

ACADEMIC ACCELERATION IN AUSTRALIA: AN ANNOTATED BIBLIOGRAPHY

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Introduction

As will be seen from a quick perusal of the References to this article, there are over 50 Australian publications on academic acceleration. While preparing a review of the literature for a research study on academic acceleration, the authors noticed two things: first, that the Australian studies on academic acceleration, and Australian literature discussing academic acceleration, cited literature mainly from, if not restricted to, North America; and, second, that the literature, including the Australian literature, on academic acceleration tended to overlook or completely ignore the findings from Australian research in this area. A first step in addressing this perceived problem is to make the Australian research on academic acceleration more accessible, to Australian researchers as well as to researchers from other countries. This annotated bibliography on academic acceleration in Australia is published with this purpose in mind. The authors would welcome reference citations of any research articles that have been overlooked in this bibliography.

Anon. (2006) *Summary of findings 2004 SEAL research*. Unpublished report.

Objective: To provide an evidence base for future policy decisions on SEAL programs and to improve the effectiveness of the existing SEAL program.

Setting: Victoria

Participants: Students, teachers, parents and co-ordinators in Victorian schools in the SEAL program

Assessment of variables: Some of the schools in the SEAL program had varying ratios of students from high or low socio-economic backgrounds.

Method: A literature review and qualitative and quantitative data obtained through the administration of surveys to SEAL co-ordinators, teachers of mainstream and SEAL students and students and parents of SEAL and mainstream cohorts.

Main results: The authors outline strategies in the research literature that are of benefit specifically to gifted students including grade telescoping (for example where four years is covered in three), curriculum compacting, extension and credit for prior learning. In addition the importance of teacher attitude and specialised training for teachers was highlighted. The majority of countries recognise that gifted and talented students have specific educational needs. Of the 29 reviewed most provide special ability-grouped classes, some form of acceleration, extra curricular activity and some form of acceleration. Approximately two thirds provide special schools, differentiated curriculum and have legislation in place. Within Australia formal provision exists to some extent in all states and territories but with limited commonality. Extension and enrichment are widely practised and support for acceleration and ability grouping is growing.

In Victoria SEAL programs were varied in approach according to the variations in student cohorts, the emphasis of school communities and the knowledge and expertise of their co-ordinators. Most SEAL classes represented the language backgrounds, boy-to-girl ratio and socio-economic backgrounds of the mainstream school populations. There was however a large disparity in the five schools where there was a significantly lower ratio of low socio-economic status students in the SEAL cohort. In contrast two schools were slightly higher in low socio-economic students on the mainstream cohort.

In each of the schools accelerated learning, curriculum differentiation, enrichment, thinking skills and research development in addition to participation in competitions were strategies used frequently. Subject acceleration varied with only one third of the schools offering acceleration in all subjects. Most students (in all but three schools) completed six years of education. After the third year of the program they were integrated in various ways into the regular VCE programs.

University extension studies and VET and exchange programs were popular in around 50% of the schools. Both teachers and co-ordinators commented on the 'culture shock' for some students and parents expressed concern about this transition process. Seventy percent of applicants missed out on a place in the SEAL program in 2004. Multiple criteria were used to select students across the schools. SEAL teachers and

co-ordinators commented on the additional effort used in curriculum planning. Teachers reported using an increased range of pedagogical and assessment approaches. SEAL students reported increased motivation and connectedness to school and saw their learning environment as supportive and challenging.

The overwhelming majority of SEAL students went to university and of those still in school a much higher percentage indicated that they intended to continue with formal education beyond Year 12 compared to mainstream students. Co-ordinators indicated that SEAL students integrated well with the mainstream students. Social relationships amongst SEAL students appeared to be stronger than those of mainstream students. SEAL students were more involved in a range of activities beyond the classroom and their work ethic, sense of social justice and social- emotional development were generally more advanced. SEAL parents noted the importance of the positive social outcomes of the program and how they complemented educational and vocational outcomes.

Parents, students, teachers and co-ordinators regard the SEAL programs as operating effectively in meeting the needs of gifted and high potential students. It was generally agreed that the program impacted positively across the school by improving the learning culture and improving teacher effectiveness. There were positive 'flow on' effects to mainstream classes reported in curriculum development and teaching practice. Schools also reported an improved reputation in the local community. Both SEAL and mainstream students reported satisfaction with their educational experiences however comments were made indicating that this may not have been the case if their places had been reversed. Parent perceptions of the program were generally positive however some expressed a wish for increased communication. SEAL students had higher rates of participation in extra curricular activities yet mainstream parents saw the inclusion of the SEAL program as restricting this option for SEAL students. Teachers reported that the SEAL program had raised awareness of the diversity of student learning needs and also facilitated the expansion of curriculum offerings in the school. Co-ordinators reported an increased skill level of teachers and an increased awareness to review their pedagogy associated with their experience and professional development as a result of the SEAL program.

The findings highlighted the following elements as being important in an effective SEAL program:

- thorough planning, professional development and consultation in the development of programs with significant lead-time prior to the first intake of students
- a range of student selection criteria informed by rich qualitative and quantitative data
- the establishment of a full-time co-ordinator
- professional learning opportunities to support teachers in the SEAL and mainstream programs
- Department of Education and Training facilitation of the SEAL network for co-ordinators and teachers meeting quarterly
- systematic data collection processes including destination data
- voluntary teacher participation
- students actively supported in mapping pathways, particularly towards the end of the first three years and beyond.

Conclusion: This report indicates that the SEAL programs were a success for SEAL students in each of the schools in which they operated. It also appears that there were additional 'flow on' benefits to the whole school particularly in regard to pedagogy.

Commentary: The SEAL program appears to have had strong benefits for students participating in the program and also for teachers and mainstream students at these schools. Of interest is the strong message coming from the international research that students participating in such programs do not have social-emotional disadvantages. Indeed, this is reported to be a strength of students participating in the program. It would have been useful to know the number of students, teachers and parents participating in the data collection for this research.

Ashton, T. (1994) *A description of the academic, social and emotional effects of acceleration as perceived by five accelerants*. BEdPrim (Hons) Thesis. Wollongong: The University of Wollongong.

Objective: To describe the academic, social and emotional effects of academic acceleration as perceived by five accelerants.

Setting: New South Wales, Australia

Design: Literature review and case studies. Informal and structured interviews of five children, their teachers and parents.

Assessment of variables: Two of the participants requested the researcher not contact the school. This raised the dilemma of possible parental bias in the case of Kate. Parent information could not be verified by the school, making triangulation of data difficult. In the case of Kaylie, she appeared intimidated by the tape recorder and it was decided by the researcher that she write her responses.

Main result: This thesis examines the effects of acceleration on five young people in the Illawarra region of the New South Wales Educational system. Four of the students attended state schools, one of whom is currently home schooled and another attended a local grammar school and is currently at university. There were three males and two females all between the ages of 6 and 16. A letter was sent to schools in the Illawarra region asking for the parents of children who had been accelerated to contact the researcher if they were interested in participating in the research. There were two responses. Three additional responses were obtained by the researcher through a lecturer in gifted education at the University of Wollongong. The criteria to be involved in the research were for the child to have experienced accelerated progression, to have a commitment to the enquiry, to reside in the Illawarra region and for child and parental/guardian consent to be obtained. The research was conducted by semi-structured and open-ended interviews which were audio-taped.

At the time this thesis was written accelerated progression was available to gifted and talented students as determined by the school principal on the basis of guidelines set by the New South Wales Board of Studies in *Guidelines for Accelerated Progression* (1993). Students were selected on the basis of the guidelines by the Board of Studies (1993, p.6):

1. their early achievement of the required outcomes stated for their particular curriculum stage in the Board of Studies' syllabuses
2. whether they are gifted and talented students who are underachieving
3. their social adjustment

4. their emotional readiness for the acceleration proposed.

Fatih is an eleven-year-old Turkish male. Only Turkish is spoken at home. He is the eldest of three children. He was identified in Year 3 at the recommendation of the assistant school principal. He was grade-skipped the following year into Year 6. He is now in Year 7, in a selective high school. There was no formal testing before his acceleration. He was identified on the basis of teacher observation, teacher and parent nomination.

Creighton is an eleven-year-old male who is also the eldest of three children. Creighton was identified by his Year 1 teacher. His family is well informed in the area of giftedness. His father approached the principal for his son to be accelerated on the basis of his test results. He was accelerated into Year 3 after initially completing Year 2 work four days a week. The Year 6 extension class he attended one day a week was his saving grace. He is generally happy in Year 7 in a selective school and has been further accelerated in English. His social development was unaffected.

Elijah is the eldest of three children and was tested for giftedness in Year 2. He was previously educated in Fiji. He was grade-skipped from Year 2 to Year 4 and then further grade-skipped to Year 6. At this time in order to enter high school a student needed to be eleven. Elijah was initially destined to spend three years in Year 6. After intervention, the Education Act was amended and Elijah accelerated into high school. He completed HSC 2- and 3-unit Mathematics in Year 9 and studied Mathematics at university part-time in Year 10. He was the first child in New South Wales to experience accelerated progression. There was opposition from the Department of Education for Elijah to obtain the School Certificate as he had not attended all of his school mathematics classes, because he was at University. He was eventually granted the School Certificate. Elijah was not always well accepted by his age peers but this did not appear to worry him. He was well accepted in Year 12 by his peers.

Kaylie was identified by the Director of her pre-school. She could have started school even earlier but her parents decided against it. She began school at age five. The school has approached the family re grade-skipping Kaylie to Year 3 but at this stage the parents have declined this option as

they are worried it will disadvantage her socially. Kaylie enjoys school and the extra work she has been given.

Kate is nine and the eldest of fraternal twins. She was identified at age seven. She was tested and accelerated from a composite 1/2 to Year 4 for Mathematics, Year 6 for LOTE and Year 5 for Social Studies. She was then grade-skipped from Year 3 to Year 5. Kate has some learning difficulties which are expressed in aspects of gross and fine motor skills. She has anxiety problems and obsessive/compulsive disorder. In Year 5 Kate was challenged but then her teacher left and Kate became bored again with the new teacher. Socially Kate is unhappy and had more friends before her acceleration.

There were four questions that guided the research and these are outlined below.

What were the logistics of the child's acceleration?

In four cases the children were identified as gifted within their first four years of formal schooling. Kaylie was the exception. She was identified when attending preschool due to the extensive knowledge of the preschool director. There was a general lack of awareness and knowledge regarding the characteristics and traits of gifted children on the part of many teachers and parents. Three of the cases involved parents as advocates. All parents however were committed to their children. In four of the cases there was opposition from the principal and teachers. Opposition to acceleration appears to be linked to knowledge possessed by teachers and principals in relation to acceleration.

Has acceleration addressed the relevant needs of the child?

In the five cases, the work before acceleration was not challenging enough leading to boredom and frustration in the classroom for four of them. None of the children appeared to become behaviour problems. Each of the students appeared to be challenged by the work offered immediately after their acceleration, however Kate and Creighton were still not challenged sufficiently. In the case of Creighton this seems to be linked to lack of knowledge by the teacher and no further modification of the curriculum. This appeared to be the same for Kate however her learning difficulties may have been linked to her learning. Kaylie was offered the chance to

experience a one-year acceleration but her parents declined this option.

Has the acceleration affected the on-going social development of the child?

Each of the students was generally pleased with the range of their social group before they were accelerated. They all enjoyed the company of older peers. With acceleration they were not immediately accepted owing to the perceived threat they posed to children in the class. Kate experienced social problems in her acceleration but these were evident before her acceleration. It was ultimately decided that she would benefit from home schooling.

Has acceleration catered to the emotional needs of the child?

Each of the five children desired to be accelerated. Apart from Kate they were generally happy with their acceleration but ultimately experienced renewed boredom at school.

The researcher makes several recommendations that are summarised below:

- Validated longitudinal Australian research needs to be undertaken into the effects of acceleration particularly regarding the social and emotional development of students.
- Current policy in New South Wales regarding accelerated progression needs to be evaluated to see whether the guidelines for accelerated progression are being implemented in schools and if so, how effectively.
- In order better to understand teachers' reluctance or acceptance of accelerated progression, we need first to determine their attitudes and beliefs.
- Research in the area of teacher training in gifted and talented education is a high priority. Research needs to focus on pre-service training as well as the inservicing of teachers.
- Various procedures that exist for the identification of accelerants need to be investigated.
- Before the arrival of the accelerant into the new class, the peers of the accelerant need to be counselled.
- Greater knowledge of the ability and achievement should be accorded to accelerated students.

- Gifted children need to have knowledge of and have input into the process of accelerated progression.

Conclusion: Of the five cases, three had parents as advocates. Opposition to acceleration came mainly from the school. The findings of this study indicate that acceleration did not have any adverse effects on the academic, social and emotional development of the five children involved.

Commentary: This research indicates the need for flexibility when acknowledging the reaching of outcomes by gifted students. This was particularly evident in the case of Elijah. The importance of teacher training in identifying and consequently providing appropriately for gifted students is also highlighted.

Bailey, S. (1993) Acceleration: Why each case must be examined on its merits. In M. McCann & S. Bailey (Eds.), *Giftedness: Creating opportunities* (pp.59–66). *Proceedings of the 4th National Conference on the Education of Gifted and Talented Children*. Adelaide: AAEGT.

After summarising the then research support for acceleration, this paper presents an outline of the findings from the author's 'Acceleration in Australian Schools' study, and a list of lessons from the author's and others' research.

First, Bailey's small-scale study, 'Acceleration in Australian Schools', provided emerging evidence congruent with the positive findings reported elsewhere. However, it also underlines the necessity of looking at each case individually, for while there are common threads running through most of the twenty-five or so responses the individual differences are also marked. The tentative findings were summarised:

Of the 23 students included in the study, 14 were male and 9 female, their ages ranged from 6 to 17, and the average IQ of the group was 150+ (range from 136 to 200).

Grade-skipping has been the most common form of acceleration, with telescoping and all other forms of acceleration represented in at least one case.

As a group, their social relations are reported to have improved since acceleration, and their attitude toward school is reported to have improved considerably. Their academic

performance, which was very high prior to acceleration, has apparently not suffered and it is reported as now being higher in some cases.

Prior to acceleration, only 7 were reported to have a positive (or very positive) attitude towards school, whereas after acceleration 21 were reported have a positive (or very positive) attitude towards school.

Prior to acceleration, 11 were reported to have good social relations with other class members, whereas after acceleration the number increased to 18.

Prior to acceleration, 7 were reported to have high self-esteem, whereas after acceleration 18 were reported to have high self-esteem.

