Policy and implementation strategies for the education of

gifted and talented students

Revised 2004

Gifted and talented students

Support package

Acceleration

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Contents

Foreword

This package is intended to support schools in implementing the *Policy and implementation strategies for the education of gifted and talented students* (revised 2004). It explains how school staff can manage the acceleration of gifted students. As part of this initiative, information is available in the support packages on identifying gifted students and differentiating the curriculum. *What are the options? Extension programs for gifted and talented students in comprehensive schools: A discussion paper* (2004) also provides clarification for the implementation of the revised policy.

Some additional support materials, indicated by the icons below, are available on the Gifted and Talented web site at
http://www.curriculumsupport.nsw.edu.au/gats/index.cfm

Key

The following icons designate resources and activities that include:

Reading material, such as policies, documentation, publications and articles supporting the particular aspects of acceleration under discussion

Proformas and checklists for schools to modify for their own school and community

Electronic material, including Internet sites and PowerPoint presentations

Case studies that depict examples of strategies for supporting students and implementing specific acceleration placements.
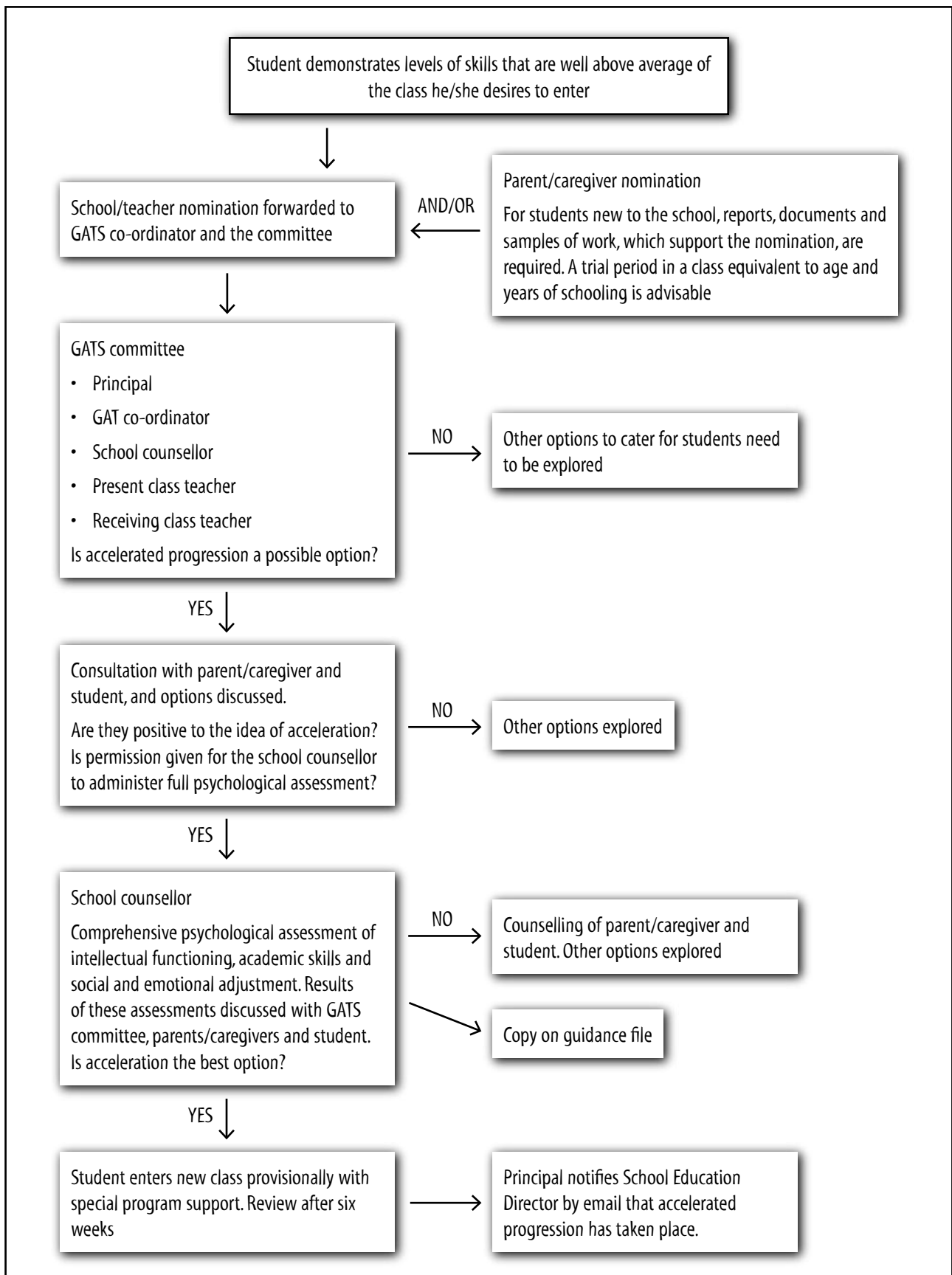
Acknowledgements

Overview

The following overview may help schools to develop their acceleration policy.

Reference should also be made to the *Policy and implementation strategies for the education of gifted and talented students* (revised 2004) and the companion document *Guidelines for the use of strategies to support gifted and talented students* for further information.

