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## CONFERENCE PROCEEDINGS

### Part 2

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#### **PAPERS WERE REVIEWED BY:**

Dr Tracy Riley, Massey University  
&  
Dr Jill Bevan-Brown, Massey University

#### **THE REVIEW PANEL WAS COMPRISED OF:**

Louise Tapper  
Alison Kearney  
David Keen  
Brenda Bicknell  
Anne Sturgess  
Catherine Rawlinson

Shirley Taylor  
Gay Gallagher  
Michael Townsend  
Peggy Lee  
Jenny Smith  
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Presenters were invited to submit papers for the conference proceedings. Each paper received was reviewed by one of the editors and a review panel member, focusing on the importance, presentation and reporting within New Zealand's educational and cultural context. Based on reviewer feedback, presenters revised their papers for the final publication. The views expressed within each paper are those of the presenters, and not of the editors, review panel, conference organisers, or Ministry of Education.

# VISUAL SPATIAL GIFTEDNESS: IDENTIFICATION AND PRINCIPLES FOR DIFFERENTIATION

**Author(s):** Kristin Joy, Massey University

## ABSTRACT

Children who are gifted within the visual spatial domain are uniquely wired to see the world and their thoughts in a multi-dimensional way. The theoretical history of constructs of visual spatial ability is described and linked to cognitive behaviours that can be used for identification. Five principles for the provision of differentiated learning programmes for identified students are proposed, with reference to Renzulli's Enrichment Triad model.

## Visual Spatial Giftedness: Identification and Principles for Differentiation

Parkinson and Edwards (1993) state that the dominance of written language over the past thousand years has led to a lack of appreciation and understanding of students who have highly developed visual-spatial abilities. Yet it is people gifted in the visual spatial domain who have provided the world with many of the revolutionary ideas, innovations and technologies around which today's society revolves (West, 1997). It is imperative that educators in schools acknowledge the importance of these abilities, recognise that students highly gifted in this area require a differentiated programme in which to thrive, and have the knowledge to identify and provide for such students (Golon, 2006; Silverman, 2002; Turner, 2003). This paper describes the theoretical history of the construct of visual spatial ability, and cognitive behaviours that can be used for identification. Five principles for the provision of differentiated learning programmes for gifted visual spatial students are then proposed and linked to Renzulli's Enrichment Triad model.

## THEORETICAL HISTORY AND DEFINITIONS

The development of the construct of visual spatial aptitude historically begins in 1924 when psychometrician Thurston argued for the existence and independence of spatial ability as one of seven primary factors of intellect (Gardner, 1983). Thurston defined this factor as the ability to recognise an object from different angles, the ability to imagine the manipulation of a configuration, and an ability to think about spatial relationships in relation to the body orientation of the observer (Gardner, 1983). In 1927 Kelley, who was founder of the Scholastic Aptitude Test (SAT), defined spatial ability as the ability to sense and retain geometric forms and the capacity to manipulate mentally spatial relationships. The difference between two-dimensional and three-dimensional aptitude was distinguished by El-Koussy in 1935.

In 1983 Gardner proposed the existence of seven different domains of intelligence, one being spatial intelligence (Gardner, 1983). Gardner (1983) defined spatial intelligence as a number of independent but related abilities, such as recognising patterns and transformations, mental imagery and graphic reproduction. All of these are used in different contexts such as orientating oneself, recognising objects, two and three-dimensional depictions, mental imagery and thought.

As a result of 21 years experience studying gifted children who excel in visual spatial items on psychometric tests Silverman developed a 'visual-spatial learner' construct in 1982 (Silverman, 2000). Silverman (2002) describes this construct through a set of behavioural characteristics which include: extraordinary ability at spatial tasks, high level of maths conceptualisation, preference for gestalt learning, learning in intuitive leaps, no need for drill or repetition, thriving on systems thinking and complexity, and excellent grasp of metaphors and analogies.

## COGNITIVE CHARACTERISTICS AND BEHAVIOURS

Visual spatial aptitudes can be related to cognitive theory. Baddeley's theory of working memory describes the left-hemispheric phonological loop, which manages verbal material and the right-hemispheric visuospatial sketchpad, which processes visual spatial material (Baddeley, 2003). These two mechanisms operate independently and are regulated by the central executive (Baddeley, 2003). The cognitive skills encapsulated by definitions of visual spatial aptitude can be identified as occurring primarily in the right hemisphere of the brain.

These cognitive skills lead to a variety of cognitive behaviours that are observable in people with a high degree of aptitude in the visual spatial domain. These characteristics can be seen in people who tend to think holistically rather than sequentially, who can easily synthesise ideas and grasp complex systems. People gifted in the visual spatial domain tend to use inductive reasoning, which requires a view of the whole picture before the idea or problem is deconstructed into its smaller parts. They often report thinking in pictures instead of words, which results in fast, complex, non-sequential thinking. They use their imagination to combine existing facts in novel ways and some report the ability to run working models in their mind (Mann, 2001; West, 1997). Silverman (2000) describes gifted visual spatial learners as having "extraordinary abilities with visual-spatial tasks, imagistic thinking, complex systems, humour, empathy, music, creative expression, or creative imagination" (p.6).

## Asynchronous Development

Students gifted in the visual spatial domain tend to fall into two groups. There are those who are gifted in both audio-sequential (left hemispheric) and visual spatial (right hemispheric) processing (Turner, 2003). These students are usually identified as gifted, but not as gifted in the visual spatial domain because they excel in learning environments based on audio-sequential instruction. There is anecdotal evidence that a high proportion of gifted students are visual spatial learners (Hass, 2004). Turner (2003) suggests that this may be because they are able to gain faster access to more complex representations of thought using this mode. Therefore, it is important to assess high achieving gifted students for visual spatial aptitude to better inform the differentiation of their learning programme.

Students gifted in the visual spatial domain can be especially at risk of experiencing difficulties at school. This is because their exceptional visual spatial ability, processed by right hemispheric activity, may not be matched by the same degree of ability in the left hemisphere, where audio-sequential and phonological processes occur. This type of imbalance is called asynchronous development. Such students may have problems translating the ideas, knowledge and relationships that they perceive as visual representations into written words or numbers set out in a sequential manner, as is required for many classroom learning tasks (Turner, 2003).

## IDENTIFICATION

Effective identification procedures are those that link directly to the definition of the construct being assessed (Ministry of Education, 2000). There are many ways that a student gifted in visual spatial processing might be identified by an educational psychologist, a teacher or a parent.

### Psychometric Testing

There are many psychometric tests that can assess visual spatial aptitude (Silverman, 2002; Stumpf & Eliot, 1999). The Wechsler Intelligence Scale for Children-III (WISC-III), WISC-IV and the Stanford Binet 5 are commonly used in New Zealand. These tests are used to assess ability in a number of different areas of cognitive processing. They are often used by educational psychologists when concerned parents bring their bright but struggling child in for private testing. It is important that teachers know what to look for when such evidence is provided by parents in support of their child's education needs.

The Stanford Binet 5 provides scores for five different areas of processing, one being visual spatial processing. In relation to WISC-III scores, Mann (2005a) states that a block design score of 17 or more identifies a gifted visual spatial student. While Silverman (2002) requires that a student has two out of the following three indicators to be identified: performance IQ a few points higher than verbal IQ, block design in gifted range (130 or above) and significantly higher than digit span, or perceptual organisation index in gifted range. A graph of WISC results that has a high degree of scatter (exceptionally high scores in vocabulary, block design abstract, or spatial reasoning relative to significantly lower scores in arithmetic, information and digit span, or coding) should flag an educators attention to the possibility of visual spatial giftedness with asynchronous development (Stewart, 2003).

### Checklists and rating scales

Parents play an important role in the identification of their child as gifted in the visual spatial domain. Parents know their child's pre-school history, strengths, and weaknesses intimately. Information shared with teachers such as ear infections in the first five years (Silverman, 2002), or a large discrepancy between high levels of verbal expression and emerging reading and writing skills (Sword, 1997) can lead to early identification. It is important that gifted visual spatial students are identified as early as possible so that their learning needs can be met, thus avoiding a spiral of underachievement due to a poor fit between the student and the learning environment (MacFarlane, 2000).

Teachers and parents are able to identify visual spatial giftedness in students by comparing their behaviours to a checklist of common characteristics. Below is a list of characteristics common in students with visual spatial giftedness. Students gifted in this domain who have asynchronous development may also display characteristics described in the column on the right.

Characteristics of visual spatial giftedness	May also display these behaviours if development is asynchronous.
<ul style="list-style-type: none"> <li>Grasps relationships between systems</li> <li>Excels with complex, higher level content</li> <li>Is reflective</li> <li>Has excellent memory for specific information</li> <li>Is preoccupied with ideas</li> <li>Is able to manipulate visual images</li> <li>Exhibits creative talent</li> <li>Excels at mathematical concepts</li> <li>Uses metaphorical language effectively</li> <li>Has strong reading comprehension skills</li> <li>Is aware of physical properties and patterns</li> <li>Possesses a vivid imagination</li> </ul>	<ul style="list-style-type: none"> <li>Has difficulty grasping isolated details</li> <li>Struggles with easy or basic content</li> <li>May be seen as a day dreamer</li> <li>Has difficulty with rote memorisation</li>   <li>Possesses weak social skills</li> <li>Processes verbal communication slowly</li> <li>Struggles in traditional academic settings</li> <li>Has poor computational skills</li> <li>Rarely uses concise descriptions in language</li> <li>Has weak reading decoding skills</li> <li>Is slow to process conventional understandings</li> <li>Has difficulty putting stories into written form</li> </ul>

(Dixon, 1983; Silverman, 2002; West, 1997 cited in Mann, 2005b)

Silverman has developed a 'Rating Scale for High IQ Visual-Spatial Learners' which clearly describes seventeen characteristics that can be used for identification of all students gifted in the visual spatial domain. This is available for use with permission at [www.visualspatial.org/VSI/rating.pdf](http://www.visualspatial.org/VSI/rating.pdf).

McAlpine and Reid's (1996) teacher observation scales do not clearly identify visual spatial giftedness. Some visual spatial characteristics, however, are included in the learning characteristics scale and many of the creative thinking characteristics correlate with characteristics of visual spatial giftedness. If these observation scales are used on a student, and characteristics related to visual spatial giftedness are observed further investigation of visual spatial giftedness may be helpful to facilitate effective differentiation for that student.

Identification resources for gifted visual spatial students with asynchronous development are more common. Observer and student rating scales to identify students with visual spatial strengths and audio sequential weaknesses have been developed by Silverman (2000) after rigorous trials for construct validity. These are available on the website [www.visualspatial.org/VSI/vsieng.pdf](http://www.visualspatial.org/VSI/vsieng.pdf), but cost money for each assessment to be interpreted. Although these scales do not specifically identify visual spatial giftedness a high score may indicate the possibility of visual spatial giftedness with asynchronous development. Mann (2005b) has developed a self identification questionnaire for students as part of her doctoral dissertation. As a result of work with over 200 gifted visual spatial students Sword (1997) suggests identifying students by obtaining a comprehensive history of early and current development, then using a checklist of characteristics and a comparison between the results of an auditory sequential and a visual spatial task. Sword provides an identifier checklist that is free for reproduction with attribution on her website at [www.giftedservices.com.au](http://www.giftedservices.com.au).

Casual observation that a child is good at puzzles and mazes, has an excellent sense of direction, visualises transformations easily, loves toys like lego and k'nex, likes art or music, loves making things but rarely follows directions, and is highly imaginative with novel ideas may indicate that a more formal assessment of visual spatial abilities would be appropriate (Mann, 2001). Sword (1997) adds characteristics such as difficulty with spelling and times-tables, struggling with easy concepts but thriving on complexity and being highly disorganised as possible indicators of visual spatial giftedness. Visual spatial giftedness is not highly correlated to verbal or mathematical ability (Lubinski, 2003). Therefore it is important that criteria relevant to visual spatial ability is used otherwise students gifted in this area may be left unidentified and therefore at risk of underachievement.

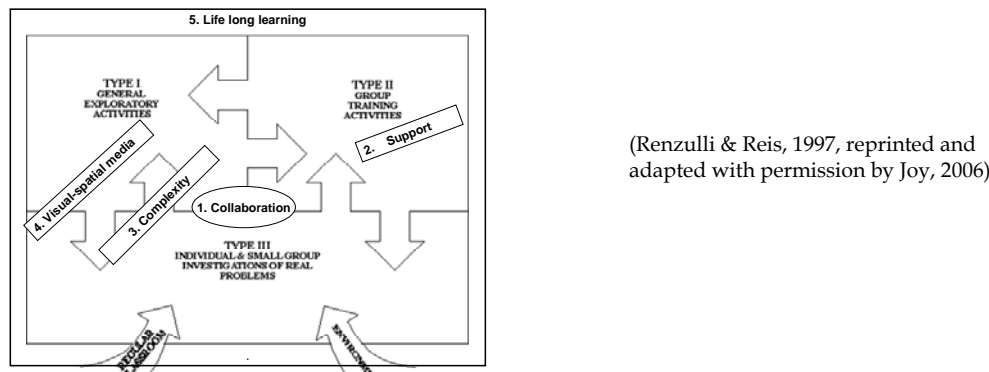
## PRINCIPLES FOR DIFFERENTIATION IN THE CLASSROOM

The differentiation of a gifted student's learning programme must be specifically designed to support and develop the abilities defined by the construct that the identification procedure sought to assess (MoE, 2000). Through the identification of the cognitive and behavioural characteristics outlined above five key principles for differentiating a programme for students gifted in the visual spatial domain are proposed. These principles are collaboration, support, complexity, visual spatial media and life-long learning.

Renzulli's Enrichment Triad is a framework that can be used to provide effective differentiation for gifted students (Renzulli & Reis, 1997). In Type I activities students experience a wide range of exploratory activities such as field trips, community visitors and problem finding. Type II activities occur when students need to develop specific skills for particular activities. Skills such as self analysis, reflection, organisation, advanced research or critical thinking may be focused on at these times. In Type III activities students become investigators of real problems working toward the presentation of solutions to a real audience. To do so they might be involved in activities such as system design, computer modelling, invention, film-making, prototype testing or graphic design.

Each proposed principle of differentiation for gifted visual students relates to a different part of this framework.

**Figure 2:** Relationship between proposed principles and Renzulli's Enrichment Triad Model.



### 1. Collaboration

Collaboration implies that the differentiated curriculum is negotiated, decided, implemented and assessed by a number of parties. It refers to a negotiated alliance between teacher, student, parents and any other interested parties, from which the goals, direction, content and level of learning are derived (MoE, 2000; Riley, 1999). The prevalence of asynchronous development in gifted visual spatial students means that they often possess unique areas of weakness as well as strengths. This makes collaboration imperative for such students because the teacher must become informed of these in order to differentiate the curriculum to best suit their individual learning needs (Stewart, 2003; Sturgess, 2004). In relation to Renzulli's model collaboration is placed at the very core of the entire programme. It is the basis on which the programme is built and the mechanism by which it is monitored and assessed.

It is the teacher's role to instigate, direct and nurture the collaboration between school and home. The role of a parent of a gifted visual spatial student is to advocate for their child's educational needs to be met. Within the school system this may mean sharing knowledge of and information about their child with the teacher and supporting their child to use appropriate strategies to develop their strengths, and compensate for any weaknesses. Students identified as gifted in the visual spatial domain are often complicated learners to understand, and the people who have been living with the student their whole lives are the best resource for teachers who are trying to unpack the complexity of their learning needs (McFarlane, 2000). Riley (1999) uses the analogy of a partnered dance to describe the intricate reciprocity that occurs between teacher and parents as they communicate and negotiate in order to best realise the potential of the gifted child.

## 2. Support

Once a collaborative relationship has been built it is important that the student is well supported by the teacher so that they are able to experience success. All too often gifted visual spatial students with asynchronous development become chronic underachievers at school because they do not receive appropriate support (McFarlane, 2000; Stewart, 2003; Sturges, 1999). Support refers to the teacher's role in ensuring that the student's needs are met so that they can enjoy their learning and achieve their learning goals. This support can be in relation to study skills, access to resources, or their social and affective development (Delisle & Galbraith, 2002; Riley, 2004; Stewart, 2003; Sturges, 1999).

Correlations between dyslexia and visual spatial aptitude have been hypothesized and debated by theorists since 1925. Winner (2000) explores this history, as does West (1997). Cognitive weaknesses characteristic of visual spatial gifted learners with asynchronous development can manifest as sequencing, time management and task completion difficulties, dyslexia, dysgraphia or dyscalculia (Davis, 1997; Silverman, 2002; West, 1997). Therefore it is critical that these students are provided with direct and systematic strategy instruction to develop skills which will enable them to experience success in the academic environment (Stewart, 2003; Sturges, 2004). It is important that skills such as sequencing ideas, making an action plan or writing an essay are taught using visual materials such as graphic organisers and concrete materials. Research has shown that explicit instruction of these types of skills incorporated with counselling for increased self efficacy has greatly improved the experience of success for gifted visual spatial students in the school environment (Stewart, 2003; Sturges, 1999). Gifted visual spatial students with asynchronous development can also be supported in their learning by the use of compensatory equipment or strategies—such as calculators, alphasmarts, video making, visualisation techniques and extra time. The utilisation of such resources maintains motivation and allows the student to operate within their domain of strength (Silverman, 2002; Sturges, 2004).

Type II enrichment activities in Renzulli's Enrichment Triad Model refer to this type of instruction. Renzulli and Reis (1997) describe this type of enrichment as learning experiences to develop thinking and feeling processes that are provided as and when they are needed. Even gifted visual spatial students with synchronous development will still require a programme that is planned to deliberately increase students' abilities in research skills, time management, organisation, planning, decision making and goal setting abilities (Riley, 2004). Using visual media to develop these skills would be most effective.

Delisle and Galbraith (2002) advocate for an affective curriculum for gifted students because their extra perception, high involvement, super sensitivity and perfectionism makes them vulnerable to emotional difficulties. The need for affective support is compounded for gifted visual spatial students with asynchronous development who struggle to realise their thoughts, images and answers into sequential written representations on paper. These students often get caught in a spiral of underachievement, their frustration and confusion at the difference between what they know and what they can do can lead to feelings of failure, depression, self-loathing and anger (Stewart, 2003; Sturges, 1999). Experts in differentiated provision for such students state that specific learning experiences can support the students' affective development by exploring what it means to be gifted by studying, meeting or being mentored by successful gifted visual spatial adults, and by learning the value that society places on their talents and the fields of work that they are especially hardwired to succeed in (Lubinski, 2003; Silverman, 2002; Stewart, 2003; Sturges, 2004). This support increases the gifted visual spatial student's ability to understand themselves and thus work effectively with their heightened emotional sensitivities.

## 3. Complexity

The gifted visual spatial student whose mind sees a complex inter-related world of multiple layers and dimensions, who can run working models in their mind and watch the outcome, who can see patterns and find understanding from perspectives most of us could never envisage **must encounter great complexities and intricate systems** within their learning experiences (Golon, 2006; Mann, 2001; Silverman, 2002).

Gifted visual spatial students need to be immersed in the 'big picture' first. Learning information in small parts, incrementally and cumulatively, does not suit these students (Mann, 2005; Silverman, 2002; Sword, 1997). It is imperative that students are given an overview of the main concepts and ideas at the beginning of their learning experiences. Renzulli's (1997) Type I exploratory activities allow the student to immerse themselves within the contexts, concepts and conflicts inherent within the particular area they are delving. This enables the student to build a visual representation of the factors they have encountered in their mind. By observing this preliminary model they may be able to see gaps and formulate questions that answered, will put more information into the model. They may observe patterns which might feed into possible solutions, or they might posit novel solutions into the model and 'run it' to observe the result. The creative output of such an ability is infinite, yet without the opportunity for the student to build a visual representation of the information they are about to study **initially** this is stifled.

In Renzulli's Enrichment Triad Model, Type III learning experiences occur when individuals or small groups investigate real life problems (Renzulli & Reis, 1997). Differentiated programmes based on these types of activities ideally suit the complex ways that gifted visual spatial students think and process information. In these endeavours the real (visual spatial) world is the student's learning environment. They can liaise with overseas experts as mentors, collaborate with other students via email, work in the community, in industry or in business, or bring resources from those areas into the classroom. They can investigate problems at a personal, local, national or international scale.

Gallagher (2005) describes how to increase the complexity of problem-based learning for gifted students by ensuring advanced content, focusing on conceptual structures, layering interdisciplinary connections, using critical thinking and metacognition, and the exploration of ethical dilemmas. These complexities, inherent in real-world problems, provide visual spatial stimulation and sufficient challenge to motivate students to take risks and strive for achievement (Stewart, 2003; Sturges, 2004). As Gallagher (2005) states "success in complex thinking happens only with repeated practice in complex learning environments" (p.289).

It is also important that teachers understand that gifted visual spatial students can thrive on complex material even if they do not appear to have mastered 'the basics' (Sword, 1997). Such students often struggle with rote memorization and simpler processes that don't engage their visual spatial strengths. For example, they might struggle with simple computational tasks but have the ability to grasp complex mathematical ideas by seeing them as shapes and patterns in their minds (Turner, 2003; West, 1997). Therefore it is important that teachers do not take a mastery approach by holding back complex material while waiting for basic skills to develop.

#### 4. Visual spatial media

Visual spatial media refers to the media with which the visual spatial gifted student best learns, such as two-dimensional and three-dimensional materials, real life environments and cyber space (Davis, 1994; Silverman, 2002; West, 1997). The gifted visual spatial student lives in a world of images, real life and symbolic, moving and still, integrated, connecting and transforming. This is the world within which learning experiences must be provided so that students can think, work and excel in the domain within which they are gifted (Davis, 1994; Mann, 2001; Mann, 2005; Silverman, 2002; Sword, 1997; Turner, 2003; West, 1997). By providing such experiences teachers are enabling the student to learn in their own language, in the way that they are most at ease, and within which they can do their very best, most inventive, extraordinary and revolutionary thinking—how could one resist?!

Visual spatial media can be used in all areas of a differentiated programme—content, process and product (Riley, 2004). Content that can be manipulated, experimented with and redesigned or transformed suits visual spatial learners. Lubinski (2003) suggests hands-on manipulation of materials used in the fields of "agriculture, architecture, computer simulation, engineering (robotics), and bench work in the creative sciences and visual arts are ideal settings for developing their talent" (p.530). Students could study inventors and inventions, artists and art forms, system designers and systems, revolutionary thinkers and abstract ideas.