All of the cases of acceleration were reported to be either successful or very successful. Bailey did not claim that this sample was representative of any wider population, but that it was best seen as a collection of case studies, from which there is still much that may be learned.

Second, from the study's findings and from others' research the following 'lessons' were drawn.

It is not possible or desirable to follow a 'formula' when making decisions about acceleration.

We shouldn't expect a 100% success rate, especially if drawing from a wider ability band than may have been the case in the past.

'Success' should be seen to include how we deal with withdrawals after a trial period, rather than just those cases where acceleration is deemed appropriate.

There is a need to publicise/share (anonymously) more case study examples of acceleration, given the evidence on teachers' attitudes towards it — especially examples from class teachers themselves.

There is a need for more longitudinal research so that long-term consequences may be better understood.

Advocates should be wary of promoting acceleration as a 'cheaper' or 'no cost' option. The 'cost' of systematic screening, counselling and ensuring that skill/knowledge gaps are not a problem needs to be taken into account.

Each region or district should have an action research plan to monitor acceleration within its boundaries.

Access to higher-level work *before* acceleration can aid the decision-making process, to help assess both attitudes and performance. This may occur in multi-grade activities organised within the school or via extra curricular pursuits.

Being already 'well adjusted' socially and emotionally is too restrictive a criterion for deciding cases of acceleration. Instead, we need indicators of likely success or difficulties. The search for these indicators is a major task for future research.

The student involved should usually be given the right of veto in decisions about acceleration (but even this needs to be qualified).

The paper concluded that acceleration is no more an easy answer to how schools might provide for the needs of their gifted students than is enrichment.

Bailey, S. (1995) 'Doing acceleration': Fast but not loose. *TalentEd* 13(3), 14–19.

This paper discusses some of the precautions that schools need to take when considering, implementing and following-up the acceleration of gifted students. Examples from Australian and overseas research are used to illustrate the dangers of seeing acceleration as a 'no cost' or 'low cost' option.

The paper is informed by a research project Bailey was undertaking at the time in one rural region of New South Wales. This project arose from two sets of concerns, one related to previous research and the other to present and future practice. The research concerns are:

What can we learn from the exceptions, albeit a small minority, that tend to be glossed over in reports of the supportive findings from survey research on the acceleration of gifted students?

What might be learned about 'doing acceleration' from the compilation of detailed longitudinal case studies that focus upon the process aspects as well as the learning and social-emotional outcomes?

The ideas discussed in this paper were tentative and were intended to promote thorough consideration and investigation of the variable detail within the positive 'big picture' on the acceleration of gifted students. Bailey suggested a range of implications for implementing acceleration options in Australian schools.

Schools should be advised against seeing acceleration, especially grade-skipping, as a 'cheaper' or 'no cost' option. Acceleration is no more an easy answer to how schools might provide for the needs of their gifted students than is enrichment. The 'costs' of systematic screening, of ongoing counselling and advising (especially, but not only, in the period just before and just after the acceleration occurs), and of ensuring that any initial skill or knowledge gaps are remedied need to be taken into account.

There is a good case for inservice education for teachers to cover 'doing acceleration' (including, but much more than, curriculum compacting), as well as the traditional emphases on identification and enrichment.

Many schools in New South Wales now have a teacher designated as the 'G&T coordinator'. Any school contemplating the acceleration of a student should create such a position if one does not already exist, with ongoing monitoring of accelerants as part of the role description. For example, Hannon, the G&T coordinator at a Sydney high school, follows the practice of having regular affective sessions with the eight accelerated students at his school, individually and as a group.

Given the evidence on teachers' wariness about acceleration, there is a need to publicise/share more case study examples of it, especially reports from class teachers themselves. Furthermore, these examples will be more compelling if they cover different levels of giftedness as well as different ages and circumstances.

One very positive case study concerns the caring and insightful management by his school of 'Charles', a Year 5 student whose program comprises some work with his age peers, some (i.e., maths) with Year 9 students and some by individual negotiation with the Special Needs Coordinator and the school's Deputy Principal. That the school is another K–12 school is significant, for it seems to have avoided the difficulties outlined by Hill (1994) through flexibility and attention to detail.

If the misgivings about acceleration are to be laid to rest there is a need for more longitudinal research so that long-term consequences may be better understood (e.g., what happens to accelerants at high school, tertiary and early career levels).

An expanded set of guidelines that embraces attention to detail, frankness and insight, based on the hard-won experiences of others, may be the scaffolding that is needed.

Bailey, S. (1998) Acceleration: Policy in practice. *Gifted*, September, 21–23.

Objective: To examine the effectiveness of the NSW acceleration policy introduced in 1991.

Setting: New South Wales, Australia.

Method: Literature review and parent written responses to the author.

Assessment of variables: The small non-random sample of parent responses has limitations.

Participants: 24 parent responses to a request for examples of NSW gifted and talented policy in practice.

Main results: The New South Wales gifted and talented policy was introduced in 1991. A particular strength of the new policy was the inclusion of a set of guidelines promulgated by the NSW Board of Studies (1991) for teachers and parents considering acceleration. The author supplies data on students accelerated in NSW for 1993 and 1994. Although details for at least one region were incomplete for 1994 the figures are encouraging with early entry (to school at age 4) students rising from 54 to 82 from 1993 to 1994. For primary schools single-subject acceleration increased from 544 students to 899 students. Whole-grade acceleration (i.e., grade-skipping) increased from 144 to 302 students. For high schools single-subject acceleration increased from 383 to 466 students. For whole-grade acceleration there was an increase from 37 to 68 students. The Board of Studies Guidelines (1997, p.22) statement advises that probably only 0.5 students will be capable of acceleration in all subjects whilst only 5% of students will probably be capable of acceleration. The author notes that this contradicts the findings of the Richardson study which suggest that between 20% and 25% of students in public schools can handle material a year ahead of where their age places them, whilst around 2% could advance two or more years ahead of their grade level (Daniel, 1989, p.50). The New South Wales guidelines also make clear that all students academically ready for acceleration may not be socially level. The author suggests that without a properly planned and formal research project it is not possible to

determine whether the NSW acceleration policy is being fully or effectively implemented. 24 responses (21 of them from parents) were received at the author's request for examples of policy in practice. An interesting range of quotes is provided which indicate that acceleration takes place very much based on the attitudes and training of teachers or principals. In addition the responses indicate that there was considerable variation in the awareness and knowledge of the guidelines. The two major concerns associated with acceleration are whether there will be any gaps in the student's knowledge or skills because of a grade-skip or whether there will be negative social or emotional consequences. Only one of the 23 respondents felt that in hindsight she would not have accelerated her son. Her reasons were largely social. In contrast, in several instances acceleration was seen to have benefitted the child socially and emotionally. On the issue of knowledge or skill gaps, respondents held mixed opinions. In some cases there were gaps that were quickly addressed, and in other cases there appeared to be no gaps at all. Only one person mentioned the Distinction courses available for those completing Year 12 early. This respondent was very supportive of this option. Several respondents expressed the view that the guidelines needed to state more forcefully that acceleration alone might not be sufficient to meet the needs of the individual gifted student. Nevertheless the author notes that the guidelines are extremely helpful.

The author suggests that ideally acceleration should have three phases. First is the 'lead in' where the child is assessed for academic and social readiness. Additional counselling should take place to assist in articulating any concerns or fears held. This assistance should be extended to the receiving teacher and the parents. Next would be a six-week trial and finally ongoing monitoring and perhaps an annual reappraisal of acceleration for the child. The author also advocates having a designated person to oversee students who are accelerated. Schools also need access to detailed information including case studies so that they can make informed decisions on acceleration. The author also suggests the readers participate in the new Oz-Gifted — Acceleration Support network to contribute further to discussion on best practice and well supported and informed advocacy.

Conclusion: The small, non-random sample raised serious questions about parent access to

and school use of the acceleration guidelines in New South Wales. The responses indicate that the attitudes of individual principals and other teachers will be more important than the guidelines in determining whether acceleration is offered as an option at the individual school level. The author notes that the acceleration guidelines booklet is very helpful and should be disseminated widely.

Commentary: An interesting, small study is presented to generate discussion on the effectiveness of the implementation of the new acceleration policy in New South Wales schools. Good practical advice for the guidelines to be further distributed and an invitation for readers to further discuss issues regarding acceleration.

Batt, D. (1997) *An exploration of the peer status and self-concept of grade skipped primary students.* BEd(Hons) thesis. Armidale: University of New England.

Negative social and emotional effects of academic acceleration have frequently been cited as a reason for not utilising this method of intervention, yet it is considered by many as an efficient way to adapt the curriculum to suit the needs of gifted and talented children. This study addressed credibility problems of past research, such as the complexity of the socio-emotional construct and the inadequate techniques used to measure it.

An exploratory, phenomenological multiple case study research design and Altman's (1983) 'research model' were used to explore a smaller portion of the socio-emotional construct in context. The self-concept and peer status of three primary students who had been grade-skipped were explored using triangulated data-gathering techniques and sources: the Piers-Harris Children's Self-Concept Scale, a peer rating scale, as well as participant observation and interviews with the students, their parents and their teachers.

The students who skipped a grade were found to have normal to high peer status and a high general self-concept within their older peer groups. These findings supported the first of two conflicting propositions emerging from the literature review, that alleges grade-skipping gifted students provides them with an empathetic peer group, thus improving their peer status and self-concept.

This study also defined a conceptual framework for a future study in this area, using Altman's model as the linking structure and a common research design to aid collective analysis. Unfortunately, although this second study was begun, it was not completed past the data collection stage.

Colangelo, N., Assouline, S. and Gross, M.U.M. (Eds.) (2004) *A Nation Deceived: How schools hold back America's brightest students.* Volumes I & II. The Templeton Foundation National Report on Acceleration. Iowa City: Belin Blank International Center for Gifted Education and Talent Development.

This publication is included here because of its importance. It responds to the evident lack of support afforded to gifted students in America following the *No Child Left Behind* legislation. It is presented in two volumes: the first is a distillation of the research reviews presented in the second. More specifically, Volume II presents an extensive review of the growing body of research on the academic acceleration of gifted students. There are eleven chapters, written by American leaders in gifted education and acceleration research. A taste of the contents can be gained from a sample: Kulik on meta-analytic studies; Gallagher on public policy; Rogers on effects and Robinson on affects; Gross on radical acceleration.

The key findings of the report are strong and clear and unequivocal:

Acceleration is the best educational intervention for high-ability (gifted) students.

Acceleration is consistently effective with gifted students.

Acceleration is highly effective for academic achievement.

Acceleration is usually effective in terms of social-emotional adjustment. (II, p.11)

What appears in the report is not new to science: the essence is well known, having appeared in the literature over the previous decade or so. What is new is the political message made explicit:

For the first time, this compelling research is available to the public in a bold new initiative to get these findings into the hands of parents, teachers, and principals. The report is

available at no cost to schools, the media, and parents requesting copies. (I, p.66)

A Nation Deceived intended to change the discourse about the education of gifted children in America. It goes a long way towards realising this goal. The report is available in English, Arabic, Chinese, French, German, Hindi, Japanese, Korean, Russian and Spanish, and is free to download from the internet at <http://www.accelerationinstitute.org/nation_deceived/>.

Diezmann, C., Watters, J.J. and Fox, K. (2001) Early entry in Australia: Rhetoric, research and reality. *Australasian Journal of Gifted Education* 10(2), 5–18.

The purpose of this paper is to draw attention to the rhetoric and research concerning early entry to school as an education strategy for gifted children. First, the key issues concerning early entry are outlined and the research evidence in relation to early entry is analysed. Second, an overview of the policies on early entry in Australia and elsewhere is presented. The paper then describes one instance of the reality concerning early entry. A parent responds to the issues raised above by describing her experiences in gaining early entry for her child, and the educational and social consequences of early entry. This discussion provides an insight into the reality that parents confront when policy meets practice.

Commentary: this paper essentially presents a study with a purposive sample size of $n=1$ participants. There is mention of neither ethical considerations nor limitations of the study.

Eales, C. and de Paoli, W. (1991) Early entry and advanced placement of talented students in primary and secondary schools. *Gifted Education International* 7, 140–144.

Objective: To examine the evidence supporting accelerated progression of talented students of all ages in the NSW education system.

Design: Literature review.

Analysis of variables: This study looks at the international and Australian research literature examining the arguments for and against acceleration.

Setting: Many Australian research examples provided.

Main results: This paper provides a strong list of research showing the benefits of acceleration and defending arguments supporting this strategy. The author emphasises that at the time of publication chronological age has been the main criterion for entry to school in New South Wales and advocates strongly for the use of acceleration in New South Wales schools. The author outlines research spanning four decades which supports acceleration: Terman & Oden (1947 & 1959) conducted 25- and 35-year studies which found that students who were accelerated 1–3 years were usually more successful than their intellectual peers who were not accelerated. Hobson (1963) reported that on a longitudinal study of underage students admitted early to kindergarten, these students exceeded their peers at graduation by a ratio of about two to one. The author provides numerous studies that have found accelerated students are more successful than same-age non-accelerated peers. Studies by Janos and Robinson (1985), Stanley (1985) and Stanley and McGill (1986) all reported students who were academically accelerated and enrolled at university early and were extremely successful academically. The author provides Australian examples of cases where students have been successfully accelerated. Thirteen students were accelerated as part of the Western Australian Secondary Placement Program. One was 15 when offered a place in the Faculty of Medicine at the University of Western Australia. All students achieved well academically and were socially accepted by their classmates. The author argues that although most opposition to the acceleration of talented students has been based on the alleged detrimental social and emotional effects, studies have refuted the notion that this damage occurs. Horne and Dupuy (1981) point out that opposition is often based on anecdotal evidence. Robinson (1983) argues that forcing gifted students to follow a lock-step educational system may have harmful consequences including dropping out of school, turning off and social alienation. Keating (1979) and Benbow and Stanley (1983) both comment that it is time to abandon socio-emotional concerns until solid reliable evidence becomes available. Melbourne University High School Acceleration program enables groups of talented students to complete six years of high school in four years. The 1984 review of this program indicated that students

were happy, motivated, achieving highly academically and demonstrating social and emotional maturity. It is strongly argued that gifted and talented students benefit from acceleration as it raises the level of challenge and allows them to avoid boredom and frustration. Braggett (1985) comments that school systems need to adapt to cater for these students. He also laments the failure of many schools to provide differentiated programs for 'developmental spurters', students who are way ahead of their age peers. Another objection to acceleration was the notion that students would have gaps in their content knowledge. This is disputed by Klausmeir (1963) and Robinson (1983), who both indicated that there was little evidence to suggest that accelerated students are disadvantaged in this way. The problem in restricting provisions for gifted students to enrichment activities are outlined. Difficulties discussed include: lack of funding to maintain the program, filling in time, haphazard and unsystematic activities, resentment of additional work. Horne and Dupuy (1981) point out that no studies have shown that enrichment provides superior results to acceleration. The author argues that acceleration as a provision offers many advantages including being less expensive than other programs and that it can utilise facilities that are already in place.

