept *and* sense of belonging to a group. Other qualitative research has noted that workers in a New Zealand organisation who do not understand the regular "jocular abuse" between workmates can be left feeling insulted and excluded from the group (Plester & Sayers, 2007). Mill and Carwile (2009) also warn that children can claim they are "just joking" when their true intentions were to hurt, suggesting that some banter may indeed be malicious.

A parallel to the BFLPE and contrast effects was noted when Tito discussed his sense of belonging to his squash club. He said he considered himself to be “not bad” at squash and felt comfortable there, but also mentioned, “There might be someone who’s better at squash, more comfortable there, who – not belittles you, but acts like you’re not as good and makes you feel you’re not as involved in the whole squash community”. This was remarkably similar in essence to the contrast effects discussed in BFLPE theory. Tito mentioned that it affected not just how good he felt he was at squash, but his connection “to the whole community of squash”. This is again comparable to Michael’s comments on academic banter, and how it affected both academic self-concept and sense of belonging. This suggests that the BFLPE is present in the physical, and possibly other, self-concept domains. Another study found evidence for the BFLPE affecting the physical self-concepts of adolescent gymnasts (Chanal, Marsh, Sarrazin, & Bois, 2005).

Limitations

A limitation of the current study was the reliance on self-reports of self-concept and sense of belonging. Self-reports have notable downsides as a methodological tool: participants may answer dishonestly in an effort to present themselves as likeable or well-adjusted (Paulhus & Vazire, 2009). The Piers-Harris 2 manual warns of deliberate or unintentional distortion of answers by participants, as the questionnaire is transparent in its purpose (Piers & Herzberg, 2002). The interviewees in the current study confirmed this, with all of them saying the aim of the test was clear. Therefore, distortion of both questionnaire and interview data was possible. Self-concept, however, is phenomenological in nature: it is how a person views themselves as a result of their experiences throughout their life, and as such can only be most accurately assessed through their own lens.

The only other feasible possibility would be to have participants' self-concepts rated by significant others. This would be even more problematic as close observers suffer from the same problem as researchers: they cannot know another person's experience or be certain of how another person views the world (Paulhus & Vazire, 2009). Marsh and O'Neill (1984) also state that "ratings by others are phenomenologically distinct from self-concept, and will agree with self-reports only if the external observer knows the person well in a wide range of contexts, is able to make discriminating judgments, and is judging the same characteristic as the subject" (p. 155). A similar argument can be made for sense of belonging, as self-determination and subjectivity are key elements of belongingness (Mahar et al., 2013). It appears researchers simply have to accept and be aware of the limitations of self-report when measuring phenomenological concepts.

It has been recognised that gifted students can underperform on academic multiple-choice tests (Alvino & Wieler, 1979). They are likely to interpret the wording of a question in many ways, and could possibly find multiple defensible answers for the same question (Alvino & Wieler, 1979). This was highlighted in the earlier discussion of the items "I am different to most people" and "My classmates make fun of me". Jermaine's interpretation of another item demonstrates this clearly:

"...the "I wish I was different" idea, sure everyone wishes they were something better than what they are, but I got to where I am because of what I did, so can I really wish that I was different to who I am?" – Jermaine

Ambiguity in seemingly simple multiple-choice questions can often result in gifted students failing to answer altogether (Alvino & Wieler, 1979). Indeed, a number of participants in the current cohort chose not to answer some items, and one student's answer sheet had to be

discarded as there were too many left blank. For those acceptable answer sheets with unanswered items, the Piers-Harris 2 manual dictates that these should be scored as 0, therefore not endorsing a positive self-concept. This could very well have contributed to the cohort's scores being slightly lower than the norm group's scores. Four of the five interviewees thought that the Piers-Harris 2 was too limited in its answer options, with three interviewees suggesting a scale would have been easier to answer. Other self-concept measures use Likert-scales. For example, the Self-Description Questionnaire III uses an eight-point Likert scale for its item answers, and the Tennessee Self-Concept Scale 2 uses a five-point scale. Using one of these or a similar measure in future research with gifted students could potentially produce more representative scores by reducing the number of unanswered items.

The lack of a control group in the current study was unfortunately unavoidable. Control groups are important for quantitative research as they allow the researcher to control various extraneous variables that could affect the variables of interest. In the current study, a true control group would have consisted of an equivalent number of gifted students at the same school who were *not* accelerated. This would have allowed firmer conclusions on the effects of acceleration on self-concept. Vogt (2007) notes, however, that it is impossible to employ a control group in every situation. As the school in the current study accelerates all of the students who perform well on its entrance test, it would be difficult to find gifted students not within the acceleration programme.

