How high ability students perceived the practice of influential teachers

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In 2005, acting on advice received from the Scholarship Reference Group, the New Zealand government introduced re-designed New Zealand Qualifications Authority Scholarship Awards. One goal of these awards was to help motivate students to strive to develop and display excellence. Distribution was aimed at approximately 3 percent of students studying at Level 3 National Certificate of Educational Achievement with this proportion consistent with the level many consider to be 'gifted and talented' learners. This article identifies secondary school students' perceptions of those factors they perceive to have facilitated their success in New Zealand Qualifications Authority Scholarship. Results show that effective teachers of gifted students demonstrate personal and professional characteristics that facilitate high academic success.

Over the past decade, there has been heightened awareness of the importance of meeting the needs of New Zealand's gifted and talented learners (Riley, 2005; Riley & Moltzen, 2010). Despite this awareness, there has been little research into effective New Zealand provisions for this country's most able students. Two reports (Education Review Office (ERO), 2008; Riley, Bevan-Brown, Bicknell, Carroll-Lind & Kearney, 2004) have considered school provisions for gifted and talented students, with both studies identifying the range of practices evident in New Zealand. However, neither report assessed the effectiveness of these provisions in improving student outcomes.

Effectiveness in teaching is measured through outcomes. This article identifies and describes successful high-ability students' perceptions of those factors that facilitate high academic outcomes, measured as success in the New Zealand Qualifications Authority (NZQA) Scholarship examinations. Importantly, the paper describes the key personal and professional qualities of teachers whom students identified and perceived to have been influential in their gaining a Scholarship Award.

Gifted in New Zealand

In New Zealand the concept of giftedness is contextual. 'Giftedness' and 'talent' can therefore mean different things to different communities and cultures. Furthermore, there is a range of approaches towards meeting the needs of all the country's gifted students (Ministry of Education, 2002). Unlike stakeholders in some countries, New Zealand stakeholders (school Boards of Trustees, teachers, parents, and students) are not directed to any one way of defining or identifying gifted and talented learners. To this end, schools in New Zealand are required to develop their shared understanding and definition of what it means to be gifted and talented, in consultation with their school community. These definitions lead into identification criteria, and include – but are not restricted to – consideration of a wide range of abilities (intellectual ability and academic aptitude, cultural abilities, creative abilities, and a range of other abilities pertaining to support, leadership and the arts) (Ministry of Education, 2000). Some academics differentiate between gifts and talents, with this delineation most evident in the model proposed by Gagné (2003, 2004, 2005) who suggests that a range of catalysts are critical in activating and transforming gifts into talent. Gagné (2003) argues that giftedness relates to natural abilities, whereas talent is an outcome of systematically developed skills.

Approaches to meeting the needs of gifted and talented students

Two New Zealand reports have investigated school provision for investigating the needs of gifted and talented (ERO, 2008; Riley et al., 2004). The ERO report identified that New Zealand school provisions for meeting the needs of gifted and talented learners varied. The majority of schools on which the ERO reported had not developed a shared understanding of giftedness and talent. This report identified a link between school leadership support for gifted and talented programmes, and school provision for these students. Where schools had leaders supportive of gifted and talented initiatives, they had also developed a school-wide understanding of giftedness and talent, had prepared policies and procedures, and had undertaken staff professional development (ERO, 2008).

The other New Zealand report (Riley et al., 2004) that has identified the range of approaches to meeting the needs of those students identified as gifted and talented noted:

> The effectiveness of initiatives in gifted and talented education in New Zealand is contingent upon how those are designed and delivered, and this requires educators not only to be aware of the recommendations for effective implementation, but also the importance of ongoing evaluation. (p. 279)

Clearly, the effectiveness of programme design and delivery is also reliant upon a number of factors, including the design and delivery of programmes. In most schools across New Zealand, the person responsible for delivery is the classroom or subject teacher. As this report also noted:

> … the empirical research related to the qualities, abilities, and skills needed by teachers in order to effectively meet the needs of gifted and talented students is limited. (Riley et al., 2004, p. 152)

The literature on effective teaching of gifted and talented students is even more sparse in the New Zealand context than it is internationally. International literature has not established links between outcomes that are evidence of student achievement and teacher characteristics. Instead, much of this work focuses on describing and documenting those teacher characteristics that have been "…identified by students, supervisors, and experts in gifted education as desirable for high-ability learners…" (Robinson, 2008, p. 671).