Conclusion: The author presents a wide range of research in and out of the Australian context showing the effectiveness of acceleration as a provision and defending the notion that acceleration does not cause social-emotional problems.

Commentary: The author provides an insight into Australian research supporting the benefits of acceleration within the context of international research.

Fardell, R. and Geake, J. (2003) Vertical semester organisation in a rural secondary school as a vehicle for acceleration of gifted students. *Australasian Journal of Gifted Education* 12(1), 16–31.

Objective: To investigate the benefits of a vertical semester organisation (VSO) for gifted students, particularly those students who took advantage of opportunities to accelerate.

Design: Phase one involved the collection of quantitative data on the number of gifted and

non-gifted students who took advantage of the opportunity to accelerate their studies as part of the Vertical Semester program. A standard 5-point Likert scale instrument was used. The second phase involved interviews and surveys to obtain attitudinal data about VSO from gifted students and their teachers.

Setting: A rural secondary school in New South Wales.

Assessment of variables: Data were solicited under the following headings:

- the perceived potential benefits of being able to choose units of study
- perceptions of the actual delivery of these benefits
- perceptions of the consequences on grades of being able to choose units
- perceptions of classroom practice and VSO
- whether further advantage should be taken of VSO
- general teacher and student evaluations of VSO.

Participants: 46 higher-ability students and 204 other VSO students. 15 of the higher-ability students were chosen for interview as well as a questionnaire.

Main results: The principal and teaching staff were enthusiastic about the vertical semester program. Nearly all VSO students favoured unit choice and a substantial majority thought that it would be good to take a unit in advance of their year level, i.e. to accelerate. Students enjoyed the opportunity to complete their studies at a level and pace that suited them. Higher-ability students were more positive about the opportunity to choose units and saw more merit in taking subjects with older students. Higher-ability students felt their motivation was more increased by the opportunity to choose than other students. More higher-ability students felt that the units offered matched their academic abilities and interest than other students; however this effect lessened with age. Three quarters of both higher-ability and other students said they had been able to take units in advance of their year level and that they had been able to enrol in units that they had chosen. Both higher-ability and other students exhibited minor agreement that mixed-age classes provided better learning environments than same-age classes. The

exception was Year 9 students who preferred to be with older students. Both groups felt that they were taught the same way whether in same-age or mixed-ability classes but many higher-ability students felt that the way in which they studied was both interesting and challenging. Small majorities of both students felt that VSO helped to maximise their learning. Teachers at the school who taught the VSO curriculum were also surveyed on a number of questions similar to students whilst others were specific to a teaching perspective. The majority of teachers felt that students should be encouraged to accelerate and that higher-ability students specifically would benefit from this. Most teachers felt that mixed-age classes resulted in more productive and co-operative learning environments. There was a mixed response from teachers as to whether all students were taught the same way whether in a same-age or mixed-age classroom. The majority of teachers felt that VSO better catered to the needs of gifted students. From the gifted students interviewed, being able to choose units was important to decrease boredom, increase autonomy, enhance learning and provide autonomy. In this model students were able to select units from a higher or lower level (accelerate or decelerate). Younger gifted students were less inclined to leave their same-age peers than older gifted students who were more inclined to accelerate contrary to the research of Southern and Jones (1991). There were higher rates of gifted girls taking the option of acceleration, contrary to the notion that gifted girls may not choose acceleration due to possible effects on peer relations as indicated by Benbow (1991). Gifted girls did not appear lacking in confidence as was evident in the findings of Stables (1995). The authors argued that these apparently contrary findings were an advantage of a whole-school approach to acceleration compared with acceleration of individual students. Likewise teachers in this study were positive about students' accelerating in contrast to teacher reservations often expressed in the literature (Vialle, Ashton, Carlon & Rankin, 2001). The benefits of the VSO perceived by the majority of gifted students did not extend to the two precocious students who did not share the enthusiasm for the range of subjects on offer. Both appreciated the option to accelerate and neither experienced social difficulties. Many students felt that they were taught the same regardless of age. Student and teacher attitudes towards the teaching of mixed-age classes

diverged. Differences were apparent between faculties. Nevertheless students held positive perceptions of interest and challenge and this seemed to be connected to the fact that students who chose these classes wanted to learn.

Conclusion: The performance of students in accelerated units matched or exceeded their mean performance across all their units, but this was more marked for higher-ability students. Teachers and students agreed that participation in the VSO was appropriate and beneficial.

Commentary: This is the second report of a comprehensive study of the advantages of the Vertical Semester system for gifted students in the middle years of a secondary school.

The article provides a voice for the views of students involved in the study and their teachers. The views of students and their teachers are critical to the planning of special provisions.

Fardell, R. and Geake, J. (2005) Vertical semester organisation in a rural secondary school: The views of gifted students. *Australasian Journal of Gifted Education*, 14(1), 15–29.

This is the second paper arising from a study into the advantages for gifted students of Vertical Semester Organisation (VSO) at a secondary school in New South Wales. Here, the views of gifted students and their teachers about VSO are summarised and analysed. The analysis addresses several questions.

How did the evaluations of VSO by gifted students compare with those of other students, and their teachers?

How did gifted students perceive the benefits or otherwise of acceleration within VSO?

What were the classroom experiences like for gifted students who were younger than most of their classmates?

What recommendations would gifted students and teachers make for improving VSO at their secondary school?

The study found that VSO, originally implemented at this school as a way of increasing the engagement of lower-ability students, could actually benefit higher-ability students more. Gifted students were favourably disposed towards this form of curricular organisation: they tended in the interviews to praise its fundamental

foundations such as the greater autonomy through the availability of choice, the variety of the units, and the consequent increased interest in their studies that these factors engendered. From the gifted students' perspective, VSO provided an opportunity for their learning to develop to its potential. However, the strength of this belief declined with age, perhaps a reflection of the ceiling effect of the upper level of difficulty of units being set at an 'average' Year 10 student level. Nevertheless, gifted students were strongly of the view that VSO had allowed their learning to develop in a smooth and continuous pattern, and several students said that they could more clearly distinguish and hence take advantage of what this system could offer. However, it was a matter of degree: VSO assisted some gifted students substantially, but less so for other students. In the ranks of those students who were less enthusiastic about VSO were the two precociously gifted students who believed that it was peripheral in its influence and importance to their education. Nonetheless, VSO did allow these two exceptionally gifted students to follow interests that they may not otherwise have been able to do. However, all gifted students, regardless of their degree of giftedness, were of one mind that the VSO curricular system was considerably preferable to the traditional age-graded lock-step approach.

Gallagher, S. (2010) *Inventing the wheel: Portraits of acceleration and grouping provisions for the socioemotional and intellectual needs of gifted students in Queensland Primary Schools*. PhD thesis. University of New England, Armidale, Australia.

This qualitative, multi-site case study sought to examine the current educational provisions for intellectually gifted primary school students in Queensland and to consider how the beliefs, attitudes and understandings of primary school stakeholders were reflected in the production of their school gifted education policies. Factors that may be involved in helping or hindering the provision of acceleration and grouping opportunities for intellectually gifted primary school students were also investigated, along with the implications of teacher, parent and student beliefs on the learning needs of gifted primary school students. Beliefs, attitudes and understandings of principals, teachers, parents

and students at four Queensland primary schools were explored through the use of semi-structured interviews, focus group interviews, open-ended questionnaires and document analysis.

The major findings indicated that, although most of the school policies were still in an early stage of development at the time of this research, the attitudes and beliefs of primary school stakeholders were selectively reflected in their school policies on gifted education. Reported positive attitudes towards aspects of acceleration and ability grouping were largely invisible, while concerns about identification featured strongly. It was found that attitudes towards the use of acceleration and ability grouping with gifted students were generally positive, although part-time strategies were favoured over full-time ones.

However, educators were still concerned about the possible adverse effects of grade-skipping on students' social and emotional development, and the connotations of elitism associated with full-time models of ability grouping. Furthermore, teachers' knowledge of the affective characteristics of gifted students did not appear to influence their attitudes or beliefs regarding acceleration and ability grouping. Teachers in the current study did not tend to support the myth that gifted students are more at risk of social and emotional problems, but knowledge of the socio-emotional development of gifted students was fairly low, and teasing emerged as a significant concern for the gifted student participants.

The apparent focus on gifted education at the State level was found to be a supportive factor in the efforts of schools to make provisions for gifted primary school children, while at the school level, ameliorative factors included having strong leadership and practical support. Teachers' efforts to improve the educational options for their gifted students were hampered by the pervasive dilemmas presented by a lack of time and a restrictive educational environment. Additionally, when considering the type of support needed by classroom teachers to cater for their gifted students, a discrepancy emerged between the views of the classroom teachers and those of principals or other executive staff.

Gallagher, S., Smith, S. and Merrotsy, P. (2010) Early entry: When should a gifted child start school? *Australasian Journal of Gifted Education* 19(1), 16–23.

The foundation of this paper is a qualitative multi-site case study (Gallagher, 2010), which sought to examine the current educational provisions in place for intellectually gifted primary school students in Queensland, and to consider the attitudes and perceptions of a range of different stakeholders, including teachers, parents and students. This paper considers the literature on early entry to school for gifted students in the light of recent developments in the education system of Queensland, Australia, and presents the study findings that specifically relate to early entry.

Results confirm that some commonly reported concerns and negative attitudes still exist, but that a significant proportion of primary school educators recognise that early entry may be a legitimate response to the academic and social needs of young, gifted children. Some alternative practices and implications for the field are considered.

Gallagher, S., Smith, S. and Merrotsy, P. (under review) In the dark: Perspectives of parents of gifted students in Queensland primary schools. *Australasian Journal of Gifted Education*.

The foundation of this paper is a qualitative multi-site case study (Gallagher, 2010), which sought to examine the current educational provisions in place for intellectually gifted primary school students in Queensland, and to consider the attitudes and perceptions of a range of different stakeholders, including teachers, parents and students. This paper examines the perspectives of parents about their gifted children's experiences of school. Parents in the current study were predominantly supportive of their children's schools; furthermore, and importantly, no evidence was found to support the existence of the stereotypical 'pushy parent'. While knowledge and awareness of gifted education issues were generally fairly low overall, ability grouping strategies generated largely positive responses, while acceleration was regarded less positively. A lack of communication with schools was the major concern for a majority of participants.

Gallagher, S., Smith, S. and Merrotsy, P. (in press) You turn up the first day and they expect you to come back? Gifted students' perspectives on school and being smart. *Gifted and Talented International*.

The foundation of this paper is a qualitative multi-site case study (Gallagher, 2010), which sought to examine the current educational provisions in place for intellectually gifted primary school students in Queensland, and to consider the attitudes and perceptions of a range of different stakeholders, including teachers, parents and students. This paper examines the perspectives of students towards their school and being smart. The major findings suggested that while students reported being relatively satisfied with their schools, a significant number were concerned about being teased because of their academic ability and achievements. Implications for practice and directions for further research are suggested.

Gallagher, S., Smith, S. and Merrotsy, P. (in press) Teachers' perceptions of the socioemotional development of intellectually gifted primary aged students and their attitudes towards ability grouping and acceleration. *Gifted and Talented International*.

The foundation of this paper is a qualitative multi-site case study (Gallagher, 2010), which sought to examine the current educational provisions in place for intellectually gifted primary school students in Queensland, and to consider the attitudes and perceptions of a range of different stakeholders, including teachers, parents and students. This paper considers how the beliefs and attitudes of primary school stakeholders were reflected in the production of their school gifted education policies. Attitudes and perceptions of principals and teachers at four Queensland primary schools are reported. The major findings indicated that while reported attitudes towards acceleration and ability grouping were fairly positive overall, educators are still concerned about the possible adverse effects of grade-skipping on students' social and emotional development, and the connotations of elitism associated with full-time models of ability grouping. However, teachers' knowledge and awareness of the affective characteristics of gifted students did not appear to influence their attitudes or beliefs regarding acceleration and ability grouping.

Gross, M.U.M. (1986) Radical acceleration in Australia: Terence Tao. *Gifted Child Today* 9(4), 2–11.

Objective: To present a case study of a radically accelerated child.

Design: Case study

Setting: Australia

Participants: Terry Tao, a profoundly gifted child. Terry was ten years of age at the time this article was written.

Assessment of variables: Information on Terry's development and education since birth was presented in addition to information on the home environment, affective development and involvement with the South Australian Association for Gifted and Talented.

Main results: Terry was born in 1975, the eldest of three boys. Terry was encouraged and supported by his family. His father is a paediatrician and his mother graduated with first class honours in mathematics and physics from the University of Hong Kong. The author outlines signs of precocious development from an early age including reading by the age of two, and exhibiting reading, writing and mathematical ability of a six-year-old at age three. Terry started at a private elementary school at the age of three years and six months but this was unsuccessful. He was not ready to spend extended periods of time with children older than himself even though his abilities were so far in advance. He was consequently enrolled in a kindergarten with children his own age. Terry's mother assisted him with Maths and Terry completed the elementary school curriculum by the age of five. Terry's parents joined the South Australian Association for Gifted and Talented and approached educators to help them develop an educational program. At age five Terry was enrolled at school. He spent most of his time with the Year 2 students but attended the Year 5 maths classes. Terry taught himself BASIC computer language and wrote computer programs by age six. At age nine Terry began high school full-time. When Terry was ten he began dual enrolment. He went to the local high school to work on Year 12 mathematics, Year 11 physics and Year 8 English and social studies and spent one third of his time at university studying second-year maths and first-year physics. Terry had no difficulties fitting in with older peers. The author relates that at the time the article was published Terry's parents

were considering full-time university enrolment for their son. They decided to postpone this when Terry lost his sixth-place ranking in the Australian Mathematics Olympiad. They felt that although Terry had developed in mathematics quickly, he needed more time to consolidate his learning. Terry was invited to the United States by Dr Julian Stanley of the Johns Hopkins University and whilst there, Terry and his family visited many universities and spoke to many experts in mathematics. In view of this, Terry's parents decided to put off his full-time enrolment for three years, so that he could consolidate his learning and remain at school for the purposes of socialisation and maturation. The study indicates that Terry had no real issues with social adjustment. He has been involved in the planning of his educational program and has had the opportunity to enjoy acceleration, enrichment, mentors and to be with gifted peers.