Accelerated progression

Student demonstrates levels of skills that are well above average of the class he/she desires to enter

↓

School/teacher nomination forwarded to GATS co-ordinator and the committee

AND/OR

Parent/caregiver nomination

For students new to the school, reports, documents and samples of work, which support the nomination, are required. A trial period in a class equivalent to age and years of schooling is advisable

↓

GATS committee
- Principal
- GAT co-ordinator
- School counsellor
- Present class teacher
- Receiving class teacher

Is accelerated progression a possible option?

NO → Other options to cater for students need to be explored

YES ↓

Consultation with parent/caregiver and student, and options discussed.

Are they positive to the idea of acceleration? Is permission given for the school counsellor to administer full psychological assessment?

NO → Other options explored

YES ↓

School counsellor

Comprehensive psychological assessment of intellectual functioning, academic skills and social and emotional adjustment. Results of these assessments discussed with GATS committee, parents/caregivers and student. Is acceleration the best option?

NO → Counselling of parent/caregiver and student. Other options explored

→ Copy on guidance file

YES ↓

Student enters new class provisionally with special program support. Review after six weeks

→ Principal notifies School Education Director by email that accelerated progression has taken place.

Acceleration

Introduction

"It is critical that gifted and talented students be given appropriate opportunity, stimulation and experiences to develop their potential."

(NSW Department of Education and Training, 2004a, p. 6)

Gifted and talented students have cognitive and emotional abilities that allow them to learn much more quickly than their age peers. Acceleration is a set of administrative strategies that enable educators to cater efficiently and effectively for the diversity of cognitive development, needs and competencies of gifted and talented students (Van Tassel-Baska, 1992a). They allow gifted students to "progress through an educational program at rates faster or ages younger than normal" (Pressey, 1949, in Southern & Jones, 1991), and are not to be confused with modification of curriculum content. This is dealt with fully in the support material on curriculum differentiation.

Acceleration is designed to allow a student to progress through the core content of a school program at a natural rate, rather than being restricted by artificially imposed steps of progression. The interdependent practices of grouping strategies, enrichment, counselling interventions and acceleration are central to maximising learning outcomes for gifted students. The provision of a developmentally appropriate curriculum is the key element of any gifted program (Van Tassel-Baska, 2000) and should minimise the occurrence of underachievement and boredom. The decision to accelerate any student needs to be made in consultation with the student, parents/caregivers, teachers, principal and school counsellor.

The value of accelerated progression for gifted and talented students is becoming more widely accepted across Australia. The practice has the potential to enhance student learning, motivation, accomplishments and self-esteem (Kulik & Kulik, 1984; Van Tassel-Baska, 1986; Southern, Jones & Stanley, 1993; Schiever & Maker, 2003). Of the many intervention strategies provided by schools, acceleration is the one best supported by research (Benbow, 1998). Despite the controversy in this field of research, no studies have shown the practice of acceleration to be harmful to accelerants (Borland, 1989; Kulik & Kulik, 1992; Gross, 1993; Sayler & Brookshire, 1993). Indeed, failure to provide appropriate acceleration for students may lead to more significant negative cognitive and affective outcomes for the student (Feldhusen, Proctor & Black, 1986).

Significantly, the Commonwealth of Australia Senate Committee Report (2001) identified acceleration as being highly advantageous for students who are socially and emotionally ready for an alternative placement. The Committee recommended that Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA) adopt "a more consistent policy regarding suitable acceleration" (Commonwealth of Australia, 2001).

Approaches to acceleration

It should not be presumed that all gifted students would benefit from acceleration. Careful screening and evaluation of candidates are essential in determining the most appropriate intervention strategy for each student. Counselling, an integral component of acceleration, should enable gifted students to understand the purpose, procedures and implications of the proposed accelerative option.

Acceleration should not be adopted in isolation, but should be a component in a strategy of curricular flexibility (Benbow, 1998), combining with other "accelerative options, enrichment options, and out-of-school opportunities that reflect the best possible alternative for educating a specific child" (Benbow, 1998, p. 282). What should be offered is not more work, but rather qualitatively different work that provides advanced conceptual opportunities and stimulates higher-order thinking skills.

In considering acceleration of students, schools will need to consult the following documents:

- *Policy and implementation strategies for the education of gifted and talented students* (revised 2004), available online at
  https://www.det.nsw.edu.au/policies/

- *Policy and implementation strategies for the education of gifted and talented students* (revised 2004)*: Guidelines for the use of strategies to support gifted and talented students* (2004), available online at
  http://www.curriculumsupport.nsw.edu.au/gats/index.cfm

- *Guidelines for accelerated progression* (revised 2000), Board of Studies NSW, available online at
  http://www.boardofstudies.nsw.edu.au/manuals/index.html

Policy

A whole-school approach to acceleration needs to be embedded in the school's policy on the education of gifted and talented students. This is essential so that school staff, students and parents/caregivers have a common understanding of how and why acceleration occurs. School principals and school communities should base the development of a policy and subsequent determination of students' suitability for accelerated progression on the *Policy and implementation strategies for the education of gifted and talented students* (revised 2004) and the *Guidelines for accelerated progression* (revised 2000). Individual key learning areas will also need to consider developing their own policies, in line with whole-school policies. Teachers may need to modify their teaching strategies to facilitate the emphasis on guided discovery learning rather than direct instruction in a faster paced curriculum. (Please consult the support package on curriculum differentiation for information).