Determining teacher effectiveness

In the synthesis of meta-analyses pertaining to the contribution teachers make to achievement, Hattie (2009) states that:

> Not all teachers are effective, not all teachers are experts, and not all teachers have powerful effects on students … [an] important consideration is the ways that teachers differ in their influence on student achievement… (p. 108)

He suggested that student rating of teachers and teaching quality is associated with learning outcomes (Hattie, 2009). Conversely, Hattie (2003) also suggested that teachers rarely use this feedback to improve their teaching or the effectiveness of their courses, even though excellence in teaching is the "single most powerful influence on achievement" (p. 4). He cited a range of teacher characteristics that influence student learning, including: feedback, instructional quality, class environment, teacher style, and questioning.

An international investigation (Stronge, Ward, Tucker & Hindman, 2008) into what constitutes effective teaching defined 'effectiveness' as measured increases in student learning (i.e., outcomes). This study also identified characteristics and behaviours of effective teachers, including: differentiation and complexity of instruction; use of questioning, with effective teachers employing up to seven times as many higher level questions; and, less disruptive student behaviour. Stronge et al. concluded by advocating for teachers to use classroom assessment data to improve student learning outcomes:

> …[There is a] clear and undeniable link that exists between teacher effectiveness and student learning, [therefore] the use of student achievement information … can provide an invaluable tool to explore the classroom practices of teachers who enhance student learning beyond predicted levels of accomplishment. (p. 181)

Characteristics of effective teachers of the gifted

As Robinson (2008) has suggested, the literature that identifies characteristics of teachers of the gifted does not focus on evidence of student outcomes, identifying instead those preferred teacher characteristics. In one such study, Vialle and Tischler (2005) investigated the characteristics that gifted students preferred in their teachers. Their findings were that these students appreciate both personal qualities and intellectual skills. These gifted students from Australia, Austria, and the United States also identified their preference for their teachers to demonstrate a range of pedagogical approaches (Vialle & Tischler, 2005). In her study of 63 teachers and 1,247 'highly able' students, Mills (2003) identified that, like their highly able students, those teachers considered to be highly effective teachers of gifted students "preferred abstract themes and concepts, were open and flexible, and valued logical analysis and objectivity" (p. 272).

Mills (2003) identified that the most effective teachers of gifted students held advanced degrees in the content area in which they taught, yet had no formal training in gifted education. Additionally, Mills suggested that formal 'gifted training' for teachers may not be sufficient in selecting teachers for gifted students, and highlights the importance of selecting teachers who have both strong content knowledge and a passion for what they are teaching. Rowley (2008) disputes this, suggesting that those teachers who have received

specialised training in gifted education establish superior learning environments and utilise more effective teaching strategies than those who have not received this training. However, this study, like many of those also identified by Robinson (2008), was not based on evidence of outcomes; rather it was developed around observations and assessment of teaching skills.