Processes using visual spatial media could involve role-plays, interviews, computer programming, painting, experiments and prototype testing. Use of graphical mapping of ideas, systems, interconnections, research processes and learning paths are ideal for the gifted visual spatial student. Students can use software such as *Inspiration* to a potential rarely realised in classrooms today by creating new templates to best represent information as they visualise it. It is important that students have multiple choices, as some students will operate better with 2D materials, others with 3D, and others with mental abstractions or symbols (Davis, 1994; Lubinski, 2003; Mann, 2001; Mann, 2005; Silverman, 2002; Sword, 1997).

Products that can be produced with visual spatial media are multitudinous and varied. Many are employed as alternatives to written reports or projects in schools today. Some options may require extra effort to locate resources or to strengthen the student's skill base to enable successful use of a particular medium, for example, in film making, computer animation, web page construction or sculpture.

Renzulli's Enrichment Triad Model is particularly conducive to the use of visual spatial media because it is a curriculum model that is placed within a real world learning environment, that is in essence 'visual spatial'. This makes it a facile process to utilise visual spatial media, especially within Type I exploratory activities and Type III problem solving investigations.

#### 5. Lifelong learning

The final differentiation principle proposed for gifted visual spatial students is life long learning. This is a desired outcome of the differentiated programme, and the underpinning basis of the entire programme. To represent this it is placed at the exterior and base of Renzulli's Enrichment Triad Model.

It is valuable for a teacher to ask: is this programme nurturing a life long love of learning within the student? If the student is frustrated the programme must be differentiated further so that they are supported to succeed. Maybe they need more specific study skill support? Maybe they need to be using media better suited to their visual spatial aptitude? The teacher could ask if enough collaboration has occurred so that the student is excited about what they are learning, or if the content needs to be refocused or refined to make the task more manageable or enjoyable. The process of regular reflection and evaluation of the student's learning programme by all parties—teacher, student and parents, will ensure that the student's needs are being met and a love of learning is being nurtured.

If effective collaboration occurs and teachers provide appropriate support, an engaging degree of complexity, and media with which the student is highly dexterous, the end result should be an engaged student who is enjoying his work. This develops intrinsic motivation and develops the student's independence and confidence in their ability to direct and monitor their own learning and achieve their own learning goals (Gallagher, 2005). If this is not occurring, reflection on the five differentiation principles for gifted visual spatial students proposed may provide vital clues for how the programme might be further differentiated to meet the goal of nurturing a love of learning.

Many gifted students are highly involved in their own projects and learning outside of school. They might be drawing for hours every night, building tree houses, making computer games, designing and selling innovative clothes, beta testing for software companies, film making or dancing. It is important for a teacher to recognise what and how the student naturally loves to learn. Making connections to what enthalls them can be used to enhance their study and affective skills within the school environment (Tomlinson, 1999). By integrating the student's personal drive and passions into the differentiated curriculum a mutual reciprocity can occur. Recognition of the value of their out of school pursuits can further support these endeavours, while use of these skills, materials or interests within the classroom may increase the students love of learning at school.

In conclusion, almost a century of theorising has developed the construct of visual spatial ability. Observable behaviours linked to components of this construct are used to identify students who are gifted in the visual spatial domain. Students so identified require a specialised learning programme that meets their needs as gifted visual spatial students and facilitates the development of their exceptional ability. This paper proposes that the five principles of collaboration, support, complexity, visual spatial media and life-long learning can be

used to create such a differentiated programme. It is important that gifted visual spatial learners are understood, identified and supported by teachers in schools because they have the potential to be the leaders of tomorrow – the inventors of new technologies, buildings, systems and ideas of the future. It is essential that they are not constrained by a text-based classroom or turned off learning by the time they leave school. It is essential that their unique way of thinking is celebrated and developed so that they become voracious learners and creators who can't stop and won't stop learning throughout their lives, both for their own fulfilment and for what they have to offer society with their innovative creativity.

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## TALENT IN THE NEW MILLENNIUM AND TRACKING TALENT

**Author(s):** David Keen, Dunedin College of Education

### ABSTRACT

*"Talent in the New Millennium", a research study into gifted education conducted over a two-year period in 68 centres and schools in three regions of New Zealand gave rise to a second study, "Tracking Talent". These studies have recorded and analysed the experiences and performance of identified gifted children and students as they have passed through successive stages along the education continuum, from early childhood centres to primary school, primary school to intermediate school, intermediate to junior secondary, and junior secondary to NCEA level. They have sought to learn, by analysis of these experiences and performance, how the impetus of giftedness best can be encouraged and maintained.*

### Background: Talent in the New Millennium and Tracking Talent

The following paper summarises the findings of two related research studies, *Talent in the New Millennium*, an essentially descriptive study of giftedness, and a derivative, qualitative study, *Tracking Talent*.

A two-year project, *Talent in the New Millennium* commenced at the beginning of the year 2001. It involved sixty-eight education providers in three regions of New Zealand, namely Otago, Southland and the Bay of Plenty. About a fifth of all centres and schools in Otago and Southland took part, comprising a sample representative of the early childhood, primary and secondary educational sectors, in rural and urban settings, and sited in diverse socio-economic catchment areas.

The study progressed through five stages of implementation. It used questionnaires, distributed to teachers, parents and students, supplemented by face-to-face workshops and interview contact. About a hundred teachers, over 250 children and students and more than 250 parents and caregivers, associated with the participating schools and centres, completed questionnaires and/or took part in workshops and interviews.

The study explored, firstly, definitions and perceptions of giftedness both among schools and their wider communities. Secondly, it pieced together the demographic profile of the children and students whom the participating centres and schools identified as gifted. Thirdly, it assessed the impact of programmes of gifted education from the several perspectives of the participating students and their parents or caregivers. The fourth stage of the study, qualitative in approach, centred on a series of four regional workshops. These workshops afforded opportunities for an evaluative sharing of concept and practice among representatives from participating schools. The final stage tested *Talent in the New Millennium's* interim findings against evidence provided by specific case studies of giftedness, carried out over a five-month period in eleven of the sixty-eight enrolled centres.

### Key Findings from *Talent in the New Millennium*

#### The Nature of Giftedness

The results of the *Talent in the New Millennium* study highlighted the variety and fluidity of giftedness among young people. Socialite; loner; introvert; extrovert; conservative; rebel; perfectionist; dilettante; broad spectrum high achiever; specialist; idealist; pragmatist; mildly autistic... All of these, and many more disparate qualities and conditions, were represented not only among some two hundred and fifty children and students taking part in the *Talent in the New Millennium* research but also within the developmental experience of individual participants.

#### The Identification of Giftedness

By virtue of its very dynamism, giftedness creates difficulties of definition. Among responders to the *Talent in the New Millennium* study, approximately a sixth of the participating centres and schools, and a larger proportion of parents, felt unable to define giftedness. A majority of responders, over eighty per cent in the case of schools and seventy per cent in the case of parents, defined giftedness normatively, but loosely, in relation to the anticipated performance levels of cohorts of age peers. This approach provided no guarantee of unanimity of identification. Responders disagreed as to where, on a quantitative continuum, the cut-off point for giftedness might lie. There was no consensus, also, as to whether performance, to count as giftedness, should be displayed in single or multiple fields, a disagreement with implications for participants' definition of *talent*.

Allowing each institution to apply its own definition of giftedness and talent, overall the centres and schools taking part in *Talent in the New Millennium* classified 9.4 per cent of their enrolled children and students as gifted. However, the mean percentage masked a more complex reality. Typically, schools either identified less than five per cent of their children as gifted, or else a proportion in the ten to fifteen per cent range. The proportion identified was high or low depending on whether the individual centre or school recognised high attainment in single fields as giftedness, and on whether or not gifted underachievers were included in the tally.

#### Socio-economic Imbalances in the Identification of Giftedness

Issues relating to perception and procedure in the identification of giftedness link to differences in the demographic profile of those so identified. Regarding the socio-economic profile of the identified gifted, a third of the child and student participants in *Talent in the New Millennium* came from professional homes and, of this third, fifty per cent came from homes associated professionally with education. These figures far exceed the proportion of professionals and, particularly, teachers in the New Zealand population as a whole. Conversely, children from semi-skilled or unskilled labouring backgrounds, and the children of the unemployed, proportionally were underrepresented in the *Talent* sample.

### Ethnic Imbalances in the Identification of Giftedness

Equally with socio-economic disparities, ethnic imbalances among the identified gifted, as tabulated below, are worrying.

#### Ethnicity of children and students identified as gifted and talented in schools and centres taking part in *Talent in the New Millennium*, July 2001

Ethnic group	Number enrolled in responding schools and centres	Percentage of enrolment identified as gifted/talented
New Zealand European	7534	10.0
Māori	923	5.6
other Polynesian	63	4.8
Asian	301	9.3
other ethnic groups	223	7.6

Māori and other Polynesian children and students comprised some eleven per cent of the aggregate enrolment in centres and schools involved in the study. Seemingly these children and students, relative to roll numbers, were identified as gifted and talented at about half the rate for New Europeans and Asians, and at lower rates, also, relative to other ethnic groups. Gifted performance is culturally conditioned (Bevan-Brown, 1996, 91). New Zealand's educational system, multicultural in its ideals, faces challenges in recognising and fostering giftedness in diverse socio-economic and ethnic settings.

### Identification and Networking

Because of diversity of perception, it is desirable that gifted identification should involve networking between centres, schools and the wider community. Input from the *Talent in the New Millennium* study suggests that interschool networking and community networking in New Zealand both currently are underdeveloped, especially in relation to the potential input of the early childhood sector. Early childhood practitioners, attending workshops in association with the *Talent* study, asserted consistently that their intimate, observational knowledge of children gave them insight into gifted potential long before it was picked up in the wider school system. Conscious of the constructive contribution which they could make to gifted education, the centres voiced their frustration that, at present in New Zealand, they felt marginalised as regards official policy on giftedness.

### Addressing the Needs of the Identified Gifted - Pupil Perceptions

Whatever the strengths or weaknesses of the identification process, how well do centres and schools meet the needs of children and students whom they identify as gifted? For a large majority of the children and students taking part in *Talent in the New Millennium*, schooling was an enjoyable or, at least, an acceptable experience, valued for the range of curricular and co-curricular opportunities which it offered. The twenty-five per cent minority who overtly disliked school complained specifically about being under-challenged, an issue emerging more commonly among younger rather than older students.

As regards content area, participating students often expressed enjoyment of language, mathematics, science or computing. More than half the students played a range of sports, and almost half were involved in music or dance, both in school and as leisure activities. Art and drama tended not to emerge as interests until the later years of secondary schooling. The high status of music among the interests of gifted young people suggests that this subject should be promoted more vigorously in schools. The paucity of reference to social studies in the students' perceptions should be of concern to teachers of the social sciences in New Zealand.

As regards preferred pedagogy, gifted students expressed an almost unanimous preference for experiential learning and for programmes which afforded them elements of choice and ownership. Least preferred were passive learning situations. Groupwork was enjoyed when it involved interaction with like-minded peers. It was resented when it placed the gifted in partnership with the apathetic. Numerous students in this situation had experienced peer pressure to *dumb down* their performance.

### Stress and Anxiety for Gifted Students

With regard to peer relations, school can be an anxious place for the gifted. The manner in which the choices of many student participants in *Talent in the New Millennium* were governed by external stimuli must give cause for thought. Public recognition of their achievements was important to most of the students, and many drove themselves hard both in academic and sporting competition. Side effects of the drive for success, in some respects, were negative. For example, a younger student, in interview, voiced concern lest she fail to match the standards of an older sibling. For another, perfectionism encouraged risk aversion and a preference for a limited range of *safe* challenges. Others accepted challenges to a level where time management became a significant issue. Theories of giftedness tell us that the gifted are characterised by an internal locus of control (Clark, 1997, 58). They tell us, on the other hand, that the gifted are culturally conditioned, translating gift into talent, Gagné-wise, in terms meaningful for the social milieu wherein they move. Perhaps *Talent in the New Millennium's* students simply showed this mechanism at work. However, easily the most moving interview response from any student engaged in the *Talent* study came from a primary school girl whose evaluative compass led her to be true to herself. She rated her most satisfying achievement of the past twelve months as being *my treasure poem*. Her reason?

*I used my best language. It came from the heart.*

### The Rationale for Tracking Talent

The *Tracking Talent* programme arose from issues apparent in the findings of *Talent in the New Millennium*. It was triggered by concerns voiced by early childhood education centres, during workshop phases of *Talent in the New Millennium*, regarding poor vertical linkage between the centres and first-year primary education. Accordingly, the *Tracking Talent* study sought to monitor and analyse the experiences of identified gifted children and students at a range of transition points on the education continuum. The four chosen transition points were:

- Early childhood education to Year 1 primary schooling
- Year 6 primary to Year 7 intermediate or college
- Year 8 intermediate to Year 9 secondary
- Year 10 secondary to Year 11 NCEA

Using a qualitative methodology combining classroom observation and parent, staff and student individual and focus group interviews, the *Tracking Talent* study explored the aims of identified gifted children and students, prior to and during educational transition experiences, and the students' evaluative perceptions of their experiences. The study is ongoing.

### Participants in *Tracking Talent*

To date, over forty identified gifted children and students from twenty-three centres and schools in three regions of New Zealand have taken part in the study. The schools comprise: two early childhood education centres; seven primary schools; three intermediate schools; eleven secondary schools. The regions concerned are: Otago; Southland; the Bay of Plenty. The tally of child-student participants is gender-balanced. It spans the age range from four to fifteen years. Predominantly New Zealand European, it includes a twelve per cent Māori component, together with individual participants of Chinese, Korean and Pacific Islands ethnicity.

### Selection of the Participants

*Tracking Talent* allowed participating centres and schools to select children and students for the programme, each centre and school according to its own preferred criteria. Analysis of data has shown that centres and schools, in the selection process, have tended to focus on the following five groups of child or student attributes:

- High all-round attainment.
- Analytical and cognitive facility and conceptual range.
- Social and ethical awareness, affective qualities and sensitivity.
- Attitudinal qualities, with particular reference to concentration, perseverance, independence and responsibility.
- Facility in oral and written language.

In general, centres and schools have selected the broad-spectrum achiever ahead of the specialist in a narrow field, and have avoided the gifted underachiever.

The table shown below, *Student Attributes and Skills displayed on a Bloom-Gardner Matrix*, uses a four-point scale to collate and summarise information provided by teachers on *Tracking Talent* participants. In the table, the skills listed in the left-hand column of the matrix are taken from Bloom's *Taxonomy of Educational Objectives* (Bloom et al., 1964). The skills listed across the top of the matrix derive from Howard Gardner's work on multiple intelligences (Gardner, 1983). The table shows, therefore, at what attainment levels teachers see gifted children and students as performing when the children or students operate in different fields of intelligence. The tabled figures indicate, in the following proportions, whether teachers perceive students whom they have selected to take part in *Tracking Talent* to possess the attributes and skills in question:

- 4 - usually (80 per cent or more of students display the attribute or skill in question)
- 3 - commonly (50-80 per cent of students display the attribute or skill)
- 2 - sometimes (30-50 per cent of students display the attribute or skill)
- 1 - rarely (less than 30 per cent of students display the attribute or skill)

*Student Attributes and Skills displayed on a Bloom-Gardner Matrix*

	verbal, linguistic	logical, mathe- matical	visual, spatial	bodily, kinaes- thetic	musical	inter- personal, social	affective, emotional	ethical	spiritual
remembering	4	4	3	4	3	4	4	4	2
understanding	4	4	3	4	3	4	4	4	3
applying	4	4	3	4	3	4	4	4	1
analysing	3	3	3	3	1	3	3	4	1
evaluating	3	3	1	1	1	2	2	2	1
creating	4	3	1	1	1	2	2	2	1

The patterning of the indicators within the matrix tends to confirm Bloom's thesis, to the effect that *remembering* and *understanding* represent lower-order skills, while *evaluating* and *creating* represent higher levels of challenge to which relatively few children or students aspire. The indicators suggest that teachers, in identifying giftedness, focus on the linguistic, mathematical and social, with gifted extension occurring most commonly in the conventional area of the three Rs. Motor skills are widely observed as operating at the basic levels of Bloom's hierarchy, but are less observed at the higher levels. Visual-spatial skills and musical skills tend to be seen as the preserve of a significant but specialist minority of children. Least recognised are spiritual skills, a deficit which reflects New Zealand's secularised education system and which might have a bearing on the under-recognition of giftedness among ethnic minorities in New Zealand schools (Bevan-Brown, 1996).

### How Children and Students involved in *Tracking Talent* viewed and defined their Goals

In individual or focus group interviews, identified gifted young people, participating in *Tracking Talent*, presented as strongly self-motivated, with high personal expectations, which might or might not be contextualised within the school programme. Evidently, *Tracking Talent's* child and student participants have engaged with a rich diversity of activity. The stereotype of the physically inactive intellectual is far from the truth. Only two of the identified gifted children and students interviewed to date, have remotely conformed to the stereotypical pattern. Only one professed no interests beyond her regime of study, immersing herself in the school library during every lunchtime opportunity. Arguably the most successful scholar among those interviewed undertook rowing practice three mornings each week, starting at 6.30am. Also, she did distance-running training three times a week, had ballet classes twice a week, modern dance classes once a week,

and she played soccer and practised Italian *for fun*. She still found time, as a Year 10 student, to attempt Level 1 NCEA standards in mathematics and science, achieving a perfect score in mathematics.

Focus and drive in no way preclude the faculty of imagination. A feature common to many of *Tracking Talent's* participants, at every age level from early childhood to Year 10, was an enjoyment of fantasy. Whether or not this enjoyment translated into creative writing, *Tracking Talent's* children and students devoured fiction in the fantasy genre. They could rehearse, in detail, the themes and plots of the Harry Potter cycle, Tolkien, *Watership Down*, *The Wind in the Willows*, *Animal Farm*. They revelled in the witty, quirky and offbeat and, even at primary school age, showed an acute critical faculty. A final year primary pupil, for example, was able to analyse in depth and detail why she preferred Tolkien's original *Lord of the Rings* over the Jackson movie version. She found more depth in the text rather than the movie; for her, even a crafted trilogy could not do justice to the scope of Tolkien's saga. Gifted with a lively imagination, she loved Tolkien's evocative powers of description and, internalising Tolkien's imagery, had built up her own mental concept of *Middle Earth*. The movie series, when she came to view it, did not sit well with the sculpturing of her imagination; she preferred the world into which Tolkien had led her, through the private pathways of the mind.

Imagination and fantasy correlate with individuality. Among all the interviews conducted to date in connection with the *Tracking Talent* programme, the responder who came across as the most intelligent and the most mature was, also, the most idiosyncratic. An ethnic Chinese boy, recognised in his school as a broad-spectrum high achiever, he *could not be bothered with goals*. He would like to be rich, to enjoy the convenience of purchasing power, and he saw himself as going to university:

*Is there any choice?*

But he had no idea in what field his tertiary study would lie. His philosophy of life urged the individual to:

.....have fun... make the most of something... enjoy what you've got  
and don't kill yourself.

He claimed when interviewed as a Year 10 student, that there was:

*... not much homework... and I'd like to keep it that way.*

His rationale was that the minimal demands of schoolwork freed up time for him to pursue his real interests - instrumental music, computing and sport. Raised in an Asian culture of high collective expectations and inducted into a culture of Kiwi individuality, he moved between the two with the poise of a ballet dancer.

#### **Participants' Thoughts and Feelings, pre-Transition to another Stage of Education**

In line with their facility in goal setting, most of the *Tracking Talent* child and student participants, interviewed before they moved to another stage of schooling, felt positive about the transition. Some were apprehensive, and some felt ambivalent. One primary pupil, scheduled to move to a large urban secondary school, quantified her feelings as 20 per cent nervousness and 80 per cent excitement. Most of the cohort of primary pupils, initially involved in *Tracking Talent*, looked forward with anticipation to an intermediate or secondary school environment which, they believed, would offer them wider subject choice, depth of subject penetration, diverse and enhanced sports opportunities, leading to competition at a higher level, and a rich range of extra-mural opportunities.

Several of *Tracking Talent's* early childhood or primary-age interviewees already had visited their prospective destination schools for the following year, either with one or both of their parents or with a group from their current class, and had liked what they saw. One primary girl, who had not yet visited her prospective secondary school, at least had read the school's prospectus and, on that basis, felt herself to be quite well informed. The pupils who were able to make prior visits to their following-year destination schools found the visits to be helpful orientation exercises, removing some elements of uncertainty and apprehension.

Where worries were expressed by *Tracking Talent's* primary school participants, regarding their transition to another level of schooling, these related to school size and peer relations. Primary pupils commonly imagined their following-year destination schools to be dauntingly large, and they were anxious to get a feel for lay-out and location. Pupils who knew they had friends, from their source schools, who were going with them to the same following-year destination schools found this knowledge to be re-assuring. Conversely, the pupils who expressed most apprehension about shifting schools were those from small primary schools who had not yet seen their following-year destination schools and knew little about them beyond hearsay. These pupils feared the destination schools would be frighteningly larger than the familiar schools that had accommodated them, in many cases, since the age of five. For these pupils also, if their friends were going to different destination schools, the thought of losing a hard-won relational security and *starting again* was worrying.

#### **Participants' Thoughts and Feelings, post-Transition to another Stage of Education**

In the event, for most of *Tracking Talent's* child and student participants, the experience of educational transition turned out to be positive. For children moving from early childhood education into primary schooling, variables of personality, and also the time of year when the transition was made, had a bearing on the children's patterns of adjustment. Important, also, was the sensitivity of the Year 1 primary school staff to information received from the early childhood centre. Children's adjustments rode on the back of good professional communication. One *Tracking Talent* participant, making a Term 4 transition from early childhood to primary schooling, felt her way cautiously into her new environment, closely observing and modelling on the established behaviour patterns of her more experienced peers. She needed, and was given, time to adjust socially. Another child, outgoing and confident in his well-developed motor skills, and making a Term 2 transition, thrived on the tailored challenge which his primary school provided. He valued and missed the interpersonal links of his early childhood experience but, overall, preferred the primary environment. He did not want to go back.