Conclusion: The case study of Terry Tao shows clear academic and social benefits of appropriately planned acceleration.

Commentary: A richly detailed case study with quotes from parents and participants. This case study supports research literature advocating the benefits of acceleration.

Gross, M.U.M. (1989) The pursuit of excellence or the search for intimacy? The forced-choice dilemma of gifted youth. *Roeper Review* 11(4), 189–194.

Objective: To review the research on the conflicting psycho-social needs of gifted children.

Setting: Australia

Design: Literature review and case study

Main results: The author comments that in Australia very little is known about the social and emotional needs of gifted children. Investigation is further hampered because of the prevailing view that gifted students differ from their age peers on intellectual factors alone. Their level of social and emotional development is more highly correlated with their mental age than their chronological age. Their enhanced capacity for abstract reasoning coupled with their frequently accelerated capacity to obtain and process information leads them to speculate on ideas not normally encountered till a later age. Serious difficulties can arise when they attempt to share

their ideas or interests with their age peers. The gifted child's search for intimacy is well documented; Silverman's research (1983) illustrates several incidences when gifted children have demonstrated compassion and concern for other children well beyond what is expected for their age. It is pointed out that it is more likely for children to form intimate or supportive relationships with those people they have more in common with, either older children or intellectual peers. The study of O'Shea (1960) noted that in several studies conducted over a number of years, no variable correlated more highly with friendship choice than mental age. This search for like minds seems to start from early childhood, even from age three (Hubbard, 1929). Terman (1930) made a special study of play in a gifted group of children and found that those with an IQ of 170 or over were much more solitary in their play than those with an IQ of 140 or over. Generally the play interests of gifted children centre on games of intellectual skill whereas the average child is more interested in simple sensory-motor activity. Consequently gifted children need to face an uneasy compromise between their own interests and their desire to be accepted into the group. Many prefer to play by themselves, some inventing playmates and others inventing solitary, intellectual games. Many gifted students underachieve. Painter's research (1976) showed that 60% of 160 children with an IQ 123–212 were underachieving by at least four years. The author notes that many students who choose to sacrifice achievement for intimacy are remarkably successful in concealing their abilities and gives the example of Tom who employed two distinct and separate vocabularies to avoid detection. It is highlighted that gifted students are compelled by our education system to choose which of the two basic psychological needs should be fulfilled. The author notes that many students experience neither achievement nor intimacy in their current school climate. Many students drop out of school early. The author speculates that gifted children subjected to intense and continued pressure to moderate their performance may lose their motivation to achieve. The work of Foster (1983) proposes that a necessary condition for the development of the drive to excel is a secure self-concept. The development of intimacy is, according to Foster, a necessary correlate of the development of a secure self-concept. A number of examples of programs are outlined which are experimenting with various social groupings to assist gifted

students establish peer relationships with other students who share their abilities and interests. In Australia these include the accelerated program at University High School, Melbourne and full-time self-contained classes in the Northern Territory.

Conclusion: The author recommends more empirical research on the effects of peer grouping on the social and emotional development of the gifted in homogeneously grouped and ungrouped settings.

Commentary: A clear picture of the emotional and social needs of gifted children is portrayed through clear research literature, the author's own research. The voices of the children presented from case studies make this a relevant and persuasive article to persuade educators to look at a broader range of grouping options for gifted children.

Gross, M.U.M. (1994) Radical acceleration: Responding to academic and social needs of extremely gifted adolescents. *Journal of Secondary Gifted Education* 5(4), 7–18.

This article advocates the acceleration of gifted students as an urgent necessity.

Over a period of about ten years, the author undertook a longitudinal study of the academic, social, and emotional development of 45 'exceptionally gifted' and 'profoundly gifted' Australian students. Most of these students experienced traditional progress through school, being retained full-time in the regular classroom with little if any access to other students with similar abilities or interests. Some of the students were permitted a single grade-skip of 12 months — an intervention that is suited to the needs of the moderately gifted, but does little to assist the extremely gifted student unless it is followed up with further acceleration later in subsequent years. The majority of the participants in the study practised a deliberate and sustained underachievement for peer acceptance. Their self-esteem was measured using the Coopersmith Self-Esteem Inventory, which is designed to measure evaluative attitudes towards the self in social, academic, family and personal areas of experience. Although the academic self-esteem of the study children was positive, the majority of the children scored more than one standard deviation below the mean on the sub-scale that measures social self-esteem. In particular, it

seems that the students who were confined full-time to the regular classroom were all too aware of the degree to which they were disliked and rejected by their age peers, and their low self-esteem and social isolation were also reported by their parents and teachers. In fact, the only students (nine out of the 45 participants in the study) whose social self-esteem was more than one standard deviation above the mean were those who had been radically accelerated. These students also displayed higher levels of motivation than when they were grouped with age peers, reported that the pressure to underachieve for peer acceptance had significantly diminished or had disappeared completely, and said that they enjoyed closer and more productive social relationships than they did prior to their acceleration. To support and illustrate her discussion, Gross presents vignettes of the educational experiences of three of the participants in the study.

This paper concludes that, for the extremely gifted, radical acceleration, or placement with students not simply one year but several years beyond their age, has strong positive effects on their social adjustment, especially when the acceleration occurs through a series of carefully planned and monitored grade-skips. However, the study also notes that radical acceleration would be unsuitable for the moderately gifted student whose intellectual and psychosocial development is not as advanced as those of the exceptionally and profoundly gifted.

Gross, M.U.M. (2006) Exceptionally gifted children: Long term outcomes of academic acceleration and nonacceleration. *Journal for the Education of the Gifted* 29(4), 404–429.

Objective: To trace the academic, social and emotional development of 60 young Australians with IQs of 160 and above.

Subjects: 60 young Australians with IQs of 160 and above.

Setting: Australia

Method: A twenty-year longitudinal study

Assessment of variables: 30% of the expected number of young people in Australia with an IQ of 160+ were identified.

Main results: The author provides a brief review of some of the early literature focussing on Terman and Hollingworth. As early as 1930

Terman warned that exceptionally and profoundly gifted students were children at risk, particularly in regard to problems of social adjustment. Leta Hollingworth (1926, 1931, 1942) was contemporaneously engaged in a significant study of 12 children with IQs of 180 and above. Hollingworth was intrigued by the differences she noted in the cognitive and affective development of moderately and exceptionally gifted children. She defined the IQ range of 125–155 as 'socially optimal intelligence' whereas children with IQs of 160 and over experienced ongoing problems of social isolation. Hollingworth noted that the majority of children testing above IQ 180 played little with other children unless special provisions were made, such as those found in a special class for the gifted. The author relates that in the 1920s and 1930s the school system advanced gifted students more readily than it does now. Consequently 10% of Terman's entire subject group had skipped two grades and a further 23% had skipped one (Terman & Oden, 1947). In contrast, the majority of students in the author's present study were retained with their age peers for the entirety of their schooling. The author outlines the advantages and disadvantages of a longitudinal study. The advantages of a comparative longitudinal study are that they allow us to examine differences both within subjects and between them on a range of variables throughout the period of the study. Nevertheless, longitudinal study is seen as time consuming. Frequent contact is needed to reduce dropout rates. The 60 young Australians in this study are spread over an area as large as the United States but with a population of only 21 million. Face-to-face contact is limited owing to expensive travel costs and was supplemented by mail, phone and email. The author restricted membership of this study to young people between ages 5 and 13 with an IQ of 160 or over. The formal commencement of the study was advertised extensively from 1986–7 in the *Bulletin of the Australian Psychological Society*, state and national gifted education newsletters and through letters to universities and psychologists. By 1989 the study comprised 40 children and an additional 20 students entered between 1990 and 2002. 30% of the theoretical population was identified. Subjects undertook regular assessment in several school subjects and these were compared with teacher assessments in half-yearly and yearly reports. Serious discrepancies were noted between ability and

academic response. Records of physical characteristics and health were taken through childhood. Parents and children completed questionnaires and participated in interviews. The author reports that exceptionally gifted children tend to be characterised by the early onset of reading. 40 of the 60 children in this study were reading before their fourth birthday and all but one was reading before school entry. Whilst in a small number of cases the classroom teacher accommodated this situation, the majority were required to read with their age peers. Only 17 of the 60 were radically accelerated. The majority (33 of 60) were retained with age peers for the duration of their schooling. The author provides two examples of radically accelerated students. The first, Christopher Otway, revealed a mental age of 22 when he was tested at age 10 years, 11 months on the SB:L-M. Whilst in Grade 1 Chris was accelerated to work with fifth-grade students for Maths and sixth-grade students for English. By age 12, he was theoretically enrolled in 9th grade but took five subjects with 11th grade students. Chris decided to repeat 11th and 12th grade to give him an added breadth to his studies but also because he felt he was too young for university. Chris entered university when he was 16 years old, graduating in Computer Science at age 20. He then received a university scholarship and graduated with a PhD at age 24. The second radically accelerated student is Sally Huang. Sally scored 165 on the SB:L-M at 6 years, 11 months. The psychologist stopped the test before Sally had reached her ceiling. Sally entered 2nd grade at age 6, 4th grade the following year, 7th grade at 9 and compacted the six years of high school into four, graduating at age 13. She entered university on scholarship at 13.5 years old. Sally gained a Bachelor of Science at 16 years 8 months and also gained a scholarship to university to complete a PhD in theoretical physics at age 21. The following year she completed a postdoctoral MBA. Like all of the other students in this study who were radically accelerated, Sally had no regrets about her acceleration. She was more worried about the possible consequences if she had not been accelerated. The majority of radically accelerated students in this study topped their state in specific academic subjects, the majority entered university between ages 11 and 15. All have graduated with extremely high grades. Each of these students has been able to form lasting and deep friendships and they attribute this to the fact that their schools placed them quite early with

older students. Those who experienced social isolation say that it disappeared after their first grade-skip. The five young people who were 2-year accelerands reported personal satisfaction with their education but the majority said that they would have liked to have been accelerated further. Two have taken PhDs and three have taken Bachelor Honours degrees. Those who were retained with age peers until 4th grade have found socialising difficult. Five subjects who were accelerated by one year were not as happy with their education and wish they had been accelerated further. This group tended to take undergraduate courses and stop there. It is with this group that a serious dissatisfaction with friendships and relationships starts to appear. 33 of the subjects did not participate in acceleration and generally held jaded views of their education. Two of these young people dropped out of high school and several dropped out of university. Several of the non-accelerands have serious and ongoing problems with social relationships. Six have had counselling and two of these have been treated for severe depression. The author notes that teachers appeared to be less threatened by students accelerated by more than one year. When their academic performance is compared to their new peers their performance appears less out of the ordinary. They may require less differentiation and therefore may be easier to teach. The students in this study completed the Coopersmith Self-Esteem Inventory. General self-esteem and family relationships scored highly across the subjects. However there were substantial differences in academic and social self-esteem between subjects who had been accelerated by two or more years and those not accelerated or only accelerated by one year. The author suggests that we should not require young people with multiple talents to make decisions about an area of specialisation before they have had the opportunity to explore pathways throughout which several of their talents could be fostered. One such example of this is Chris Otway who decided to take four years to complete the last two years of high school in order to broaden his range of subjects from 5 to 10. The findings of Hollingworth (1942), that between the ages of 4 and 9 the social difficulties experienced by children with IQs of 160+ were the most acute, were mirrored in this study. Many of the subjects deliberately underachieved for peer acceptance and talked about camouflage as being part of a survival mechanism. It is noted that many schools in Australia and the United

States tend to delay acceleration until the middle years of elementary school. The author suggests that the earlier these students are placed in a setting catering to their ability the greater their capacity to form friendships in their later years.

Conclusion: The author outlines many case studies of profoundly gifted students who have been radically accelerated, partially accelerated and not accelerated. This study provides sound evidence to demonstrate negative consequences of not accelerating these students and the benefits to those students who were accelerated.

Commentary: An exemplary study supported by Australian case studies. The author provides an insight into the lives of these young profoundly gifted people. The author provides quotes from the subjects, intertwined with the research literature to clearly demonstrate the benefits of appropriate acceleration for gifted students.

Gross, M.U.M., Urquhart, R., Doyle, J., Juratowitch, M. and Matheson, G. (2011) *Releasing the brakes for high-ability learners: Administrator, teacher and parent attitudes and beliefs that block or assist the implementation of school policies on academic acceleration. Overview Report, June. Sydney: GERRIC, UNSW.*

This study empirically investigates Australian school stakeholders' knowledge, beliefs and behaviour regarding acceleration. It also explores whether recommendations and requirements of gifted education policies are currently being implemented in schools. Its principal aim was to provide policy makers and legislators with detailed information about how to overcome obstacles to policy implementation at the system, regional and local levels, and how to provide information to facilitate the implementation of acceleration options.

The study addressed several research questions:

Are systemic gifted education policies supportive of acceleration?

What are the differences between policies? How do they differ?

What are teachers' knowledge of, and attitudes towards, accelerative practices?

Do teachers who have undertaken professional learning in gifted education display different degrees of knowledge,

attitudes and practices with respect to acceleration than teachers who have not undertaken such learning?

What are the perceptions and understandings of key stakeholders (parents and accelerated students) of acceleration in school settings that practise acceleration in some form? Do parents' attitudes directly or indirectly influence a school's decision whether to accelerate students?

To answer these questions, the study was exploratory and used mixed methods. Policy documents on the education of gifted and talented students, drawn from state, Catholic and Church-administered Independent education systems, were examined. A Likert-scale self-administered survey questionnaire was administered to 211 participants. Face-to-face interviews were conducted with a sample of 104 participants, including principals, coordinators of gifted and talented students, teachers, parents and high-ability students aged 16 years or older. *NVivo* (a computer-based qualitative data analysis program) was used in the analysis of the interviews. Of the participants, about three quarters were female, about two thirds were aged over 40, and about 70% were classroom teachers.

Findings from the study included the following.

The use of enrichment is reported by 85% of the participants, but acceleration by only 39%. Implementation of academic acceleration is largely dependent upon local educational practices.

The schools and education systems in the study tend to be reluctant to accelerate talented learners, mainly because of the assumption that they will experience difficulties in socialising with the older students.

On the other hand, from the teacher participants there was general support for the use of acceleration. They tended to believe that acceleration does not have adverse effects on students' psychosocial development; however, teachers' perceptions of what constitutes or defines social-emotional maturity tend to be subjectively based on selective examples of behaviour rather than on a student's overall behavioural profile. There is certainly a need to develop more appropriate and more objective measures to assess social and emotional maturity.