Those teachers of gifted students who demonstrated passion for the subject they were teaching were more likely to engender motivation and passion in their students (Fredricks, Alfeld & Eccles, 2010; VanTassel-Baska, 2005). Furthermore, the engendering of passion impacted on student motivation to learn, with students who were passionate about learning demonstrating persistence in those tasks (Fredricks et al., 2010). A lack of intrinsic motivation evidenced in boredom arising from insufficient challenge in the regular classroom has been blamed for underachievement in gifted students (Reis & McCoach, 2000). Gagné (2003, 2004, 2005) has also identified that motivation (and volition) has an essential role in transforming gifts into talent. He uses his Differentiated Model of Giftedness and Talent (DMGT) to demonstrate that talent is an outcome of a range of catalysts that are both environmental and intrapersonal. Those environmental catalysts he cites include – but are not restricted to – teachers and mentors. Chance, Gagné (2003, 2005) suggests, is also an influence in determining the extent to which those catalysts impact on the development of talent. He proposes that each catalyst is influenced by chance and by the developmental process where informal and formal learning and practising occurs (2003). The DMGT focuses on the importance of individual students, and highlights the significance of context in influencing the transformation of gifts into talents. Moon and Dixon (2006) have also suggested that both individuality and the context in which the student operates are key considerations for those working with gifted adolescents.

Investigating students' perceptions of factors leading to high academic success

In 2005, the New Zealand government introduced re-designed Scholarship Awards for distribution to what they claimed would be approximately 3% of students studying at Level 3, the third level of the national examination system. The overall aim of this examination

was described in the Scholarship Reference Group Report that stated: … "a key goal for Scholarship should be to not only extend our most able students but also to identify a small number of the very top students" with identification of top scholars being restricted to "within a range of 2% to 3% of the cohort in each subject" (Ministry of Education, 2005, p. 3).

Consistent with international literature (Gagné, 2003; Renzulli, 2002), this group, comprising the top two to three percent of scholars in the cohort, represents the very top students at this level who may also be considered 'gifted and talented learners'. This evidence of success that is measured by outcome (Scholarship) makes it possible to investigate the connection between student achievement and teacher effectiveness. The linkage is established through students' retrospective perceptions of the characteristics they identified in those teachers they perceived to have facilitated their success.

The following description of the mixed methods scholarship study involved 332 successful NZQA Scholarship students completing retrospective self-reported surveys (Horsley, 2009). A further 18 were interviewed. Student recruitment was facilitated by NZQA, which provided a mail-out to all successful students after they had received their 2007 Scholarship results. The Victoria University Faculty of Education Ethics Committee approved the project, and in accordance with their requirements, any information that could identify students was removed from the data.

The study investigated those factors to which students attributed their success in attaining NZQA Scholarship Awards. Students considered and ranked a range of factors that research and literature had identified as essential components in the success of gifted and talented students (Bloom & Sosniak, 1985; Csikszentmihalyi & Rathunde, 1993; Gagné, 2005). Survey items and interviews included questions about student-teacher relationships, participation in extracurricular activities, homework routines, relating to family members or peers, and self-belief. Although the study investigated a range of factors that students perceived to have influenced their success, this article addresses only one factor: that of student-teacher relationships. This focus was chosen because responses showed that most students (78%) perceived their Scholarship teachers to be the people or person who had the greatest influence on their results. In a separate question, 29.5% of students surveyed perceived their

Scholarship teacher to have had the greatest *overall* influence in their success.

Grounded theory analyses of survey comments and interview responses revealed two core themes: those of teacher professional characteristics, and teacher personal characteristics. These themes are further described with supporting student comment that is representative of a number of similar comments.

Teacher professional qualities

High expectations of students

Successful Scholarship students perceived the importance of teachers articulating high expectations for student success. This belief engendered a feeling of loyalty and, as the students describe, a need to succeed in order to fulfill that teacher's belief in them:

> …And the stuff that he teaches he goes over a lot of excellence type questions because that's what he expects we'll get... (Female)

> [The teacher] – was extremely enthusiastic about the subject and had very high hopes that I would get scholarship. This made me work harder so that I could meet his expectations. (Female)

Knowledge of examination system

Students considered their teachers to be strong in content knowledge and knowledgeable about the NCEA. This teacher knowledge was evident in classrooms and was perceived to facilitate examination success:

> …she knew the NCEA system really well, like – she could basically predict which questions would come up and help us study specifically for those questions. (Female)