*We do harder stuff here, real work.*

Of ex-primary participants who transferred to a secondary school, most liked the wider choice of subjects which the secondary school could offer. Most, although not all, found their secondary work to be relatively more challenging than their primary work. For a minority, the step up in level of challenge was a shock, with relatively greater rigour being demanded, for example, in English language presentation. Many

students, on the other hand, liked being taught by subject specialist teachers at secondary school. Several young people, making the secondary transition, regretted they had no access to specialist science teaching in the primary school, but rose to the secondary challenge:

*Science is pretty cool. [At primary school], we never did anything to do with science. Now, I've gone from 'not achieved' to getting 'excellence' three times.*

Young people, making the primary-secondary transfer, saw relational as well as cognitive gains in their new experience. They appreciated the variety of teachers and teaching styles to which the secondary system exposed them. They saw the primary home room as functioning well when the pedagogical and relational dynamics were good, but as a disaster if pupil-teacher-home relationships became dysfunctional. They did not advocate that the primary home room should be abandoned, seeing it as appropriate for the age level for which it was designed. But, they felt it was time, at their personal life-stage, to move on. Some students noted also that, among the larger roll of the secondary school, the gifted student has a better chance to find friends of like aptitude and interest.

An interestingly alternative point of view regarding secondary education, however, was offered by a Year 10 student whose earlier education had been entirely under the Montessori system. She appreciated warmly the flexibility of the Montessori method and its ability to tailor approaches to identified, individual need. Accultured in a system that celebrated and serviced individuality, she commented on the highly structured nature of curriculum-focused delivery in the secondary classroom, and questioned its flexibility. She, among *Tracking Talent's* Year 10 interviewees, was the strongest advocate of one-to-one mentoring.

### **The Gifted and the National Certificate of Educational Achievement**

Flexibility of implementation proved crucial in relation to gifted students' appraisal of the NCEA system. *Tracking Talent's* participants, at the Year 10 level, prior to encountering the NCEA regime, typically were *sort of anticipating* the NCEA experience. Most felt it would be reasonably easy to gain the requisite NCEA credits. The students who expressed most ambivalence about the NCEA either were those who admitted that they knew little about the system, or those who had sourced their information from older siblings or older school peers. These students believed that the NCEA would over-assess, and inappropriately structure, or even fragment, their learning experience. They did not see it as offering meaningful challenge, a serious flaw in the eyes of gifted students who, typically, insist on *seeing the point* of any activity.

In the event, the NCEA qualification worked well for *Tracking Talent* students in schools where it was applied flexibly. It proved less successful in situations where, basically, students were made to fit the system rather than vice versa. A good example of successful flexibility involved a Year 10 boy, working independently at high levels in maths and science, who was allowed to study Level 3 and 4 NCEA maths and science units alongside Year 13 candidates. The boy's hobby was to trawl the shelves of his regional university bookshop, and buy and read as many tertiary texts on calculus, statistics and physics as he could. At the time of interview, he was achieving in these subjects at a level well ahead of his Year 13 study partners. Because these older students, however, were sufficiently life-experienced to possess emotional confidence, they did not feel threatened by their younger colleague's success. Therefore, the typical secondary school problems of *put-downs* and *dumbing down* did not occur. In English classes, on the other hand, the same Year 10 boy travelled with Year 11 study partners in the NCEA Level 1 programme. Although lucid in expression he, in his turn, lacked the life-experience to validly and meaningfully analyse literature at senior levels of study. Working on the Shakespearian play *Macbeth* at the time of the *Tracking Talent* interview, he was able to *achieve* the English unit to which the play was geared, but not at *merit* or *excellence* levels.

Overall, Year 11 participants in *Tracking Talent* gave the NCEA system their endorsement qualified by four reservations, three of these relating to the level of incentive which the system provides and one to pedagogy:

1. Students with personal NCEA experience maintained it was far easier to gain credit in some subjects than in others, encouraging students to accrue credits via soft options rather than face up to academic challenge and rigour.
2. Students regretted that, while the NCEA qualification recognises attainment at the differentiated levels of *achievement*, *merit* and *excellence*, it offered no bonus credits to students attaining at the higher levels, thus weakening the incentive to try for excellence.
3. The three-level differentiation between achievement, merit and excellence was seen by *Tracking Talent* responders as a blunt instrument as regards assessment. Many felt that, in the assessment process, much could hang on adherence to a single technicality and too little on originality or creativity.
4. The NCEA classroom was seen by responders as a satisfying or frustrating place, depending on whether the teaching is directed at individual extension or a whole-class uniformity of attainment.

### **The Art of Positive Failure**

Perhaps the most important issue evident in the findings of *Tracking Talent*, and creating significant problems for a minority of the identified gifted, has been the need to learn the art of positive failure or, in other words, to understand and apply the concept of resilience. In a small primary school, a gifted child easily and consistently might outstrip his or her peers in a range of activities and fields. Coming thence to a secondary school, far larger than the contributing primary school, the gifted child might find to his or her chagrin that the doors to the secondary school's *gifted class* are closed, the class complement having been filled by identified gifted candidates from other contributing schools. This is an issue which underlines the importance of vertical, two-way communication between secondary schools and their contributing primary and intermediate schools. Ideally, each secondary school, together with its associated contributing schools, should create a gifted education web, facilitated by a committee including staff representatives from each of the schools involved. Without the resourcing and funding to free up staff time, such developments will not happen.

However, whether or not the gifted child, in transition to another school, gains entry to a *gifted class*, the experience of no longer being *best* in some specific field can be demoralising. As one student participant in *Tracking Talent* lamented, after transition to his destination school:

*It's all turned pear-shaped.*

He was finding that several age peers in his new school were ahead of him in maths, denting his confidence in his own ability. The same boy grieved for his inability to gain first place in a school cross-country race:

*No-one remembers anyone who came second.*

His new school, aware of his reactions, invested a lot of time in helping the boy to focus on his genuine strengths, especially in sport where he had real ability, hoping that enhanced confidence in one field would spill into others and, also, encouraging the boy to understand the typically uneven profile of giftedness.

The *One-in-Five* publicity campaign, currently promoted through the New Zealand media, encourages New Zealanders to think in terms, not of disability, but of potential. The message is apt for every one of us, for every person, in some sense or aspect, could be regarded as disabled. However, in the words of Japanese high achiever Hirotada Ototake, born without arms or legs:

*The only disabilities are the ones you impose on yourself in your own mind* (Ototake, 2003).

Gifted children and students, in all their diversity, and with all their passion and potential, share the universal human need to learn the experiential lessons of resilience, to learn that mistakes, failure and awareness of limitation are essential stepping stones on the pathway to any truly worthwhile achievement.

### In Quest of a Gifted Identity

The processes of *Talent in the New Millennium* and *Tracking Talent* have reflected a New Zealand society feeling its way in its perceptions of, and attitudes to, giftedness. New Zealand essentially is a migrant society. Its traditions celebrate the pioneering virtues of courage, inventiveness and adaptability. At the same time, its migrant agendas have tended to espouse an upward social levelling. New Zealand society, thus, through much of the twentieth century, tended to be ambivalent in its relationship with giftedness. The researcher, in his earlier teaching career in New Zealand, was directed to ignore the high achievers because they would *make out anyway*, and to focus on the needs of the academically under-attaining. The pressures of globalisation have encouraged a re-thinking of the mid-twentieth century attitudes. The young participants in *Talent in the New Millennium* and *Tracking Talent*, in their responses to challenge and setback and in their lives' quest for attainment and fulfilment, mirror the quest of New Zealand as a whole, as a youthful country reaches out, in self-discovery, towards its potential.

### Site Visits and/or Interviews undertaken 2004-2005 in Connection with *Tracking Talent*

Early childhood centre, Dunedin	23.3.04,	8.6.04
Early childhood centre, Dunedin	30.3.04	
Primary school, Dunedin	30.3.04	
Secondary school, Dunedin	31.3.04	
Secondary school, Invercargill	31.3.04	
Primary school, Dunedin	5.4.04	
Primary school, Dunedin	7.4.04	
Primary school, Otago	8.4.04	
Intermediate school, Bay of Plenty	six interviews, February-March 2004,	
	29.4.04	
Primary school, Otago	4.5.04	
Secondary school, Dunedin	5.5.04	
Secondary school, Otago	18.8.04	
Secondary schools, Bay of Plenty	10.2.05	
Secondary school, Bay of Plenty	12.5.05	
Secondary school, Otago	17.5.05	
Secondary school, Bay of Plenty	11.8.05	

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# ADULTOCENTRISM? THE ROLE OF THE ADULT IN SUPPORTING GIFTED LEARNERS: CASE STUDIES OF PRECOCIOUS READERS

Author(s): Dr Valerie Margrain, The Open Polytechnic

## ABSTRACT

Case studies of 11 4-year-old precocious readers highlighted that giftedness in children is not necessarily attributable to the intervention of adults. The study reinforces the benefit of adults using responsive approaches to support young children's learning; however the case study children also self-regulated their own learning, and additionally learnt unexpectedly and spontaneously. Where adults focused on their own 'teaching', children also learned what was expected of them, with some adults reinforcing "age-normal" behaviour.

## INTRODUCTION

Precocious readers are children who have demonstrated exceptional reading ability, without having been taught. According to Stainthorp and Hughes (2004). We define "precocious readers" as children who are able to read fluently and with understanding at an unusually young age before attending school and without having received any direct instruction in reading. Precocious readers appear to have taught themselves to read (p. 107).

Reading performance captures one aspect of children's competencies and achievement. The 11 precocious readers in my study (Margrain, 2005) were a heterogeneous group of learners, with a range of strengths and interests. The study gathered information relating to diverse aspects of children's abilities, including reading, writing, art, oral language, problem-solving, leadership, social skills, perseverance and inquiry. However, it is not possible within this paper to report on all aspects of children's ability; reading abilities are reported in this paper as they most effectively illustrate the children's exceptional abilities.

After reporting the results of reading tests, this paper will consider children's learning, and the role of adults in support of the children's learning. The purpose of the paper is to report the extent to which adults were integral to children's learning, with particular focus on reading.

## METHODOLOGY

The research approach of the study reported in this paper was case study design (Harker, 1997; Kemmis, 1980; Stake, 1980). Multiple case design was utilised (Stake, 1994, 1995; Yin, 2003), with 11 concurrent case studies of 4-year-old children, their families, early childhood centres and some schools. The purpose of case study research, according to Harker, (1997) is to *observe, probe and understand* an individual unit (whether a child, a group, a class, a school or a community) as a whole – what goes on within the unit, and the unit's relationships *horizontally* with other units, and *vertically* with other orders of units. It is the attempt to understand *meaning* within units and to understand the *individual*, unique construction of reality (p. 3).

Thus, case studies provided a relevant methodology for a study aimed to probe and understand the *meaning and experience* of being a precocious reader.

The key research question was: *How are social scaffolding and self-scaffolding demonstrated within the learning of precocious readers?* In addition, there was consideration of data which could *not* be explained by the question's focus on scaffolding; the examples of learning that could not be accounted for through scaffolding might link to a notion of spontaneous learning. There was, therefore, a subsidiary question: *Can precocious readers provide evidence for the concept of spontaneous learning?*

To be able to address these questions, a range of formal and informal methods were used within the case study approach. Methods relevant to data reported in this paper include standardised tests of reading such as the *Burt Word Reading Test* (Gilmore, Croft & Reid, 1981) and the *Neale Analysis of Reading* (Neale, 1999), semi-structured interviews with parents, informal interviews with teachers, and observations of children in early childhood and school settings. Participants were recruited as a result of fliers displayed in early childhood centres and public libraries, and also through networks with early childhood centres, associations and families. The study had ethics approval from Victoria University of Wellington. Fieldwork was conducted during 2001 and 2002.

## RESULTS

### Children's Precocious Reading Abilities

The children participating in my study all had reading ability levels well in advance of their chronological age. Table 1 shows that accuracy rates on the *Neale Analysis of Reading* (Neale, 1999) varied from 6:08 age equivalency (for a child aged 4:07) to 10:08 (for a child aged 4:09). Henry read the following Level 5 passage from the *Neale* in 89 seconds, with 100 words read correctly out of the 117 total words. The seven errors are shown in bold, with the correct word in brackets afterward.

*Among animals the fox has no rival (rival) for cunning. Aspychus (suspicious) of man, who is its only natural enemy, it will, when purshowed (pursued), perform extraordinary feats, even alighting on the backs of sheep to divert its scent. Parent foxes share the responsibilities of cub-rearing. Through their hunting expeditions they acquire an uncanny knowledge of their surroundings which they use (Repeated: 'which they use') in an emergency. This is well illustrated by the story of a hunted fox which led its pusers (pursuers) to a negited (neglected) mine-shaft enclosed by a circular hedge. It appeared to surmount the barrier. The hounds followed headlong, only to fall into the indirectly (accumulated) water below. The fox, however, apparently on familar (familiar) territory, had skirted the hedge and subsequently escaped.*

(H: Neale test results)

Henry's reading of the former passage, from the *Neale Analysis of Reading* (Neale, 1999), illustrates his competency in reading; although he made seven errors, he had an accuracy rate of 94% on this passage. Many of his errors were mispronunciations. There were many words in the passage that are not usually able to be read competently by a 4-year-old: "extraordinary", "responsibilities", "expeditions", "knowledge", "surroundings", "illustrated", "circular", "apparently", "territory" and "subsequently".

Reading ability levels on the *Burt Word Reading Test* (Gilmore, Croft & Reid, 1981), which involved reading words from a list rather than in a text, were consistent with the ability levels on the *Neale Analysis of Reading* (Neale, 1999), as shown in Table 1. For example, Gillian, aged 4:03, obtained a reading age of 6:10 on the first form on the *Neale*, and 6:11 on the parallel form of the *Neale* two weeks later. She completed the *Burt* between each form of the *Neale*, with an equivalent age band of 6:08 to 7:02 years.

Age-equivalent band scores on the *Burt Word Reading Test* (Gilmore, Croft & Reid, 1981) ranged from 6:10 to 10:06 years of age (averaged, see Table 1). Examples of words that children could read from the *Burt* are shown in Figure 1. When I asked Lewis if he knew any other words (as the manual directs) he carefully searched then said, "Yes, New Zealand", pointing to the fine print "New Zealand Council for Educational Research" at the foot of the form.

	Final 3 words read correctly	Examples of errors
A	Overwhelmed, fringe, trudging	Desteeny (destiny), Champion (champagne)
D	Journey, explorer, tongue	Bury (beware), Twist (twisted)
E	Encyclopedia, trudging, urge	Pilsopher (philosopher), Re-Known (renown)
G	Luncheon, shelves, explorer	Emergy (emergency), Obitin (obtain)
H	Urge, binocular, economy	Termology (terminology), Gleyeserine (glycerine)
J	Shelves, terror, urge	Projeking (projecting), Underversal (universal)
L	Overwhelmed, universal, destiny	Scarsilly (scarcely), thory (theory)
M	Explorer, events, overwhelmed	Norusmat (nourishment), Scarecly (scarcely)
N	Luncheon, events, emergency	Shivers (shelves), Believe (belief)
O	Trudging, binocular, destiny	Autobography (autobiography), Contemptis (contemptuous)

Figure 1. *Burt Word Reading Test* results.

Table 1  
*Literacy Abilities*

Identifier	A <sup>1</sup>	D	E	G	H	I	J	L	M	N	O
Gender	M	M	F	F	M	F	F	M	M	M	M
<b>Entry Age</b>	<b>4:08</b>	<b>4:02</b>	<b>4:07</b>	<b>4:03</b>	<b>4:09</b>	<b>4:09</b>	<b>4:01</b>	<b>4:08</b>	<b>4:03</b>	<b>4:07</b>	<b>4:10</b>
<b>Neale 1 Accuracy</b>	<b>8:1</b>	<b>7:05</b>	<b>8:01</b>	<b>6:10</b>	<b>10:08</b>	<b>7:10</b>	<b>7:03</b>	<b>8:01</b>	<b>6:10</b>	<b>6:09</b>	<b>7:08</b>
Neale 1 Comprehension	6:11	6:05	7:01	6:07	8:03	7:01	6:09	6:09	6:07	6:03	7:01
Neale 1 Rate	13.0	8:09	13.0+	7:07	12.02	>10.08	9.01	8.06	8.0	7.0	7:02
<b>Neale 2 Accuracy</b>	<b>7:11</b>	<b>7:09</b>	<b>8:10</b>	<b>6:11</b>	*	<b>7:07</b>	<b>7:05</b>	<b>8:01</b>	<b>7:05</b>	<b>6:07</b>	<b>7:08</b>
Neale 2 Comprehension	7:02	6:06	7:02	6:04	*	7:05	6:04	6:10	6:08	6:06	6:06
Neale 2 Rate	9:04	7:11	13.01+	9.0	*	10.03	12.03	8.0	7:05	7:03	8:08
<b>Burt Word Reading</b>	<b>8:01-8:07</b>	<b>7:05-7:11</b>	<b>8:03-8:07</b>	<b>6:08-7:02</b>	<b>10:04-10:10</b>	<b>7:06-8:00</b>	<b>7:09-8:03</b>	<b>8:00-8:06</b>	<b>6:11-7:05</b>	<b>6:11-7:05</b>	<b>8:10-9:04</b>

(*Neale* = *Neale Analysis of Reading*, *Burt* = *Burt Word Reading Test*, *BPVS* = *British Picture Vocabulary Scale*)

\* Refused to read the second assessment of the *Neale Analysis of Reading*

Comprehension scores were slightly below the reading ability ages for the children in my research, but still well above their chronological age (see Table 1). For example, Erin, aged 4:07, had a reading ability of 8:01 on the first version of the *Neale Analysis of Reading* (Neale, 1999), and a comprehension level of 7:01. Although her comprehension was a year below her reading ability, it was still 2½ years above her chronological age.

<sup>1</sup> The letters A to O refer to children in the study: Alistair, David, Erin, Gillian, Henry, Isla, Julia, Lewis, Matthew, Nathan and Oscar (pseudonyms).

The comprehension scores are important because many teachers have expressed their concern about “allowing” young children to read beyond their chronological age in case the children do not “really” understand what they are reading. The results from my study clearly show that *all* of the children had comprehension levels well above their chronological age. They could read, understood what they read, and wanted to read. There is no evidence to explain why they should be “held back” or denied access to ability-level literature, provided it is age-suitable (Hartley, 1996). Julia was reading plays and novels in her free time. Her mother knew that her daughter had understood them because of the way she could discuss issues from the characters’ perspectives. Aged 4:01, if Julia had been restricted to age-level reading material, she would have had to wait another year before being allowed to read emergent texts.

The repeated references to children’s enjoyment of reading affirm that reading was the children’s *choice*, rather than something they were helped to learn to even something that was imposed on them. Parents described their children’s desire and ‘thirst’ for learning.

*He enjoys it a heck of a lot. There is no way he’d do this much if he didn’t enjoy it.* (A: Parent interview, p. 10)

### **Children as Learners**

The study of precocious readers confirmed three types of learning: socially supported, self-regulated and spontaneous. The case studies provided examples of each of these three kinds of learning. Spontaneous learning is the type of learning least acknowledged in literature and other studies. Precocious readers can illuminate our understanding of how learning can occur without the necessity of formal adult teaching or coaching.

### **Social support**

Parents of children participating in this study noted their children’s inquisitive nature and thirst for knowledge. The analogy of being a ‘sponge’ was repeatedly used as the children ‘soaked up’ all that they could from their environment. When I visited Henry’s school, the teacher said to me “he’s such a sponge”. (H: School1)

*He learns from everywhere. Comes home with things from other kids’ houses, TV, books, phrases from the computer. The ‘sponge analogy’ – learns from everywhere.* (A: Parent interview, p. 10)

*It put me off when he wanted encyclopedias read. He likes picturepedia. He likes things with facts more than stories, like a sponge, wants to learn things.* (O: Parent interview, p. 8)

*It does not even seem like Matthew is learning. Yet he is constantly absorbing information and remembers them in context, and that is just amazing.* (M: Parent interview)

As well as absorbing information ‘like a sponge’, children were also reported to have excellent memory skills. They learnt quickly and retained their knowledge.

*Just really quick in grasping anything. Anything you teach her once or twice she gets it. At the [early childhood] parent-teacher meeting the teacher confirmed it – she grasps things very quickly.*

(J: Parent interview, p. 3)

*He has a very good memory . . . he really could remember it - he had that retention of his memory.*

(L: Parent interview, p. 7)

*Because they’re born with three trillion brain cells, the more you use the more you retain. I don’t believe it’s an overload to inform them if they ask, give the answer.* (H: Parent interview, p. 11)

These examples illustrate that the children effectively capitalised on their environment. The children asked questions, ‘demanded’ to be read to, and used a range of resources. When I visited children at their homes, many of them enjoyed showing me a range of things that were important to them: their bedroom or playroom, books, piano, artwork, chalk art on the outside concrete, a box to enjoy hiding in, Lego, animals and computers. These interactions affirm that children were not merely *doing* things that their parents expected; they were enjoying *being* children with the support of a range of resources.

We [parents] were told early on that the best way to help is to give wide experiences – looked laterally. We haven’t done skiing trips but have involved them with daily life. Cooking is good with maths, reading, patterns, conclusions. We go to museums – can be harassing, but they enjoy it. Love libraries. By encouragement and giving him time and the opportunity to do stuff . . . We haven’t actually sat down and taught him stuff, except in a passive way – but I ‘spose reading is active. (A: Parent interview, p. 5)

Social support and environment *contributed* to children’s learning, but did not *create* precocious reading ability. Parents supported, encouraged and interacted with their children, the families visited libraries, read books and owned computers. However, millions of families around the world also do these things, yet precocious reading ability occurs in only one to two-and-a-half per cent of the population (Jackson, Donaldson & Cleland, 1988).

### **Self-regulation**

Several parents of children participating in this study highlighted a specific focus on self-teaching. The children were perceived to “teach themselves” more than they were “taught” by others. When asked “Who is it, if anyone, who has mainly taught your child?” – Henry’s parents emphatically stated “Henry!” (H: Parent interview, p. 7).

*She taught herself, that’s the amazing thing.* (G: Parent interview, p. 6)

*Reading – she sussed that one out.* (E: Parent interview, p. 5)

*Mostly he’s a self-starter – we try to keep up with him.* (H: Parent interview, p. 7)

Children in this study combined systematic and analytical approaches to learning with questioning, reflection and memory. They showed dispositions relating to curiosity, logic and order, and internal control. Nathan's mother noted that he had a strong sense of how things "should" be.