Information regarding the learning and socio-affective characteristics of talented students was

rarely provided to educator participants during their undergraduate education (i.e., when they were pre-service teachers). This information tends to be offered in postgraduate studies and therefore is accessed by a small proportion of teachers seeking higher-level qualifications in the education of gifted and talented students.

Parents of academically talented students are faced with the dilemma of advocating for their child and being considered to be 'pushy' parents (resulting in their child being denied acceleration), or of advocating not forcefully enough (resulting in requests for acceleration being disregarded).

Thirteen recommendations arise from the study.

Gross, M.U.M. and van Vliet, H. (2005) Radical acceleration and early entry to college: A review of the research. *Gifted Child Quarterly* 49(2), 154–172.

Objective: To validate the practice of appropriate acceleration through reference to the research. In addition, to outline the procedures that have been shown to lessen the likelihood of unfavourable outcomes of radical acceleration.

Setting: International context

Participants: Examples of case studies are given.

Method: Literature review

Assessment of variables: A range of case studies and academic research are referred to.

Main Results: The authors provide an overview of the concerns and research in the international literature regarding acceleration. Acceleration as an educational instrument has a compelling body of empirical evidence for its success. Yet many educators are wary of possible ill effects citing fears for the affective and intellectual well being of the student (Daurio, 1979; Southern, Jones & Fiscus, 1998) particularly when radical acceleration is used. The authors then outline research on acceleration in a number of countries. They comment that nations may make decisions about acceleration based on prevailing socio-political and cultural values. In Australia a twenty-year longitudinal study has documented 60 exceptionally gifted young Australians from childhood to young adulthood (Gross, 1993, 2003). The study found significant socio-political and educational opposition to acceleration, particularly in the 1980s. Only a minority of the

study participants (17) was allowed to accelerate. The accelerands in their 20s at the time of publication report high levels of satisfaction with the academic and socio-affective outcomes of the program. In China radical acceleration has been a focus since 1978 when an early entry program at the University of Science and Technology of China (USTC) was introduced. This has since been replicated at 12 other universities. The majority of early-entry students achieve exceptional results. Zhao (1996) entered USTC at age 13 and reports the program was beneficial despite some regrets about the range of subjects taught and the need for greater concern regarding the social and emotional needs of students. In Taiwan there are programs in most elementary and high schools as well as many universities (Wu, 1991). Academic acceleration is widely supported and available. Research has focused mainly on academic gains that appear to be impressive. In Poland, acceleration escalated during the early 1990s. The Creative Schools Association and the School of Talents in Wroclaw offer individualised academic instruction, including Advanced Placement college courses. The research supports strong academic outcomes. The authors argue the importance of family support, citing the research of Galton (1869) and Cox (1926), both of whom consider family upbringing and support to be an important variable in the success of accelerated students. Montour (1977) provides a case study of two prodigies, William Sidis and Norbert Wiener. Both men had dominant fathers who pushed their sons to achieve; however, Sidis was completely home schooled and his difference from his peers was stressed to the media whereas Wiener attended school some of the time and was protected by his father from the media. Both boys went to Harvard, however Sidis appeared to lack social maturity whereas Wiener was well liked. Australian prodigy Terry Tao who gained a PhD at age 21 also strongly benefitted from the ongoing support of parents (Gross, 1986). Socio-affective factors are seen to play a significant role in the success of radical acceleration. In Chalton's study of 14 radically accelerated students, all students experienced an increased zest for learning and happy social relations. Similarly, Gross's radical accelerands were found to have higher levels of social and general self esteem than their peers who had not been accelerated or only grade-skipped by one year. The advantage of dual enrolment is also supported by the research. Brody and Stanley

(1991) and Olszewski-Kubilius (n.d.) suggest that students considering early entry should consider studying part-time to gain experience with the demanding nature of tertiary study. It is suggested that students starting college early should consider living at home rather than commuting. It is suggested that accelerated students consider what to do with the time they have saved (Brody and Stanley, 1991). Both Olszewski-Kubilius (1995) and Gross (2004) report that it is not uncommon for students to reinvest their time in further academic study. A growing number of universities and colleges in the United States have introduced special programs for young enrolments. The Study of Mathematically Precocious Youth (SMPY) initiated in 1971 by Julian Stanley at Johns Hopkins University has influenced the formation of programs for educational acceleration throughout the United States and also Europe and Asia (Giheany, 2001; Touton, 2001; Wu, 1991). The use of talent searches provides an additional opportunity to identify students (Brody, 2001). SYMP has conducted many longitudinal studies that investigate the academic and psychosocial effects of acceleration. Swiatek (1993) reviewed the results from a wide range of studies and found that these students do not 'burn out' and suffer gaps in their knowledge. She concluded that acceleration assists in establishing a foundation for advanced learning, maintaining interest and earning extra time for career development. Several studies have also been conducted at the University of Washington as part of its early entrance program (EEP) that began in 1977. These studies included the use of control groups. Janos and Robinson (1985) conducted a three-part evaluation of this program. Results showed that EEP students' academic results far exceeded that of regular students. EEP students also appeared more satisfied with the academic life provided by the university. A study by Noble, Arndt, Nicholson, Sletten and Zamora (1999) of 31 EEP students found that all students enjoyed the social environment that university offered and felt that early entry afforded them appropriate levels of maturity and independence. A study surveying 33 students who enrolled in an early entry program at a small college found that these students became more independent, mature and self-disciplined than 18 students of similar age and intellect who were enrolled in traditional high school programs (Cornell, Callahan & Lloyd, 1991). However, a disturbing feature of the study

was that some of the accelerands experienced depression and other adjustment problems during the course of the year and some dropped out of the program. A second study (Cornell, Callahan & Lloyd, 1991) of 44 students found that more than half were reported by staff as suffering periods of depression during the study. Five were reported as engaging in suicide-related behaviour and thirteen students left the program for reasons judged as stress-related. These results were, however, more difficult to interpret as there was no comparison control group and some of the students had an IQ as low as 115%. Gregory and Stevens-Long (1986) presented case studies of 5 students who enrolled in an early entry program at California State University (CSULA) in its first years. The aim was to discover problems facing early entry students. The authors identified lack of study skills as a major problem and recommended that students be provided with note-taking, coping and time management skills. The study identified the importance of parental support in student success. In a study of student perceptions of early entry to college Noble and Drummond (1992) found that some students had regrets about radical acceleration. Concerns included missing school music and arts programs, extra-curricular activities and school friends. Some felt that if they had been able to attend high school they would have had more opportunity to apply for scholarships. In reviewing the literature concerning early entrance to college Saylor (1994) listed 12 points for prospective early entrants to consider which are summarised below:

1. Contact the admissions office, explain circumstances, and request information about policies regarding early entrance.
2. Exhaust the challenging opportunities available in the school system including Advanced Placement courses.
3. Attend university summer schools before leaving school to develop skills to prepare for early entry.
4. Be sure you are aware of the work involved.
5. Consider a support network such as cohort acceleration programs where a group of young students attend college together.
6. Match career goals to the courses offered at particular colleges or universities.

7. Select colleges based on what programs and departments offer rather than the 'Big name' appeal of the college.

8. Decide whether to live on campus or commute.

9. Determine whether your aptitude and achievement measures are at least as high as the average for the freshman class.

10. Evaluate your organisational skills.

11. Visit the college or university campus, meet staff and if possible tour residence facilities.

Conclusion: Research provides strong support for well planned and monitored radical acceleration to respond to the needs of a significant number of the gifted population. Overall the research does not indicate socio-emotional disadvantages. The author advocates this intervention as cost free and effective.

Commentary: A detailed review of the international literature is provided. The research indicates useful strategies for young people to maximise the benefits of acceleration.

Hill, K. (1994) Who understands? *TalentEd* 46, 1–2.

Despite the normally sound advice that grade-skipping is likely to succeed if kept unobtrusive by being effected at major breaks in schooling, such as the beginning of the school year or when transferring between levels of school, Hill, a secondary Science teacher in New South Wales, reports a case for which this was not sufficient to avoid negative outcomes:

M was a boy in Year 7 who had been accelerated, skipping Year 6. Hill came into contact with him in class and was amazed at the behaviour he was displaying. He was seeking the attention of the other students by calling out, being very silly, not completing his homework and deliberately getting into trouble. His answers to questions were ridiculous, and usually yelled out over everyone else, trying to get a laugh. He would miss out on answering a whole page in a test, trying to gain acceptance. He was constantly on detention in all subject areas. Cognitively, he was being satisfied but socially it was a nightmare, exacerbated by the fact that he was socially immature [i.e. unskilful] and did not know how to cope with the problems he was facing.

He was resented by those students whom he left behind in the Junior school, and owing to the structure of the K–12 school, this resentment was easily transferred to the Senior school. He found it hard to socialise with his previous friends: they were 'over there' and considered to be immature, and yet he was not accepted where he was within the school. To him it was about 300 people to 1 and it wasn't good odds. To make matters worse, he was diabetic, and so they had another weapon.

M was at the stage where he was not motivated by grades or the desire to learn — he even resented that. He was more concerned with peer relations and the basic need to belong. He would have given all of his ability away if he could have just one true friend and some peace at school. He did not realise that his behaviour was making things worse.

The saddest point, and of most concern, was that this 11-year-old mentioned that he had a suicide plan, which he described to Hill in full detail, and would end his life because 'What sort of life is this? Would you call this living?'

M and Hill together worked out strategies by which he could deal with problems now and in the future — the tall poppy syndrome does not stay at school. They also devised a contract scheme and extension work he could complete outside the classroom so that attention was not drawn to his ability.

The results? His behaviour improved greatly, and any inappropriate behaviour was easily controlled by saying, 'Is this getting what you want?' Hill's door was also open if he had any problems.

So, a happy ending? One may wish that it were so. The 'honeymoon' lasted about a term and a half. M was enjoying the work and he seemed to be dealing with his peers but if you are abused and taunted constantly, at such a young age particularly, you can only last so long and before too long he was being a behaviour problem at school ... and at home. This culminated in his father asking me, 'What do I do? I wish he was just a normal kid. This has been such a shambles. We should never have allowed him to skip Year 6.'

As a result of this traumatic experience Hill, who as a gifted student herself had experienced acceleration in maths while in Years 3 to 6, was moved to raise several fundamental questions:

Is acceleration appropriate within a K–12 school?

Where is the counselling? This should be continually available, for parents and students.

We take a more holistic approach when assessing a 4-year-old for early entry into kindergarten [the first year of formal schooling in New South Wales], but do we apply enough of this for someone M's age?

Is satisfying cognitive needs a justification for the emotional and social costs?

Should we set up a gifted and talented peer support network, including adults who have 'survived' [i.e., those who have clear memories of their own experiences as gifted students in our schools]?

Hoekman, K. (1994) The tyranny of chronological age. *Gifted 82*, April, 17–19.

Objective: To persuade readers, particularly in New South Wales, of the benefits of acceleration.

Design: Literature review

Setting: Review of literature primarily from the United States of America and educational practice in Australia

Main Results: The author outlines well known research (Southern & Jones, 1991) to support the premise that it is unreasonable to group all students by chronological age in one grade per year in a lock-step fashion. A background to educational reform in New South Wales is provided. It is noted that prior to the 19th century student performance rather than age steered decisions re class placement. In NSW the reissue of the 1904 Primary School Syllabus meant that quarterly and half-yearly promotion were abandoned which quite incidentally jeopardised the progress of gifted and talented students. In 1922 a back-to-basics move was implemented and with it no individual recognition of individual difference in children. Southern and Jones (1991) noted that acceleration in its earliest form was the process of putting students ahead in age/grade placement. Studies examining the effects of acceleration and social-emotional adjustment reveal a contradiction between the intellectual support for the concept of acceleration to the actual practice due to fears of effects on social and emotional development. The author highlights the unique social demands

placed on the gifted (Silverman, 1993) when they are asked to adapt to children mentally and developmentally much younger than they. The concept of getting along with others which is perceived by society as so crucial is aptly translated by the author into 'getting along with others who are the same chronological age'. The author points out the importance of programming in gifted education considering the interplay of non-intellective and cognitive factors to be truly responsive to the needs of the gifted. The author discusses the concept of 'acceleraphobia' and welcomes the Board of Studies' newly revised guidelines on acceleration. Readers are encouraged to read these guidelines and research literature.

Conclusion: The author makes a strong case for the appropriate use of acceleration in NSW through reference to well known research.

Commentary: The historical origins of acceleration and the history of educational reform in NSW add to the interest of this paper.

Jaggar, K. (1999) *Student perceptions of subject acceleration in New South Wales secondary schools*. EdD thesis. Sydney: University of New South Wales.

This study targetted current accelerants at the secondary level in New South Wales, as they were engaged in the process of experiencing a program of acceleration. It appears to be the first study that specifically addressed the issue of student perceptions of subject acceleration in secondary schools, and one of the very few studies at the time that addressed acceleration interventions for the moderately gifted.

The principal objective of the study was to ascertain what accelerating students think and feel about their accelerative experiences while they are still engaged in them. The study aimed to assess aspects of the relationship between socio-emotional adjustment and degree, type and timing of acceleration, and attempted to determine the personality traits and effective characteristics of students already involved in subject acceleration. The study also aimed to examine whether the self-esteem dip was a problem perceived by subject accelerants. In so doing, it claimed to address the following research questions:

What is the background of students who accelerate in a subject or several subjects?

In what subjects is acceleration occurring?

What relationship exists between gender and subject choices?

What relationship exists between non-English speaking background and subject choice?

What effects do school characteristics have on subject acceleration?

What organisational adaptations are made by schools to support subject acceleration and subject accelerants?

What do subject accelerants think and feel about their experiences of subject acceleration?

What pedagogical effects are felt by subject accelerants?

What do subject accelerants feel about themselves in the context of their acceleration?

What relationship exists between gender and acceleration experiences?

What relationship exists between non-English speaking background and acceleration experiences?

Are there any articulation issues associated with subject acceleration?

Do different approaches to subject acceleration produce differential effects on students?

Do school grouping policies affect participation in subject acceleration?

In 1996, there were reported to be 1283 secondary students in NSW who had accelerated in one or more subjects. Of these, 306 (24%) participated in this study by completing a 10-page, 59-question survey on *Student perceptions of subject acceleration in secondary schools*. A purposive sample of 30 of these students then participated in a semi-structured interview.

