

Students with Disabilities

Some gifted and talented students have physical and sensory disabilities. The “disabled gifted” are amongst the “hidden gifted” because their special abilities are masked by their more visible physical and sensory disabilities. However, by adulthood it is often their exceptional talent that is outstanding. Consider, for example, musicians who are blind.

It is important to try to identify, as soon as possible, students who have disabilities but who may have special abilities. Teacher observation and the use of rating scales have been used to assist with identification. Some of the most effective methods have been self- and peer nominations.

Underachieving Students

The identification and remediation of seriously underachieving gifted and talented students are notoriously difficult. Moltzen (1996) points out that it may be relatively easy to obtain information on a student’s performance at school but is much more difficult to find an indicator of ability. Moltzen further suggests that providing a responsive learning environment that is secure and student centred and that rewards accomplishments without fear of ridicule or humiliation will help identify and remediate the gifted underachiever.

Within such a setting, careful teacher observation will be effective in helping to identify such students, particularly if teachers are alert to the behavioural characteristics of this group. Checklists and teacher observation scales are also helpful in increasing the validity and reliability of teacher observation.

Parents are also important in helping to identify the abilities of this group of students. Evidence of high achievement at home or in the community is particularly significant. Peers are another source of information that can be useful in this regard.

Students from Low Socio-economic Backgrounds

Disadvantaged gifted and talented students (or gifted and talented students from low socio-economic backgrounds) are difficult to identify and are seriously underrepresented in programmes for the gifted and talented. Since the performance of these students generally declines the longer they are at school (by comparison with students from more advantaged backgrounds), it is critically important to identify them as early as possible. Attention should focus on early childhood education and on the junior school.

Traditional identification methods tend to be ineffective with this group of students. Standardised tests of achievement and intelligence may penalise students from lower socio-economic backgrounds. Non-verbal tests of general ability, such as the Standard Progressive Matrices, are more culturally fair although they do not predict academic performance as well as some tests.

The accuracy of teacher identification can be increased with the use of checklists designed specifically for identifying disadvantaged gifted students. Peer nominations have proved promising, particularly where peers have identified areas of special ability outside the classroom, such as art, music, sport, and leadership. Of particular value, however, has been the responsive learning environment approach for this group of students. When coupled with early identification and intervention, it is usually the most effective method.

Summary: Identification of Gifted and Talented Students

- Issues of equity are fundamental to the identification of the gifted and talented. An inclusive approach that will benefit as wide a group as possible is more valuable than an exclusive approach.
- Special attention should be given to the "hidden gifted". These include the disadvantaged gifted, the disabled gifted, those with learning difficulties, the underachieving gifted, and those from minority cultural and ethnic groups.
- Identification is a mediating link between definitions of giftedness and talent and educational programmes.
- It is helpful to have a school-wide policy on the gifted and talented that co-ordinates identification in the school.
- Some of the principles of sound identification suggest that it should begin early, be continuous, incorporate a team approach, be as unobtrusive as possible, and include both quantitative and qualitative methods.
- Identification should employ a wide range of quantitative and qualitative methods. Some of these methods are:
 - teacher, self-, peer, and parent nomination;
 - standardised tests of intelligence, achievement, and creativity;
 - teacher-made tests;
 - portfolios and performance-based assessments;
 - rating scales and checklists.
- A responsive learning environment approach, in which rich and stimulating learning experiences can take place, helps to challenge gifted and talented students and to enable their special abilities to "surface" and be identified. Such an approach is particularly helpful for identifying gifted and talented students who are disabled, disadvantaged, or from different cultural groups.
- Identifying gifted students from diverse cultures poses special challenges. Standardised tests of intelligence and achievement and even teacher and self-nominations are often not appropriate or effective. Of more value for identifying Māori students and those from other ethnic groups are the evaluation of students' products, careful teacher observation through a responsive learning environment, and input from whānau members and kaumātua.

PART 2: PROGRAMME DEVELOPMENT AND EVALUATION

Differentiation for the Gifted and Talented: Principles and Practices

Once gifted and talented students have been identified, our next question might well be “Now what do we do with them?” While the options are many, the crucial factor in programme development and implementation is to make certain that programmes are appropriate. Using identification as a means to an end, as McAlpine (1996) advocates, rather than an end in itself, helps ensure that the differentiated programme is tailored to the individual strengths and interests of the gifted and talented.

The purpose of defining and identifying giftedness is to uncover individual abilities, qualities, and interests, and the objective of differentiation is to further develop them. Gifted education, in its simplest terms, is about enabling gifted and talented students to discover and follow their passions. It’s about opening doors, removing ceilings, and raising expectations by providing an educational experience that strives towards excellence.

A different way of learning is what kids are calling for. All of them are talking about how our one-size-fits-all delivery system – which mandates that everyone learn the same thing at the same time, no matter what their individual learning needs – has failed them.