Range of pedagogical skills

Scholarship teachers' ability to demonstrate a range of pedagogical skills was frequently referred to by students, and perceived as facilitating learning and understanding. These practices included the provision of on-going feedback that provided affirmation of what students were doing well, or suggested areas where they could improve:

> They told us what was wrong and how to do better. (Female)

> … And she gave constructive criticism which is very successful… (Female)

Other pedagogical approaches identified by students in their teacher's practice included the facilitation of class discussions, the use of higher-order questions, and making links to authentic contexts:

> It was more fluid [than taking structured turns]. She was really good at just adding her opinion – like she was a member of the class, she was in the room, she had an opinion... We felt quite free to either argue against her opinion or agree with her with supporting examples…and she could say "yeah, you can say this but you need an example" and she would often stop us and ask – "where's the example to support this statement?" Especially if someone said something really good she'd say "what's the quote that supports this and how can we justify this answer?" (Male)

> He made the subject interesting and made me feel enthusiastic about it which made me enjoy it and think about [subject] in everyday situations which made me understand it better and therefore get better results. (Female)

> So you'd get the history that you needed to learn but he'd always be making it interesting and telling stories because he'd lived through most of the stuff we'd be talking about. So he'd be throwing in stories of how he perceived it and things like that, and stories from his own life as well which made the periods interesting and gave it a bit of relevance. (Male)

Students also identified where teachers demonstrated explicit teaching of exam strategies:

> We had special Scholarship classes, where we were taught technique for answering questions, how to plan answers. ...planning it out and stuff. (Female)

It appeared that many of these classes that focused on preparing students for Scholarship were convened in what is traditionally teacher non-contact time:

> …our [subject] teacher had weekly Scholarship [subject] questions available. She'd go thru them … every Wednesday lunchtime. (Male)

> …my History teachers set up a study thing in the holidays and those were really helpful. (Male)

Teacher personal characteristics

Students reported that in addition to professional characteristics that engendered learning and facilitated success, most of their Scholarship teachers had a range of positive personality characteristics. These included teachers demonstrating that they were passionate about their subject, and sharing their enthusiasm and enjoyment for their subject in a way that, in turn, engendered the same emotions in their students:

> I was lucky enough to have an amazing teacher in 6th and 7th form. [Teacher's name] was enthusiastic, passionate, supportive, intelligent, perceptive, and inspired me to do well in the subject. She had a unique ability to make learning fun, and make her students determined to achieve. (Female)

These high-ability students perceived that having a teacher take a personal interest in them facilitated their success:

> She mentored me and took a personal interest in my successes, and also assured me I was capable of these successes. I always received extra tuition and help when I asked. (Female)

Students also commented on the importance of a classroom climate that enabled students and staff to share humour, with the teacher still remaining 'in control' of the environment:

> …it was ok to be wrong. He let you down softly and with humour. He took the mickey out of a few students – but it was mutual. He treated us like adults – more like we were the same as him. He valued our opinions.   (Male)

> … it was her [using humour] and the rest of the class In these discussions people would make comments or jokes – there was definite use of humour.… generally – the class was pretty good [well-behaved]; there weren't many problems with it. … (Male)

There were students who felt supported by their teachers even during the post-exam period, as these teachers maintained or re-established contact with the students to congratulate them on their Scholarship success:

> …when I was working at [store name] during the summer months I saw my [subject] teacher she came in and she came over and congratulated me. (Male)

> She emailed me, well done and stuff and we were going to meet up for coffee. (Female)

Many of these successful students had attained Scholarship in Year 13, and were aware that as they progressed through high school, their relationship with some of their teachers changed. By the time they sat Scholarship they perceived that they were being treated by those teachers more as equal partners in the learning process:

> She got the students involved in classes, she treated us more as equals whereas some of the other teachers would just lecture down to us and not get us very involved. (Female)