The documents mentioned above outline specific criteria for consideration in determining appropriate student placement. Two principal criteria are that students:

- are higher than average achievers

- possess the ability to master the material at more rapid rates compared with age-level classmates (Southern et al., 1993).

Students need to be identified as gifted (see support package on identification), and to demonstrate persistence, independence, flexibility and motivation. While these criteria risk excluding the gifted underachiever, acceleration may be appropriate if underachievement is a consequence of a lack of challenge in the initial placement (Van Tassel-Baska, 1992a). Acceleration always takes place as a trial procedure (e.g. six weeks) and so needs to be documented, monitored and reviewed regularly.

> All cases of accelerated progression should be arranged as a trial of at least six weeks. The student should be aware that a return to the original year placement will occur if the trial period is not a positive experience. It is important in such circumstances to avoid a sense of failure.
>
> (NSW Department of Education and Training, 2004a).

As indicated in the *Guidelines for accelerated progression*:

> Assessment of students should determine in which area of the curriculum they are gifted and the program should cater for the acceleration in this area only.
>
> (Board of Studies, 2000, p. 19)

The range and degree of students' capabilities will therefore determine the most appropriate placement strategy for them.

> As a general guide the following Statewide percentages are indicators of the proportion of students capable of acceleration:
>
> - Year advancement (including early entry): on a Statewide basis 1 in 200 (0.5%) students would be capable of acceleration in all subjects
> - Subject acceleration: on a Statewide basis the most capable 5% of students would be appropriate for acceleration in one subject.
>
> (Board of Studies, 2000, pp. 20–21)

On these figures, the issue of single-subject or whole-year acceleration may not arise in some schools with few enrolments.

School principals should use the following guidelines in determining students' suitability for accelerated progression:

- When a student is being considered for accelerated progression, a trained psychologist may perform a comprehensive, culturally sensitive, psychological evaluation of the student's intellectual functioning, academic skill levels and social-emotional adjustment.
- The student should demonstrate skill levels above the average of the class of intended entry.
- Judgements about the student's social and emotional maturity should include input from the student's parents/caregivers and the school counsellor/psychologist. Gifted students are sometimes rejected by their classmates and within their own culture. It is important that teachers do not confuse the absence of close peer relationships with social immaturity.
- It is important that the student should not feel unduly pressured by schools and parents/caregivers. The student should be eager to move ahead.
- The receiving teacher must have positive attitudes towards Year or Stage advancement and must be willing to help the student adjust to the new situation.

- Ideally, Year or Stage advancement should occur at natural transition points, such as the beginning of the school year. However, mid-year advancement may sometimes be desirable where the student's prior teacher and receiving teacher may more easily confer about how best to help the student make a smooth transition.

(NSW Department of Education and Training, 2004b)

Schools still need to cater for the individual needs of their students once acceleration has taken place. Because accelerative practices are interdependent, it is highly likely that students who are ready for placement in a higher stage will also require a differentiated curriculum to suit their individual needs. It is essential that accelerated progression is planned, with clear guidelines that are understood by all concerned – the student, the teacher and the parents/caregivers. It is also extremely important for the success of acceleration that all teachers involved in the process feel positive about the strategy.

Professional support material

Available online is an adaptation of the earlier document available from the NSW Department of School Education, Metropolitan North Region: *Accelerated progression of academically gifted students K–6* (1995). This updated document provides scaffolds for primary schools to modify in implementing their own school policy guidelines and procedures for acceleration. Included is a flowchart outlining a possible process for determining the most appropriate response to the student's needs.

Credentials

It is essential that schools consult the NSW Board of Studies *Guidelines for accelerated progression* (revised 2000) to ensure that students wishing to present themselves for a NSW Board of Studies credential have complied with all the curriculum requirements of the Board. Guidelines regarding notification of accelerated students for the NSW School Certificate or the NSW Higher School Certificate are clearly stated. If there are any concerns, schools should contact the NSW Board of Studies directly.

Records must be vigilantly kept, and all programs, procedures and action taken must be documented, so that accreditation is facilitated for students whose pathways to academic qualifications and success have varied from the norm. Documentation is best kept with a central co-ordinator to ensure systematic, efficient and thorough adherence to all necessary protocols.

For students engaging in activities not formally assessed, it is recommended that certificates be presented with a formal evaluation attached to acknowledge achievement.

Assessment

The following should be documented in pre-testing and subsequent monitoring of candidates for acceleration:

- student capacity
- academic attainment: what the student already knows in terms of skills and content, i.e. his or her prior knowledge
- social/emotional development.

The criteria for assessment of outcomes in any mode of acceleration must emphasise:

- higher-order cognitive processes
- independence and originality of thought and learning
- methods rather than content.

These criteria express the analytical approach and synthesis of data expected of gifted students. By specifically identifying elements of the accelerative program, teachers will be documenting student proficiency on instructional objectives (Renzulli, 1994).

Measures that may be used to assess student capacity for acceleration may include the following:

- standardised tests of achievement and general ability
- multidimensional testing
- behavioural checklists
- reports from class teachers
- products and performance
- class grades
- a report from the local school counsellor
- interviews with the student
- interviews with the student's parents/caregivers
- anecdotal records
- evidence of any academic prizes or awards the student has received
- evidence of the student's extracurricular and out-of-school activities, interests and abilities.