(Sarason, 1993, cited in Tomlinson, 1999, page 1)

The New Zealand Curriculum Framework advocates flexibility and individualisation, but it is questionable whether our classrooms adequately provide for the needs of gifted and talented students. The array of possibilities offered by differentiation may be used to enhance the educational experiences of our gifted and talented students, creating classrooms tailored to individual size and fit.

Principles of Differentiation for All Students

1. The teacher is clear about what matters in subject matter.
2. The teacher understands, appreciates, and builds upon student differences.
3. Assessment and instruction are inseparable.
4. The teacher adjusts content, process, and product in response to student readiness, interests, and learning profile.
5. All students participate in respectful work.
6. Students and teachers collaborate in learning.
7. Goals of a differentiated classroom are maximum growth and individual success.
8. Flexibility is the hallmark of a differentiated classroom.

(Tomlinson, 1999, page 48)

Ideally, these principles provide a framework for all New Zealand classrooms and for all students. Yet to avoid falling into a one-size-fits-all pattern of differentiation, it is important to look at how to make this happen for gifted and talented students.

Due to the unique needs of gifted and talented students, it is essential that educators examine general teaching methods and practices with the aim of differentiating those for the gifted and talented, so that potential comes one step closer to realisation.

The underlying principles guiding differentiation for gifted and talented students are as follows.

1. Present content that is related to broad-based issues, themes, or problems.
2. Integrate multiple disciplines.
3. Present comprehensive, related, and mutually reinforcing experiences.
4. Allow for in-depth learning of a self-selected topic.
5. Develop independent or self-directed study skills.
6. Develop productive, complex, abstract and/or higher order thinking skills.
7. Focus on open-ended tasks.
8. Develop research skills and methods.
9. Integrate basic skills and higher thinking skills into the curriculum.
10. Encourage the development of products that challenge existing ideas and [that] produce "new" ideas.
11. Encourage the development of products that use a variety of techniques, materials, and forms.
12. Encourage the development of self-understanding, that is, recognising and using one's abilities, becoming self-directed, and appreciating likenesses and differences between oneself and others.
13. Evaluate student outcomes by using appropriate and specific criteria through self-appraisal and through criterion-referenced and/or specialised instruments.

(United States Curriculum Council of the National Leadership Training Institute on the Gifted Talented, 1986)

VanTassel-Baska further elaborates these points when she describes the necessity for continuity, appropriateness, diversity, integration, openness, independence, substantive learning, complexity, interdisciplinary learning, decision making, and challenge.

Qualitative Differentiation

From these principles, it becomes clear that differentiation for gifted and talented students must consist of qualitative, rather than quantitative changes. These adjustments to their education should incorporate well-thought-out, meaningful learning experiences that capitalise on students' strengths and interests.

Within qualitative differentiation for gifted and talented students, three primary areas of differentiation emerge:

- Content: What is taught or learned — the concepts, information, ideas, and facts within the curriculum.
- Process: How the content is taught or learned — how new material is presented, what activities students are involved in, and what teaching methods are used.
- Product: How learning is evidenced by gifted and talented students — tangible or intangible results of learning, "real" solutions to "real" problems.

As a natural result of differentiating each of these elements, the learning environment is also transformed. This transformation of the learning environment is determined by both the teacher and physical classroom environment.

Maker and Nielson (1995), elaborate on the areas of differentiation, as set out in the table below. Any content, process, or product modification should involve all the indicators below its heading:

CONTENT	PROCESS	PRODUCT
Abstract	Discovery	Results of a real problem
Complex	Open-endedness	Variety
Varied	Metacognition	Self-selected
Organised around concepts	Higher level thinking processes	Addressed to a real audience
Study of gifted people	Choice	Appropriately evaluated
Study of methods of inquiry	Group interaction Pacing and variety	Represents transformation of knowledge via originality

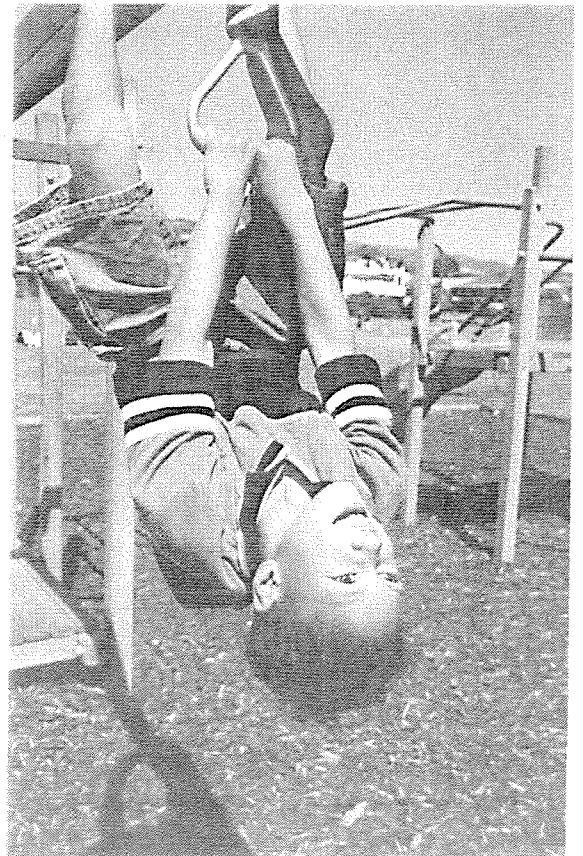
In order to effectively implement content, process, and product modifications, the learning environment, both physical and psychological, must also be considered.