*He has a way of analysing what the problem is - probably putting a grown-up context onto it. He has the ability to think a problem through and think of a way to fix it. I never thought about it [before]. A very quick learner. (D: Parent interview, p. 3)*

*He sits and looks a long time first, then gets it right when he tries. He's pretty successful . . . I don't see that he gets it wrong. (A: Parent interview, p. 2)*

Vygotsky's (1978) sociocultural theory highlights the role of adults to provide scaffolding support that facilitates learning within the child's zone of proximal development (the difference between what the child can achieve independently, and what they can achieve with support). However, Berk and Winsler (1995) discuss a concept of 'zone of executive functioning', which focuses on independent, child-centred factors and does not depend of what adults provide in the way of scaffolding. The zone of executive functioning appears to link with research literature relating to metacognitive thinking and reflection, self-teaching and self-evaluation. In this study with precocious readers, many examples were provided of children's systematic or metacognitive thinking.

The children were able to self-assess their own achievement. Gillian had drawn some hearts on her work, and was proud of having learnt to draw them recently. She pointed to them, explaining "These ones are good one, and these one are not very good" (G: field notes, p. 4). Children also showed self-reflection as they read. Isla was aware when words became too difficult for her on a reading assessment, saying, "I don't know these words". Her comments coincided with the point at which she did begin to make errors. At the exact point the test procedures suggested I should ask her to stop, she emphatically stated, "That's all", indicating she wished to finish the task (I: field notes, p.2). Gillian also appeared to know the precise accurate level of her reading ability. At the third reading passage, she stated, "My energy's gone away now" (G: Field notes). Half way through the last set of comprehension questions, at the level appropriate for ending assessment, David similarly stated, "I think I've done enough reading now, thank you!"

Children's self-descriptions also illustrated an awareness of their own abilities.

*Oscar's father: He knows he's good*

*Oscar's mother: He doesn't show off - he's not one for bringing attention to himself*

*Oscar's father: He will sometimes say, 'I'm a good reader . . . always known he's good'.*

(N: parent interview, p. 13)

Another of the case-study children, Alistair, spontaneously drew a picture for his early childhood teacher, which he referred to as "The laboratory inside my head" (see Figure 2). He pointed out the areas where "creative things happen", and also explained that there was more in the laboratory, but he could not draw it all. Alistair also told his teacher that "not everyone has a laboratory in their head". However, during a research interview with his early childhood teacher, she mentioned her concern that Alistair's comment may be elitist and might mean that he considered that he was better than other children. The importance of Alistair's contribution includes his self-reflection on learning and on his own cognitive and creative abilities. Alistair was also aware of differences in ability and learning style between himself and other children.

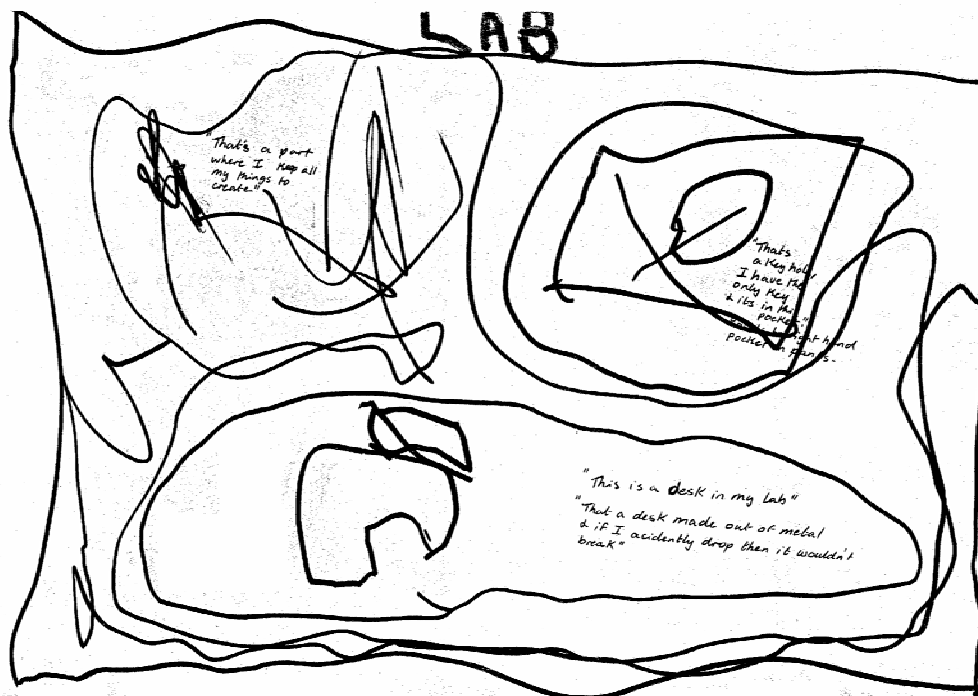


Figure 2. Laboratory.

*Spontaneous learning*

In this study, many parents referred to their children's implicit and intuitive understandings as "spontaneous learning". Sometimes parents referred to children "teaching themselves", but clarified that "it just happened" or was "natural". In this study, children's learning was not always taught, not always metacognitive, and sometimes spontaneous.

*A little concerned at the fuss everyone was making over his reading – it is just something that happened and no big deal . . . spontaneous. (A: field notes, p. 1)*

*Isla revealed she could read just before 3 years when she took a cereal packet out of the cupboard and began to perfectly read what was written on the side – I couldn't believe my ears. [The packet text] included the word 'fantastic'. (I: Parent interview)*

Several of the children were not aware that other children couldn't read; they thought that everyone "just could" read. Erin's mother described to me her opinion that she viewed Erin's reading was something that had "just happened" and that Erin had ownership of it (E: Field notes). David's parents commented that his reading development didn't appear to be in stages – the comment was made repeatedly that it happened 'overnight' – 'one day he couldn't read, the next he could' (D: field notes, p. 3).

*It may be compressed in my memory, but it seemed to go quickly from knowing names and knowing sounds to being able to attempt words – all within a span of 3 months. (H: parent interview, p. 6)*

*She's one of those kids that things happen so rapidly through the stages that you just about miss it. (E: Parent interview, p. 5)*

Parents were adamant that the children had not been formally "taught" to read, and told stories to clarify this, for example worrying that teachers would disapprove, or that they might teach incorrectly. One parent told me that, as a primary school teacher, she has seen early readers arrive at school and that the teachers "didn't know what to do with them". She had determined not to teach her child, but the child learnt spontaneously.

*Compared with other children, she'll go into [her school] and they will not have experienced other children like her. In fact, I'm worried, and this is why I've not deliberately taught her . . . I'm too nervous to have a frank talk in case I get off-side with them. (I: Parent interview, B7)*

*In actual fact Isla hasn't been taught – not consciously – I wasn't aware I was doing it – "taught" in inverted commas – I didn't set out, at no stage . . . (I: Parent interview, p. 8)*

*At no time did I set out to teach her to read. From her earliest years I have followed her lead and interests though I have introduced new books, tapes, ideas to her to see if she'd be interested in pursuing them. If not I've left it until a later time or dropped it. At all times I've been ultra careful with her attitude to learning, being careful not to turn her off in any way [original emphasis]. (I: Correspondence)*

*I have not deliberately set out to teach Isla to read at all – it makes for problems with the school system. Even after I noted she could read I was bending over backwards not to affect her positive attitude – we don't do it if she doesn't want. I follow her lead, but I do present a wide variety of learning [experiences]. (I: Parent interview, B7)*

The notion of spontaneous learning also describes the experience of children learning effortlessly, they did appear to need to 'work' at learning to read.

*She's galloping . . . gobbling up her book like eating very fast. I tell her it helps her to space, help her to breathe. (G: Parent interview, p. 7)*

*The teachers told me that he devoured books, for example reading all of their new library collection in a single morning. (M: field notes, p. 4)*

### **The Role of Adults**

Jordan's (2003) continuum of teaching includes responsive, mediated and directive approaches. In this section of the paper, responsive and directive approaches, as different ends of the continuum, are focused on. The case studies of precocious readers highlighted that parents tended to be responsive, following the lead of their children. Teachers were more directive, with some teachers emphasising the *age* of the children as being more important to these teachers than the children's ability. There were, however, a range of approaches from and between individual parents and teachers, including mediated approaches.

### **Responsive support**

Parents appeared to have a practical understanding of their children's zone of proximal development, demonstrating skill in recognising teachable moments and ensuring that learning was natural and easy for children. The parents indicated that they followed the lead of their children, responding to the children's strengths and interests.

*I don't put her in a situation when I have to help her: it's co-operative, shared reading. She might say "I'll do that", she'll indicate she wants to do that. If she doesn't know a word, if it's in her vocabulary I'll link in to the picture, or if not I'll tell and explain. (I: Parent interview, p. 10)*

*We sang to her, nursery rhymes, danced around with her (p. 6) . . . We present ideas to see if she's ready to learn new things. [Her mother] is giving her a variety of experiences that will help her. Discuss and present her with books. Try to give her new things, social development, play . . . She's not been allowed to have difficulty – she doesn't normally have difficulty. She's not in a situation of difficulty because we're always supportive. (I: Parent interview, p. 7)*

*When I see a teachable moment. (I: Parent interview, QB7)*

*We take the time to listen. (N: Parent interview, p. 6)*

*Early on when she showed an interest or readiness I presented materials. (I: Parent interview)*

Despite their responsiveness to their children, the parents also noted that they still considered that the children played a key role in facilitating their own learning; "He has an idea in his head of exactly what he wants" (H: Parent interview, p. 6), and they saw their support as "following the lead" of their children.

Children's involvement with activities and experiences was also seen by parents as *partnership* rather than as "top-down" teaching. Henry's father mentioned Henry "*helping me work on things in the garage*" and his mother noted "we've spent quite a lot of time on the beach

together". Isla's activities included "helping feed the animals" [italics added]. Thus, the parents acknowledged the children's contribution and participation.

### **Directive 'teaching'**

Some positive interactions between teachers and children were observed, however from over 20 hours of observational data in early childhood settings:

- only two positive comments were observed from teachers to children, both expressing thanks for things the children had done (rewarding conforming)
- in three observations, there were *no* interactions between the child and *any* adult.
- in at least one observation, the *only* comments to a child were directive, for example, "do your work".
- forty- eight per cent of all early childhood teacher comments recorded were directive, for example, "sit down", "tidy up" or "be quiet"
- eighty one per cent of all interactions were brief, rather than sustained<sup>2</sup>
- in some instances children initiated interaction but did not receive any reply from the teacher.
- nine per cent of the teacher comments appeared to be rhetorical (the teachers walked away after speaking, without waiting for a reply or feedback).

The early childhood curriculum refers to "warm supportive relationships", yet organisational and directive interactions dominated several observations. In some of the settings with more formal programmes there was a noticeable amount of wait time as children lined up to have their work checked or to ask permission to use resources, or waited (on the mat) for the teacher to be ready to continue "teaching". These aspects of teaching were unlikely to have enhanced precocious reading ability.

However, in three of the four schools, programmes were adapted in an effort to meet the children's learning needs (using extension, acceleration and individual programming), nevertheless teachers referred to precocious reading ability as a "predicament", "challenge" and "problem". In a fourth school, there was a dilemma regarding whether a child should be "allowed" to have her own way and the need to know that the teacher had "control". "Little bit of a control thing there" (Teacher interview). At this school, the teachers wanted to work on "broadening out rather than shooting up". For example, it was felt that a focus on writing would help the child's writing to "catch up" to reading ability. Becoming "even" was considered to be more important than knowing where the actual reading ability was. Organisational factors also outweighed pedagogical decisions in the example below:

*[the child] may be better in another group. The last time they worked the groups out there was not a suitable group ... there would have been eight in the group - 'we wouldn't have enough books.* (Teacher interview)

There were three observations of children having reading "lessons". In general, the New Zealand early childhood sector has a non-formal approach to literacy, for example, focusing on phonological development through rhyme and song rather than formal teaching of phonics or formal reading (Cullen, 2001a, 2001b; Foote, Smith, & Ellis, 2004). Reading lessons were part of the private preschool and Montessori preschool programmes, but not of the kindergarten programmes. Several of the parents who had chosen formal preschools for children participating in my study did so because their child was *already reading*, and they believed that a more academic programme would provide helpful extension for their children. However, it is important to note that the text level of books used in the observed reading "lessons" was *significantly* below the reading ability of the children.

I observed teachers who had previously told me that the children were well- advanced in reading take the children aside and try to "teach" points such as the book title, one-to-one finger pointing, colours and concepts like "big" or "little". My initial presumption when I observed this was that teachers were loath to "push" children too far, and that they deliberately chose books closer to the child's chronological level. However, when a teacher presented an emergent level book *Three Little Ducks* (Melsner & Cowley, 1980) from the *Story Box* series to a child in this study, she said that the book is "a hard one today". Since the teacher had recommended this child to me for inclusion in my study, telling me that the child could read well, the teacher must have realised that the book was not difficult for this child. Two pages of the text read, "Three little ducks came out of the eggs. Mother duck looked after them.", however the child had a reading age of over 8 years. Parents did not consider that the early childhood reading "lessons" were "teaching" their precociously reading children to read; they could *already* read. One parent commented that her daughter found the books frustratingly easy, saying, "I don't think she thinks much of the books the preschool gives her to bring home ... she'd rather read [her older brother]'s books.

These examples of directive "teaching" responses reinforce that the children's precocious reading was *not* as a result of adult facilitation, in fact persisted almost despite some adult intervention!

### **Being taught to be "Just a little 4-year old"**

Perspectives of how a 4-year-old 'should' act repeatedly emerged within this study. Teachers and the children's age peers appeared to focus on chronological age, making judgments about what they considered to be age-appropriate. Parents appeared to be more flexible and based their expectations on their children's individual potential, but reported they repeatedly received age-related comments from other people. Teachers highlighted the chronological age of the child, with statements such as "just a little 4-year old". Teachers may have commented on the children's chronological age to justify systems that keep the children with their age peers rather than ability peers.

The example of being "taught" to read the "hard" book *Three Little Ducks*, described in the previous section of this paper, illustrates a teacher defining for a child and the peer group what books are *supposed* to be hard; in other words, what they should expect to be doing as a

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<sup>2</sup> Dunkin (2001) defines a sustained interaction as three or more sustained exchanges (Dunkin, 2001).

4-year-old. In other words, *Three Little Ducks* was “a hard one” for other 4-year-olds. Teachers made several comments reinforcing chronological age rather than individual ability or potential capability levels.

*David is still a little boy – cries if he doesn't have a pencil (teacher).*

*She's a little girl, matches my group. Things that match her, match my group [of children the same age] (teacher).*

*[Despite her reading ability] In other ways she's a normal little 5-year-old (parent).*

A former kindergarten teacher of one of the children in this study met the child's primary school teacher at a professional meeting. The kindergarten teacher said how lucky the school teacher was to have the child in her class, and what a wonderful reader he was. The primary school teacher reportedly snorted and said, “Hm, but he can't tie his shoe laces and he takes forever to eat his lunch”. She also criticised him for sitting and daydreaming alone with his lunch on his lap instead of playing with the other children as soon as possible at break times. The school teacher valued independence in her class pupils more than advanced academic skills. The kindergarten teacher reported this anecdote to me because she was sad that the child's ability and potential was not appreciated once he began school.

Some teachers focused on children's difficulties rather than their strengths. A school principal, for example, told one child's mother that unless a child was outstanding in every curriculum area they could not possibly be gifted. Another teacher minimised a child's reading ability by noting that the child was “still a 5-year-old writer”. In another example, a family member who had been a primary school teacher warned a family in this study that the teachers would see early reading negatively and give them “a hard time”. This deficit approach highlights the child's “needs”, and also validates the teacher's role to “help” the child. This approach may indicate that some teachers wanted to find reasons to justify that the children were not “special”.

These examples illustrate that many teachers reinforced being “normal” more than they truly appreciated diversity. They encouraged precocious readers to focus on “broadening out”, “settling in”, “being rounded”, “contributing” “acting appropriately” and “learning what is expected of a 4-year-old”. These goals encourage normalisation. In my study I observed some precocious readers minimise their reading ability and pretend to practice early reading concepts such as one-to-one pointing to please their teachers and thus become assimilated with their age peers.

## DISCUSSION

Perez, Peynircioglu and Blaxton (1998) noted that learning strategies could be secure at a young age. The *social constructivist* perspective highlights the role of parents, teachers and other involved people who support children to develop their growing memory-use skills. *Cognitive constructivist* and information processing perspectives acknowledge the role of the individual in developing and using memory-use strategies (Hulme & Roodenrys, 1995). The *bio-ecological model* also acknowledges innate and potential capabilities of individuals. My study of precocious readers proposes that multiple theoretical perspectives underpin learning, and it is important to acknowledge each. In particular, individual children's abilities should not be overshadowed by an emphasis on the social constructivist, or sociocultural, pedagogy of teachers. No matter how much information is provided to children, whether they learn is influenced by *their* thirst for learning, and how willing and able *they* are to absorb new knowledge.

Parents perceived that the learning of children participating in this study to be “instantaneous”, and they described a different concept from the zone of proximal development and the zone of executive functioning. A key difference is one of rapidity: a “flash” of inspiration or a “moment” of intuition are terms we use in discussing learning. This view links to the differentiated giftedness-talent model of Gagné, which recognises the importance of a learning “catalyst” (1985, 1991), that the catalyst will often be external, but that receptivity to the catalyst is within the learner. Spontaneous learning can also be linked to independent and non-conscious learning acquisition, described by Lewicki, Hill and Czyzewska (1992), and to the work of Walters and Gardner (1986), who refer to a “crystallizing experience”. Crystallizing experiences are not “sufficient for ultimate achievement”, but can, when timely, prove to be powerful (Gardner, 1986). The experiences of the children in this study illustrate that it is the individual's receptivity rather than the experience that is ultimately decisive. Inagaki (1987) notes the ability of young children to make spontaneous developmental gains, and discusses children's “genetic predisposition” for learning (Inagaki, Hatano & Inagaki, 2002).

Roopnarine and Johnson (2000) note the *intensity* of interactions and relationships in the home setting between parents and children. This intensity was illustrated by the many hours some parents spent reading with their children, talking to them, enjoying their company. Parents described their parenting role positively, not as a responsibility or chore. Although I have asserted in this study that the achievements of the children should not be attributed to their parents, it is also clear that parents provided key support for the children, allowing their potential to flourish.

Children autonomously create and capitalise on opportunities to learn. Co-construction describes a process of shared understandings and interaction that acknowledges the important role of the learner (Jordan, 2003; McNaughton, 1995; Rogoff, 1998). Contemporary co-constructive perspectives may also imply that learning *necessarily* occurs in collaboration with an adult or peer. However, my thesis challenges that the learning is *necessarily* through connection with adults or ‘more competent others’; this is often so, but not necessarily at all times. Children also “just” learn; it would be adultocentric (Litowitz, 1993) for adults to claim responsibility for, or even partnership with, all the learning of children.

An adultocentric view of the child's behaviour [is]... too exclusively concerned with what is being done by the dispensers of knowledge ... A child performing in the zone of proximal development with an adult believes himself to be accomplishing the task and that the adult's organization of the task ... permits that illusion or fantasy (Litowitz, 1993, p. 190).

Children in my study were not merely recipients of given, or even shared, experiences; they also cleverly exploited situations and resources to best advantage and actively generated learning opportunities. The children demonstrated that they were rich in potential, strong, powerful and competent (Malaguzzi, 1993), and “ready, willing and able” to learn (Carr, 2001). They also demonstrated their ability to operate bimodally (Carr, 1998) or multimodally, as they altered their behaviour, interactions, use of materials and levels of achievement according to the context they operated in. Sometimes this involved hiding or minimising abilities, or “dumbing down” (Price, 1995) at 4 years old.

A more equitable view of power and influence between adults and children is proposed by Baker, Scher and Mackler (1997): “The direction of influence is not simply from parent to child; rather, children’s behaviors influence those of their parents, which in turn influence future behaviors of the children” (p. 78). Scarr and McCartney (1983) proposed biological effects “determining not only which environments are experienced by individuals but also which environments individuals seek for themselves” (p. 424). If we respect children as active, empowered learners, then we should not expect that they need to have learned everything from adults.

## CONCLUSION

The case studies of precocious reading highlight that learning is both an individual and social phenomenon. Children’s learning may be *affected by* adults, but adults cannot claim responsibility for all of children’s learning. Sometimes children learn spontaneously, without adult influence or involvement.

This study has also illustrated that some adults give negative messages and disincentives to children with special abilities. Age-related expectations and overly-directive teaching are barriers to learning and achievement. Rather than focusing on adult ‘teaching’ this study of precocious readers reinforces the importance of adults being responsive and supportive, and valuing and acknowledging children’s *own* abilities.

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## ACADEMIC ACCELERATION THROUGH THE EYES OF YOUNG KIWIS

**Author(s):** Juliet Martin, Christchurch College of Education

### ABSTRACT

This is an account of an investigation into the non-radical grade skipping experience of three gifted New Zealand children aged nine to ten. An appraisal of events and anecdotes from the children's lives during the immediate acceleration period confirmed the positive academic, social and emotional benefits found in existing acceleration literature. Case studies captured the students' perspective on various aspects of the acceleration process. These included their reflections on the acceleration decision, a transition period and their experiences and feelings over the first six months in their acceleration classes. Recommendations for parents and schools arose from an interpretative analysis of the findings and have implications for the emotional, social and academic welfare of gifted accelerated students and gifted students per se.

## ACADEMIC ACCELERATION THROUGH THE EYES OF YOUNG KIWIS

### Introduction

From December 2003 until June 2004, Padfoot, Pup and Claire, aged nine and ten, met with the writer. They attended different schools and, at the time, were lone acceleration candidates in their environments. This paper provides, firstly, a description of the participants, their families and home-life. It then relates the children's experiences in the acceleration decision-making process, and, thirdly, the paper looks into the students' acceleration experiences (academic, social and emotional) over the first six months of their grade skipped year, the actual period of the study. The stories in this paper are about individuals but the messages they contain are for everyone who in some way encounters this school-based provision.

### Research Procedures and Methodology

The overarching aim of this study was to look at academic acceleration from the children's perspectives. Case study, a qualitative research design, was used as it enables investigations that are in context, detailed and holistic (Punch, 1998, 244) and reveals the "insider's view" (Minichiello, Fulton & Sullivan, 1999, p.39).

Selection of the participants was guided by Rogers and Kimpston (1992, p. 59) who identify "the greatest research-supported academic and social effects (of grade skipping) to be in grades 3-6", that is, Years 4-7 in New Zealand. For ease of access, they were sought from one city and its environs, and letters were sent to principals of all schools in this geographical area who catered for Year 4-7 children. The total number of schools was 150. Further contact (through phone calls and visits) identified three possible subjects in the target range. Careful research procedures and ethical considerations were followed to establish that the project could go ahead with these children.