(Board of Studies, 2000, pp. 21–22)

The emotional and social readiness of a student for acceleration may be determined in a number of ways, including:

- observation of interaction with peers over a reasonable time period
- evidence of the student's maturity, social skills and participation in activities beyond the school environment, e.g. out-of-school hobbies, interests, participation
- the student's level of self-esteem and motivation
- consideration of the student's adjustment to problems and decision-making skills

- the student's participation in extracurricular school activities
- the relative benefits of acceleration versus enrichment
- anecdotal evidence from teachers and parents/caregivers.

<div align="right">(Board of Studies, 2000, p. 22)</div>

Types of acceleration

There are several types of acceleration. These may be loosely identified with two main categories that depend on school-wide or classroom delivery. Obviously, in teaching students, there is some overlap across these categories if several types of acceleration are implemented concurrently.

The first category, referred to in Table 1, includes options that place students into existing programs at a younger age than is usual.

Placement options are extremely important in addressing the need for gifted students to be able to work and interact with other students who share their own level of ability and interests. Placing a student at a level commensurate with his or her ability may optimise the development of methods and materials to better suit the learning styles and intellectual needs of the gifted student. Additional to this is the important recognition, identified in the previous section on assessment, that appropriate accelerated placement options may contribute to advancing the social and emotional development of the gifted student. This is particularly the case when a group of gifted students is together for a significant period of time each week.

Table 1: Types of acceleration based on recognition of readiness/superior achievement.

1. Early entrance to Kindergarten	The student is admitted to school prior to the age specified for normal entry.
2. Year or Stage advancement	The student is moved ahead of normal stage placement.
3. Continuous placement	The student is given material deemed appropriate for current achievement as he or she becomes ready.
4. Self-paced instruction	The student is given materials that allow him or her to proceed at a self-selected pace (online learning).
5. Subject-matter acceleration	The student is placed for part of the day with students at more advanced levels.
6. Combined classes	The student is placed in classes where two or more year levels are combined to allow younger children to interact academically and socially with older children.
7. Advanced placement	The student takes a course in high school that prepares him/her for taking an examination that can confer college/university credit for satisfactory performance e.g. Olympiad training.

8. Correspondence courses	The student takes high school or university courses by distance education e.g. distinction courses (see p. 21 for more information).
9. Credit by examination	The student receives credit upon successful completion of an examination.
10. Acceleration in university	The student is admitted with full standing to an advanced level of instruction at least one year early.

<div align="right">(Adapted from Southern et al., 1993, p. 388)</div>

The second category of accelerative options deals with ways the classroom teacher may modify curriculum delivery and is summarised in Table 2.

This acceleration category consists of procedures and strategies which involve "speeding up the pace at which material is presented and/or expected to be mastered" (Schiever & Maker, 2003, p. 165). Content acceleration allows students to progress in a subject or content area at a rate that best suits their natural ability. It may take place within the framework of individualised work, classroom grouping practices, vertical grouping, or some forms of enrichment.

Table 2: Types of acceleration based on the recognition of need for faster pace.

1. Curriculum compacting	The student is given less drill and repetition and moves faster through the curriculum.
2. Curriculum telescoping	The student spends less time than usual in a course of study.
3. Mentorships	The student learns with a mentor who provides skills in a specialised area at the appropriate pace.
4. Extracurricular programs	Course work or summer programs e.g. fast-paced language or science courses.
5. Early graduation	The student graduates from high school or college/university in less than usual time.

<div align="right">(Adapted from Southern et al., 1993, p. 388)</div>

For gifted students to make substantial gains in learning they need to spend the majority of their learning time in key academic areas with others of similar ability (Rogers, 2002). The richer learning environment and the interaction with other students of high ability, similar interests and capability enhance the potential achievement for the individual student. These grouping issues will also need to be considered in assessing appropriate curriculum development. A generally accepted rule is that at least one-third of a year's extra progress can be expected when gifted students are grouped together full-time (Rogers, 2002).

Detailed examples of each of the above types of acceleration are explained and elaborated on in the sections that follow.

Acceleration for readiness or superior achievement

Early school entrance

Early admission allows students, who are both ready and able, to begin formal schooling at a chronological age below the officially approved age (Proctor, Black & Feldhusen, 1986). Students need to be challenged just above their skill level to develop optimally, and opportunities to develop and grow may be impaired if a student's readiness to learn is not accommodated at any age. This option causes minimal social and academic disruption for students as they are placed with a cohort or peer group with whom they may remain (Benbow, 1998).

The following guidelines may assist school principals in determining students' suitability for early entry.

- Ideally, early enrolment should occur at natural entry points, such as the beginning of the school year. However, placement at other times may be desirable where the student's previous teacher and the receiving teacher may more easily confer about the best way to help the student to make a smooth transition.

- A student's physical size or physical or sensory disability should not prohibit early entry to school.

- Advanced placement should be reviewed after one term. At this time the committee who made the initial decision for early entry should reconvene to evaluate the placement.