Learning environments for gifted and talented students should be:

- learner centred rather than teacher centred;
- teacher independent rather than teacher dependent for most tasks, including classroom management;
- open to new people, materials, and things;
- complex and filled with resources;
- open to acceptance rather than judgment, and so “psychologically safe” for risk-taking, creativity, and individuality;
- open to varied groupings;
- flexible in all aspects of management, especially scheduling;
- tolerant of high mobility of movement, both in and out of the classroom.

(Adapted from Maker and Neilson, 1995)

Differentiation for gifted and talented students means movement both horizontally and vertically from the usual curriculum. It is about expanding horizons and shattering glass ceilings. In gifted education, this is referred to as enrichment and acceleration.



Enrichment and Acceleration

Perhaps the two most commonly associated terms in any discussion about gifted education programmes are *enrichment* and *acceleration*. Townsend (1996) defines these two terms as follows:

Enrichment refers to "learning activities providing depth and breadth to regular teaching according to the child's abilities and needs" (page 362). Enrichment activities are normally in addition to and different from the regular classroom activities by way of offering challenge.

Acceleration is instruction that aligns gifted and talented students' abilities and learning needs more closely to the curriculum. "In practice, acceleration occurs when children are exposed to new content at an earlier age than other children or when they cover the same content in less time" (page 361). Thus, acceleration differentiates the timing of introduction of content and/or the rate of coverage.

These two approaches are not mutually exclusive and best meet the needs of gifted and talented students when used together. For as Townsend reminds us, "... it is essential ... to adopt an integrated approach to the education of gifted students" (page 361).

In New Zealand, enrichment is the preferred option for meeting the needs of gifted and talented students. There are advantages and disadvantages to each approach, as illustrated in the tables below, but by blending the two, a balance of good practice in the education of gifted and talented students can be achieved.

Acceleration

Advantages

- Adequate and superior understanding of the curriculum is obtained (Kulik and Kulik, 1992).
- Behavioural and underachievement problems associated with boredom and quick mastery may be alleviated.
- Research has not confirmed parental and teacher concerns about possible negative social and emotional effects (Townsend, 1996).
- When well-planned and individualised, acceleration provides mental stimulation, opportunities to interact with like minds, and avoidance of "rust-out" (Townsend, 1996, page 363).

Disadvantages

- Students may miss out on learning some processes related to new tasks or content, creating gaps in learning.
- If acceleration simply means moving into a higher level with little or no adjustments made to teaching methods or materials, it may not adequately address individual strengths and interests.
- Some gifted and talented students may feel different or isolated if acceleration means removal from a well-established social/emotional/cultural peer group.
- Students may feel extreme pressure (real or imagined) from teachers, parents, and peers.
- Some teachers may feel uncomfortable or threatened by student abilities that outstrip their own.