For some students, the teacher's personality characteristics were considered even more important than teacher knowledge:

> The teaching that she gave me wasn't so much about her knowledge, it was more about her personality…her personality was just passionate about [subject name], passionate about her students, passionate about success, rather than, you know, drilling people with content knowledge ... whereas the other teachers were more laid back, got down to the students' level. (Male)

Disappointing teaching

In this study, it was evident that some teachers (and schools) had not positively influenced student success. Negative student comments often referred to a teacher in whose subject they had aspired to attain Scholarship, and had been unsuccessful. Other students recalled negative experiences that related to teachers in whose subject they had attained Scholarship. Whereas most students identified their Scholarship teachers as exemplary practitioners, some identified Scholarship teachers whose practice they deemed disappointing:

> My [subject] teacher was pretty slack... He doesn't prepare his lessons. He does not set work for us to [do] … it was really disappointing really. (Female)

Students mentioned teachers providing inappropriate curricula that left them feeling bored or frustrated. This lack of academic challenge created boredom that had made it difficult to remain motivated at high school:

> My school was terrible at catering for students who are gifted and talented. Without the support of one of my teachers I would have dropped out because school did not assist me in any way and the system is not designed to cater for students outside the 'norm'. … I felt bored for the past five years in class... (Female)

Some high-ability students identified that their teachers and schools did not hold high expectations for student achievement, and even cited examples of ethnicity being used as a basis for pre-judging student capabilities:

> … our school puts a lot more focus on just getting 'achieved' in NCEA rather than Merit or Excellence or Scholarship after that. (Female)

> … no encouragement of excellence… I don't think they [the school] encourage high achievement, at all. They definitely didn't encourage excellence. ...the school itself had an attitude like, where if you're white, you're rich, you can do Scholarship. If you're Māori, if you're poor you cannot do Scholarship. Since the school has a lot of Māori students, they're really shooting themselves in the foot... (Male)

Negative motivation

Some students who contributed to this study perceived that their teachers had influenced them to succeed by suggesting they were not capable of gaining a Scholarship:

> Contrary to the norm, my [subject] teacher didn't think I would achieve scholarship therefore I was more driven to succeed in the examination, more so than in the other scholarship exams I attempted but did not achieve. (Female)

> She didn't encourage me. She told me that I wouldn't be able to sit because I didn't do this subject in the 6th form. It was a motivator for me – I decided to get it in spite of her. (Female)

Further perceptions of support

Students' perceptions of teacher knowledge were considered through statistical aggregation of survey data, using the quantitative programme *Statistical Package for Social Scientists*. As Table 1 shows, most students (96%; 91.7%) perceived that each of the statements relating to their teachers and Scholarship were sometimes, or always, true.

Table 1: Student perceptions about their Scholarship teacher

	Rating	
Student perception	Not at all true/mostly not true	Always true/ sometimes true
My teachers were knowledgeable in the subjects in which I gained Scholarship.	4.0%	96.0%
My teachers expected me to succeed in Scholarship.	8.3%	91.7%
My teachers were supportive of my study for Scholarship.	4.0%	96.0%

Statistical testing was conducted to determine whether those themes that had emerged during qualitative analysis were indicative of significant relationships between students' perceptions of aspects of Scholarship and students' perceptions of their teachers' role in their success. Hypotheses were tested based on the codes and trends that emerged from the qualitative data. These results (Table 2) show a positive correlation between students' perceptions of their teachers being supportive of their study (Teacher) and also expecting them to achieve Scholarship success (Expect). Students' perceptions of their teacher being supportive of their study (Teacher) and also being knowledgeable in the subjects in which they gained Scholarship (Knowledge) were significantly positively correlated too. Correlation was further identified between students' perceptions that their teachers expected them to achieve Scholarship (Expect) and, during the year in which they sat Scholarship, their teachers' beliefs that they were strong students academically (Strong).