Triangulation of data was achieved through a 'between methods approach'. This approach "embraces the notion of convergence between independent measures of the same objective" (Cohen, Manion, & Morrison, 2000, p. 114). It serves as a check on validity and helps address bias. Over the six-month research period, four semi-structured, open-ended interviews with the children took place and were the primary source of data. A guiding list of broad headings ensured coverage and was drawn from acceleration research literature; however, the necessity to be open-ended and to allow the subjects to lead took precedence. Teachers and parents were also interviewed. All interviews were taped and transcribed. Classroom observations took place, and the development of a portfolio of artefacts (described in Martin & Merrotsy, 2006) generated rich data. Two instruments, Rogers' (2000) Attitude to School and Learning Scale, and The Coopersmith Self-Esteem Inventory Form (Coopersmith, 1981), were used to investigate affective issues. They were administered twice: immediately prior to the acceleration year and six months later, at the end of the research period. Data was also gathered from documents such as school reports, and, where available, educational psychologists' reports.

An examination of all data followed procedures outlined by Hycner (1985, pp. 280-294). It considered the extent to which propositions converged and diverged, and what was common and what was unique in the three case studies. The checking and rechecking of themes inherent in this process, reinforced the reliability and validity of the evidence presented.

### The Participants: A Description

Padfoot, Pup and Claire (who chose their own pseudonyms) were their family's first born, a characteristic of accelerated children also noted by Plunket, Harvey, and Harvey (2003, p.6). they were all girls which contrasts with studies that note a predominance of boys identified for acceleration (Heinbokel, 1997, p.69; Prado & Schiebel, 1994, p.68). All had May birthdays, were among the oldest in their classes prior to acceleration and did not stand out as physically different in their accelerated classes. They exhibited many characteristics typical of gifted children (as in Gross, Sleaf & Pretorius, 1999, pp. 22-23). Pup had extraordinary levels of energy, and all had energy and enthusiasm for their many interests. Pup and Claire had busy extracurricular schedules that included sports and Padfoot displayed a high degree of risk taking in recreational and physical pursuits. All of the participants were happy spending time by themselves and all were thinkers, concerned about large issues such as war and terrorism, refugees and the sick. They were described as kind and helpful, responsible and sensible. Padfoot and Claire had sophisticated senses of humour, Padfoot carrying this to an overt delight in mischief. They were all keen readers. Padfoot and Claire had a passion for Harry Potter and Padfoot extended her interest to *The Lord of the Rings*, as both a reader and collector of memorabilia.

The girls often demonstrated maturity beyond their years, having 'older heads' from their earliest days. Padfoot and Claire were independent and Pup developed independence after acceleration. All were sensitive. All made valued contributions to classroom discussions but none lead the way. All were described 'gifted' by their schools, perhaps indicating a change in New Zealand's thinking about students with high abilities (Moltzen, 2000, p. 338). Checked against criteria in the Iowa Acceleration Scale (Assouline, Colangelo,

Lupkowski-Shoplik, Lipscombe & Forstadt, 2003) Padfoot, Pup and Claire came well within the range that recommends acceleration. Their year advancement, from this perspective and those provided below, seemed to be appropriate.

The three girls appeared to have a secure sense of self. They reported personal stands and attitudes that countered pressures to conform to the surrounding norms. They also reported on their differences, for example, differences in behaviour, appearance, ability and interests, and while they showed no sense of shame for being different, a feeling sometimes expressed and experienced by gifted students (Greenspon, 1998, p. 163), they did not always find it comfortable. Padfoot expressed her own intolerance of difference in others (which did not appear to be a reaction or cover-up for her own feelings), but Pup and Claire demonstrated resignation mixed with some hurt from reactions they encountered. However, they did not apportion blame for negative experiences and both Padfoot and Claire accepted responsibility for decisions and actions that did not turn out for the best. Although Padfoot denied that she was 'gifted', an attitude of gifted students also noted by Swiatek (1995, p.159), she did not appear to mask her abilities and no girl showed unhealthy perfectionist tendencies as described by Silverman (2000, p.59).

Socially, they all seemed adept, relating easily and well to adults, including their teachers, and to their classmates. Although they reserved most of their time and attention for their friends, at times expressing disinterest in regular classmates, they were described as considerate and courteous, having group skills and showing confidence in their class interactions. Pup was recognised by her teachers as a natural leader. She particularly enjoyed helping others and saw herself as a peacemaker, intervening in other students' conflicts.

The issue of friends was very important to Padfoot, Pup and Claire, and contributed to their happiness at school. The number of friends was not a concern but loyalty was, a finding supported by Gross (2002, p. 28). Padfoot and Claire used the term 'friends-friends' as distinct from 'friends'. The former were the people they could trust, whom they would have round to their homes, and as expressed by Claire, they were the people with whom she felt 'normal', a descriptor also found in Gross (1994, p. 4). Prior to acceleration, Pup and Padfoot struggled to find close school friends. They talked about their out of school friendships, based on similar interests and both had a special friend who was no longer at the same school. Maintaining these friendships was very important. Pup also reported that she had been called a 'geek' in the past and was anxious about having no friends or being bullied after acceleration. (Incidentally, her fears, like those of Rawlins' (2000, p. 132), subjects, were not realized.)

Each of the girls belonged to close-knit, New Zealand - European, two parent families where children and their opinions were respected, and where knowledgeable parents played an active role in their children's lives. Each home bore evidence of busy, activity-focused families who valued education and books. No parent was unemployed. Four worked full-time and one part-time and each household had a parent at home after school on most school days. All the case studies provided evidence of physical and emotional security and support from their families. No parent appeared 'pushy' or to unduly pressurise their child. These homes were consistent with findings on the home backgrounds typical of identified gifted children (Janos & Robinson, 1985, p. 172) and of gifted children who are selected for programmes (Robinson & Noble, 1992, p. 57).

### **The Acceleration Process**

All three girls came from schools without established acceleration policies or procedures. One school sought student assessment from registered educational psychologists and the others used their own data and observations. They all made a move towards the acceleration decision in the last third of the year, 2003, in preparation for the beginning of 2004. The schools initiated the process for Padfoot and Claire, whereas Pup's parents introduced the idea of acceleration. In all cases the initiator believed that the student was either performing, or capable of performing, at a higher level than her present year level placement. In Pup's case this had been evident since she was five years old. Her parents were relieved to find a teacher who concurred. The mothers of Padfoot and Claire were more hesitant about acceleration than their fathers. They voiced concerns regarding possible social difficulties in adolescence. On the other hand, their fathers voiced concern over the effects of boredom and lack of challenge, and mentioned their daughter's age as a positive factor in deciding for acceleration. However, all parents mentioned the importance of friends. Their daughters' happiness was of primary concern. Evidence of the girls' all round high ability and the belief that socially and emotionally they would cope with acceleration emerged from discussions between home and school. Each of the girls was consulted about the proposed move by their parents, unlike students who were accelerated in Freeman's study (2001).

The range of issues discussed by the decision makers above supports the notion that acceleration is a placement that involves holistic consideration of the child. It demonstrates the importance of discussion and contributions from multi perspectives and suggests that the acceleration decision should be the result of collaboration and a strong home-school partnership.

Following the decision to accelerate all girls had their classification changed. They had begun their acceleration transition year in composite classes where two or three year groups were placed together. After the acceleration decision, Pup and Claire were moved from one year group in their composite class to the next and remained in the same room with the same teacher. Padfoot (who was considered to be underachieving) was advanced one year group and moved to a new class with a different teacher. This caused difficulties for the three. Padfoot was unhappy in spite of having two friends in the class. She thought the work was no different and she missed her previous teacher. In addition, questions from students about her reclassification and room change made her uncomfortable. This was also true for Padfoot. Difficulties for Claire included unwelcome 'favoured' treatment from her teacher and ongoing confusion over which year group she was aligned to, in the composite class, with respect to sport and school outings.

At the end of the year and transition placement, Pup and Claire were reported to be academic high achievers. Padfoot, although rated as a very good student, was still perceived by teachers to be underachieving. Had she experienced a greater feeling of control over her placement decision, this may have been different as Bandura (1997, p. 165) notes that a sense of control contributes to student adjustment. All girls changed classroom and teacher in 2004.

Although Padfoot, Pup and Claire were happy to be accelerated, they all experienced some difficulties with their mid-year change in classification. Research (Assouline et al., 2003, p. 15) recommends that acceleration take place at natural transition points, for example at the beginning of a new year when all students are undergoing change. For these students who were in the junior level of composite classes and who had high ability students in the upper levels of these classes, it seems reasonable to ask why their classifications needed to change in midstream? The New Zealand curriculum falls into broad bands (Ministry of Education, 1994, p. 20) that enable teachers to provide for students at all levels of ability and to group accordingly. Therefore, in a composite class, the potential for appropriate provision and flexible grouping is even greater.

#### **The Acceleration Year, 2004**

As 2004 approached Padfoot, Pup and Claire looked forward to their new classes. All had concerns (unsubstantiated in the event) that the work might be too hard, and two feared that people would comment on their acceleration placement. They all anticipated interesting work and Padfoot and Pup referred positively to the teacher they would be having. These two were concerned that good friends were leaving to attend other schools and 'friends' in the new class was an issue. Pup and Claire were going into composite classes where their year group was the youngest and this challenged their confidence initially. It seemed that no-one talked to the girls about what they might expect and conversations with them revealed that support from students who had experienced acceleration in the past may have helped overcome their anxieties.

Six months into their accelerated classes, Padfoot, Pup and Claire reported that they did not think about being accelerated. Padfoot said it was just a thing that had happened and Claire that she just got on with it. She was positive about the move and would not go backwards but also said, 'It isn't as easy as you think it is. Not as fun.' Pup said she had lost her 'boredness' and preferred her new class. Padfoot who had been particularly diffident, said she was enjoying school 'actually', but mainly because of her friends. None felt that she had lost anything by being accelerated and Pup and Claire expressed the importance of putting effort into the experience.

Academically, each girl achieved at a significantly high level. All were rapid learners and over the two terms they progressed to the top half of their classes, frequently performing amongst the top two or three able students. They reported no concern for gaps in their learning and teachers reported that any gaps were rapidly filled (findings supported by Heinbokel, 2001, p. 52). Padfoot and Claire exhibited critical thinking skills beyond the level of their new classmates. Claire and Pup had issues with spelling and Padfoot and Claire with multiplication tables but after six months they all reported increasing confidence in their abilities, and motivation to learn and achieve was occurring in self-selected areas. Significant overall achievement for Claire was demonstrated when she won an academic scholarship to a new school for 2005.

The level of the girls' achievement may have indicated that one-year of acceleration was insufficient (see Vialle, Ashton, Carlon & Rankin, 2001) and that acceleration without a differentiated curriculum is an unsatisfactory provision for the gifted student (Gross, 1992, p. 91). The belief that acceleration itself increases the motivation of students to achieve (Rimm & Lovance, 1992, p. 100) seemed only partially true. Factors such as appropriate degree of challenge, connection with student interests and a satisfactory student-teacher match appeared significant in this study. Furthermore, the students themselves appeared to be the best judges of their programmes. Initially, none of the girls found the work difficult in their new class. Six months on, they believed it was at the right level and reported higher levels of satisfaction than the previous year. However, Claire and Pup were starting to find that they completed work more rapidly and at times were bored with nothing to do (supported by findings in Vialle et al., 2001). Interestingly, their teachers believed, wrongly, that the 'doing' and 'completion' of work were signs of interest and satisfaction.

In the area of relationships, each girl's experience was positive. Over the first six months in the acceleration classes, they reported new friendships with girls up to eleven months older with like abilities, interests, and qualities, which supports VanTassel-Baska's findings (1991, p. 150). At mid-point in the acceleration year, all were content and secure in their friendships. The peers, who had played on Claire's younger age in her acceleration transition period, had let the matter go, and now she felt a confident equal, Padfoot's friendship group had grown from two to four. She sat with them in class and was not concerned about other classmates. The friendships were based on similarities a finding supported by Gross (2002). Pup was also happier. She had more friends than ever before and reported feeling comfortable with older children. All teasing had stopped and she felt accepted for being herself. Both she and Padfoot had found ways to keep in touch with the close friends who left their schools. In addition, all the students had comfortable, working relationships with their regular classmates and teachers.

Fears of emotional harm frequently associated with acceleration (Robinson, 2004) were allayed as Padfoot, Pup and Claire reported growing self-confidence during the first six months of acceleration. Padfoot's anxiety over her teacher's moods abated. She enjoyed being her mischievous self and happily accepted the consequent punishments. She also appeared to like and respect her teacher, which may have indicated a relationship that allowed her to be herself. Padfoot identified ongoing change - change of class and therefore of teachers, classmates and friends, and change through friends leaving the school - as an unsettling feature of the previous year. The new year brought change only at its beginning and this may have contributed also to her sense of well-being, a finding supported by Coopersmith (2002). Pup was rapidly developing the confidence to solve her own social-emotional problems without turning first to the teacher or her parents for help. Claire, naturally cautious, quietly worked out strategies for tackling challenges and said she believed that time would see her confidence grow. No-one reported thoughts, feelings or actions that raised concerns about their general well-being, state of mind or dissatisfaction with their self. All, in their accelerated context, reported the sense of belonging and acceptance of their differences necessary for a healthy self-concept (as discussed by Greenspon, 1998, p. 163).

## CONCLUSION

For Padfoot, Pup and Claire acceleration appears to have been a success, and their stories can contribute to the positive findings of existing acceleration research. Why, then, does the community continue to hesitate, still demanding sure and safe methods for identifying the 'successful' acceleration candidate? The writer's response is to suggest that life itself is never sure and safe. Yes, it would be foolhardy to cross the road without first looking both ways and it is wise to use a pedestrian crossing. It would be equally foolhardy to accelerate a student without the same commonsense approach, and 'pedestrian crossings' (e.g. Assouline et al., 2003) are available. Obviously every student has unique characteristics and circumstances and acceleration will not be right for everyone. Padfoot, Pup and Claire may have been 'safe' candidates but one suspects that a large number of 'safe' candidates exists. Decision makers acknowledge acceleration's academic benefits while they worry about its social and emotional implications (Southern, Jones & Fiscus, 1989, p. 34), and yet Coleman (1995, p. 172, p. 174) suggests that a child's academic achievement and motivation spawn social and emotional contentment! Perhaps it is time to break down the walls that separate the cognitive, the social and the emotional needs of gifted students, accelerated or not, and to recognise their inter-dependency (Vialle et al., 2001). The longer educators ponder, the longer some of our students will sit in class without the challenges, motivation, satisfying friendships and growing confidence that acceleration facilitated for Padfoot, Pup and Claire.

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## IDENTIFICATION: NUMBER ONE ISSUE OR NOT?

**Authors(s):** Anna Meuli, School of Primary and Secondary Education, Victoria University of Wellington

### ABSTRACT

Identification has been rated internationally as the number one issue in the area of gifted and talented education. This paper will highlight, both from literature and from the author's experience with schools as a gifted education adviser, some of the complexities associated with identification. Some of the issues raised are worthy of consideration, while others serve merely as a distraction from engaging with the process. These are identified throughout the paper as "red herrings". The view is expressed that, despite the newness of national developments in the area of gifted education, which has brought identification to the forefront of teachers' minds, it need not be seen as the number one issue at all. What is advocated is that teachers take a step back to refocus on the purpose of education, and their specific responsibilities within that; that they look to their existing school systems and processes for identifying learners with special learning needs. Here one finds an already well-developed set of school processes that, for the most part, can serve this purpose equally as well. These existing principles and procedures dovetail nicely to fit with the principles and recommended procedures governing the identification of giftedness and talent and the associated special learning needs of those pupils. Approaching identification from this angle takes much of the angst out of the process; it creates a starting point which fits comfortably with common teacher practices to provide a structure for identification that is already familiar to teachers, and one that they can engage with. What is needed is ongoing professional development to broaden teachers' understanding of: more contemporary concepts of giftedness, including: common behavioural characteristics; the vulnerabilities and issues such students experience; a willingness to engage with one's community to develop shared understandings and a true sense of partnership; and the review of special education procedures in order to be able to identify the special learning needs of this group of learners. Schools do not need to create a whole new set of procedures to layer upon those already in existence, nor do they need to feel that a complicated layer of bureaucracy around the process of identifying and providing for our gifted and talented pupils is necessary in order to do the job well.

### INTRODUCTION

Identification of giftedness and talent is considered a perplexing issue (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004) and, in the 1990's, was rated by 29 American experts as the number one issue out of a list of twelve topics on gifted education (Cramer, 1991; cited in McAlpine, 2004a). It also ranked top equal as the topic with the most entries in the 1992 *Bibliography of NZ Documentation: Gifted and Talented Children* (McAlpine, 2004a). Is it still considered the number one issue ten to fifteen years later? From my experience in schools as a gifted education adviser I would suggest that this is so. Certainly, recent national developments in the area of gifted and talented education (Ministry of Education (MoE), 2002a), and the mandatory requirement for schools to now show how they identify and provide for gifted and talented learners as a group of learners with special education needs, has pushed identification to the forefront of teachers' minds. To this end, it is very much one of the top issues that teachers are grappling with throughout our country at the moment, and there appears to be a high level of anxiety evident in teachers while engaging in the process. But does it need to be the number one issue? And why does it create such a high level of anxiety? While it is important to have an awareness of the issues associated with identification, it is also important to ensure that this does not result in paralysis, most noticeable by a lack of teacher confidence and a lack of engagement with the process.

So what are the issues associated with the identification of giftedness and talent? Which of those are authentic issues and which are the red herrings?

### THE ISSUES

The main concerns associated with the process of identification appear to be that either it is not happening, or that, on the whole, it is not happening very well. While there are many reasons for this, not all will be dealt with within this paper. Those that are, are organized under the following headings:

- Focus
- Purpose
- Methodology
- Skill and Confidence
- Use

#### Focus

*"We have a number of children identified as gifted in our school but I believe that gifted children may cross your path perhaps once or twice in your teaching career."*

The process of identification is somewhat dictated by the concept of giftedness held by those engaging in it. That is, what one believes giftedness and talent to mean will drive what one is alert to look for, and, as such, the concept held acts as a focal point from which everything else grows. One of the issues around identification is that there is variance in belief about what constitutes as giftedness and talent by many New Zealand teachers within their own schools. Recent national research results indicate that only half of the schools who participated in the survey (48% of all schools) reported having a definition, and that, upon closer scrutiny, many of these were not definitions as such, but rather descriptions of behaviours, procedures, etc. (Riley et al, 2004). Additionally, while the reported definitions reflected a multicategorical view of giftedness, what was missing was the recognition of the cultural, social and emotional, and spiritual dimensions proposed and explored in contemporary research and literature (Riley et al, 2004).

Given the historical lack of national focus and professional development in this area in New Zealand (Moltzen, 2004), it is easy to see how it is that New Zealand teachers hold varying views about what giftedness and talent is or means, and that schools have not seen the importance of developing and articulating a common understanding. The result of this, in terms of identification, is that in practice teachers

disagree over the children nominated. Two classic examples of this are exemplified in the following claims, the first made by a teacher, the second by a principal... "Gifted? Never gifted me with any work!", and ... "We are a decile one school and do not have any gifted children here." Both of these claims reveal a difference in understanding around what constitutes giftedness. One who would make the former claim would believe that such ability could only be acknowledged through demonstrated performance. Contemporary views of giftedness, however, acknowledge that even though a child may not be performing highly, this does not mean that they lack the innate ability to do so but, rather, that the demonstration of such ability is dependent on many variables associated with the child themselves and the environment they find themselves in (Renzulli & Reis, 1985; Gagne, 2000). One who would make the latter claim would believe that giftedness is more highly represented in groups who belong to a higher socioeconomic bracket. Once again, contemporary views of giftedness would suggest that gifted people come from all walks of life, and can be found in all socioeconomic groupings. Another confounding factor in New Zealand schools is that decile in schools have a much higher proportion of Maori children and children from the Pacific Islands. One could read into such a claim that giftedness is more evident in the dominant cultural groups that make up higher decile schools. Such thinking assumes a monocultural view of giftedness. However, contemporary views of giftedness acknowledge that cultural groups may view giftedness differently (McAlpine, 2004b). In New Zealand, Bevan-Brown (1996) has identified a Maori view of giftedness which highlights some differences to what could be considered to represent more traditional views of giftedness.

The result of teachers holding different/opposing views of giftedness is that some gifted children either are not nominated, or may be taken off a register. Such critical debate, while in some respects healthy, can also be off-putting for teachers and may serve to divide rather than unite. The risk is that, without a way of growing positively from such differences, teachers can become unwilling to engage with the process for fear of having their decision publicly challenged.

This is not a red herring but is a valid issue. What is needed is the opportunity for staff, in association with their wider community, to decide upon and articulate a shared understanding of giftedness and talent. This will be greatly enhanced by the opportunity to engage with some contemporary literature around definitions and concepts. The concept or understanding also needs to be revisited on an annual basis to ensure that staff (including new staff) continue to work from a shared approach. Recent Ministry of Education policy initiatives are providing some resources and support structures for schools to do just that (MoE, 2002a). However, given the recent introduction of these supports, it is still very common to find variance in teacher beliefs within a school as to what constitutes as giftedness and talent.

#### **Purpose "Gifted or just bright?"**

A second issue in the area of identification, which is a red herring, has to do with what is perceived as the purpose of identification. It seems that undue emphasis is placed on getting the label right, and that teachers engage in a process of trying to identify "the" gifted student. The question above is one that I often hear asked in staffroom conversations. Such questions communicate a nervousness and anxiety associated with getting it right. To want to get it right assumes that "the gifted" is some sort of fixed and definitive grouping. This view is problematic and, to some degree, the label, and the attempts to define it, perpetuate this kind of thinking. As soon as one creates a category, then there is inevitably going to be uncertainty surrounding those at the fringes of the boundaries set.

Definitions that stipulate a cut-off score or tools that set boundaries, like the *Bright Child/Gifted Learner* comparison (Szabos, no date given) perpetuate the view that there is a definitive category. The difficulty with the *Bright Child/Gifted Learner* comparison is that a student who presents as a bright child could be a child who has not felt able to demonstrate their true capabilities, particularly those associated with creativity. Creativity seems to be the distinguishing difference between the two groupings in the comparison of a bright child to a gifted learner. Creativity is demonstrated, for example, through risk taking, questioning, and engaging the imagination. If a student is focused on pleasing others and conforming to the norm in a particular environment, then they may well be unwilling to demonstrate their capacity for creativity. The complexity here is on the impact of the context within which the child is being assessed which may result in a very capable child having their needs considered or not. To this end, it seems somewhat problematic for teachers to engage in a process of identification of the gifted and talented children in their school. What would seem much more healthy and productive would be to engage in a process of finding out about the abilities, qualities, interests and passions of all the children in their class. In the process of finding out about the students in their class teachers can become more aware of those children whose abilities and qualities seem exceptional in relation to the same-age peers, as well as those who hint at having that potential.