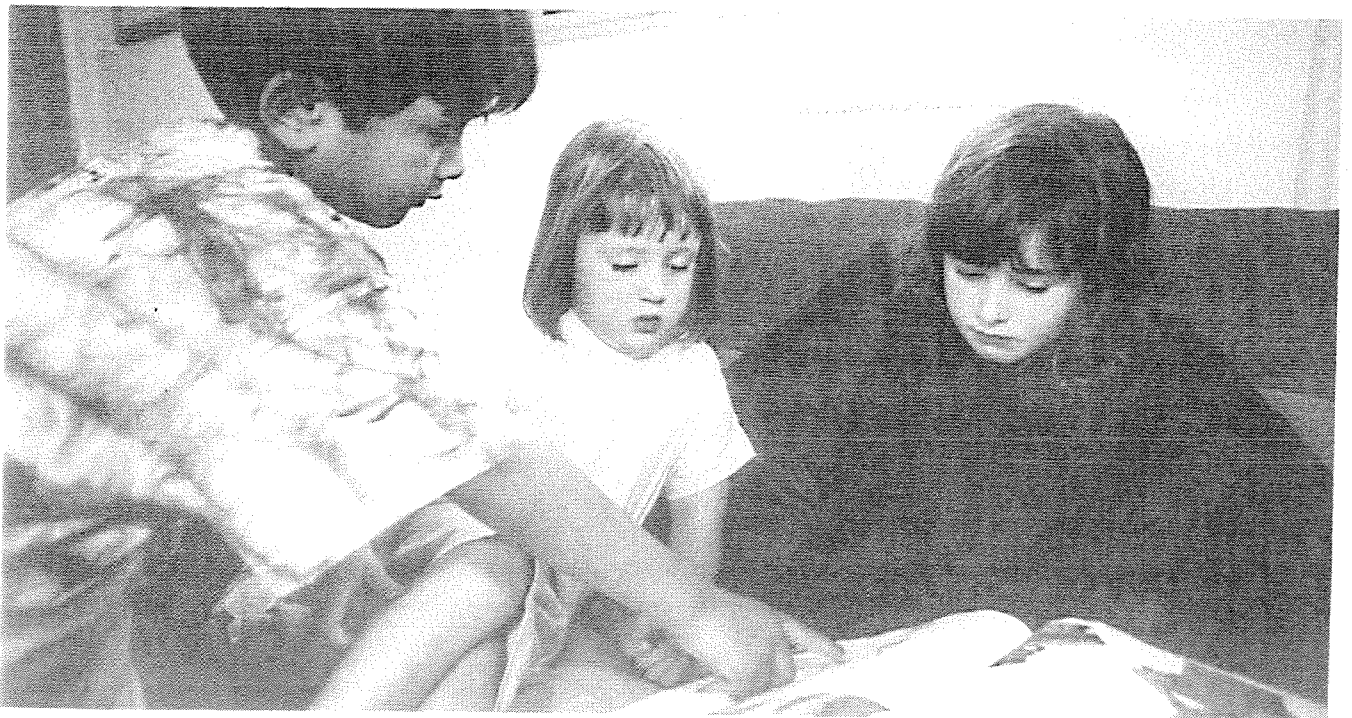
Enrichment

Advantages

- Gifted and talented students, whose passions are many, can be well catered for in an enrichment programme that addresses a “repertoire of interests and breadth of skills and strengths” (Department of Education, Victoria, 1996, page 33).
- Enrichment also allows for varied grouping with like-ability, similar-interest, and/or same-age peers.
- Schools advocating an inclusive notion of giftedness may find enrichment an appealing option in that it may sidestep both formal identification and overt labelling (Townsend, 1996).
- When planned in close association with the curriculum, enrichment avoids a fragmented learning experience by keeping gifted and talented students connected – albeit horizontally – to the general classroom activities and topics of study.
- Enrichment may curb problems associated with intellectual frustration and boredom.

Disadvantages

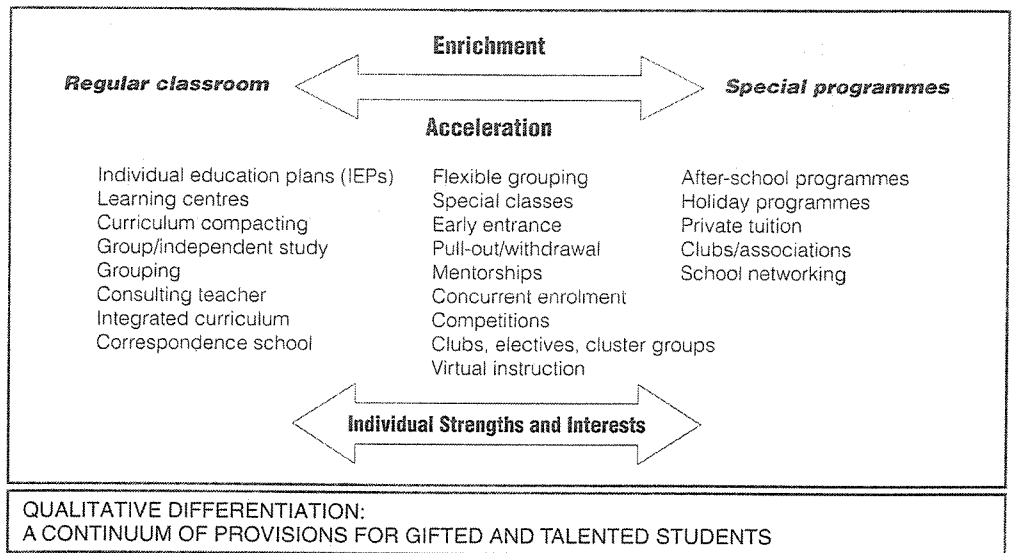
- Enrichment is a difficult term to define and is sometimes masked by the notions of extension, more of the same, or busy work.
- There is a common view that enrichment is good for all students, and if that is the case, we must examine whether it is then an appropriate solution to the learning needs of the gifted and talented.
- When implemented, enrichment may simply be a homogeneous solution, paying little or no attention to the needs of individual students.
- Enrichment is often provided in a patchy, one-off fashion, short in duration and lacking in “clear goals, adequate substance, and carefully planned teaching strategies” (Cox, Daniel, and Boston, 1985, cited in Townsend, 1996, page 367).