The study found that, for accelerated students, there was a gender balance of 49.5% girls to 50.5% boys; that acceleration had mostly occurred between the ages of 14 and 15 years (averages were 14.3 years for girls and 14.7 years for boys); that 94% had access to acceleration opportunities in their own school; and that there was a 'grudging' reception of the accelerated student in only 2% of cases. The study also found that 34% of the boys and 57% of the girls

expressed fears about acceleration prior to their experience, but that over 70% of these did not have any such fears realised, which also means that about 30% (35% of the girls and 21% of the boys) did have their fears realised.

Although the study interpreted that a desirable key to successful subject acceleration is the inclusion of more than one student in the process, presumably so that students do not experience social isolation, the data actually show mixed results (37% agreed, 29% disagreed, and 34% were undecided). It was clear, however, that most of the students (93%) would not have preferred to remain with their cohort, and that most of the students (95%) found their acceleration experience to be appropriate for them. It would be informative to learn why some of the students (approximately 5%) would not recommend acceleration.

The study found that there were significant gender differences among NESB students. It also found that the results of the survey did not confirm fears of parents and practitioners about social and emotional maladjustment resulting from participation in subject acceleration programs, and that there did not appear to be evidence of a dip in self-esteem caused by the acceleration experience. It therefore concluded that social-emotional development was not adversely affected by subject acceleration.

Merrotsy, P. (2002) *Appropriate curriculum for academically accelerated students: Listening to the case studies of gifted students*. Doctoral thesis. Darwin: Faculty of Education, Northern Territory University.

This study explores ways of providing a better curriculum for gifted students. A review of the literature emphasises that gifted students require the provision of a qualitatively differentiated curriculum, and finds unequivocal support for the benefits of academic acceleration. An appraisal of curriculum in NSW notes that there are fine programmes for gifted students, but that a lot more can be done.

By listening carefully to the voices of gifted students, effective ways to improve their curriculum may be discovered. Following a life history model that employs the narrative, cases are made from the naturalistic portrayal of eight gifted individuals. Each case study outlines the formative background and educational

experiences of the individual, and concludes with a summary of the issues that the individual believes to be most important for improving the curriculum for gifted students.

An interpretive analysis of the case studies makes 20 recommendations. These include: greater flexibility of school organisation; better communication; continuity in a broader, more inclusive curriculum; options of academic acceleration, including access to tertiary-level courses; appropriate educational support; and financial support for gifted students from low socio-economic backgrounds, and from rural and isolated settings.

A model for academic acceleration is presented. It recommends six steps towards a better curriculum for gifted students: identification; communication; a negotiated curriculum; academic acceleration; access to tertiary courses while still at school; and support for gifted students.

Merrotsy, P. (2003) Acceleration: Two case studies of access to tertiary courses while still at school. *TalentEd* 21(2), 10–24.

Objective: To outline the challenges faced by two young gifted people in their journey through the school system

Design: Case studies

Setting: Subjects attended a small, rural, relatively isolated high school in an economically depressed area.

Participants: Two accelerated students, Elise and Kerr.

Main results: Kerr was academically accelerated in several subjects, completing ten HSC units before he was in Year 11. He gained access to several tertiary courses while he was still at school and was dux of his school. Kerr is Scottish-born. His paternal grandfather grew up in Wales and Malaysia and lived in Lincolnshire most of his life. He was a carpenter by trade and had been one of the people involved in the handing over of power to Malaysia when it gained independence from Britain. This experience triggered Kerr's interest in Asian languages. His grandfather's sister was one of the first women in Britain to graduate from university. Kerr has met his paternal grandmother several times. She lived for five years in Malaysia and now lives in Lincolnshire. His

maternal grandfather was a farmer and was thought to be university-educated. His maternal grandmother studied music at university and taught music to hospital patients. She moved to Australia with her husband to farm and then returned to Scotland where Kerr's mother was born. Kerr's father grew up in Malaysia and England and was educated in private schools. When his father died and his mother was suffering from cancer he left school at 16 to look after the family. He completed his 'A' levels at night school and later completed two degrees at university. Kerr's mother completed a degree in French and history whilst completing a diploma in music in her spare time. After her marriage and the birth of the two boys, the family migrated to Australia. Kerr admits he does not get on well with his younger brother, which he sees as normal. Kerr is vegetarian by choice. They are a very close musical family. Kerr started to learn music when he was three and learnt to read before he went to school. He attended a small, rural, one-teacher school. When he was in Year 4 he was placed up a year. Halfway through that year the family returned to Scotland so the boys could attend a school for gifted young musicians. The family decided to return to Australia. Kerr attended a small, rural, isolated school where the one teacher struggled to provide an appropriate curriculum including Year 7 and 8 maths. The teacher phoned the high school asking for help and a maths teacher consequently became his mentor. During Year 6 Kerr completed Year 8 maths. When in Year 7 he studied the normal Year 7 curriculum as well as a VSO course in problem solving and Year 9 advanced maths. In Year 8, apart from English all his subjects were at Years 9 or 10 level. In Year 9 owing to timetable clashes he studied Year 11 3-unit maths independently, discussing problems with his teacher or mentor. He was not totally comfortable with this arrangement. By the end of Year 9 Kerr had completed his first HSC course in 3-unit music. In Year 10 he completed six preliminary HSC units, 3-unit Indonesian and 4-unit HSC maths. By some oversight he was not awarded a School Certificate even though he had met the requirements by the end of Year 9. Kerr's mentor presented him with a computer and Kerr quickly taught himself assembly programming and his own operating system. At this time Kerr was also accepted as an external part-time student at the University of New England, Armidale in a second-year Indonesian native speakers course. Again his mentor found money for texts,

residential courses, accommodation and transport to and from the university. Finally at the end of Year 12 he received the award of dux of the school. He had to his credit 23 HSC units, 10 university units, and three music diplomas. Kerr has some interesting reflections on his high school education. He compares his Year 11 mathematics studies, which used resources written with the assumption that students attended lessons (which he did not), with the structured correspondence course in Indonesian aimed at independent learners. He comments on the extent to which courses are repeated in the VSO, HSC and then first-year university. He thinks that better structured courses are warranted and that the disappearance of streaming is not a good thing. He feels that there is too much emphasis on assessment and that the goal should be real learning. In regard to university courses, he felt that there were some problems with the distance education model, namely lack of direct feedback, in particular slow feedback on assignment work. He enjoyed the residential courses and was well accepted by the mature-age students who were there. Kerr has some regret about the overall study load he took and felt that considering he did so many HSC units his UAI was undervalued. He found the accumulated HECS debt annoying but also stated that these university courses were a crucial part of his school curriculum. Ultimately his breadth of education was more important than additional points in his UAI. Kerr cites the example of other students who deliberately chose courses below their ability to get a higher UAI and feels that this is unfair. Kerr argues that:

- Academic acceleration and access to tertiary courses are appropriate and important curriculum options.
- Gifted students require specialised, high-level courses throughout their schooling. These need to be supported with appropriate resources.
- More flexible school organisation is needed, particularly in regard to timetabling; tracking of courses is needed.
- Financial support should be provided for access to other institutions, including expenses for travel, HECS and accommodation.
- Additional support is needed for gifted students from low socio-economic backgrounds and students living in isolated areas so that they

can gain access to resources such as a computer or a mentor.

The second case study is Elise who was identified because she accelerated through her high school curriculum, gained access to a tertiary course whilst still at school, was dux of the high school and worked closely with the mentor for five years. Elise is the older of two daughters. Her maternal grandfather originally worked on his parents' farm and then studied to become a zoologist. Elise spent a lot of time assisting him dig up earthworms and in his extensive library. Elise's maternal grandmother was a primary school teacher and later a teacher of doll making. Elise's paternal grandfather was a clerk, an avid reader and a keen photographer. Her paternal grandmother is English and migrated to Australia as a young woman. Her reading centres on political writing. Elise's mother was the youngest of six children. She completed the first part of a university science course. She eventually left home and taught doll making. After this she started a horticulture course and then transferred to a teaching degree. Elise's father has a love of trains and is a civil engineer. The family moved many times before finally settling in 'my town'. Elise learnt to whistle at five months of age. From the age of two she suffered from asthma. Elise learnt to read when she was three. She remembers being bored in Year 1. In Years 5 and 6 Elise attended a small rural school. She spent much of her time teaching other children to read and did not feel academically challenged. At this time it became clear that she was having difficulty relating to other children. After Year 6 the family moved to 'our town'. In Year 7 Elise felt socially isolated and unchallenged. In Year 8 she made some friends and immersed herself in music and literature to escape the boredom at school. Bored Elise approached the maths department for more challenging work. She was consequently accelerated by one year and allowed to complete Year 10 work in the Year 9 classroom. A teacher became her mentor and together, after school, they worked on topics and concepts normally covered in Year 11 or later. Elise was also bored in English but acceleration was not considered an option. Her mentor introduced her to a range of philosophical and theological writers. At this time Elise's mother suffered from recurrent medical problems and her mentor found Elise respite accommodation. Elise was clearly experiencing her own mental health issues. She

was diagnosed with Asperger's syndrome, a form of autism. Elise refused to be classified as emotionally disturbed in order to receive appropriate educational support. During Year 10 Elise completed Year 10 English and Science, Preliminary HSC, 3-unit Maths, 2-unit Music, 2-unit Chemistry and 1-unit Studies of Religion. She also topped Australia in the Enrichment Stage of the Mathematics Challenge for Young Australians. By the end of Year 11 Elise had completed ten HSC units. Consequently in Year 12 she completed a variety of HSC and preliminary courses in addition to a first-year university mathematics course and a university Distinction course: Philosophy. Elise completed most of her subjects outside of the formal lessons due to timetable clashes. A week before her HSC exams Elise was subjected to physical abuse at home and spent most of the week living in a combi-van without access to her notes. On the morning of her physics exam a trauma led to her starting in tears, late. She gained 92%. Her University Admission Index was 98.8. Elise's reflections on her school curriculum show a high opinion of the Vertical Semester Organisation. She believes it allows students of all ages to interact and to complete courses suitable to their ability. One disadvantage was by the time she had reached Year 10 she had completed all of the level-four subjects and was again bored. Elise studied many of her subjects at home as timetable clashes prevented her from attending lessons. She believes that schools need to become more flexible in their organisation of the curriculum for gifted students. Most of her teachers were flexible and helpful. Elise was grateful for the option of acceleration but frustrated because she had not been made aware of the option earlier. She believes that communication about available options is paramount. Her academic courses, in particular Philosophy, were seen as the most rewarding of her school career. Communication was sometimes difficult in her first-year university maths course and the HECS fees caused some consternation. Completing university courses whilst at school was in some ways a disadvantage as Elise found she was no longer eligible for many scholarships at university. Elise is now studying biomedical engineering and is completing music studies at a university conservatorium of music part-time.

Conclusion: The two case studies show the benefits of acceleration and the real need for flexibility in the organisation of the school

curriculum. The option of university studies whilst still at school is seen as a good option but with many challenges for the high school student.

Commentary: The author provides an intimate picture of the lives of two young people in their journey through school. Real insight is given into their challenges and a range of relevant, practical recommendations for educators are provided by the young people themselves.

Merrotsy, P. (2004) A study of exceptional mathematical ability. *Australasian Journal of Gifted Education* 13(1), 20–28.

Objective: To provide a story about a remarkable student with exceptional mathematics ability.

Setting: A small rural comprehensive high school in an economically depressed area of New South Wales.

Method: A case study, using the narrative form. This study follows a life history model.

Participant: Albert, a gifted student particularly in the field of mathematics.

Main result: Albert excelled in mathematics at a national level. He wanted to accelerate but was not allowed to do so. He became dux of his school. The author worked with Albert for six years as a teacher and mentor. Albert is the youngest of four children. He has little memory of his grandparents. His father left home at 13 after his parents had divorced, when he did not get on well with the new stepmother.) Albert's father was first brought up in Morocco. His family was poor. He learnt Spanish until he was five, then went to a French-speaking school. He ended up in the Israel Youth Program, which tried to put him into an accelerated programme. He left and at age 13 or 14 worked as a manual labourer and artist. Albert's mother was Swiss and an only child in a middle-class family. She attended a Gymnasium. At age 38 she studied Chinese medicine and acupuncture. Albert's maternal grandfather managed and owned a factory in Switzerland and was quite strict. Albert's parents met at a beach in Israel. They married and Albert was born in Switzerland. His father looked after him whilst his mother worked. They moved to Melbourne but returned to Switzerland after their second child was born. After a third child they returned to Australia. His parents worked picking tobacco and mining. Albert was born in a tent. Albert remembers his

father being competitive for his children, always wanting them to do better. He was a logical thinker who fixed and invented things. His mother was an earthy, spiritual person who took the children out of school one day a week so that the school didn't dominate their lives. Albert did not speak until he was three. At seven he was playing with computers and robots in his dad's workshop. He had attended five schools by the time he was 11, including schools in India and Switzerland. He did well at school but his inspiration came from home. He was a lonely child at school. The author was his high school maths teacher who initially worked with him one hour a fortnight. In Year 7 Albert won the school's public speaking competition and numerous prizes in Australian Mathematics competitions. From Year 8 the author worked with Albert a minimum of two hours a week in Maths, Chess and Philosophy. Albert wished to skip Year 10 but this was not allowed as the head teachers did not approve. In Year 10 he scored 100% in a national Mathematics competition, being the only student to do so. He was then invited and joined teams training for Mathematics, Chemistry and Physics Olympiads. In the same year he taught himself guitar and made his own guitar. Albert studied 4-unit Mathematics for the Higher School Certificate (HSC). He gained 100% in 3-unit Mathematics and almost 100% in 4-unit Mathematics. He did not study for his other HSC exams; instead, he put together an electrical system for the author's house. Albert gained a TE score of 94.45, which the author states does not reflect his ability. Albert reflects that he attended school for the minimum amount of time, with 85% attendance. He remembers that as he did well in Mathematics his other subjects improved as well. The competitions and Olympiads he participated in were highlights of his education and some of the few times he felt accepted by his peers. Albert also enjoyed his work experience at university as it helped him narrow down the studies he would be interested in later. Albert frequently missed award ceremonies due to embarrassment. Albert states that his work with his mathematics teacher was the turning point in his education. He feels that he wasted at least half of his time at school and that he would have benefited from acceleration. After school Albert put himself through three years of a science degree whilst working almost full-time. He then worked around the world picking up a few languages and the skills of a cordon bleu chef. He has also

completed two years of a postgraduate business management degree and is currently completing a doctoral program at Cambridge University.