(Board of Studies, 2000, adapted from Feldhusen et al., 1986)

The following criteria/characteristics are a useful checklist for identifying students suitable for early entry to school:

- scores as moderately or highly gifted on individual intelligence test
- shows readiness for reading and good mathematics reasoning (or is already reading and calculating)
- is eager to start school
- is highly motivated to learn
- is comfortable with older students
- has longer attention span than age peers
- is socially mature, emotionally stable, perceptive, confident
- acts independently
- has preference for reading and/or mathematics activities
- demonstrates consistent participation in small motor activities and close-range visual tasks
- likes being challenged and perceives school as a place to learn.

(Rogers, 2002, pp. 113–114)

Professional support materials

Early entry to primary schools: A provision for intellectually gifted and talented students provides abridged guidelines and a checklist for parents/caregivers of candidates for early entry. The more comprehensive document including administrative procedures and proformas is available to principals on their online forum.

These procedures should be read in conjunction with the Department's *Policy and implementation strategies for the education of gifted and talented students* (revised 2004).

A *PowerPoint* presentation on this strategy is also available for professional development in schools.

Case studies documented by Gross (1993) enlighten this topic.

Year or stage advancement

Stage acceleration may range from one year (e.g. from Year 2 into Year 4) to a radical acceleration of three years or more. The latter is usually appropriately spaced throughout the profoundly gifted student's education. The nature and extent of the student's giftedness will determine the provision of support the student requires. Schools should consult the *Guidelines for accelerated progression* (Board of Studies, 2000) which describes the criteria, rules and procedures for this type of acceleration.

Consideration must be given to long-term planning and the ramifications of a placement such as this. Acknowledgement must be made that year acceleration is not for every student. The teacher needs to be confident that the student is intellectually, emotionally and socially ready to work ahead of chronological peers.

This strategy is appropriate for exceptionally gifted individuals or groups of students whose teachers have monitored and assessed their progress and determined that all the outcomes for the current class have been achieved. Students need to be performing in all subjects at a level equivalent to the top half of the intended class to be considered for year or stage acceleration.

It is recommended that acceleration be implemented at natural transition points in the student's learning progression. Once year or stage acceleration has taken place, monitoring must continue. If the strategy has not been successful and the student returns to the cohort of origin, it is important that the student is not made to feel a sense of failure. Rather it should be acknowledged that this particular strategy was not the correct one, and another strategy may need to be developed and adopted.

As indicated in *Guidelines for accelerated progression* (Board of Studies, 2000, p. 5):

> Schools do not need to inform the Board of accelerating students except when the proposed advancement is to be two or more cohort years ahead of the student's present cohort and is likely to lead to early entry for the secondary credentials.

Professional support materials

Teachers may find the guidelines for the process of accelerated progression, referred to in this document in the section on policy, useful in determining the appropriateness of stage advancement for individual students.

The online Student Progress Report could serve as part of the monitoring process before and after advancement.

Gross, M.U.M. & van Vliet, H.E. (2003). *Radical acceleration of highly gifted children: An annotated bibliography of international research on highly gifted young people who graduate from high school three or more years early*. Annotations here provide insights into case studies and issues associated with radical acceleration.

Case studies with Tom and Matha, conducted by Peter Merrotsy, are examples of this form of acceleration, and include an instance of an accelerated student choosing to return to his original cohort.

Continuous placement

Continuous placement within the classroom includes enrichment and extension options being provided for the student when needed and available. This strategy focuses on the individual needs of the student. It may overlap with other accelerative strategies such as:

- whole-subject acceleration
- preparation for and participation in competitions
- individual or ability grouped projects developed by the teacher
- questioning that promotes higher-order thinking
- development of in-depth knowledge and problem-solving skills.

The support package on differentiating the curriculum illustrates strategies for enhancing provisions for students enrolled in continuous placement.

The student and the supervising teacher agree upon structured projects that allow the student to augment deep knowledge or to investigate an area or topic of high interest. This may well lead to whole-subject acceleration when the student has achieved the requisite intellectual and emotional outcomes.

The following criteria will assist in identifying students suitable for engaging in individualised learning:

- is ready to assume responsibility for own learning
- is an independent learner
- works at own pace
- makes choices
- evaluates own work
- exercises judgement over a range of available resources.

(Rogers, 2002)

Some competitions are listed in this package under Extracurricular programs.

This case study illustrates Kim's continuous placement provisions.

Self-paced instruction

Self-paced instruction is an option for the student who exhibits a mature and independent approach to learning. It can occur either online or through independent research and can be offered within a vertical timetable structure.

Where the student works alone, frequent monitoring and dialogue between the teacher and the student will avoid any loss of focus or sense of isolation or irrelevance. Contracts may be developed to provide structure and to establish understandings and expectations. Support is required to ensure that the requisite skills are developed in working towards identified outcomes.

This strategy of undertaking independent study can be successful with individual students or with small groups who have already mastered the requisite facts and concepts. Students working in small groups need to be proficient in discussion, sharing, making individual decisions and becoming responsible for their learning outcomes and the task. Research indicates that students respond positively to working through appropriately paced learning with others of similar ability.

Activities that can expand the student's horizons include excursions, competitions, clubs, lectures by guests and using technology as a tool for locating information, creating and presenting work. Skills to be developed are creative thinking, problem solving, questioning techniques and independent research.