Because of the advantages and disadvantages of each approach, schools planning and implementing differentiated programmes for gifted and talented students draw upon both approaches, merging enrichment and acceleration. To serve the range of abilities and interests of gifted and talented students, schools will probably discover that no option works on its own. Ideally, a continuum of provisions should be offered.

Provisions for the Gifted and Talented

If a continuum of opportunities is offered to gifted and talented students, it will begin in the regular classroom. From there, it is expanded to include other options suited to individual student needs. The following diagram and subsequent explanations illustrate this further.



The Regular Classroom Programme

Gifted and talented students spend most of their school education in regular classrooms, which can be tailored to fit individuals by way of careful planning and instruction, flexibility, and resourcefulness. New Zealand classrooms are particularly suited for gifted and talented students when teachers make conscious decisions to implement *The New Zealand Curriculum Framework* as intended – based on the assessed learning needs of students and with the flexibility to adapt instruction to individual levels.

Some of the strategies suggested in the diagram above for transforming the regular classroom into an appropriate learning environment for gifted and talented students are described more fully as below:

Individualised Education Plans (IEPs)

Based on assessment and team planning, IEPs involve setting goals for individual students. These plans reflect what the student already knows, what the student needs to learn, and what differentiated activities are to be offered. The involvement of teachers, curriculum specialists, parents, and especially the students themselves should ensure a plan that meets unique cognitive and affective needs. Planning, monitoring, and review are crucial to the success of



IEPs. Effective IEPs require commitment and communication and can be very time consuming.

Learning Centres

Providing a choice of activities based on high-interest topics, learning centres can be designed to both challenge and stimulate gifted and talented students (Winebrenner, 1992). By creating a range of activities suitable for many ability levels and learning styles, these centres allow for individualisation and independence. Centres may be a library corner, science table, file folder, or colourful box containing activity cards, books, tapes, magazines, equipment, or videos. Centres should focus on important learning goals, provide instructions for students, include a system of monitoring for completion and quality, and include means of assessment.

Some schools may share these centres across classrooms or centrally locate them in a school resource room or library.

Curriculum Compacting

This technique streamlines the curriculum by basing instruction on pre-assessment of skills and knowledge. Previously mastered curriculum that might otherwise be repetitious is eliminated, giving students opportunities for enrichment and acceleration. Because pre-assessment is the start of compacting, basic skill mastery is assured, allowing students to “buy out” time to pursue individual strengths and interests.

Small-group or Independent Study

Individuals or small groups of students may investigate topics related to the curriculum and to personal interests and strengths. Ideally, study of this nature is student selected and directed. However, in initial experiences, teachers may give students choices from which to select, gradually scaffolding students towards independence.

Teachers guide students through topic selection, investigation planning, and goal setting, and finally the presentation of their discoveries. Teachers should facilitate study of this kind through time management, timetabling, availability of resources, checkpoints, specifically taught skills related to research and product development, and finally, assessment.

Teachers may manage a small-group or independent study by using a learning contract, that is, a formal negotiation between teacher and students that specifies content, processes, and products, within a given timeline.

Grouping

Students may be flexibly grouped within the classroom and across the school day according to abilities and/or interests. Teachers plan ability groups on the basis of assessed skills and



knowledge. Though this is a common practice, particularly in many primary classrooms, teachers need to keep in mind that there may be students "beyond the top group", creating a need for off-level assessment in order to adequately place students. Interest groups may arise more spontaneously, with direction given by student curiosity rather than assessment.

Tiered activities, whereby all students work with the same essential skills, but in different directions based upon needs, may complement grouping. It should be noted that co-operative learning groups that have the purpose of academic/intellectual growth work best for gifted and talented students when they are grouped homogeneously, rather than heterogeneously (Robinson, 1997). It seems that the notion of gifted and talented students bringing up or helping out less able students may be a myth, with traditional co-operative learning groups often leading to frustration and lack of challenge for the gifted and talented. However, heterogeneous grouping does have some benefits, such as, meeting the service component for gifted and talented Māori students. Thus, a careful balance of grouping practices must be ensured.

Consulting Teacher

Another option for meeting the needs of gifted and talented students is to have a specialist teacher working within the regular classroom with individuals or small groups of gifted and talented students. This requires close communication and co-operation between the specialist and the regular classroom teacher. In some cases, the consulting teacher may work alongside the regular classroom teacher, supporting the teacher's development of specialised opportunities for the gifted and talented. The consulting teacher may therefore work directly or indirectly with gifted and talented students within the regular classroom setting.