The principles of the *New Zealand Curriculum Framework* (MoE, 2002b) reflect a valuing of the individual, a focus on assisting them to develop to their potential, scaffolding learning, considering the development of the whole child, not just their academic growth, and establishing the skills and qualities necessary for life long learning. To express these values in practice, teachers, with the support of the wider school, are charged with the task of finding out as much as they can about the students they teach. They will need to find out about just what their students are capable of, what their interests, passions, abilities and needs are. The teacher could assume the roles of talent scout and coach. A talent scout is always on the alert and a coach is aware of the impact the environment has on the student at the time. In asking teachers to consider what they need to do in order to be able to see the best a student can do, I have found that they inevitably describe what has been identified as quality teaching for diverse learners (Alton-Lee, 2003).

The ultimate aim for teachers is to have an understanding of the needs of the individuals in each class so that they can be better addressed. What is required is the opportunity for teachers to develop an appreciation of the implications of developmental advancement. Silverman (1999) suggests that just as developmental delay impacts on all facets of a child's life so, too, does developmental advancement. The greater the level of advancement, or degree of asynchrony, the greater the level of impact on all facets of the child's life. Silverman proposes that these students not only think differently from their same age peers, but that they also feel differently. Developmental advancement brings with it many challenges for the child. Some are associated with the need to develop self-understanding. "Why is it that I am so sensitive to...?" "Why is it that I can not seem to just go with the flow?" "Other children don't seem to see things the way I do." The type of environment children may find themselves in creates other challenges. For example, it is often heard that the tall poppy syndrome is alive and well in New Zealand society. This has significant implications for those who, by way of their innate abilities, would naturally stand out. There is plenty

of material available, e.g. Delisle & Galbraith, (2004); Johnson, (2004); and Taylor, (2004), for teachers to engage with to better understand the implications of developmental advancement and the associated special learning needs that such children have.

It is proposed that a definitive view of giftedness and the use of the terminology “identification” leads teachers to view the task as one of finding children to fit a clearly-defined category. Such an approach is problematic and may create tension and anxiety within a school that need not be there. What would seem much more healthy and productive would be for school communities to explore and develop some shared understandings around developmental advancement and the process of talent development. Teachers would, through the process of finding out about the abilities, qualities, interests and passions of all the children in their class, become more aware of those whose abilities are well developed for their age. This kind of structure provides a starting point that is somewhat familiar to teachers and may take the anxiety out of engaging in a process of “identification”.

**Methodology** *“There is no one reliable method of identification.”*

The third issue, and the second red herring, is associated with the reliability of methodology. Statements such as *“there is no one reliable method of identification”* reflect a belief that there should be. Underpinning this, once again, is the view that there is a discreetness to the grouping of giftedness and talent, and that it is important to get the label right.

The methods used to become aware of giftedness are both quantitative and qualitative in design. The use of achievement data, information from parents/whanau, community members, students, teacher observation and rating of behaviours are a few of those recommended in the literature. While there are limitations to each method used (Riley et al, 2004), and no one method will reliably produce all of the information needed, the information collected through each method helps to build a reasonable picture of a child that, when brought together, gives teachers something to work with. The principles advocated by the Ministry of Education (2000) for the identification of giftedness and talent highlight the need to use a range of methods, and from a variety of sources; that teachers engage in this as part of a transparent, systematic and school wide team approach which includes parents and whanau; as well as being alert to underrepresented groups, and the factors that can mask a child’s true ability.

The process advocated assumes very closely the role of an action researcher. During the reconnaissance phase of action research, the researcher is interested in finding out what the current situation is. This requires the gathering of data on a number of different occasions, from a range of sources and using a range of methods, so that the data can be triangulated to give a clear picture (Cardno, 2003). This approach is commonplace in schools when collecting data on other children with special needs, and can be comfortably used in this context as well.

In collecting information on a child, teachers should not be seeking to clarify a label as such but, rather, should be interested in finding out as much about the child as possible, so that they can better understand their needs. It is not reliability of measurement that is important but, rather, the validity of the data collected. While there may be no one reliable method for identifying giftedness and talent, there are many valid methods for collecting important information on a child’s special abilities, qualities, interests and passions. And it is this process which results in the building of a profile of a child that is the most empowering and useful to a teacher.

**Skill and Confidence** *“We need experts to do this for us”. “We are the experts.”*

These two statements, while paradoxically opposite to each other, reflect either a lack of, or an overestimation of, the skills teachers need to identify giftedness and talent.

Educators, who mistakenly assume that teachers do not have the skill or tools necessary to identify the indicators of giftedness and talent in a child, or that it is best viewed in a specialist environment, make the first claim. Certainly, the historical lack of opportunity to undertake professional development in the field would understandably result in a lack of confidence to engage with the process. Knowledge breeds confidence. With the opportunity for some professional development teachers can become familiar with the behavioural characteristics commonly displayed by such learners, as well as the factors that can cause a child to behave differently in certain contexts. Subsequent to professional development, I have noted that teachers have become much more sensitive in what to look for and, with supported practice, have grown in confidence in the quality of the information collected on children.

The Ministry of Education is very clear in its belief that the school environment is a powerful catalyst for the demonstration and development of talent and has articulated this as one of their core principles (MoE, 2002a). The abilities of these children can be observed in the school context if it is responsive (Clark, 2002), or invitational (Cathcart, 2005), i.e. encouraging to children by providing opportunities to engage in challenging tasks, in depth, exercising creative thinking, with sufficient time and pace and individual input, considering also the social, emotional and cultural needs of the individual. In short, the child would feel comfortable and challenged. Examples of this could be highlighted as examples of quality teaching. Recommended guiding principles suggest that identification should be an unobtrusive process embedded within a responsive classroom environment (MoE, 2000).

Educators who make the second statement tend to believe that they alone have the skill necessary to identify giftedness and talent. They may view themselves as *“the experts”* and may also believe that parents are not. This view is inaccurate on both counts. Firstly, while teachers can increase their ability to become more alert to the indicators of developmental advancement, and can develop greater awareness of the challenges that this brings for such children, they are, for the most part, only able to view the child in the school context, and through their own lenses. This, of course, is only one facet of a child’s life, which is viewed from one perspective. In thinking back to the role of an action researcher, one of the requirements is that data be collected from a variety of sources. Finding out about a child from the perspective of others is essential to establishing a clearer picture of the child’s abilities. Employing a team approach is advocated (MoE, 2000), sharing the responsibility and drawing on the information of a range of people, such as parents, students, whanau, other teachers, etc.

I often hear teachers suggest that all parents think that their child is gifted. This reflects the underlying assumption that a parent's view of their child's abilities is somewhat biased and perhaps distorted. While there may be a few cases where this is true, my experience reveals that parents are well aware of their children's strengths and interests, and do know their children well, and that not all parents consider their child to be gifted. In fact, parents of gifted children often seek to avoid having their child labelled as such. Once again, the Ministry of Education clearly values the knowledge, skill and involvement of parents in the education of their children as it states that schools should communicate openly with the school community (teachers, parents, students, Board of Trustees) about the identification of giftedness and talent, utilising a systematic, coordinated, school wide team approach which includes parents and whanau (MoE, 2000).

To this end, to claim that teachers cannot do it, or can do it entirely on their own is a red herring that serves to either disengage teachers or promotes deficient structures for engaging in evidence-based teaching. They can do it, and do it well, in consultation with others.

#### Use

*"We have done identification but what do we do now?"*

*"Our GATE programme consists of a withdrawal programme that take place after lunch on a Friday afternoon".*

These statements are indicators that the information collected on students has not been analysed and used to make decisions about what is appropriate for the individual but, rather, has been collected to verify a label, and then sits forever in an administrative folder. It could also be, of course, that information could be of limited use because it was collected some time ago and has not been added to since.

The Ministry of Education advocates that identification should be a means to an end and not an end in itself (MoE, 2000). That is, the data collected on a child should be analysed to ascertain needs and appropriate provisions. After worthwhile data is collected, the next step is to analyse this information and to ask what it tells of the needs of the student. One grouping of data could be around the level of ability a student has in relation to the curriculum. The information gathered here should shed some light on what level the teacher needs to be planning for, and if there are any other children who are close to similar ability. If not, then opportunities to find similar ability peers for this student at times will be necessary to meet their needs. Data collected which provides evidence of a child's creative thinking should lead to decisions made about the focus on using or developing that potential. Data gathered on a child's motivation and task commitment would lead to being able to see whether they could engage in independent or small group in-depth investigations, or whether the teacher would need first to explore areas of interest, and reasons for lack of motivation, and see the development of this as a goal. Data collected on friendships leads to understandings about social needs. Data collected on self-concept leads to understandings on emotional needs, etc.

A final principle guiding identification suggests that not only should data collection begin early but also should be ongoing (MoE, 2000). As noted earlier, data will be of limited use if it is only collected from one source and using one method. The same applies to out-dated information. Sufficient information to yield a comprehensive and current picture of a student's abilities is needed. A child's level of ability, creativity, task commitment, interests and passions are likely to change over time (Renzulli & Reis, 1985). If the focus is on collecting information to verify inclusion in a category, then it is understandable that, once sufficient evidence is collected, the process would be seen as complete. However, if the process is on collecting information that will drive decision making, then the process changes from one that is associated with identification to one that is ongoing and is much more closely aligned with assessment for learning.

The purposes of assessment information at the classroom level are to:

- provide the most appropriate learning opportunities for students;
- provide feedback to students and identify their next learning steps;
- develop partnerships with parents;
- modify teaching programmes;
- ensure continuity of education for individual students.

(MoE, 2001)

And this is exactly what we need to do. It is interesting to note that, in the literature in the field of gifted education, there is an evident change of terminology and focus from "identification" to "assessment" (Assouline, 1997; Johnson, 2004; Ryser, 2004).

#### A NEED TO REFOCUS

The official requirements are that Boards of Trustees, through the principal and staff, are required, on the basis of good quality assessment information, to identify students and groups of students who have special needs, including gifted and talented students; and to develop and implement teaching and learning strategies to address the needs of these students (MoE, 2003). Just as teachers collect and analyse information on other learners who have special needs, so too should the same processes hold true in this context. What needs to be teased out is what is meant by "good quality assessment information", and there are plenty of guidelines to support this. Teachers also need a working definition for the term "special needs". Group Special Education (GSE) (MoE 2006) define students with special education needs as: learners with disabilities, learning difficulties, communication or behaviour difficulties, or sensory or physical impairments who require the provision of extra help, adapted programmes, learning environments, or specialised equipment or materials to support their learning and help them participate in education.

While GSE is not funded to cover provision for gifted and talented children, this group of learners could be added to the list of categories, and the rest would equally apply.

As well, a school community does need to establish some shared understandings about what is meant by giftedness and talent. The focus, however, should not be to fixate on whether the label exactly fits but, rather, to look at all our learners in terms of degree or level of ability and to ascertain their needs accordingly. And just like the issues teachers face around deciding on the degree of learning or behavioural difficulty that is significant for inclusion on a register, so too can they expect to experience some of the same difficulties with developmental advancement. A given is that extra help, adapted programmes, learning environments, or specialised equipment or materials are necessary for these children to fully engage with the curriculum. A teacher's job is to ascertain to what degree. There is always going to be some grey

space but, with a common set of understandings, some clear procedures, and a team effort these difficulties can be minimized and well managed.

## CONCLUSION

The majority of the issues surrounding identification of giftedness and talent raised by New Zealand educators can be identified as red herrings and serve to disempower teachers from getting on with their job. They tend to, by and large, reflect and place an overemphasis on the process of labelling students. This process will inevitably cause a great deal of tension and anxiety for teachers. This is due, in part, to the lack of historical national discussion and professional development around giftedness and talent. Thankfully, recent changes have meant that school wide professional development is now much more common than it used to be. However, given the recency of these developments, there are still schools in New Zealand who have yet to strategically plan for this.

What schools should seek to avoid is placing undue emphasis on the process of labelling students. A healthier starting point would be to revise the procedures for identifying learners with special needs in their school and, with some common understandings of giftedness and talent, widen the net to capture gifted and talented students as well. The sound principles and procedures already in place in schools for this will help to avoid some of the red herrings identified throughout this paper. It will provide a natural and less threatening place to start from for teachers, and ensure that wheels that are already in place and in motion will not need to be reinvented.

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Author(s): Dr Tracy Riley, Massey University  
Dr Catherine Rawlinson, University of Auckland

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## ABSTRACT

In this paper we will share the results of an investigation of the extent and nature of current provisions in teacher education. The results show that gifted and talented education is addressed to varying degrees at both pre-service and in-service levels. Further to this there is consistency in the nature of the content and resources being used by teacher education providers. There is strong support for the Ministry of Education's initiatives, particularly those aimed at teacher educators. Recommendations for teacher education providers and those made to the Ministry of Education are also discussed.

## SETTING THE SCENE

Gifted and talented education in New Zealand has received unprecedented support from the Ministry of Education in recent years. In its *Initiatives for Gifted and Talented Learners* (2002), the Ministry stated that "Provision for gifted and talented learners should be supported by ongoing high-quality teacher education" (p. 3). This principle underpins several of the Government's initiatives specific to teacher education. These include:

1. Increased opportunities for professional development;
2. Advice to the Teachers Council of its expectation that programmes leading to teacher registration should include content about teacher responsiveness to students with exceptional abilities (2002); and
3. A series of hui for advisers and teacher educators (2002-2005).

These initiatives are based upon the premise that *all* teachers are teachers of gifted and talented students (Ministry of Education, 2000). This implies that all teachers must be prepared and supported to teach in ways that will benefit gifted and talented students' learning. In 2000, the Ministry acknowledged that "... gifted education is seldom addressed (beyond a chapter, a one-off lecture, an optional paper), within pre-service education" (p. 10). This extends to in-service professional development, a much-neglected area (Working Party of Gifted Education, 2001). Furthermore, schools report the need for ongoing, school-based, high quality professional development for *all* teachers focusing upon the inter-relationship between and amongst a school's definition, identification, programmes, and evaluation (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004).

Professional development is being delivered by advisers to schools and teacher education providers at both pre- and in-service levels. In 2004, Riley and her colleagues reported four different delivery models of teacher education in gifted and talented, based upon anecdotal evidence:

1. Integration across a variety of papers and programmes.
2. Inclusion of a module or component in a compulsory inclusive education paper.
3. An optional, stand-alone paper, usually in the 3rd year of pre-service education.
4. Postgraduate papers and specialist qualifications.

The researchers concluded that "Whilst all of these are promising practices, and growth is reported in the Colleges, the bottom line regarding compulsory pre-service teacher education remains that described by the Ministry of Education in 2000: it is seldom addressed" (Riley et al., 2004, p. 154).

With the Ministry of Education initiatives has come increased visibility of gifted and talented education. The perceived effect for teacher educators has been greater demand in relation to their teaching and research and it is timely to consider future directions in teacher education. Therefore, this Ministry of Education funded study investigates the extent and nature of teaching and research in gifted and talented education within the major providers of teacher education. It also considers current and future collaboration amongst teacher educators and Ministry of Education support. This paper describes the research process, results, conclusions, and recommendations. Any opinions expressed are those of the researchers and not necessarily those of the Ministry of Education.

## RESEARCH PROCESS

A mix of qualitative and quantitative data was sought from representatives of the six Colleges of Education that have been supported by the Ministry of Education as members of the 2002-2005 hui for advisers and teacher educators. Twenty-one teacher educators were invited to take part in the study which utilised:

1. *Questionnaires* to probe the extent, and to a lesser degree, the nature, of teaching and research in gifted and talented education; teaching and research specialisations; collaboration; and Ministry directions.
2. *Document analysis* of relevant teaching materials to probe the nature of teaching and research.
3. *Interviews* (focus group) to allow for clarification and elaboration of teacher education programmes and to provide a forum for discussing future directions.

Four different questionnaires were developed targeting coordinators of gifted and talented education for each institution; lecturers of specialised papers in gifted and talented education; lecturers of compulsory inclusive/special education papers; and other teacher educators (e.g., lecturers in curricular areas). The questionnaires for coordinators and teacher educators contained a mix of open-ended and close-ended questions related to each individual's involvement in teaching and research, professional collaboration within and across institutions, and Ministry of Education current and future directions. The coordinator's questionnaire also asked for information regarding each institution's approach to gifted and talented education, to provide a 'big picture.' The questionnaires designed for lecturers in gifted

and talented education and inclusive education papers additionally probed paper details relating to offerings, content, assessment, and resources.

Prior to commencement of the study, approval was sought and received from the Massey University Human Ethics Committee. The purposes, procedures, and rights of participants were outlined in an information sheet sent firstly to each institution's dean, principal, or pro vice-chancellor for institutional approval. Individuals were then sent information sheets and questionnaires on the understanding that completion indicated consent. The questionnaires were mailed to participants with a return envelope and requesting a 10 day turnaround. At the end of that period a reminder email was sent to participants. Eighteen teacher educators returned questionnaires (a response rate of 86%). Table 1 shows a breakdown of the questionnaires received. It should be noted that because some individuals have multiple roles, more than 18 questionnaires were received. As the table shows, institutional information was received from all six coordinators.

**Table 1. Questionnaire Responses**

Questionnaires	Number
Coordinators of Gifted and Talented Education	6
Teacher Educators	12
Specialised Papers in Gifted and Talented Education	11
Inclusive Education Papers	4

The analysis of results required the collation of identical questions across the different questionnaires. The quantitative questionnaire results were analysed based on frequency of responses. Given the small sample size, the rate of response was simply totalled rather than converted to means or percentages. The qualitative results from the questionnaires were coded and analysed for recurring themes, and supported by relevant direct quotes.

The preliminary questionnaire results were presented to 12 teacher educator participants at the 2005 October hui and representing all participating institutions. From the preliminary analysis, recurring themes were shared with the participants and they were invited to participate in a focus group discussion. Two focus groups of six participants were formed: lecturers in special/inclusive education and curricular areas (e.g., mathematics, music); and those more directly involved in gifted and talented education coordination, teaching, and research. The aim of the focus group discussions was to prioritise the Ministry of Education's facilitation of professional collaboration and initiatives specific to teacher education. The focus group discussions lasted approximately one and a half hours and were facilitated by the two researchers who took notes. Participants were asked to complete written information related to priorities and these were collected at the end of the discussion. These results were then analysed according to the recurring themes.

Participants were invited to take part in individual interviews at their request; however, no participants opted to do so. Documents related to teaching were analysed in relation to the institutional information on specific papers in gifted and talented or inclusive/special education; however, these were not received from all lecturers.

## LIMITATIONS

The results of this study need to be considered in light of the limitations. The sample of teacher educators was limited to twenty-one representatives of six teacher education providers, of which 18 participated in questionnaires. The rate of response is reasonably high therefore the results may be generalisable to this group; these results may not, however, give an accurate picture of gifted and talented education in teacher education throughout New Zealand (wananga and private providers were not participants in this study), or even within each institution. There is some inconsistency in the use of terms and definitions across the six participating institutions and the researchers' interpretations of these may vary from institutional interpretations. To try to avoid this situation, each institution's coordinator of gifted and talented education was sent a draft copy of the report for checking and in doing so was asked to consult with his/her peers. The limitations of questionnaires, focus groups and document analysis should also be kept in mind: there is always scope for misinterpretation of questions and results. The results were checked and re-checked by the two researchers, and preliminary results were made available for checking by all participants.

## SAMPLE: TEACHER EDUCATORS

For most of the 18 questionnaire participants, gifted and talented education could be described as secondary to their teaching in inclusive education or a curricular area; only five described "specialist" teaching in gifted and talented education. Other roles in gifted and talented education included: supervisor; researcher; student enrolled in postgraduate study; guest lecturer; and teaching practice supervisor. A wide range of teaching specialisations were reported by participants. Interestingly, the specialists considered themselves to be "generalists" as reflected in these responses:

*As the only person with a background in gifted education on the teaching staff, I am interested in                      and cover all aspects. I am very much a generalist in a specialised field!*  
*My approach is general but primarily with an educational and psychological focus.*

Similarly, a "very generic" approach was reported by one of the lecturers who specialised in inclusive education. Other areas of teaching expertise were programme delivery and curriculum models; cultural issues; identification; and curricular specialisation. One-off specialties included issues related to parents and community, social-emotional needs, transition between levels of education, creative writing, intelligence, and spirituality.

The majority of participants reported a preference for qualitative research methodologies (namely action research, interviews, and focus groups); only four respondents reported a mix of qualitative and quantitative methodologies. There was a wide range of research content areas reported and most of these were singular responses. The results indicate that New Zealand's teacher educators have a breadth of

expertise reflected in both teaching and research. Although the reported teaching is sometimes generic and general, this is perhaps more a reflection of the nature of teaching responsibilities than a lack of expertise. A relationship between teaching and research interests was evidenced in the responses and this suggests that teacher educators are involved in research-informed teaching and teaching-informed research.

## RESULTS: PRE-SERVICE AND UNDERGRADUATE EDUCATION

All of the six participating institutions reported that they address gifted and talented education in primary pre-service programmes; four include it in their early childhood and secondary programmes. In every institution gifted and talented education is integrated across a variety of papers (e.g., curriculum studies, professional practice, etc) and a module is included in an inclusive education paper (five of which are compulsory papers). Five of the six institutions offer specialist pre-service/undergraduate papers in gifted and talented education.

Four of the six institutions provided information regarding their compulsory papers in inclusive education. These compulsory papers are required in the final year of study and include from two to five hours of teaching related to gifted and talented education. The papers are all team planned, taught, and assessed, with two of the papers involving lecturers who specialise in gifted and talented education. A wide range of issues are addressed in these papers, mainly by way of lectures and readings. Not surprisingly, given the principles of inclusive education, characteristics of gifted and talented students, enrichment/acceleration, and inclusive classroom strategies receive the greatest attention in lectures, readings, and assessment. School-based and out-of-school provisions alongside policy/programme development and evaluation are least frequently addressed.

The reported advantages of including gifted and talented education in a compulsory inclusive education paper are:

1. Every student has some exposure to the needs of gifted and talented students.
2. Students may gain direction and inspiration for further study in the field.
3. Lecturers' awareness and understandings of gifted and talented students may be enhanced.