Due to its subjective nature and growing awareness of differing cultural interpretations, the nature of giftedness is still debated internationally and there is no current global consensus on a definition (Freeman, 2005). In awareness of this, the New

Zealand Ministry of Education chooses not to mandate a national definition of giftedness. Instead, it empowers schools to define the concept for themselves (Ministry of Education, 2012). This means that every school differs in how they define and identify gifted students, therefore it was not possible to create a control group of non-accelerated gifted students from other schools.

Ethical concerns also affect acceleration research as a whole. In a situation where two groups are provided with different interventions (or a control group is provided with no intervention), it can become apparent that one group is experiencing vastly superior benefits over the other. It is widely considered unethical to henceforth withhold the effective intervention from the individuals in the control group, as they may be receiving little or no benefit (Vogt, 2007). With the amount of research indicating acceleration's effectiveness, an experimental design would be ethically questionable. Robinson (2004) agrees, saying, "We need to resign ourselves to the fact that we are unlikely ever to undertake true experimental studies that include random assignment of gifted children to contrasting experiences" (p. 64).

As no control group was available, the participants' scores had to be compared to the results of the standardisation sample of the Piers-Harris 2. While it was possible to compare the participants with the equivalent age group of the standardisation participants, other factors could not be controlled. The norm scores were generated from an American cohort, therefore cultural difference may have affected the results. It has been noted that New Zealand's egalitarian nature leads to expectations of humility in New Zealanders, particularly successful individuals (Grant, 2008), otherwise they may face the negative effects of tall poppy syndrome (Mouly & Sankaran, 2000). In contrast, it is more acceptable

in the USA to discuss and take pride in one's achievements and abilities (Goddard, 2012). Therefore, the current study's participants may have been more likely to 'undersell' themselves in the Piers-Harris 2 than the American participants, resulting in slightly lower self-concept scores overall.

The standardisation sample also consisted of a roughly equal number of males and females. Gender differences in self-concept have been noted (Cole, et al., 2001; Marsh & Yeung, 1998; Cairns, McWhirter, Duffy, & Barry, 1990), which affects the validity of score comparisons with the all-male participant group. There was also no indication whether gifted individuals made up any of the standardisation participants.

Implications and Recommendations

The results of the current study indicate that acceleration does not have a detrimental effect on the self-concepts of gifted male adolescents. It may positively contribute to their sense of belonging. These results could encourage educators to look at employing a form of single-subject acceleration or dual enrolment for their intellectually gifted students, and if possible placing them together in the same classes. The findings around banter suggest that teachers should be alert to teasing that is either deliberately hurtful or interpreted as such despite innocent intentions. Mills and Carwile (2009) recognise that banter can be a force for social good, especially with males. They suggest that teachers can model appropriate banter for students and step in when boundaries are crossed. Informing teachers of gifted students about the nature of the BFLPE, and contrast and assimilation effects may help them recognise events that cause these in their classes. This will enable them to actively encourage positive comparisons, while simultaneously discouraging negative ones. Encouraging gifted students to get involved with sport, even at

a social level, is also recommended. The interviewees in the current study noted that sport was a major enabler for socialisation with non-accelerates.

It is important to note that this study involved an entire class of students who had experienced long-term acceleration and been dually enrolled. The school in the current study has a very large student population, making the prevalence of academically gifted students high enough to allow for an entire acceleration class. Other schools may not have the same numbers, and may need to place their gifted students in classes with older students in order to accelerate them. Acceleration comes in other forms as well. These include telescoping, early entrance, and withdrawal programs. Studies similar to the current one could be run with gifted students experiencing other forms of acceleration, as well as with students who have been placed in classes with older students.

It would be valuable for a similar study to be performed with a cohort of accelerated females at a single-sex school. Wright and Leroux's (1997) results suggested that males and females experienced acceleration programmes differently, with girls feeling higher levels of social-emotional support from their peers. With research indicating gender differences across self-concept domains (Lewis & Knight, 2000), and within them (Marsh et al., 2005), acceleration may affect females differently. Furthermore, banter between peers is widely considered a male phenomenon (Hain & O'Donoghue, 2014; Eder, 1991), therefore research could investigate whether the BFLPE is manifested through different behaviours in a female acceleration programme. The acceleration experience could be different again for students in a mixed-gender school; research on this population would also be valuable.

With respect to banter, one of the interviewees suggested that the students who were less confident about their place in the acceleration programme were more likely to be

negatively affected by teasing. Studies could assess whether those with lower self-concepts are more prone to interpreting light-hearted teasing negatively than those with higher self-concepts.

Further research into social comparisons that lead to contrast and assimilation effects would be very valuable to any educators running acceleration programmes. Much of the research into contrast effects have looked at comparisons forced by teachers, or the researchers themselves. No studies appear to have investigated student-to-student forced comparisons. The current study, as well as previous research (Chanal et al., 2005), also suggests that these comparisons can have an effect in the physical domain. Finding effective ways to reduce the occurrence of contrast effects, while also looking at ways to promote assimilation effects, could be beneficial to professionals running programmes for gifted youth in various domains.