Integrated Curriculum

Using broad-based, conceptual themes, this option involves the integration of multiple disciplines, allowing learning across wide issues as opposed to narrow topics. For example, the themes of discovery, survival, or exploration may be umbrellas under which many disciplines and subtopics rest. This approach may be used with all students, with gifted and talented students having the freedom to pursue topics of choice in accordance with their individual needs.

Correspondence School

Another possibility worthy of exploration, particularly for rural students, is The Correspondence School (Green, 2000). Gifted and talented students may be enrolled when a school they are attending is unable to provide appropriate enrichment and acceleration.

The Correspondence School provides for gifted and talented students, allowing those in the top 5 percent of their age group to study extra subjects in a variety of areas.

Distance education allows students to pursue subjects outside the normal school offerings and in a manner that matches individual rates of learning and completion. The courses can be facilitated in the student's usual classroom environment, with guidance and flexibility from the teacher.

Beyond the Regular Classroom

While some gifted and talented students may have their needs adequately met within the regular classroom, other students may experience their most optimal learning experiences outside that structure. The possibilities outside the classroom are many and, with planning and forethought, can successfully work for individual students. Consider the options described below.

Flexible Grouping

Often referred to as cluster grouping or cross-age grouping, flexible grouping entails placing students from one or more levels in a learning situation with a teacher who possesses similar special skills or interests. Flexible grouping cuts across classrooms, with students moving in and out of their regular setting to one that enables further, in-depth pursuit of ability areas. Grouping of this sort capitalises not only on student strengths and interests but also on those of staff and community members. These groups may be academic in nature, such as a maths specialist working with a mixed-age group of high-ability mathematicians, or interest-derived, such as a photography buff working with a group of budding photojournalists.

Special Classes

These specialised classes for gifted and talented students offer broader depth and complexity, usually at a faster pace than would be typical. Sometimes telescoping (for example, when students complete three years of work in two) complements these classes. A skilled teacher needs to work successfully within full or part-time classes for gifted and talented students in order to ensure qualitative differentiation rather than "more of the same".

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Early Entrance

This option, which suits students with advanced academic skills across a range of areas, allows them to skip a level of their education or to enter intermediate, secondary, and tertiary education at an earlier age than usual. In order for this option to be successful, it is essential that students willingly participate and that adequate assessment of both their academic and their social-emotional readiness is undertaken.

This option also requires institutional flexibility to waive entry requirements and possibly assisting parents with costs, timetabling, and transportation – the logistics of making it possible.

In situations where families cannot provide such financial support, schools need to consider outside sources of funding, such as scholarships sponsored by business or civic groups.

Pull-out or Withdrawal Programmes

This option involves setting aside part of the regular school time for gifted and talented students to be grouped with other students of similar interests or abilities. Students are regularly removed from their normal classroom setting for work in a resource room with a specialist teacher, participation in a mini-course, seminars, field trips, or interactions with a special guest.

Schools may vary withdrawal time from an hour a week to a full day per week. It is also common for schools to vary the topics covered so that a wide range of students get to participate. Students working in this sort of arrangement may miss some other classroom opportunities or receive fragmented instruction from the curriculum, so close communication between teachers is essential.

Mentorships

An experienced older student or adult (the mentor) is teamed with a student of similar interests and abilities (the mentee), with the intended outcome of gaining new skills and knowledge. Usually conducted outside school settings, this provision may work best in conjunction with independent or small-group study.

For this option to be viable, a flexible timetabling arrangement is needed, as well as a clear understanding of the intended purposes and outcomes. Mentors may be from any field of endeavour: business and industry, health, the arts, research, and so on.

The role of the mentor is not simply to impart information about their skills or profession but also to nurture the social and emotional aspects of giftedness through empathetic companionship. Mentorships need to be facilitated by offering training to mentors and students on their roles in the partnership, and by appointing a school-based co-ordinator.

Concurrent Enrolment

Also called dual enrolment, this programming option allows students to concurrently enrol in either secondary or tertiary courses while still at primary, intermediate, or secondary school. This arrangement may involve a physical presence at two institutions or may be facilitated through distance education. Normally students pursue this option in a limited number of subject areas, with most students doing so in their primary area of academic ability.

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Competitions

These serve as an ideal platform for gifted and talented students to display their skills and abilities. Many schools already participate in a range of competitions, including science fairs, examinations, and technology challenges. Competitions allow students to pursue interests, demonstrate strengths, and often be grouped with students of like abilities. This option must be well facilitated so that students understand participation is more important than prizes.