Perhaps the most important advantage is summed up by one respondent, who wrote,

*... places gifted and talented in an inclusive context ... highlights this group as another group with 'special' needs ... attending to these ... is the responsibility of every teacher.*

Similarly another respondent described the importance of individual instruction within an inclusive philosophy and the appropriateness of this for gifted and talented students. Raising awareness of individual differences was reported as forcing, or challenging, students to view their classroom and students in a different way.

The results show that all specialist paper offerings are single semester, with the majority being team planned (3/5), but individually taught (4/5) and assessed (4/5). The online component of these papers ranges from none (2/5) to web-based (1/5). The reported content for specialised papers is rather broad, with the strongest emphasis on definitions, characteristics, identification, programmes, and cultural diversity. Areas not frequently addressed include out-of-school provisions, other special populations, parenting, and professional development. One lecturer reported that all topics are addressed; however, these vary from year to year dependent on student needs and interests.

The reported advantages of a specialised undergraduate paper were mainly in relation to the appeal, or "popularity," of these papers and the opportunities they offer for enhancing professional skills and opportunities. Having an undergraduate paper may serve as a "platform" for further study and allow career/workforce opportunities. Another frequently mentioned advantage was the depth of information; as one lecturer stated, "It provides an opportunity for depth of exploration in gifted and talented education."

An institutional advantage described at length by one of the respondents was in relation to raising the profile of gifted and talented education within the institution:

*It is no longer seen by most staff as a 'fringe' area of education but as an accepted and legitimate area for inclusion in programmes for teacher educators.*

A flow-on effect of this profile raising is likely to be greater inclusion of gifted and talented education in a range of other papers and programmes. On the other hand, having a specialised paper could lead to a lack of integration, for as one respondent wrote:

*... reinforcing this as a 'specialist' area can tend to give the impression that providing for the needs of the gifted and talented is the role of specialists and not the role of every teacher.*

Integration in inclusive education, however, also has its reported disadvantages: time constraints, leading to lack of depth in content, and as one lecturer reported, difficulties in promoting "significant shifts" in attitudes. Another lecturer stated that "what we do is not enough," and another wrote that the exposure to gifted and talented education was "too little too late." The specialist papers may remedy these problems, but the optional nature of the papers, length of time for study, and the diverse range of students enrolling in these papers create difficulty in doing so. As one respondent stated, "Gifted and talented education is such a broad field ... we only touch the tip of the iceberg."

## RESULTS: POSTGRADUATE EDUCATION

Gifted and talented education is reported to be integrated across a range of postgraduate papers and programmes at three institutions; specialised postgraduate study is available at four of the six institutions (comprising six different postgraduate papers). One institution offers endorsed postgraduate qualifications (Certificate and Diploma in Education), and another co-teaches in Australian-based endorsed postgraduate programmes (Certificate and Masters). Postgraduate student research in gifted and talented education is reported to be supervised at five institutions.

Of the six postgraduate papers offered, one paper is single semester, another is a summer school option, and the remaining four are double semester papers. The majority of these papers are individually planned, taught, and assessed. Only one paper is reported to be team planned. The online component ranges from none (2/6) to web-based (2/6). The content for these papers is rather generic, with strong

emphasis on Ministry of Education initiatives, definitions, characteristics, identification, and programmes. Areas not as frequently addressed are out-of-school provisions, evaluation, policy and programme development, other special populations, social/emotional issues, parenting, and professional development. Only one lecturer reported a topic beyond the list: the development of conceptual units of study.

The most commonly reported advantage of a specialised paper at postgraduate level is the chance for depth of study. As one lecturer reported, the postgraduate paper allows students to really put "theory into practice." Another lecturer stated,

*Depth! Really gives students a chance to seriously consider provisions for gifted and talented – makes a difference in my students' teaching/schools.*

Flexibility in delivery options and timetabling were seen as enhancing not only the amount of time students could spend engaged in study, but also its availability. As with the undergraduate papers, having a specialised postgraduate paper also acts as a platform for future professional endeavours, but with the added advantage of providing a launch pad for student research. One paper coordinator stated that the inclusion of the gifted and talented paper across a variety of postgraduate programmes was a definite advantage of its existence. There were some disadvantages reported, but these are specific to each institution.

## RESULTS: COLLABORATION

Participants were asked to indicate their current and future collaborative teaching and research both within and across institutions. The results indicate that within institutions there is currently a great deal of collaboration, primarily in relation to sharing of teaching and research resources (13/18), research (11/18), co-supervision of student research (9/18), and the facilitation of student interactions across papers and programmes (9/18). Within institutions there is very little reported collaboration by way of online lectures and video-conferencing (2/18) or moderation of assessment (5/18). The numbers fall dramatically, however, when one examines current collaboration across New Zealand institutions. For example, no respondents indicated they are currently sharing teaching and research resources or assessment ideas. The inter-institutional collaboration that is taking place, though minimal within this sample, was predominately in relation to Ministry of Education initiatives (6/18) and working with advisers in gifted and talented (7/18). Four respondents were involved in collaborative research and marking.

Not surprisingly, there is a great deal of goodwill and enthusiasm for greater opportunities for collaboration within and across institutions, particularly in relation to:

- Collaborative research (14/18), publications (13/18), and presentations (12/18);
- Sharing of teaching and research resources (12/18);
- Teaching: writing materials (11/18); assessment ideas (11/18); online student interactions (10/18); lectures (10/18); and
- Ministry of Education: Initiatives/contracts (11/18) and working with advisers (11/18).

Collaborative ideas that did not receive strong support included the moderation of assessment (4/18) and mentoring of teaching and research staff (5/18).

During the focus group discussions, participants were asked to prioritise the types of inter-institutional collaboration. Opportunities for collaborative research and publications, including the development of teaching resources, were considered a priority. There was agreement that teacher education should be informed by research within the context of New Zealand. This depth of understanding was seen as a prerequisite for effective teaching, mentoring and supervision. Furthermore, collaborative research and its dissemination were seen as routes for bringing multiple perspectives to a wider community of teacher educators and clarifying a national approach through shared understandings. Collaborative research was also positively seen as a means of professional development and fostering research and teaching mentoring relationships. There was some discussion in light of Performance Based Research Funding (PBRF) but this was not seen as driving force behind prioritising collaborative research and publications. Rather the collaborative nature of research and publication was viewed as strengthening what is already being done in gifted and talented education. Sharing of teaching and research resources was also considered an important priority. This opportunity for sharing resources was viewed most positively because it was seen to enhance the quality of the papers being offered "which in turn would benefit gifted and talented children." Furthermore, sharing resources provides collegial support when planning, with one member stating that there is "no need to always be innovating alone." The group members were also cognisant of the fact that a great deal of good work has already been put into developing gifted and talented courses so this sharing of resources can result in there being "no need to keep reinventing the wheel." In order to facilitate collaborative research/publication and to encourage sharing of resources, the group felt strongly that the Ministry of Education needed to provide sustained funding for professional development and support, collaboration with advisers, and research.

## RESULTS: MINISTRY OF EDUCATION INITIATIVES

Participants were asked to describe the impact of the Ministry of Education Initiatives (2002) on their teaching and research. A variety of responses was received, with the most frequent being increased demand – by way of more students and support/advice sought from schools. One lecturer described gifted and talented education as a "sexy, hot topic!" Several of the initiatives were reported as offering opportunities for networking with other teacher educators, advisers, schools, and private providers of gifted and talented education services. The questionnaire evidence related to teaching indicated the Ministry's initiatives have increased the New Zealand-based teaching resources. Similarly, an increase in research opportunities was reported. One respondent commented that the initiatives have given "credence" to research within the cultural context of New Zealand. Several respondents, all of whom are teacher educators with secondary interests in gifted and talented education, indicated that their awareness has been raised as a result of the initiatives. The position of gifted and talented students has also been strengthened, according to one respondent. Three participants were not aware of all of the initiatives and as a result did not know what impact these might have had.

The current initiatives were discussed during the focus group and there was overwhelming support for the continuation of the annual hui with advisers. This was seen as a priority by the group, providing opportunities for:

- professional development;
- relationship building amongst and between teacher educators and advisers;
- facilitating, enhancing, and “growing” a professional learning community;
- encouraging collegiality, networking and support;
- gaining a full picture of gifted and talented education issues;
- recognising teaching needs;
- re-energising and increasing motivation;
- providing and gaining feedback on trends in teacher education and the effectiveness of programmes in schools; and
- collaborative research and teaching/professional development.

The groups spoke positively about the benefits they had gained from previous hui, however, some concerns were raised regarding limited participants and the timing and location. There was a mixed response in relation to teacher educators being appointed as mentors for the Talent Development Initiatives (Ministry funded innovative programmes for gifted and talented students). It was suggested that mentoring roles be voluntary (rather than appointed), based on availability and interests of proposed mentors and Talent Development Initiatives. The group also expressed interest in being kept up-to-date and informed of the activities of the Talent Development Initiatives groups.

The questionnaire also probed future possible Ministry of Education directions and again, there was overwhelming support for most of these. The most frequent responses were in relation to professional development and support for teaching and research related to cultural groups (16/18), teaching resources (16/18), funding for innovative teaching (15/18), research funding (15/18), and scholarships/study awards (15/18). During the focus group discussions, participants were asked to prioritise future directions. The two groups had some similar, and some different, priorities. For example, in the gifted and talented teaching and research group, the recurring theme in relation to future possible Ministry of Education initiatives was that of funding for further developing expertise and research. As one member of the group concluded, funding is a priority so as to “build a base of skilled, competent, knowledgeable and active researchers/teachers.”

In the special/inclusive and curricular teaching group, there was a strong call for teaching resources, particularly New Zealand-based and inclusive of cultural differences (e.g., Maori abilities and qualities). The view was that teaching resources would need to be based upon New Zealand practice and research. Another suggestion discussed by this group was that a pool of funding be available to support innovative teaching in gifted and talented education at tertiary level, with the proviso that recipients would develop a teaching resource as an outcome. Professional development in relation to specific cultural groups (i.e., Maori and Pasifika) was considered a priority by both groups. As one participant stated, there is a “need to lift the profile of Maori and Pasifika issues in gifted and talented education.” Another participant expressed the view that culturally diverse students and their educational needs are “badly in need of support and attention” There was overwhelmingly strong support for the Ministry of Education’s current and possible future initiatives. There is, however, a danger here for teacher education; as one participant stated, “...the Ministry’s support and direction is critical. However, over-involvement is counter-productive to sustainability.”

## DISCUSSION

The results demonstrate that gifted and talented education is addressed in all of the participating institutions to varying degrees at both pre-service and in-service levels. A multi-pronged approach is preferred, with integration across a variety of appropriate papers and programmes, a component in inclusive education, specialised papers and programmes, and opportunities for student research. The compulsory nature of gifted and talented education is rather limited. This approach differs somewhat to those used overseas: Adams and Pierce in the United Kingdom (2004), Seeley in the United States (1989) and Yeun and Westwood in China (2004) describe opportunities for degree specialisation at postgraduate level, but limited exposure at pre-service level. Seeley (1989) also describes field experiences as an important element of postgraduate study. Thus, New Zealand differs in:

1. The existence of optional specialised papers at undergraduate/pre-service level;
2. The lack of opportunity for a specialised New Zealand-based Masters degree;
3. The lack of field experience, especially notable at postgraduate level, in teaching gifted and talented students.

There are advantages to this approach. Through the introduction to gifted and talented education in inclusive education and other papers, students are provided with some general knowledge and skills, and for many their interest in the field is “piqued.” Several institutions build on this by offering pathways for further study and research opportunities. These institutions report that having specialised papers in gifted and talented education raises the profile of gifted and talented education within institutions, and when coupled with the Ministry of Education’s recent initiatives, awareness and interest of students, schools, communities, and tertiary educators has also been elevated. This in turn has led to greater student demand by way of enrolments and the desire for more opportunities for specialisation, particularly at the postgraduate level.

New Zealand teacher educators are currently placed in a position to creatively and innovatively answer the demand for gifted and talented education. There were several suggestions made by participants and these included:

1. A compulsory pre-service paper in gifted and talented education.
2. Greater integration of gifted and talented education content across a range of appropriate papers (including those of a compulsory nature) at pre-service/undergraduate and postgraduate levels.
3. A Masters degree endorsed in gifted and talented education, giving consideration to collaborative, cross-institutional development and delivery.

It is timely for New Zealand teacher education providers, as individual institutions and collaboratively, to carefully examine their current and future offerings in gifted and talented education through internal investigations and planning.

In doing so, the content of papers calls for attention: the content reported is not comprehensive, and has the potential to be repetitious or narrowly addressed. Heavy emphasis is placed on the ‘nuts and bolts’ of gifted and talented education within New Zealand’s cultural and educational context, but important issues like parenting, social-emotional development, evaluation, and special populations are not

receiving adequate attention. Furthermore, students enrolled in specialised papers should be given opportunities to engage in practical, hands-on teaching and research experiences. A curricular scope and sequence needs to be developed, especially in relation to pre-service teacher education given the heavy reliance on integrated approaches. Integration of gifted and talented education content across all relevant papers also requires collaboration between gifted and talented education specialists and other staff; long-term professional development and support to raise awareness and understandings; and ongoing monitoring and evaluation of effectiveness.

Future directions in teacher education should build on the strong base reported in this study. There is consistency in the participants' commitment to and enthusiasm for gifted and talented education shown in their responses, many of whom used terms like "passion" to describe their interests. Teaching and research interests are multiple and diverse, and the level of involvement within institutional collaboration is high. There is a great deal of good will for more opportunities for collaboration across institutions and a desire for growth within the gifted and talented teacher education community.

The Ministry of Education initiatives have had an impact on teacher education, particularly the broader initiatives related to research, the development of resources, and professional development and there remains strong support for these. Furthermore, in teacher education, there is consistent use of the Ministry's resources, and this in turn leads to some uniformity in the content and messages being delivered to students. The increased awareness of the needs of gifted and talented students throughout New Zealand has been credited to a large extent to the change in the National Administration Guidelines. As implementation continues to occur, and particularly following from the Education Review Office's planned report for 2006/07, it will be important to re-visit the support and role of the Ministry of Education in teacher education, as well as the directions teacher educators are heading.

It is hoped that the Ministry of Education will continue to support teacher educators in their professional development, teaching, and research. However, in doing so it is important that the role taken is facilitative, rather than directive, particularly given the autonomous, independent nature of tertiary institutions and the roles of those who work within them. Teacher educators, in turn, are encouraged to continue in their support for and involvement in the Ministry of Education's initiatives in gifted and talented education, remembering the role of critic and conscience in their teaching and research. Finally, it is vital to remember that all efforts by teacher educators and the Ministry of Education should remain focused on creating positive outcomes for our gifted and talented students as they pursue their educational adventures, hopes, and dreams.

#### RECOMMENDATIONS: TEACHER EDUCATION PROVIDERS

1. 'In-house' investigation and analysis of the extent and nature of each institution's teaching and research opportunities in gifted and talented education for students and staff.
2. Development of a curricular scope and sequence of gifted and talented education content, especially in relation to pre-service teacher education and as a response to the Ministry's recommendation to Teachers Council.
3. Integration of gifted and talented education content across all relevant papers.
4. Facilitation of collaborative teaching and research opportunities for lecturers and advisers in gifted and talented education.
5. Encouragement and support for individual and collaborative research in gifted and talented education within New Zealand's bi-cultural context, with the recognition that research should inform good teaching practice.
6. Facilitation and support for cross-institutional collaboration for teaching and research in gifted and talented education.
7. Consideration of the need for opportunities for students enrolled in specialised papers in gifted and talented education to engage in practical, hands-on teaching and research experiences. This requires flexible timetabling and collaboration with centres and schools.
8. Recognition of the impact of institutional mergers in relation to the present and possible future of gifted and talented education at tertiary level.

#### RECOMMENDATIONS: FUTURE RESEARCH

1. Investigation of a broader, more representative sample of teacher education providers in New Zealand, including wananga.
2. In-depth investigation of integrative approaches to gifted and talented education in teacher education.
3. In-depth study of a small sample of specialised papers, including investigation of exact content being taught, how, why, to whom, etc.
4. Examination of overseas approaches to teacher education in gifted and talented education for the purposes of comparison with and enhancement of New Zealand's teacher education.
5. Evaluation of the effectiveness of different approaches in teacher education in gifted and talented education (e.g., specialised papers, compulsory components, integration across a variety) in relation to teaching practice, attitudes, knowledge, skills, etc.
6. Survey of teacher education graduates to determine their perceptions of their preparation in meeting the needs of gifted and talented students once employed as teachers in centres or schools.

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## MEETING THE NEEDS OF THE GIFTED IN THE REGULAR CLASSROOM

**Author(s):** Graham Watts. Director of Advanced Learning, St Cuthbert's College, Auckland

### ABSTRACT

This paper explores a Year 1-13 school's pathway in meeting the needs of gifted students in the regular classroom. The reasons for inclusive classroom provision versus withdrawal groups are discussed. The establishment of shared guiding principles across the staff are outlined and the shaping of provision described. The pathway has involved selecting a variety of curriculum planning models in which teachers have been trained. Examples of how these models have been developed in relation to the curriculum are shared. This paper is of interest to teachers who are developing a culture that is supportive of teaching the gifted in the regular classroom. It is also of interest to teachers who seek curriculum models to use when teaching the gifted.

### INTRODUCTION

All students expect to have their learning needs met. This sounds a simple enough claim, but the reality of achieving this is anything but simple. Education in New Zealand, like many other nations, is organised around the basic unit of one teacher for approximately thirty students. Once we break down the student body into groups with certain needs, and individuals with specific needs, we start to increase the demands on the teacher. Teachers, as we all know, have many demands placed upon them and providing for the gifted has at times, been left on the sidelines in New Zealand schools.

The change to the National Administration Guideline 1(iii)c in 2003 has changed that. The identification of gifted students and efforts to meet their needs are now a requirement for all teachers. The gifted are centre stage and teachers are under the spotlight as to how to provide for their diverse needs. The questions that arise are:

- 1) What guiding principles should shape provision in the classroom and across the school?
- 2) What curriculum models can be adopted to provide for the gifted?
- 3) How do busy teachers manage this extra demand on top of the multitude of others?

Whilst models such as one-day-schools and withdrawal groups have raised the profile of the gifted and increased debate around identification strategies, we must go further. I would argue that these types of provision send the wrong message to teachers in the regular classroom. It says that to provide for the gifted we need to take them away from you, the classroom teacher, and give them to someone else. Implicit in this is the message that the classroom teacher cannot provide for the gifted and that the gifted do not belong in the regular classroom. Such a message runs against the grain of inclusive education.

Providing for the gifted for part of the week, at a different location or in a separate group, does not acknowledge the nature of giftedness. Gagne's model of giftedness (2000) shows gifts lie within individuals and fructify only when catalysts allow talented behaviour to show. If we limit adequate provision for the gifted to one day a week or a few hours on one afternoon, we drastically reduce the catalysts the gifted encounter. They will not be given opportunities and challenges that allow their gifts to shine through. They will not, according to Gagne's model, be given the necessary stimuli to develop their talented behaviours.

We must provide for the gifted from the moment they walk through the school gate to the moment they leave (and set suitably challenging homework for when they are at home, too). At St Cuthbert's College, withdrawal groups are being replaced by provision in the regular classroom. The onus for provision is shifting from the few to the many. All teaching staff are on a journey of professional development to upskill themselves to become empowered to meet the needs of the gifted in the classrooms throughout the day and on every day.

To shape provision in the regular classroom we have developed two guiding principles. Teachers refer to these as the foundations of whole school provision and are core to our shared understanding of what it means to educate the gifted in the regular classroom.

#### **Guiding Principle 1: Quantity versus quality**

For some of us, our first experience of teaching the gifted may have been what I call the "turn over the page and carry on" approach. I, for one, am guilty of offering this less than tempting 'reward' to gifted students. It's not surprising that schools are now struggling to uncover and remedy the phenomena of the gifted underachievers when, for so many years, giftedness was 'rewarded' with more of the same. Looking back to my first year of teaching I remember feeling very proud of myself when, for a special 'treat' for the two gifted in my Year 7 history class, I did an extension worksheet to complete when the first was finished. At the time I naively thought this was a major breakthrough in teaching and learning as we knew it. The gifted had to do the same as everyone else, then more. And although the extension was open ended and with scope for independent learning the gifted ended up doing more than everyone else. Whilst there is an argument that the gifted can achieve more in the lesson than others, the question we as teachers must ask ourselves is what is the point of doing more? It may be beneficial for the student to write more thus achieving an in-depth analysis, supported with greater reference to evidence and with a carefully constructed evaluation. However, at times, it may be better to offer something different, something new and offering greater challenge and expression; something offering breadth as well as depth. The gifted often need less practice as they acquire mastery over new skills and knowledge faster than others. Rather than offering a quantitatively different curriculum for the gifted, we should offer a qualitatively different learning experience. In other words, it's the quality of what we offer the gifted that matters more than how much we offer.

## Guiding Principle 2: Altering Content – Process – Product – Learning Experience

There are many theories and approaches to gifted education that teachers can adopt. The one that struck a chord for me is Sandra Kaplan's work (1986). Her model provides clarity not just for the gifted but for curriculum planning to meet all individual needs. (See Diagram 1). Kaplan's model has four components or variables (CONTENT – PROCESS – PRODUCT – LEARNING EXPERIENCE) that can be altered to suit the student's learning needs. The meanings of these four terms are as follows:

CONTENT – the interesting, useful and important knowledge and understanding students gain as a result of their schooling

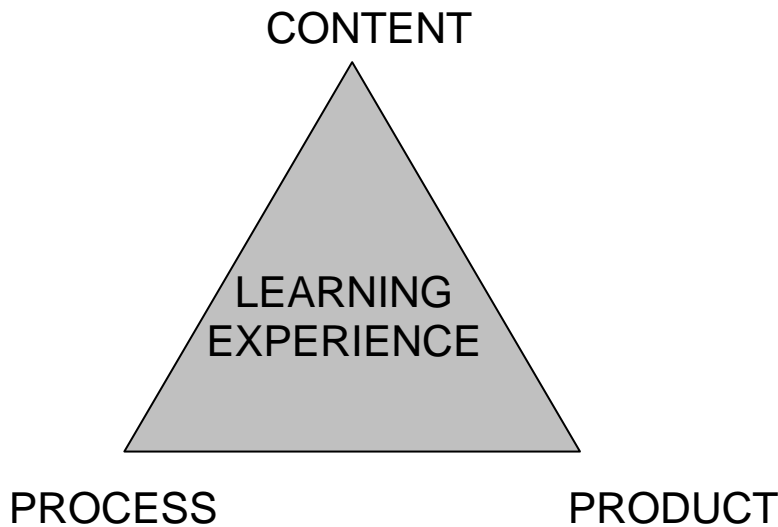
PROCESS – the skills and competences students learn as a result of their schooling

PRODUCT – the manifestation of the knowledge, skills and mastery students communicate as a result of their schooling

LEARNING EXPERIENCE – the meaningful relationship achieved through the combination of the three components mentioned above.