Future research could test the finding that accelerated students have less motivation to perform in non-accelerated classes. This could be done quantitatively, comparing the academic self-concept and academic motivation of accelerated gifted students when they are placed in accelerated and non-accelerated classes.

The physical self-concepts of intellectually gifted students should also be further examined. While the participants' average Physical Appearance and Attributes score was within the ordinary range, and the effect size between the participants' and norm group's scores was small, it was still statistically significant. Research could assess whether this difference is credible, and if so what causes gifted students to feel less secure about their physical attributes than non-gifted students.

The results of the current study suggest that accelerated students who are negatively affected by banter may suffer a drop in academic self-concept *and* sense of belonging. It is possible that sense of belonging is not exclusively attached to social-self-concept: different senses of belonging may be attached to different domains of self-concept depending on what is valued by the referent group. Factor analysis research could investigate this further to determine exactly how self-concept and sense of belonging are related.

The current study was unique in its focus on the sense of belonging of gifted students. This is despite the fact that feeling abnormal and not fitting in are considered some of the biggest challenges facing gifted students in schools (Diezmann, Watters, & Fox, 2001; Gross, 1998; Galbraith, 1985). While the current study's results on belonging were of interest, generalizability is difficult to assert as only qualitative data from five participants was collected on the topic. Standardised measures of sense of belonging, such as the Sense of Belonging Scale or Sense of Belonging Inventory, could be used to obtain quantitative data, which could then be used to compare between groups. Comparing gifted accelerated students with gifted non-accelerated students could test this study's finding that acceleration contributes positively to the sense of belonging of gifted students. Meanwhile, comparing the sense of belonging of gifted students with non-gifted students could provide these results with context, determining where gifted students sit in comparison to the mainstream body of students.

Sense of belonging may also be of extra importance for gifted Māori students. Māori views of giftedness differ somewhat from Western perspectives, primarily in how gifts are used and expressed (Bevan-Brown, 2009). A person's gifts are owned by their entire whānau

or iwi, and talents that are used for the service of others are emphasised. Māori perspectives also value an individual's social and emotional sensitivities more than Western ones (Bevan-Brown, 2009). Having a strong sense of belonging to whanau, hapu, and iwi may therefore be essential to having a positive view of one's mātauranga (intellect and thinking skills) for Māori (Mahaki & Mahaki, 2007). This was not able to be assessed in the current study's research, as ethnicity data of the participants was not collected. Research into Māori gifted is much needed, as they are greatly underrepresented in gifted programmes (Mahuika, 2007). Sense of belonging – or a similar, more culturally-appropriate concept – could be a key concept to understanding gifted Māori students and finding ways to provide for them sensitively and appropriately. Future research should investigate the importance of belonging for gifted Māori students.

As mentioned in the limitations, high-achievers in New Zealand are expected to be humble, otherwise they are at risk to being cut down or ridiculed due to tall poppy syndrome. This could be a significant element of the gifted experience in New Zealand. Acceleration may increase visibility of gifted students and make them more vulnerable to tall poppy syndrome. Future studies could investigate whether gifted students experience tall poppy syndrome, and the nature of these experiences

This study proved to be an exhibition of the strengths of mixed methods research, and specifically of the explanatory sequential design. Exploring the 'banter' comment left by one of the questionnaire participants provided evidence for banter as a possible mechanism of the BFLPE. This would not have been possible without the interviewees' comments on the topic. Future research should continue to take a mixed methods approach where possible, so that data can be more deeply explored.

Conclusions

In conclusion, the self-concept scores of the accelerated gifted males did not differ from the norms of the Piers-Harris 2, other than being significantly lower on the Physical Appearance and Attributes scale, which still scored within the “Average” range. All of the interviewees said they compared themselves with other accelerates when assessing their academic self-concept, which may have explained their “Average” score on the Intellectual and School Status subscale. While some of the interviewees said that banter between peers was normal and harmless, other interviewees suggested that it was often about academics and could damage the self-concept and sense of belonging of students who were the subjects of teasing.

All of the interviewees felt that the acceleration programme positively contributed to their sense of belonging to their school. They enjoyed being with the same peers of similar ability throughout their time at school, and their shared sense of belonging was largely built on their shared experiences together. The acceleration programme provided the gifted students with peers of similar interests and values, and an environment where they could confidently consider themselves gifted while still feeling a sense of belonging with the class and the school. The accelerates experienced ample social interaction with non-accelerates, and most had non-accelerate friends. They often interacted with them through extracurricular activities, especially sport. They also felt that school traditions and culture enabled them to associate with other students easily. The results of this study reflect positively on acceleration, indicating that it has benefits and few disadvantages for gifted male adolescents.