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Clubs, Electives, and Cluster Groups

Timetabled on a regular basis, either during class time or lunchtime, this option is normally open to many or all students and may cover interest areas, hobbies, and expertise areas. The range of topics is vast – from stamp collecting, chess, literature, and photography to debating, quilting, music appreciation, and archery. For schools to offer a range of options to students, community and parental involvement is often necessary.

Virtual Instruction

A recent innovation for schools has been the Internet, which can serve as an avenue for not only information but also interaction. The availability of online enrichment programmes has increased and should be investigated by schools able to support such study.

Special Programmes**After-school and Holiday Programmes**

Another range of provisions for gifted and talented students exists outside of school hours and operations by way of specialised programmes offered after school, on weekends, and during holidays. These may include summer camps, sports activities, seminars, and workshops or clubs offered by such organisations as the New Zealand Association for Gifted Children and the New Zealand Council for Gifted Education or by such educational institutions as the George Parkyn Centre. Most of these activities involve fees and are available at different times during the year in limited locations throughout the country.

It is important for educators to be aware of such opportunities so that parents and students can be informed of choices beyond the school itself. Schools may also choose to use these resources in their own programmes as options or for expertise. Again, students should not be disadvantaged because of their socio-economic status, and schools should endeavour to offer assistance when they can.

School Networking

Finally schools may investigate the possibility of working together or, at the least, in conjunction with one another. Schools within regions may choose to share resources, staffing, and specialised curriculum strengths in order to offer a cohesive educational package for their gifted and talented students. Networking may be between teachers and/or students sharing ideas, programmes, and professional development opportunities.

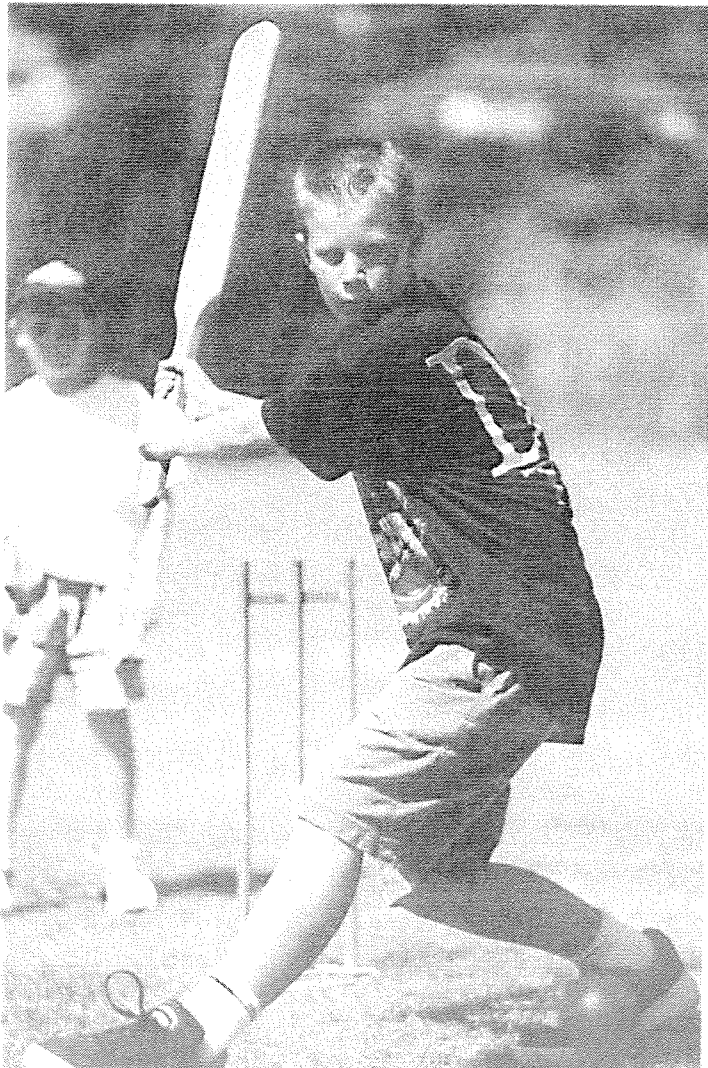
Another crucial way for schools to work together is to establish communication between primary, intermediate, and secondary schools so that students make smooth transitions, with identified needs of gifted and talented students continuously met.

Cultural Considerations

In selecting and developing programmes for gifted and talented learners, it is essential to cater for students from all cultures. Firstly, content should be considered. Schools should encourage and enable learners to select topics of study that are culturally relevant. For Māori students, this could mean an in-depth study of the Treaty of Waitangi or a research of waiata tawhito and waiata composition.

Secondly, process must be considered. For Māori learners, the mentor approach is particularly appropriate, especially if the mentor chosen is Māori. Where mentors are from a cultural group that is different from the mentee, be sure they are culturally sensitive. The use of pull-out or withdrawal programmes must also be considered carefully. If the learner is removed from a culturally safe, comfortable environment and placed in a situation where they are the sole Māori, Tongan or Sāmoan, the gifted provision may do more harm than good.