Albert makes a number of recommendations based on his experience. These include:

- Gifted students need appropriate, high-level, fast-paced curriculum.
- Academic acceleration is an appropriate way of meeting some of the needs of gifted students. It is viable and inexpensive.
- Appropriate, high-level problem solving should be an integral component of the curriculum for gifted students. Better resources and more curriculum support throughout Kindergarten to Year 12 are needed.
- Learning to play a musical instrument and learning a second language should both be integral components of the curriculum for gifted students. Educators need to enrich and extend the curriculum to foster cognitive development.
- Gifted students need access to work experience programs appropriate to their ability and interests.
- Gifted students need opportunities to meet and relate to peers and to visit universities, research facilities and libraries in large centres.
- Gifted students need appropriate recognition for their achievements given in a way that is sensitive to their situation.
- Gifted students from low socio-economic backgrounds and from isolated, rural settings are especially in need of support. This support should enable the students to gain access to needed resources, including information technology and more advanced texts and to experience the opportunities offered in large cities.
- Support is needed for small country schools to develop and implement individual programs for gifted students and to run high-level classes with low numbers of students.

Conclusion: A detailed account of the challenges facing an exceptionally gifted student in the public school system. Recommendations are made by the student to improve the education and opportunities of other gifted students.

Commentary: The author provides a detailed and intimate insight into Albert's life, his giftedness and the challenges faced by him. Albert's voice

speaks clearly throughout the article making this a more personal experience for the reader.

Merrotsy, P. (2006) Radical acceleration in one subject: Two case studies. *TalentEd* 24(1&2), 22–32.

Objective: To address issues surrounding radical acceleration in a single subject area

Design: Case study

Setting: A small, rural, relatively isolated comprehensive high school

Subjects: Two students, J and Tom

Assessment of variables: Not traditional case studies. There is a life history model, employing the narrative. Each concludes with a summary presented as theses that in the opinion of the cases are the most important for improving the curriculum for gifted students.

Main Results: J was identified because he was accelerated in Year 8 in Computer Studies, completing HSC Computer Studies two years ahead of his cohort and completing first- and second-year university courses in Computer Studies whilst still at school. J lives on the family farm about fifty kilometres out of town. He is the oldest of three brothers. His paternal grandfather was a general practitioner who has an extensive library. J enjoys unlimited access to these books. J's paternal grandmother used to be a nurse. She is interested in photography and reads extensively. J discusses philosophical issues with her as well. J does not know his maternal grandparents well as they separated when J's mother was three and she grew up with her father. J's father completed some tertiary education courses in Agriculture before becoming a farmer and J's mother studied Political Science and Philosophy until the birth of J. Both parents read widely. J was reading before attending school. He attended a small two-teacher rural school. He was particularly fond of Dr Seuss and Biology books. By the end of Year 8 J had completed all of the VSO computer courses. In Years 9 and 10 he completed 2-unit HSC Computer Studies. A maths teacher at the high school suggested he enrol at university and assisted him by 'finding' funds to pay for books, accommodation, residential courses and travel cost as the university was 6 hours' drive away. J got a lot out of the course and felt that a major advantage was that the course would be

recognised anywhere. His reflections show a better need for tracking the progress of accelerated students, of allowing a quiet space to study and an understanding that he could not complete all classes as some courses overlapped. He acknowledges the need for students having a clear role in a negotiated curriculum. He suggests that students should be able to complete a course in their own time and sit an exam at the end of the module without having had attended any lessons. J also suggests that it should be possible for students to gain access to a teacher who has a specialist interest in their area whether face-to-face or over the internet.

J's theses included the following recommendations:

- The highest level courses need to be run with full face-to-face teaching.
- School resources, e.g. study rooms and technology, need to be made available for students to follow an alternative curriculum.
- Financial support needs to be made available for students studying university courses whilst at school (texts, travel, accommodation and HECS).
- Support (in the form of a qualified teacher) is needed to deal with administrative details, co-ordinating courses and programs, tracking and certification of completed courses and programs.
- Gifted students need to be given appropriate recognition for what they do.
- There needs to be better communication about the pathways and courses available for gifted students.
- Gifted students need to play a more active part in negotiating their curriculum.

The second student Tom was identified for this study because he accelerated his schooling by one year and because he almost became the youngest person to complete a subject in the HSC. Tom was born in Scotland. His paternal grandfather served in the Royal Airforce in Malaysia. He does not remember much about his paternal grandmother. He remembers his maternal grandmother with affection. Tom's details of his parents' earlier lives are sketchy. His father worked as a social worker at one stage and his mother taught music both at schools and privately. Tom would like to have a career in the Royal Australian Airforce. Tom has an older brother Kerr who he plays a lot of Music with. Tom learnt to read when he was three. At the end

of Kindergarten he was grade-skipped to Year 2 at his small, rural, one-teacher school. In high school he completed advanced chemistry, a Year 10 course when he was in Year 8, and Year 10 physics in Year 9. He regrets that he did not complete music at school. He did not do this as he could not afford to go to Sydney to sit his HSC performance exam. He was unaware that the school could help with this. Tom got all of the subjects he selected in Year 11 but missed out on many face-to-face lessons because in his small school there was not enough staff to provide a full timetable. He got on well with the other students in his grade despite being a year younger. Tom considers that acceleration worked well for him. He felt that he would get a higher UAI because he was accelerated and not bored. Tom did not get the marks he expected, however he was given a scholarship from the University of New South Wales set aside for rural students.

Tom's theses included the following recommendations:

- Academic acceleration is a viable and already available option. Enrichment is also important and needs to be supported by good quality resource material and have some form of continuity throughout school from Kindergarten to Year 12.
- Gifted students need a specialist teacher, trained in gifted education to give curriculum and administrative support to them and their teachers.
- Appropriate high-level courses need to be developed for gifted students.
- Financial support is needed for increased opportunities for gifted students from low socio-economic and rural/isolated backgrounds.
- Gifted students need smaller, specialist classes and to be in classes with their peers.
- It needs to be recognised that classes out of school hours may bring hardship to students in rural areas.
- Gifted students need to be involved in decision making concerning their curriculum.

Conclusion: Both J and Tom completed much of their study in their area of special interest by independent learning at school and at home. Even though the school had special structures in place both students had difficulty in accessing classes. The high school changed its curricular structure to a Vertical Semester Organisation but later

abandoned it despite the benefits to gifted students.

Commentary: The case studies provided maintain the readers' interest owing to the strong student voice. Practical recommendations for schools and policy makers are provided based on the real life reflections of two accelerated students in a rural setting.

Merrotsy, M. (2006) *The Infinity Program: Review. Unpublished report. Brisbane: St Peters Lutheran College.*

Objective: To examine the extent to which the Infinity Program addresses its stated goals concerning the cognitive and affective development of its students.

Method: Data were collected by the reviewer over two days. The reviewer examined documents and qualitative data including survey instruments and interviews.

Setting: St Peters Lutheran College

Participants: 100% of students in the Infinity program and two thirds of their parents completed the survey. Six teachers returned a survey. Interviews were conducted in groups for students and one-on-one for adults. Two groups of students, five parents, eight teachers, two executive teachers, two year-advisers, the student counsellor and the Gifted and Talented Students co-ordinator were interviewed.

Assessment of Variables: Most teachers who responded to the survey are involved in some way with the Infinity Program and therefore represent a biased sample.

Main result: The Infinity Program was implemented in 2005 to meet the needs of highly gifted middle school students. The program is guided by the philosophy that the education of gifted students involves more than simply providing for the academic needs of students. It also needs to develop the whole person by providing cognitively rich intellectual, social and emotional experiences. Years 6, 7 and 8 are compacted into two years. Selected students enter Year 6 in the first year of the program, then grade-skip Year 7 and go straight into Year 8. The classes comprise up to 24 Year 6 students (10 and 11 years old). Students remain in the core class for Mathematics, Science, English, Christian Studies and SOSE. Mainstream placement is used for all option area studies such

as PE and Drama. Students are assessed and interviewed individually to determine their suitability for the different teaching styles and methodology to be found in accelerated classes. Testing would include a full psychological assessment using the WISC-IV, Stanford-Binet, DAS or similar, an achievement test battery including Maths reasoning, reading comprehension, non-verbal reasoning and Ravens matrices along with an affective test battery designed to assess motivation, autonomy, perseverance, personality adjustment and self-esteem. Students who are unsuccessful may be offered places in the available three-year program which includes options such as subject acceleration, enrichment and extension programs. The Infinity Program meets all of the state government's mandatory syllabus requirements for Years 6, 7 and 8. In addition it offers experiences beyond what is required in terms of abstractness and complexity. The program is seen as having a stronger educational framework than the Queensland Government's policy for the education of gifted students and guidelines for acceleration.

Three noteworthy points are made by both parents and students. Students who were previously unchallenged, masking their ability and underachieving, are now engaged, challenged and working to their ability. Students who previously were unhappy at school and had few friends are now happy and have good friends at school. They particularly comment on the level, pace and flexibility of the work, the challenge and the encouragement to reach their potential.

Students raised two areas of concern. Firstly, in Year 5 most of the students were achieving at a high level in Mathematics but several of them reported that they now find this subject difficult due to the sudden jump in complexity. It appears that some students need more differentiation and scaffolding in Mathematics. Some students also feel isolated and that they have no-one to talk to about their problems. The students would like to see the curriculum broadened. There are opportunities for the program to include more negotiation and student choice. Students also felt that the program was not explained very well. Rather than seeing it as a program over two years, it is the move from Year 6 to Year 8 which is seen as the big change.

The parent survey clearly shows that parents are happy with the program. They are happy to see that difference is encouraged in a supportive and safe learning environment, that their child has like-minded friends and is happy at school. However the parents perceive there has been mixed acceptance of the program in the broader community. They would like to see improved communication about the philosophy of the program, how it is implemented and about the nature of giftedness. They perceive that there is a sense of isolation in Year 6 and that the social experience in that year group is not always positive. Furthermore, parents feel that the program could be extended to include Year 1 to Year 12 and that some subjects could be further differentiated.

Teachers completing the survey are all involved in the program and have varying expertise and knowledge of gifted education. They feel that the program allows previously underachieving gifted children to achieve to their full potential whilst working with like-minded students. However, they would like to see more professional learning opportunities regarding giftedness made available to all classroom teachers. Student welfare problems are noted at the time of transition. Teachers with responsibility for the welfare of students in the Infinity Program would benefit from ongoing professional learning experiences that address the psychology of gifted children and their affective needs. Teachers also make suggestions about the further extension of some students and differentiated programs in PE. The main barrier to curriculum changes is seen to be the school timetable.

In regard to the curriculum two important issues are raised. Some students may need further acceleration or access to a broader range of subjects. Early entry to university whilst still at school could be an option. Other students may wish to leave the school early to begin university a year earlier than their cohort. Alternatively students could use this additional year for completing additional subjects, participating in an exchange program or working as a volunteer.

The report makes the following recommendations:

- A Pastoral Care Program including a peer support and mentor program be implemented into the Infinity Program. Such a program should include an orientation to understand giftedness

and exceptionality. This needs to be an integral part of the curriculum and to be timetabled.

- Parents need to be more involved in the program. The school is encouraged to continue to provide a venue to QAGTC to hold parent workshops and to encourage participation in extra-curricular activities and mentor programs.
- That a longitudinal study follow Infinity Program students through at least to Year 12 and preferably through university. A study of affective issues relating to the Infinity Program should be undertaken.
- That staff professional learning in gifted education continues and that professional learning in the psychology of giftedness is made available for teachers involved in student welfare of gifted students.
- That the Iowa Acceleration Scale be used as part of an identification tool kit and that it be used to help advise gifted students not selected for the program and their parents about future options.
- That the Infinity Program explore more flexible forms of organisational and curriculum delivery such as thematic, integrated approaches to learning.

Conclusion: The Infinity Program is strongly supported by students, their parents and teachers of the program. The review makes a range of suggestions based on research to provide greater opportunity for students in terms of further acceleration, subject choice, pastoral care and most notably, information about their own giftedness. Further professional development opportunities in gifted education and the psychology of giftedness are suggested for teachers whilst it is suggested parents become more involved in the program. The reviewer suggests further research studies into the program including a longitudinal study and a study of affective issues related to the program.

Commentary: The reviewer provides a good insight into student, teacher and parent perceptions of the Infinity Program through the use of interviews and surveys. The reviewer's recommendations are based on current research which is well summarised throughout the report. The Infinity Program clearly has enormous potential. Further research into this program would be of enormous value to other Australian schools considering such an opportunity for their gifted students.

Merrotsy, P. (2008) Acceleration. In N. Salkind (Ed.), *Encyclopedia of Educational Psychology* (Vol. 1, pp.4–8). Thousand Oaks, CA: Sage Publications.

Method: Literature review

Objective: To provide an outline of the current theory of academic acceleration, a model for acceleration, guidelines for implementing an acceleration programme and on-going issues related to the practice of acceleration.

Main result: The author acknowledges that although the research literature advocates that gifted and talented students require a differentiated curriculum, there is passionate debate about what form that provision should take. In regard to academic acceleration there is a gap between what the research has revealed and what most practitioners believe and do. The literature emphasises that academic acceleration should form an integral component of a school's program for gifted students complementing enrichment programs and provisions. The author makes the point that a gifted student is already accelerated and that what is accelerated through acceleration is the student's progress through the formal school curriculum. Programs for academic acceleration are seen as allowing the examination of content in greater depth, giving access to subject matter of greater conceptual difficulty and providing instruction that individually and explicitly matches the achievement levels, ability, interests and learning styles of the gifted student. The administrative benefits of acceleration are that it is a readily available, a cheap educational option that recognises a student's advanced abilities. Acceleration increases learning efficiency and effectiveness, provides more choice for academic exploration, and may give increased time for a career. *A Nation Deceived* presents an excellent summary of recent research. There are four important findings from this research:

First, that acceleration is consistently and highly effective for academic achievement. There are no studies that show enrichment programs/provisions give more benefits than acceleration. Accelerated gifted and talented students significantly outperform students of similar intellectual ability who have not been accelerated.

Second, there is no research to support the claim of social and emotional maladjustment from acceleration.

Third, acceleration is usually effective in terms of affective adjustment and goes a long way to meet the social and emotional needs of the gifted student.

Fourth, the consequence of non-acceleration may be frustration, boredom, reduced motivation, lower achievement and dropping out. Educators and parents need to be concerned about the possible maladjustment effects resulting from inadequate intellectual challenge.