Extension can be provided through learning centres, contracts, mentors, peer teaching and camps. Parallel programming ensures that the self-paced instruction relates to the normal class work, employs higher-order thinking and does not entail "busy work", but rather helps students to work on meaningful and progressive activities simultaneously with the rest of the class.

Cherrybrook Technology High School has implemented an independent unit of study that serves a small group of gifted students in HSIE.

Subject-matter acceleration

Subject acceleration allows students who excel in a particular subject to work with other, often older, students in that area of expertise at a rate that best suits the student's ability and current level of performance. This may require that a student is placed for part of the day (or a period) with a class or group working at a more advanced stage. This may necessitate some flexibility of the school's organisational structures in order to accommodate any significant variations in the patterns and sequencing of student programs. For example, timetables can be structured so that a particular subject is simultaneously studied by adjoining stages, so that student

movement across stages is simplified. It is therefore essential that a sound rationale for acceleration is explained in the school's policy on acceleration, and that all teachers involved in the placement have positive attitudes about the process.

Students suitable for subject acceleration will include those who:
- exhibit a strong preference for challenge and fast pacing of instruction
- like being in competitive situations
- are high achievers in a particular subject
- are independent thinkers and workers
- are socially mature and prepared to take a risk.

(Rogers, 2002)

It is extremely important in secondary schools that all school staff are familiar with the NSW Board of Studies *Guidelines for accelerated progression* (2000), to ensure that proper registration is made of students who will be seeking early accreditation in any subject(s) at either the School Certificate or Higher School Certificate level. In addition to the requirement that students who accelerate in one or more courses be outstanding students within the subject candidature, it is also expected that these students will present at the highest level in the accelerated subject when they sit the HSC.

Teachers need to ensure that the assessment of students who have been accelerated conforms to outcomes for the level to which the student has been accelerated. No allowance should be made for the fact that the student may be younger than other members of the year or stage cohort.

The summative material available from the doctoral research on acceleration conducted by Dr Kim Jaggar (Principal, Sydney Boys High School) illustrates that only 7% of subject accelerants surveyed would have preferred to remain with their age mates and that approximately 5% of accelerants surveyed would not recommend the strategy. A desirable key to successful subject acceleration appears to be the inclusion of more than one student in the process, so that students do not experience social isolation.

Professional support materials

Strategies for organising subject acceleration are demonstrated in the online documentation regarding:
- German advancement at Sydney Boys High School
- VET courses with gifted students in the Bankstown region
- Mathematics at St Ives North Public School.

Acceleration case studies of Elise (Merrotsy, 2003) in a rural high school.

Combined classes

Vertical or cross-age grouping is a system whereby students in different year groups, often organised within two or three year levels or on a stage basis, are timetabled and taught together for particular courses or subjects. As classes are not based on the students' age cohort, this structure has the benefit of allowing young gifted students

to work with students of similar intellectual and emotional age. Vertical timetabling is a whole-school structure and requires executive support if the requisite parallel timetabling organisation is to occur. Composite classes in primary schools are useful in facilitating this strategy.

Some schools, particularly small or rural schools with small gifted populations, may elect to bring together groups of gifted students at specific times of the week (Van Tassel-Baska, 1992b).

Professional support materials

Merrotsy's (2003) case studies of Kerr and Elise show how vertical timetabling benefits students, but also recognise the need for in-depth future planning for these students.

Greystanes Public School continually modifies vertical grouping in mathematics to accommodate the varied abilities of students.

Advanced placement

Advanced placement (AP) is an increasingly popular acceleration strategy in the United States, where a national co-ordinating authority, the College Board (**http://apcentral.collegeboard.com/program**), has developed prestigious and highly competitive programs that are recognised by universities nationwide. The College Board provides professional training for teachers, annual national assessment of students, and opportunities for students to participate in college-based and online programs, with syllabuses specifically designed for gifted students. It is quite common for individual schools to have an AP class in each KLA, and costs, where applicable, may be shared between students and the school. Significantly, research is demonstrating that the existence of AP classes in a school is raising the positive attitudes of all students in the school, not only those of gifted students. Research has also shown that students who have completed AP courses continue to excel academically through university and to participate more in leadership activities (Benbow, 1998).

Universities in New South Wales provide opportunities for students to participate in similar university-developed, subject-specific courses, endorsed by the Board of Studies. These University Developed Board Endorsed Courses (UDBEC) entitle students to advanced placement, but are not widespread, and generally are institution or even faculty specific. UDBEC cannot be used in the calculation of a student's UAI. Schools are able to overcome this limitation by offering the courses in Year 11 as a recognised component of the student's Preliminary units. A credit transfer policy, similar to that currently available within the TAFE structure, is yet to be widely developed.

A student suitable for accelerating in this manner will:
- possess exceptional abilities and intense interest in specific academic area(s)
- be independent in thought and a self-directed learner
- be socially mature and accepting of others
- be actively involved in a range of activities.

(Rogers, 2002)

Professional support materials

The case study of Albert's participation in the Olympiads illustrates one such program of advanced placement.