Thirdly, the product must be considered. Addressing a real audience is an important product component, and is particularly relevant for Māori students. Bevan-Brown (1996) identified "being of service" as an integral component of Māori giftedness. For example, the previously mentioned Treaty of Waitangi study could involve research to support an iwi submission to the Waitangi Tribunal, and the waiata composed during waiata research could be taught to a group and performed at a school concert. Programmes that foster group giftedness would also be appropriate for Māori students.



Curriculum Development and Models

To effectively implement programmes for gifted and talented students, schools need to consider issues related to the development of curriculum. The term curriculum may be defined as "a set of planned experiences for a targeted population" (VanTassel-Baska, 1994, p. xvi). Curriculum should be comprehensive, taking into account the cognitive, social, cultural, and emotional needs of gifted and talented students. Developing a curriculum structure of this nature ensures the longevity of gifted programmes by putting on paper the school's intentions for its gifted and talented students. When developed in conjunction with *The New Zealand Curriculum Framework*, it also eliminates the fragmented nature of these programmes. Planning curriculum also means that gifted and talented students' needs aren't accidentally met but are consciously addressed.

In designing appropriate curricula for gifted and talented students, a curriculum model or models may serve as an ideal framework. Educators of gifted and talented students throughout the world have worked for many years to design and implement programming models: theoretical and practical, abstract and concrete. Schools may choose to adopt a specific model or take a more eclectic approach in adapting several models that suit their needs.

Suitable curriculum models have purposes and procedures that allow for implementing qualitatively differentiated learning experiences for gifted and talented students.

Curriculum Models in Gifted Education

- Enrichment Triad Model (Renzulli, 1977); Schoolwide Enrichment Model (Renzulli and Reis, 1985); Secondary Triad Model (Reis and Renzulli, 1986).
- Purdue Three-stage Enrichment Model (Feldhusen and Kolloff, 1978).
- Autonomous Learner Model (Betts, 1985).
- The Cognitive Domain (Bloom, 1956); The Affective Domain (Krathwohl, Bloom, and Masia, 1964).
- Williams' Model for Developing Thinking and Feeling Processes (1970).

Criteria for Selecting Models

- appropriateness to the situation
- comprehensiveness
- flexibility or adaptability
- practicality
- validity.

(Maker and Nielson, 1995)

The goal in selecting and adapting models is to create educational programmes that enhance the strengths and abilities of gifted and talented students and that reflect the school's definition and identification procedures. Intertwining enrichment and acceleration opportunities should also be an expected outcome.

Three models, which have been used in New Zealand schools, are now examined in more depth: Bloom's Taxonomy, the Enrichment Triad Model, and the Autonomous Learner Model.

Bloom's Taxonomy

While not intended as a model for gifted education programmes, Bloom's Taxonomy has been adapted as a suitable framework for such programmes. The taxonomy is "designed with the purpose of providing a set of criteria that can be used to classify educational objectives at various levels of complexity" (Maker and Nielson, 1995, cited in Riley, 1996, page 194). Suitable for any subject area or age level, the taxonomy focuses on intellectual behaviours within the six areas shown in the diagram below (Bloom, 1956).

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BLOOM'S TAXONOMY

THEORY



PRACTICE

LEVEL	BEHAVIOURS	ACTIVITIES	PRODUCTS
Knowledge	Requires no transformation of information and may be referred to as rote recall	Locate, match, identify, listen, observe	Tapes, diagrams, models
Comprehension	Low level of understanding, making use of information and enabling student to restate ideas	Research, ask, discover	Books, magazines, videos, newspapers
Application	Using previously learned ideas, procedures or theories in a new context	List, construct, teach, paint, report, sketch, experiment, manipulate, interview, stimulate	Diary, puzzle, map, diorama, scrapbook, collection, sculpture, model, illustration
Analysis	Breaking down a whole into its elements or parts	Classify, categorise, separate, compare, contrast, advertise, survey, dissect	Graph, questionnaire, chart, commercial, diagram, report
Synthesis	Putting together parts to form a whole	Combine, invent, compose, hypothesise, role-play, create, write, imagine, infer	Cartoon, poem, story, play, song, pantomime, recipe, invention, article, video, web page
Evaluation	Making judgments or placing values upon something for a given purpose	Judge, evaluate, discuss, debate, decide, recommend, choose	Self-evaluation, group discussion, mock court trial, conclusion, review
BLOOM'S TAXONOMY			

While some contend that all students are capable of each of these processes, educators often advocate that for gifted and talented students, more time and greater attention should be spent at the higher levels, effectively inverting the triangle as illustrated below.