### Diagram 1

Kaplan's model in diagrammatic form.



Kaplan's model sets out how the components in teaching and learning can be altered individually or together to add extra challenge and rigour for the gifted. Students of all abilities can study the same topic and join in class discussions, but the content can be altered, the learning process differentiated, the product changed and the learning experience enriched for the gifted.

It is the generic nature of these four components that puts them at the core of gifted provision in the regular classroom. Assuming the gifted are an integral part of the class, the alteration of any of these components can challenge the gifted within the regular classroom. All students can work together on the same topic, sharing the same resources and discussion whilst the teaching and learning activities are differentiated for the gifted. This seamless provision allows individual needs to be met in the regular classroom by the class teacher.

An example of this seamless provision is shown below. It is taken from a Year 13 mixed ability English lesson. Ability groupings start with the least able in Group 1, average ability in Groups 2 & 3 and the gifted in Group 4. The groups act as expert jigsaws and feed back their findings. The gifted in Group 4 have the greatest challenge as the lack of structure to Plath's poetry is a key feature of her work. All students will learn from one another, but the most difficult content is the focus for the gifted who will appreciate this the most. Referring back to Diagram 1, this is an illustration of how the CONTENT can be changed to challenge the gifted

e.g. Topic: The Poetry of Sylvia Plath, Year 13 English by Amber Lloyd.

Group 1 – find examples of figurative speech

Group 2 – find examples of Nazi imagery

Group 3 – explain her views on identity and sense of self

Group 4 – explain how she structures her poems

With these guiding principles in mind, teachers have a foundation from which they can implement provision of the gifted. To build upon these principles and to turn their intent into a classroom reality, several strategies have been introduced. The following discussion will look at the 4 main strategies which teachers at St Cuthbert's College have been encouraged to adopt in their classrooms. Whilst there are many different approaches to meet the needs of the gifted in the regular classroom, these were selected for several reasons:

- 1) Firstly, some teachers were already doing some of them some of the time. Therefore there were pools of good practice already in the College which were used to illustrate their potential.

- 2) Some of the strategies were already used in the Junior School e.g. curriculum compacting, and it was therefore logical to extend this strategy across the age range.
- 3) These strategies represent good practice in the field of gifted education and are therefore worthy of development across the College.

### Strategy 1: Pre- testing

Another way of applying Kaplan's model in the regular classroom comes with pre-testing. By ascertaining what knowledge and skills students bring with them into the classroom, the teacher is able to reduce the core content and offer extension. The process can be altered to avoid repetition and the product may be innovated to allow the gifted to display their new learning in a way that offers greater challenge and meaning. Pre-testing is common in Junior Schools but seems less widely used in Senior Schools. Below is an example used in Year 11 History to uncover what students already know at the start of the unit.

#### Diagram 2

#### The Origins of World War Two

Please answer the following questions as fully as possible.

#### World War One:

When did World War One start and finish?

Who fought on each side?

#### Treaty of Versailles:

Who set the terms of the Treaty?

What are reparations?

What is unlimited indemnity?

In the film there are photos of three politicians. Who are they and which countries do they represent?

What was agreed in the Treaty?

#### Period of Hope - Peace at last?

What was The League of Nations? What was its aim? Who was a member and who wasn't?

What were The Dawes and The Young Plans?

Who are the men seen in the cartoon?

Who was Mussolini?

Why did he invade Abyssinia?

Where is Manchuria?

Why did the Japanese invade it?

Why did Germany become involved in the Spanish Civil War?

Why did The League of Nations not act over the bombing of Manchuria?

Why did Germany re-militarise the Rhineland?

Why did Germany invade and merge with Austria?

Why did the League of Nations not act over these events?

What happened to Czechoslovakia?

Why did the British and French agree to this?

What did the British PM, Neville Chamberlain, believe he had achieved?

#### Appeasement:

What is meant by the term Appeasement?

Why did Britain and France believe this was the correct course of action?

What is significant about the German invasion of Poland?

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Diagram 2 illustrates a pre-test on the Year 11 History topic of World War Two. The questions are answered after the students watch a multimedia presentation showing the main events, characters and places involved. The purpose of the presentation is to remind students of prior knowledge as well as generate interest for the following lessons. Students who score highly on the pre-test are accelerated through the knowledge and understanding activities and on to higher order thinking activities. Some activities are missed out for those who can prove prior mastery of the knowledge. In this way the gifted are rewarded for the knowledge they bring with them and are able to move to suitably challenging activities at a pace faster than the rest of the class.

### Strategy 2: Bloom's Taxonomy

Bloom's Taxonomy (1956) works well with the Kaplan's model as well as with pre-testing. By incorporating Bloom's Taxonomy at the planning stage, teachers can include breadth and depth in a topic that will meet all individual needs in the class. By pre-testing, teachers can discover the level of prior knowledge gifted students bring with them and therefore start them on a different learning pathway to others. Alternatively, Bloom's Taxonomy allows teachers to seamlessly differentiate the amount of practice or basic comprehension work students complete before moving on to more challenging activities. The gifted will often pick up the core of a topic and devise their own questions. Having to work through the low level knowledge and understanding stage with others can be frustrating and kill off the thirst to learn more. Bloom's Taxonomy allows the inclusion of accelerated pathways for the gifted to engage in higher order thinking activities and open ended inquiry.

In terms of the relationship between Bloom's and the Kaplan's models, there is clear symbiosis as shown in Diagram 3 below.

**Diagram 3**

	CONTENT	PROCESS	PRODUCT	LEARNING ENVIRONMENT
KNOWLEDGE	Pre-testing allows for avoidance of repetition.	Acceleration allows faster pace and greater engagement with higher order activities.	Flexibility will allow demonstration of knowledge in more challenging context.	Based in the regular classroom, the gifted are able to engage in work at their own level whilst working alongside peers.
COMPREHENSION				
APPLICATION				
ANALYSIS	Deeper and broader analytical thinking with wider range of variables or sources. Gifted able to reach and justify complex and original evaluations.	Greater scope for gifted to work independently, to determine direction of learning.	Scope for product to be tailored to students where appropriate. Gifted able to develop more sophisticated and mature product with negotiated assessment rubric.	Gifted experience is qualitatively richer and deeper due to engagement with advanced material, a process that offers rigour and a product that allows powerful communication of learning. ©Graham Watts 2006
SYNTHESIS				
EVALUATION				

Examples of how Bloom’s Taxonomy can be used to meet the needs of the gifted in the regular classroom can be seen in Diagram 4. This unit outline, whilst being comprehensive, may be a little daunting to students. An alternative representation is to convert this outline into a digital resource that students access and manage themselves as they progress along their individual pathways.

**Diagram 4:**  
**MULTIPLE INTELLIGENCES & BLOOM’S TAXONOMY**  
 UNIT OF STUDY: Early Auckland EAR LEVEL: 7

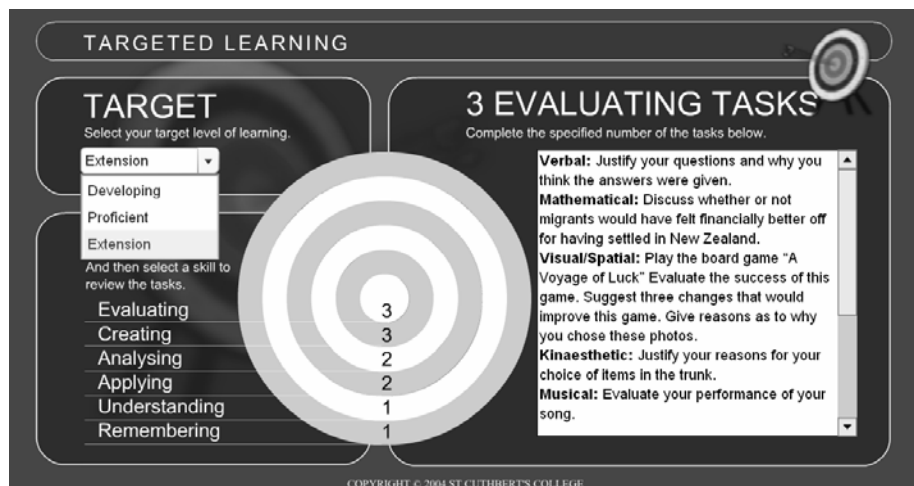
Template adapted from Ralph Pirozzo, 1997

Gardner’s Multiple Intelligences	Bloom’s Taxonomy					
	Remembering	Understanding	Applying	Analysing	Creating	Evaluating
<b>Verbal</b> I enjoy reading, writing & speaking	Cloze reading activity	**Glossary of Early Auckland words	**Write a diary as if you are on an immigration ship to NZ.	Use a Swartz compare and contrast map to compare school in the 1800’s with school today.	Ask 5 questions of one of the following & write the answers you think they would give. Local Maori Wealthy landowner Servant A fencible soldier or his wife	Justify your questions & why you think the answers were given.
<b>Mathematical</b> I enjoy working with numbers & science	Find out about the supplies brought by the ship and what it would have cost.	Prepare a graph to show the growth in number of migrants to NZ from 1840 - 1900	On a world map show where the early immigrants came from.	Carry out a PMI on the reasons for leaving England.	Estimate the provisions needed for a 5 month passage for a hundred people. See example	Discuss whether or not migrants would have felt financially better off for having settled in NZ
<b>Visual/Spatial</b> I enjoy painting, drawing & visualising	Write captions for photos taken at Howick Historical Village.	Draw an aerial map of an historical village showing the essential services.	**Create a poster encouraging immigration to NZ	Family roles Using a tree map show the roles of the family in the 1800’s.	1. Make a board game based on a voyage to New Zealand. 2. Make a montage of photos from Howick Historical Village.	1. Play the board game “A Voyage of Luck” Evaluate the success of this game. Suggest 3 changes that would improve this game. 2. Give reasons as to why you chose these photos.
<b>Kinaesthetic</b> I enjoy doing hands-on activities, sports & dance	Inside a shoe box recreate the inside of an Early Auckland Home.	Make a toy peg doll. Instructions	Build a model of a raupo hut.	Make a rag rug and explain their purpose and the process involved in making them.	Create a trunk with 10 items that you think would be essential to bring to NZ with you. Justify your reasons.	Justify your reasons for your choice of items in the trunk.
<b>Musical</b> I enjoy making & listening to music	Learn the song “Land of Plenty” by OMC	Explain what the song is about.	Explain the importance of music in people’s lives in the 1800’s.		Rewrite the lyrics of song to show the perspective of someone leaving the UK & coming to NZ.	Evaluate your performance of your song.
<b>Interpersonal</b> I enjoy working with others				In groups of 4. You are owners of ship leaving the UK. You have 100 applicants but only 70 berths on your ship. Using the 6 thinking hats decide on the skills and personal attributes needed to be a successful applicant. Hint: Habits of the Mind will be useful. © Christine Stevens, Stacey Verran, Graham Watts 2005		

Diagram 5 shows the digital interface of the same unit. Students have been pre-selected into one of three ability bands, though all are working side by side on computers in the same class. The three levels are:

- Developing – less able
- Proficient – average ability
- Extension – gifted

**Diagram 5**



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Students click on their Target Level and the number of activities for each level of Bloom's Taxonomy is displayed. The range of activities is the same. The focus however changes, thus the gifted spend less time working on lower order activities and can skip them if their pre-test displays sufficient prior knowledge. Therefore, the gifted move quickly and seamlessly on to the higher order activities where they spend most of their time during this unit. There is scope for all students to select which activities they want to do thus allowing for individual interest. From experience I can vouch that this is an effective model for individual differentiation. Students are able to work alongside one another, all working on different, yet suitably challenging activities in a seamless way that withdrawal groups cannot offer. Students enjoy the interaction with the digital interface and like the freedom of choosing which activities they complete. The gifted are well served as their prior knowledge is recognised and valued. They experience a qualitatively different learning experience as a result of this model and are able to set their own pace free from the movements of the rest of the class. Such provision, I consider, is preferable for the gifted than separate schools, separate classes or separate lessons.

### Strategy 3: Parallel Curriculum

The Parallel Curriculum (Tomlinson, Kaplan, Renzulli, Purcell, Leppien & Burns 2002) has proved to be an interesting and popular curriculum model for the gifted at St Cuthbert's College. It fits well with the CONTENT – PROCESS – PRODUCT – LEARNING EXPERIENCE model, as at its core is the qualitative enrichment of content and a deeper, more personal learning experience. The Parallel Curriculum assumes the differentiation of the core curriculum. Students are to move through the core at their own pace and engage with challenges commensurate with their ability. It is for the gifted that the Parallel Curriculum comes into play. The three parallels are Connections, Practice and Identity. Each is a strand that overlays the core and encourages students to make connections with other learning, with the practice of the subject specialist and with themselves. These are strands that are arguably relevant to all students but not all will move on from the study of the core. In order to avoid the 'more of the same' approach, Tomlinson et al have designed generic strands that can enrich any subject area and help the gifted develop a closer relationship with that subject.

Taking each strand in turn, they enrich student learning as follows:

- Connections – this parallel grows out of the core curriculum and encourages students to engage with key concepts, principles, and skills. It is essentially about making links between areas of learning and about making new meanings with the wider world.
- Practice – this parallel grows from the core curriculum and encourages students to learn how experts in the field think and act. Students are encouraged to become scientists rather than students studying science and as poets rather than students writing poetry.
- Identity – this parallel, like the others, grows out of the core curriculum. It encourages students to see themselves in the context of the subject, to consider their role and future within the subject and to develop the student's sense of self.

The Parallel Curriculum has been used in many subject areas at St Cuthbert's College as a tool to extend content in a dynamic and engaging way. Rather than adding to knowledge and understanding, the parallels develop higher order thinking activities and meta-cognition around the content thus making new meaning and a deeper appreciation of contexts. For the secondary school student whose learning is compartmentalised by subject specialisms and timetable constraints, this presents an opportunity for the gifted to re-connect their learning and make links beyond the classroom. It also offers structure for those gifted who are faced with a myriad of choices. Those gifted who have almost endless opportunities and could specialise in many directions are given scope to consider themselves and their futures in these subjects. This supports the gifted in reflecting upon themselves, their strengths, interests and futures.

An example of how the parallel curriculum has been developed is shown in Diagram 6 below.

Parallel Curriculum and Blake			
Core Curriculum	Connections	Practice	Identity
<p>Knowledge and understanding. Knowing the work.</p> <p>Blake's World: Innocence vs. Experience, Imagery patterns: freedom vs. constraint, growth vs. decay, light vs. dark, natural vs. manmade, community vs. isolation etc. Role of spirituality and organised religion, Use of sound devices: metre, rhyme, euphony, cacophony</p>	<p>Defining in context:</p> <p>No formal education: taught by his mother. He in turn taught his sister and his wife to read and write.</p> <p>During Blake's time, London became the centre of the industrial revolution. Factories increasingly became the primary means of wealth creation. No laws governing working hours, child slavery etc.</p> <p>Urbanisation: overcrowded housing, breakdown in parish law due to increased population.</p> <p>French revolution: a civilised society crumbled into bloodshed and slaughter in the streets. (1792 was one of the bloodiest years.) The French monarchy showed no compassion for its people ('Let them eat cake.' -Marie Antoinette) The death of Blake's mother (1792)</p>	<p>The work of the author: what is the motive of the writer? What is the writer's background? What influences impacted on the author growing up or later in life? How did commercial factors compromise/shape the work? What societal and cultural influences show through in the author's work?</p> <p>The books were prepared by hand, using a printing method given to Blake by God in a vision. A lot of imagery is used because the poems were designed to be seen as much as read. They were designed as 'songs' for children so rely heavily on sound devices. Euphony for the lullabies, cacophony for the cautionary tales. Blake believed he was a prophet, so the narrative is authoritative and increasingly didactic in the Experience poems.</p>	<p>How does this work affect your mood/thought/attitude? Can you see any link/applications used today? Have these issues got better? Worse? Not relevant? Are the examples the same nowadays?</p> <p>The connections Blake's world has with ours. Coming of age/loss of innocence The environmental, socio-economic, geo-political changes occurring in our world. Are they just? Blake died in poverty and obscurity. Genius is not always recognised by the people around it. Who deserves greater recognition today?</p> <p>© Mark Osbourne '04</p>

Used in a more generic way, Diagram 6 shows how the Parallel Curriculum can be the basis for self study for the gifted working independently. The diagram shows the guidance given to Year 13 gifted students studying for Scholarship in History. This assumes the students are attending the lessons that deliver the core curriculum but recognises the gifted need to engage with material at a more complex level if they are to achieve Scholarship. To support the gifted in their private study, this template directs the gifted to make connections with the core, to consider the work of the historian and also to reflect upon their relationship with the subject. Feedback from the gifted students using the parallel curriculum has been highly positive. They especially like the scope for independent learning and the sense of support, even reassurance; it gives them when working away from school. Teachers also praise the parallel curriculum as it gives them a starting point for discussion with gifted students who are considering a career in their subject. The strands give structure for teachers to guide students through the reflective process of how they relate to the subject and the future it might offer.

Diagram 7

Parallel Curriculum and History NCEA			
Core Curriculum (Extensive knowledge of the period)	Connections (making links)	Practice (The work of the Historian)	Identity (Own Voice)
<p>Knowledge and understanding</p> <p>Ability to apply knowledge and understanding</p> <p>Ability to analyse a range of sources, question their reliability, representativeness and provenance</p> <p>Ability to synthesise arguments and theories.</p> <p>Ability to evaluate evidence, arguments and theories</p>	<p>Can you make connections between events in different countries/cultures/societies? How significant are these connections?</p> <p>Can you make connections across different time periods? How significant are these connections?</p> <p>Can you make connections between events within a period and see themes developing?</p> <p>Can you see continuity over time and explain its significance?</p>	<p>What is the historian's perspective?</p> <p>What shapes the historian's perspective?</p> <p>How do we create balance in our understanding of these events?</p> <p>How does this historian/work score in terms of: Reliability? Validity? Usefulness? Provenance?</p> <p>To what extent do these sources corroborate amongst themselves and to other work?</p> <p>How might the biases of the historian have shaped this work?</p> <p>How might a historian from another country or culture have interpreted events differently?</p>	<p>Can you see relevance with issues today?</p> <p>To what extent are there unresolved issues?</p> <p>To what extent do you feel empathy with the people of the past? How might this inform your writing?</p> <p>How can the lessons learnt from this period inform our plans for the future?</p> <p>To what extent are you able to bring your argument to life by including consistent argument, relevant evidence, quotes or illustrative examples to produce a captivating essay?</p> <p>How do you and your views relate to this topic? Issue?</p> <p>© Graham Watts 2004</p>

#### Strategy 4: Adoption of New Technologies including multimedia.

A final approach we have adopted at St Cuthbert's College is the use of multimedia to enrich learning for the gifted. Whilst there is a strong argument that all students benefit from engagement with information technology and multimedia in particular, there are specific uses that enrich learning for the gifted. Whilst some students are challenged by a single source of media, (be it a text, a film or a website), others thirst to learn from a wider variety of media. The gifted benefit from access to a variety of media that offer the official and the unofficial story. The use of podcasts and video podcasts allows the gifted to gain a wider, more circumspect view. The ability to present information via these media encourages students to consider new and different audiences and to make connections with the wider world. Recently, I worked with some gifted students who put their learning together to form a video podcast. This innovation in process and product allowed the gifted to work collaboratively, and virtually free from teacher direction. They used software skills they had self-taught and broadcast their work on the World Wide Web. Perhaps the most impressive aspect of this Year 8 work was their analysis of exactly what they were scripting, how others might interpret what they said, what their work added to the state of knowledge already available and how others might want to build upon their findings. This activity would not have suited all students in the group but this change of process and product allowed the gifted to experience some of the parallels described by Tomlinson and to focus on the higher order activities as outlined by Bloom. This use of multimedia has great potential to reignite the interests of the disaffected and underachieving gifted and will I suspect, be increasingly common as we learn to understand the nature of Generation Y.

Monitoring and evaluation strategies are in place and initial findings suggest these strategies are being used effectively. The increasing use of these strategies in itself shows that provision for the gifted is growing in classrooms across the college. Students satisfaction surveys have given positive feedback on differentiation and curriculum compacting. The inclusion of annual planning for gifted provision in all year levels and subject areas has helped raise the profile of gifted education and engaged all teams throughout the college in developmental work. This will, over the course of time, result in major changes that will benefit the gifted. Their needs are now identified, principles in place and gradually strategies to meet these needs developed.

#### SUMMARY

The following steps have been introduced at St Cuthbert's College in the past three years and are still a work in progress. The use of guiding principles that are shared amongst the staff have empowered teachers to take ownership and direction of gifted provision. A range of strategies are on offer to teachers to select and deploy as they see fit. This has proved effective as teachers are not fenced into any particular approach. They are encouraged to try several strategies and customise them to make them work for themselves and their gifted students. The steps were as follows:

1. Make sure gifted provision is qualitatively different. There will be times when adding content will be beneficial for learning, but avoid only adding content.
2. Adopt an over-arching approach to curriculum planning and differentiation. Kaplan's CONTENT - PROCESS - PRODUCT - LEARNING EXPERIENCE model offers a flexible foundation from which provision can be developed over time as needed. By having a shared approach all teachers have a core understanding of how to provide for the gifted and can work together collaboratively to develop provision.
3. Adopt curriculum planning models that you, and your colleagues, feel are appropriate to your students. Examples of such may include Bloom's Taxonomy and the Parallel Curriculum though there are plenty more which may be preferable to your school and your teachers. Work together as a team to develop expertise, build a bank of resources and face the challenge of meeting the needs of the gifted together.
4. Utilise technology to change the content, process and product whenever possible. Generation Y students are used to multi-modal learning and feel perfectly at home using leading edge technology. Use this interest as a way of accessing their learning modality and explore how technology will shape their future learning.
5. Allow students to take as much direction over their learning pathways as possible. The gifted need less practice and repetition and often bring substantial knowledge into the classroom. See this as an asset and encourage the gifted to determine what they need to do to achieve their learning outcomes.

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