Thompson, M. (2004). *School students get credit for some higher learning*. Article in *The Sydney Morning Herald* 22/3/04 located at
http://www.smh.com.au/articles/2004/03/21/1079823240027.html

David Patterson's report to The Winston Churchill Fellowship on his study of Advanced Placement Programs that cater for the needs of gifted and talented students in the senior school system is available at
http://www.churchilltrust.com.au/Fellows%20Reports/Patterson%20David%202020022.pdf

Correspondence courses

Correspondence courses are a form of distance education and provide the opportunity for highly gifted students to engage in study at a level beyond that of the normal Higher School Certificate (HSC), for example a distinction course for the HSC or a subject at university level. Distance learning is essentially supplementary, non-face-to-face instruction that is designed to circumvent the constraints of isolation by geography or of higher intellect, and so these courses are particularly suitable for highly gifted rural students.

Correspondence with other students, teachers, mentors or tertiary institutions may take place via email, the Internet or the post.

Distinction courses are high-level HSC courses designed for exceptionally gifted and talented students. They are two unit courses that are multi-disciplinary and contribute to a student's Universities Admission Index (UAI). Courses currently offered include Philosophy, Comparative Literature and Cosmology. About 40% of students undertaking these courses come from non-metropolitan Sydney areas.

Students suitable for participation in a distinction or university program will include those who:

- are self-starters and have the necessary time to complete the course
- demonstrate strengths in learning, planning, and precision of communication
- feel comfortable in challenging, fast-paced learning experiences
- have wide-ranging academic interests.

(Rogers, 2002)

In promoting university courses for students requiring acceleration, teachers need to be aware of the implications and ramifications involving:

- credentialling
- HECS debts
- tertiary institutions that no longer regard students who have completed university subjects as school leavers.

Professional support materials

Higher School Certificate distinction courses: An information booklet provides comprehensive information regarding these courses and is available from the Board of Studies web site at
http://www.boardofstudies.nsw.edu.au/manuals/index.html#unibechsc

The case studies of Kerr and Elise (Merrotsy, 2003) demonstrate participation in distinction courses for students from a rural high school.

Credit by examination

Academically rigorous programs, such as the International Baccalaureate, provide a highly competitive, fast-paced and challenging opportunity for gifted students. Success provides credentials for entry into a variety of international tertiary establishments. Suitable applicants for this approach would be highly motivated, capable and independent students who are perceptive, reflective, able to make ready associations and who retain information easily (Rogers, 2002).

Schools need to be aware that the NSW Board of Studies is the regulatory authority that provides the syllabuses and issues recognised credentials for all Departmental establishments. Schools are therefore obliged to comply with NSW Board of Studies requirements.

Acceleration in university

On entering university, a student who has successfully completed university subjects while at school should be given advanced standing or granted exemption from repeating those subjects regarded as prerequisites for future study. This is a matter for individual institutions of higher education, and former school students will need to confirm their eligibility before enrolling.

Students who may be capable of pursuing this pathway will be abstract, independent thinkers, for whom retention of information is easy and for whom working in a fast-paced and challenging learning environment is exciting and interesting (Rogers, 2002).

Professional support materials

The case study of J explains how single subject acceleration may also lead to further acceleration at a tertiary level.

Policy and implementation strategies for the education of gifted and talented students

Acceleration for faster pace

Curriculum compacting

Curriculum compacting is a means, often within the regular classroom, of delivering curricular content at a faster pace in keeping with the gifted child's more efficient learning abilities. For example, both the Preliminary and HSC components of a particular HSC subject may be covered in one year instead of two. After teachers establish the basic skills and course content that students have already mastered, more time is made available to study material that academically advanced students will find more challenging and interesting (Renzulli & Reis, 1985). Previously learned material is not repeated. This strategy may relieve students of the boredom of unchallenging work in basic skills areas, but will likely require other accelerative strategies to adequately or appropriately cater for their needs. Success here depends on the accuracy of the assessment or pre-testing of students to establish their current skill levels and achieved outcomes. The capacity of the teacher to provide a differentiated curriculum is also important (Rogers, 2002).

Most suitable for this strategy are students who:
- have demonstrated mastery in pre-testing above established criteria on subject-specific measures of outcomes (usually 85%)
- are persistent in assigned tasks and their own interests
- have a preference for challenge and moving on quickly from what is already known
- dislike drill and recitation, whole-class learning experiences and peer tutoring
- have a high interest in the area of compaction.

(Rogers, 2002, pp. 119–120)

Two important principles are recommended for compacting.
- Assessment for those students undertaking a compacted program should be based on the same material on which others in the class are being assessed, otherwise students will not want to jeopardise good results in core work.
- Replacement material must focus on student interest if the requisite effort in task commitment is to be forthcoming.

(Reis, Burns & Renzulli, 1992)

To assist teachers in documenting student proficiency, guidelines are provided in the section on credentialling.

Professional support materials

For teaching strategies in implementing this type of acceleration, please see information in: Gifted and Talented Education (2002). *Curriculum Support 7*(3), p. 3–5, and in the support material on differentiating the curriculum.

Provided online are some examples of school programs or approaches from Sydney Boys High School (German, Senior History).

A case study of Elise (Merrotsy, 2003) illustrates an individually compacted program.

Curriculum telescoping

Like curriculum compacting, telescoping the curriculum involves a faster paced delivery of the curriculum or courses to a whole group. This strategy may enable students to move through their secondary schooling in five or fewer years, rather than the regular six years. By eliminating material that students have previously learnt and avoiding unnecessary repetition, this strategy delivers a course more quickly without altering its content. Enrichment may still need to be provided to reflect the student's learning needs and to provide a deeper understanding of the subject.