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Appendices

Appendix A: Pre-planned interview questions

- How long have you been in the acceleration programme for? Have you been in any other “advanced” academic programmes throughout your schooling?
 - Are you involved in any groups/teams/clubs in school?
- Have you ever thought about self-concept, what it might be? Can you tell me what self-concept means to you?
- What did you think of the questionnaire? Did it seem like a good measure of self-concept to you?
 - Did it help you understand self-concept better? In what ways?
 - Did any aspect of the scale stand out for you, or seem unclear?
 - Address Item 1 (i.e. “it’s just banter” comment”)
 - Address item 57 (i.e. “I am different from other people)
 - It appeared that the results of the surveys indicated that, overall, the average self-concept of your classmates is reasonably normal, with no significant highs or lows in any areas. Does this surprise you? Or not? Why?
 - Specific question on Intellectual and School Status scale score
- Another aspect that I am interested in investigating is sense of belonging. How would you describe your sense of belonging to the school?
 - Clarification: Do you feel comfortable here? Do you feel like a member of [your school]?
 - If yes/no, what is it that makes you feel that way? Other students? School climate? Teachers? Etc.

- Thinking of the groups you mentioned earlier [Q1], does your belonging to these groups affect your belonging to the school? Can it conflict at all?
- Has the acceleration programme contributed to your sense of belonging?
How?
- Is there a good deal of mixing with guys who are not accelerated? As an accelerate, do you feel separate at all?
- Is there anything else you would like to add about self-concept or a sense of belonging that we have not talked about earlier?

Appendix B: Research information form for participants



MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
TE KURA O TE MĀTAURANGA

Exploring the Self-Concept and Sense of Belonging of Academically Accelerated Male Students in a New Zealand Context

Information Sheet

My name is Lindsay Yeo, and I am conducting research for my thesis, in pursuit of a Master's Degree in Educational Psychology. I am interested in the possible effects that academic acceleration may have on the social-emotional development of gifted young males, specifically within a New Zealand context. To do this, I would like to assess the self-concept of gifted young males through a questionnaire, followed by individual semi-structured interviews with a handful of participants that will explore sense of belonging and other topics. I would like to invite you to participate in this research.

Recruitment of Participants

For the questionnaire stage of the research, I wish to assess all 40 Year 13 students who are dually enrolled in NCEA and Tertiary-level papers. For the interview stage, I will be selecting five students from those who express interest in being interviewed; selections will be made based on their questionnaire results in an attempt to gather a wide range of information. There does not appear to be any undue risk or possible harm that could be caused by this research.

Project Procedures

The questionnaire being used is the Piers-Harris 2 Children's Self Concept Scale (2nd Edition), a self-report consisting of 60 "yes or no" questions that can be administered in 15 minutes. The individual interviews will be semi-structured in nature (i.e. some set questions, but room for digression and exploration), and should last around 20-25 minutes. It is highly unlikely that the questionnaire or the interviews will cause distress, discomfort, or harm to the participants; however, the school counsellor will be informed and on hand if anything untoward occurs.

Data Management

The questionnaire data will be scored according to the method outlined in the Piers-Harris 2 manual, and analysed through statistics. These results will help inform some of the questions asked in the interviews. The interviews will be audiotaped, and then transcribed. These transcriptions will be analysed by looking for themes and patterns that exist between different interview transcripts, using a technique called thematic analysis.

The score sheets will be kept in a locked cabinet on Massey University grounds, and the transcript data will be stored securely on a password-protected external hard drive. The data will only be accessible to me and my supervisors. All data will be kept only for as long

as is necessary to complete the project, with scores sheets and transcripts to be destroyed within a year of their collection date.

The students will provide some demographic data for the research purposes, but no names will be collected on the questionnaire sheets, unless they are interested in participating in the interviews. The interviewees will be given pseudonyms that will be used in the transcripts and throughout the rest of the project.

At the completion of the project, a summary of the research findings will be presented to the participants, the school board, and the principal if so desired.

Participants' Rights

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 before the end of the interview period;
- 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 recorder to be turned off at any time during the interview.
- decline to answer any particular question; note that completion and return of the questionnaire implies consent.

Please give this due consideration. This is exciting and relevant research for education in New Zealand, and I would greatly appreciate your involvement. If you would like more information, please don't hesitate to contact me, or my supervisors:

Lindsay Yeo	Tracey Riley	Vijaya Dharan
Researcher	Chief Supervisor	Co-supervisor
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This project has been evaluated by peer review and judged to be low risk (Ethics Notification Number: 4000015805). Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director, Research Ethics, telephone 06 356 9099 x 86015, email humanethics@massey.ac.nz