Table 2: Correlations related to students' perceptions of support

Variables		Correlation	Percentage
		Pearson	Variation in common
Teacher	Expect	$r_p = 0.295$**	8.7
Teacher	Knowledge	$r_p = 0.328$**	10.7
Expect	Strong	$r_p = 0.257$**	6.6

* p < .01   ** p < .001

Conclusion

In attaining NZQA Scholarship, the New Zealand students involved in this study provided evidence of high academic achievement that placed each of them in the top two to three percent of their cohort. Furthermore, through their obviously salient memories of their teachers, they were able to establish that the powerful influence of their Scholarship teachers attributed to their having achieved a successful outcome.

The Scholarship study asked students to focus on those teachers in whose classes they were successful in gaining NZQA Scholarship. In doing so, these students identified a number of personal and professional characteristics in their teachers that impacted on the classroom environment and created an atmosphere conducive to learning at this high level. These characteristics included teachers:

- articulating their belief in students' capability
- demonstrating strong subject and NCEA systems knowledge
- providing feedback that affirmed the learning and making suggestions for improvement
- facilitating discussion, using humour and maintaining control
- using higher-order questions
- linking to authentic contexts
- teaching explicit exam strategies
- giving up their own time to mentor and support students, and
- modelling their passion for the subject.

There is some alignment between the findings of this study and the literature pertaining to gifted students' perceptions of their teachers. For example, Fredricks et al. (2010) identified the importance of

teachers of the gifted demonstrating passion for their subject, and the students in this New Zealand study clearly valued those characteristics in their teachers. Furthermore, these Scholarship students also identified that those teachers who modelled passion for their subject engendered the same response in their students.

Similarly, Mills (2003) identified the importance of teachers of the gifted having strong content knowledge, something that these Scholarship students identified – and valued – in their teachers. The Scholarship students also appreciated teachers who demonstrated sound knowledge of the NCEA system.

In this study, students who experienced disappointing teaching spoke of their boredom, of teachers who did not prepare content in advance of the class, and of schools where management did not support high academic success. This finding was consistent with the ERO (2008) report which identified a link between school leadership support for gifted and talented programmes, and school provision for these students. What is not clear from this study is whether the selection of teachers to work with aspiring Scholarship students is – as Gagné (2003, 2005) might suggest – subject to chance. Alternatively, this decision may have been part of a carefully planned strategy designed by members of school leadership teams who are both cognisant of the needs of high-ability learners and also aware of the strengths and capabilities of effective teachers.

The closest alignment between this study and the research of others appears to be with the literature that identifies effective teaching, rather than the literature that identifies effective teaching of gifted students. The students in this Scholarship study provided evidence of outcomes also found in studies of effective teachers (Hattie, 2003, 2009; Stronge et al., 2008). These students identified exemplary teachers who provided feedback that enhanced learning, used high level questioning, and created classrooms conducive to the complexity of learning.

One important limitation of this study pertains to the retrospective collection of student self-report surveys. These might have yielded different responses had they been completed prior to the students sitting for Scholarship. Further research is needed that monitors students, teachers, and others throughout the actual processes of preparing for high academic success. Additionally, Mills' (2003) suggestion that strong content knowledge is the most important

attribute of teachers of the gifted highlights another aspect of this Scholarship study that deserves further investigation. What is not clear in this study is whether the teachers of these students had participated in additional preparation or teacher training prior to their work with Scholarship students. Also unclear is the extent to which teachers' personal characteristics influenced student success.

Undoubtedly, all New Zealand students aspire to be taught by reflective practitioners who use outcomes as evidence of their effectiveness, and adapt their practices according to student need. However, at least one group of students – those who gained NZQA Scholarship and arguably comprise some of New Zealand's gifted and talented students – are able to identify and describe those qualities that they perceive to be critical in facilitating learning for high academic success. These perceptions shed useful light on exactly what effective teachers can and ought to be doing to facilitate high academic achievement in their most able students.

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