Professional support materials

The case study of Elise (Merrotsy, 2003) demonstrates one way in which telescoping may be implemented.

Mentorships

The term *mentor* has its origins in Greek mythology. A mentor provided leadership, support, encouragement and an example to the wider community.

The NSW Department of Education and Training encourages schools to consider a mentor program to provide an opportunity for students to learn with adults who have a high degree of expertise in an area of mutual interest. It is a particular mode of education that provides for students by meeting their specific needs when they cannot be met within the school.

Students suitable for participation in a mentor program include those who have a high need for achievement, possess independence in thought and action and who display a strong interest in a specific academic area (Rogers, 2002). This mode of acceleration is suitable for Koori students, where the involvement of the community is of great importance.

Mentor programs can operate out of school grounds and outside school hours–after school, during the school holidays, in the evenings or at weekends–and can be managed either directly face-to-face, online or through correspondence. It is important that parents/caregivers are present whenever the student meets with a mentor outside school.

Mentors are not substitute teachers. The relationship should be a "meeting of minds", a learning situation where there is two-way communication, two-way input and a productive output.

Professional support materials

The online material on mentoring contains proformas that teachers may find useful in establishing and conducting a mentor program.

The Merrotsy (2003) case study of Kerr illustrates the presence of a mentor from a high school while the student attends primary school.

Extracurricular programs

Gifted students participating in extracurricular activities, such as competitions or extended learning programs (e.g. work experience in a university), will require selection on appropriate criteria. Such activities will need to be an integral component of a comprehensive program for gifted students. Questions to consider in promoting extracurricular involvement include the following:

- Is this activity appropriate to the needs of gifted students?
- Does the activity assess learning as a part of the core curriculum, or is this an extension activity?
- Will the student require additional tutoring? Additional, properly planned support should ideally be a component of all gifted programs.
- What recognition is given to the achievements in this activity? Credentialling is an issue for some students.

(Queensland Board of Senior Secondary School Studies, 2001)

Activities suitable for the participation of gifted students include:

- Tournament of Minds, with strands in Language Literature, Maths Engineering and Social Sciences
- Australian Mathematics and Science Olympiads
- University of NSW competitions in computing, English, mathematics, science etc.

Contact details for these and other competitions are provided on p. 30.

Professional support materials

Additional contacts are available through the organisations mentioned above, universities and associations for gifted education.

The case study of Albert illustrates how work experience at a university summer school catered to the needs of one gifted student.

Early graduation

Students who have been accelerated in any of their previous years of schooling are well placed to graduate early from high school or university. As previously indicated, schools need to be aware of credentialling requirements where early graduation may occur.

Professional support materials

Merrotsy's (2003) case study of Kerr highlights such an approach.

Glossary

Ability The innate mental or physical capacity to perform at a given level in one or more areas of intelligence.

Acceleration An administrative strategy that allows progress through an educational program at rates faster or ages younger than normal (Southern & Jones, 1991).

Achievement A measure of the quality or quantity of the success attained in the mastery of knowledge, skills, or understandings.

Learning outcome This describes what the student actually achieves as a result of a lesson or series of lessons. This may be influenced by prior knowledge, effort and attention, teaching methods, resources and time.

Enrichment Refers to broadening the curriculum to develop knowledge, application, thinking skills and attitudes at the same level as the essential curriculum content.

Extension Extension means providing opportunities at a greater level of challenge to the student.

Intelligence The ability to think conceptually, to solve problems, to manipulate one's environment, or to develop expertise. Considerable debate surrounds issues regarding the innate versus environmental influences on intelligence.

Profile A student profile is often used to describe a student's characteristics and learning needs, to help guide important educational decisions for a particular individual, or to guide individualised instructional planning.

Rubric A chart or plan that identifies criteria for consistency in evaluating a piece of a student's work.

(Adapted from Braggett, 1997; Freedman & Houtz, 2004)

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Electronic

The following resources were available 9 November 2004:

Australian Mathematics Trust.
http://www.amt.canberra.edu.au/

Belin-Blank Center for Gifted Education and Talent Development, College of Education, University of Iowa.
http://www.uiowa.edu/~belinctr/
Information is available on this site of the Iowa Acceleration Scale and the Advanced Placement and Talent Search programs.

Center for Gifted Education, The College of William and Mary.
http://cfge.wm.edu/

Center for Talented Youth, John Hopkins University.
http://www.jhu.edu/~gifted/

John Templeton Foundation: Gifted education.
http://www.templeton.org/gifted_education/index.asp

Monash University, *Enhancement Studies Program 2005*.
http://www.monash.edu.au/pubs/enhancement/

Rio Tinto Australian Science Olympiads.
http://www.rtaso.org.au/www/index.cfm

Tournament of minds.
http://www.tom.edu.au/

UNSW Educational Assessment Australia (formerly the Educational Testing Centre).
http://www.etc.unsw.edu.au/

Abbreviations

GERRIC   Gifted Education Research, Resource and Information Centre

GATS   Gifted and Talented Students

HECS   Higher Education Contribution Scheme

HSIE   Human Society and Its Environment

KLA   Key Learning Area

MCEETYA   Ministerial Council on Employment, Education, Training and Youth Affairs

UAI   Universities Admission Index.