The author has developed a model for academic acceleration that recommends six steps towards a better curriculum for gifted students. The steps are identification, communication, a negotiated curriculum, academic acceleration, access to tertiary courses while still at school and support for gifted students. The Iowa Acceleration Scale is outlined as an example of a thorough, well-researched guide for whole-grade acceleration. There are four critical items. If the measured IQ is below 120 or there is any antipathy from the student then acceleration should not occur. Similarly if there is a sibling in the same grade from which the student will accelerate or if a sibling is in the same grade to which the student will accelerate acceleration is not recommended. A range of other factors such as school history, an assessment of ability, achievement and aptitude, interpersonal factors and attitude and support by the family and school are taken into account before a recommendation of whole-school acceleration may be given.

Conclusion: The author emphasises the importance of educational administrators, students and teachers accepting and implementing the findings of research into acceleration rather than relying on the traditional lock-step model of grouping by age. In addition, concern is raised that the consequence of acceleration is appropriately supported and managed by the education system. This is particularly important with respect to secondary students who have completed tertiary studies and may then not be eligible for university scholarships or credit transfer.

Commentary: The author presents an excellent summary of the main issues raised in the international research supporting acceleration. He provides a practical six-step model for academic

acceleration and also raises issues to be addressed by education authorities to provide appropriate support to accelerated students.

Merrottsy, P. (2009) Academic acceleration. In D. Wood (Ed.), *The gifted challenge: Challenging the gifted* (pp.70–78). Sydney: NSW Association for Gifted and Talented Children.

This paper presents an outline of current theory of academic acceleration through a discussion of curriculum for gifted students, the benefits of acceleration, a model for acceleration, guidelines for implementing an acceleration program, and the findings of recent research on acceleration in rural and regional NSW.

Two ongoing issues related to the practice of acceleration are discussed in the context of equity of access for gifted students from a background of disadvantage to a curriculum that includes options for academic acceleration.

First, the findings of research concerning the academic and affective benefits of well-administered acceleration programs need to be accepted by educational administrators, by communities and by teachers. System organisational patterns of social grouping and the lock-step method of promotion constitute an effective barrier to the development of giftedness, suggesting the deep and urgent need for more flexible forms of school organisation that ensure continuity of experience based on criteria other than age or years of attendance and that permit student progression based on individual development and performance.

Second, the end results or consequences of acceleration must be appropriately supported and managed by the education system. For example, with respect to tertiary-level subjects studied while still at school, clarification is needed concerning: equity of access, which can only be maintained through flexible forms of delivery and alternative modes of study; recognition that they constitute a formal component of secondary school studies, with continuity and articulation of curriculum; the status of secondary students who have completed tertiary-level units of study, *inter alia* that they are still eligible for university entrance scholarships; and credit transfer.

Merrotsy, P., Wood, D., Anderssen, R. and Vasilevska, S. (2010) *Acceleration in the bush*. 11th Asia-Pacific Conference on Giftedness, Asia-Pacific Federation of the World Council for Gifted and Talented Children, Sydney, 29 July–1 August.

This study explored the extent to which the various options of academic acceleration are implemented in schools in regional and rural areas of NSW (Merrotsy et al., in preparation). A survey was conducted in 60 schools, both public and independent, in three non-metropolitan regions of NSW. It sought information concerning school policy and support for the education of gifted students, the forms of curriculum differentiation practised, and the extent to which the various forms of acceleration are implemented. These data were triangulated by an analysis of policy and program documents, and an interview with a teacher, from twelve of the schools in the study. Six of the study's findings illustrate the current status of academic acceleration in regional NSW, and it is suspected that this situation is reflected elsewhere in Australia.

First, the existence of school policies on the education of gifted and talented children is ambiguous to say the least. Most schools do not have such a policy, or are not able to locate it, or the policy is 'developing'. It is therefore not clear the extent to which policy is, or is not, being translated into practice at either a school or a classroom level. Second, concern for the social and emotional development of the child is still cited as the main reason why options of acceleration are not implemented, even when such options would not result in the child being separated from their age cohort (cf. Robinson, 2004; Vialle et al., 2001).

Third, lack of flexibility in school organisation, especially in middle and secondary schools, appears still to be the greatest impediment to the implementation of acceleration options, and to the provision of continuity of curriculum for students who have accelerated in some way (cf. Braggett, 1985; Merrotsy, 2002). For example, several primary schools, in particular small, rural schools with one teacher or two teachers, implement multi-grade teaching, which facilitates acceleration of gifted students through 'continuous progression' and 'progression when ready' (cf. Cornish, 2006). However, when the accelerated student goes to high school the

accelerated curriculum is no longer maintained. Again, several secondary schools had, in the 1990s, adopted a 'vertical curriculum structure' in order to increase curriculum options for their students, and the benefits for gifted students, amongst others, are well known (e.g. Fardell & Geake, 2005). However, following changes to mandatory requirements for the School Certificate and increased pressure from external examinations, such flexible school organisation has been greatly reduced or abandoned completely (cf. Dart, 2006).

Fourth, teachers at most schools are loath to implement the various forms of acceleration due to concerns about both meeting external testing demands (for example, concerns about when an accelerated student sits National Assessment Program — Literacy and Numeracy [NAPLAN] tests or School Certificate examinations) and concerns about 'double dipping' (for example, through concurrent enrolment). Ironically, this same concern is not expressed about other students who are able to complete Vocational Education and Training (VET) courses, which count towards both HSC and TAFE NSW qualifications, highlighting a very interesting ethical issue about equity for gifted students!

Fifth, implementation of the various options of acceleration is not well articulated or coordinated. Most schools claim to implement curriculum differentiation, such as in the form of curriculum compaction. However, curriculum differentiation at a school level often is not apparent, and at a classroom level often does not result in gifted students accessing learning activities that are substantially and qualitatively different from those of age peers. Single subject acceleration is most common in mathematics; however, subject acceleration is not common in secondary schools, with timetabling restrictions cited as the main reason why this is the case. Early entrance to school and whole-grade acceleration are not commonly practised. Given this last point, it is surprising that there is a much greater than expected number of cases in which a student has radically accelerated (*sensu* Gross & van Vliet, 2003; cf. Merrotsy, 2006), including students accessing tertiary level courses while they are still at school (cf. Merrotsy, 2003; Young et al., 2007).

Sixth, there is a gulf between the educational experiences enjoyed by students in metropolitan centres and by students in regional and rural

areas. This is quite apparent in the significant difference in educational outcomes in all state, national and international measures of achievement (Lyons et al., 2006). It is also evident in the lack of access that gifted and talented students in regional and rural areas have to options of academic acceleration.

Muiznieks, C. (2000). *Psycho-social and Academic Outcomes for Selective High School Students undertaking a Program of Cohort Acceleration*. Doctoral Dissertation. Sydney: The University of New South Wales.

The author, a teacher in a New South Wales state school, conducted a five-year longitudinal study of academically talented students in a selective high school who participated in a program that combined full-time ability grouping and cohort acceleration within a selective high school. The key component of the program was the telescoping of the six years of secondary schooling into five years.

The study found that there were 'highly positive academic outcomes' for most of the students involved in the program, particularly, it seems, because the experience was with a cohort of gifted students. Most of the students said they would repeat the experience if they had the choice again.

Muratori, M., Stanley, J., Ng, L. and Ng, J. (2006) Insights from SMPY's greatest former child prodigies: Dr. Terence ("Terry") Tao and Lenhard ("Lenny") Ng reflect on their talent development. *Gifted Child Quarterly* 50(4), 307–327.

Objective: To illustrate the feasibility and effectiveness of utilising an individual educational program approach with gifted students by highlighting the educational paths taken by two maths prodigies.

Method: Interviews

Setting: Johns Hopkins University

Participants: Drs Terence Tao and Lenhard Ng

Main result: The authors first give a detailed overview of Terry Tao's journey from child prodigy to professor at age 24. At the 2003 World Conference Terry's father gave the metaphor of distance running, describing how as a young person, Terry tackled academic

challenges like a sprinter but ultimately evolved into a marathon runner. Early accounts of Terry's life (Gross, 1986) describe him reading before the age of two; writing, typing and solving maths problems at age three. He began elementary school at age 3½ but this form of acceleration did not suit him and his parents enrolled him in a neighbourhood program with children his own age. Terry commenced school at age five. After a few weeks he was placed in a split first- and second-grade class. He did most of the second-grade work except for maths, which he did with Year 5. When Terry was nine, he and his family visited Johns Hopkins University and met Dr Julian Stanley who advised the family to delay full-time university to give Terry time to develop his verbal abilities and nurture his social and emotional development. Accordingly, at age nine Terry enrolled part-time at Flinders University and enrolled full-time at age 14. He obtained a first-class honours degree at age 16 and a Masters degree at 17. Before turning 21, he earned a PhD in mathematics from Princeton University. In an email interview, Terry reflected on his past experiences as a student. Terry relates that he finally found his peer group in graduate school and beyond. He regrets not taking enough humanities courses in high school and college. These were the subjects he had the most difficulty with. He felt that unlike maths and science these subjects required experience with life itself to really appreciate the subject. Terry appreciates that the grades of his classes were staggered, so that he could do mixed classes in high school and also be enrolled at university. In particular he found mentors very important to get a better understanding of mathematics. The Maths Olympiad was also highlighted by Terry as it was one of his first social experiences away from his parents. He still finds some of the 'tricks' he learnt there handy. When asked about his social relationships when growing up Terry said there were always people his own age to socialise with, either neighbours or school mates. However he really only found his peer group after graduate school. The author provides additional comments on Terry from Dr Stanley, Dr Tao and Dr Gross. All comment on his unusual academic ability. His father attributes Terry's educational success to three factors. First, his intellectual capacity; second, his friendly personality; and third, his chance meetings with kind and helpful people, many of whom became friends and mentors.

The authors then outline the academic success of Lenhard Ng. At age 10, he earned a perfect score on the SAT-1 and was once thought the 'smartest kid' in America. He repeatedly competed in the International Mathematics Olympiads during his high school years, winning a gold medal twice. Unlike Terry, Lenny only skipped one whole grade (Grade 3). His parents deliberately discouraged him from moving forward too quickly. He was enrolled at the University of North Carolina part-time whilst at high school. He entered a number of international competitions and summer programs. Lenny had a number of non-academic interests from a young age, playing the violin and piano from age four. He also played a number of sports. In an email interview, Lenny commented that his parents did a great job in assisting him to have as normal a childhood as possible. He added that he was quite pleased with the level of acceleration organised by his parents. He felt that he would have been less happy if he had to leave his peer group. Lenny says that his teachers and school were very accommodating of his needs, allowing him to learn at his own pace, take higher classes and sit high school and university subjects early. He found that competitions were fun and allowed him to learn more.

Murphy, B. (1995) *Evaluation of a program of accelerated learning for gifted children, at University High School, Melbourne, Australia.* Doctoral thesis. Melbourne: University of Melbourne.

The author is a psychologist who has worked with gifted children in a research capacity and as a clinician. Her doctoral thesis involved a five-year longitudinal research study, carried out as an evaluation of the acceleration program for gifted secondary schoolchildren at University High School in Melbourne. This program has been running since 1981, through three changes of state government, despite the fact that one of those governments was ideologically opposed to special provision for gifted children, and the program has been replicated in many state secondary schools in Victoria.

Objective: To formally evaluate the acceleration program at University High School in Melbourne

Setting: University High School in Victoria

Participants: Students, teachers and parents at University High School

Method: Information gathered from contacts with children, parents and schools at University High School

Main results: The University High School program was judged to be so successful it was copied in a number of Victorian State secondary high schools. Many parents of children who have been through the program send younger children to try for selection. The main theoretical concepts underlying the University High School program are the concepts of giftedness, ability grouping and acceleration. The underlying concept was that all the children would be happy and well adjusted emotionally.

To select the students, intelligence tests were used in a battery that included a test specifically devised by ACER and a creative essay. Interviews were also used. The author outlines that critics of acceleration claim it always leads to emotional maladjustment. At University High School they aimed to overcome these social difficulties by accelerating the children in a group so that there were twenty-five children all in a similar situation and all accelerated in all subjects.

Analysis showed that the total selection test score was a significantly good predictor of achievement. No single test predicted achievement at all. Attrition rate was very low. The reason suggested for this was partly due to both a strong group feeling that developed in each year group and the fact that the interview was a very good adjunct to the selection process. Children gained strong support from their fellow members and there were no feelings of elitism after the first few weeks. There was a little unhappiness because of social comparison, mostly from students whose special ability was in the humanity subjects instead of Maths or Science. Since humanity students were very much in the minority they sometimes felt a little inferior.

Student achievement was varied. Most students achieved well with some students achieving less well in some subjects usually humanities. The author suggests that humanities subjects need more social-emotional maturity. Some of the mainstream students performed better than the accelerated students; these students were almost always humanities students. Mathematics appeared to be the easiest subject to accelerate in.

No child left the program because of emotional disturbance. Two of the 329 students needed to take time off school for psychiatric treatment (both had serious home problems) and both came back to University High School to complete their schooling.

A marked and statistically significant personality change was reported in the students over the duration of the program. They changed from being repressed, conforming and very conscientious to somewhat rebellious, not very conscientious and very independent and creative. The author suggests that this developed as a result of a strong group ethos, which was explained in terms of the program itself.

The author argues that acceleration programs of this type are a very successful way of providing for the special needs of gifted secondary school children. The author suggests that consideration could be given to instituting separate programs for Maths/Science and for the Humanities or for English or Maths alone so that the selection test could directly relate to the desired outcome. The author acknowledges that this would probably entail administrative difficulties that no state school could afford. It was noted that some of the children were not viewed as intelligent by parents prior to teacher nomination for the program.

Conclusion: The University High School Program appears to be an effective program for gifted secondary students. The author makes relevant suggestions as to how the program could be improved particularly in regard to separating students who are gifted in Maths/Science or humanities. The resourcing of a full time co-ordinator appears to be an essential factor in the smooth running of such a program. As in other research there appear to be no negative social-emotional effects as a result of acceleration for these students.

Commentary: A useful evaluation of the program outlining clear advantages and disadvantages. In her submission to the 2001 Senate Inquiry into the Education of Gifted Children, the author said, 'One of the most important advantages of programs such as the University High School program is that they can be set up in state schools, and because they are in state schools, children of low socio-economic status have the same access as any other child.'

Patterson, D. (2003) *Churchill Fellowship to study and observe the provision and operation of advanced placement programs in the United States which cater for the needs of gifted and talented students in the senior years of schooling. Report to the Northern Districts Education Centre (Sydney). Sydney: The Winston Churchill Memorial Trust of Australia.*

Objective: To outline the findings from a 2003 Churchill Fellowship visit to the United States of America to study and observe the provision and operation of Advanced Placement programs catering for the needs of gifted and talented students in the senior years of schooling.

Setting: Australia and the United States

Method: Literature review and account of the author's visit to the United States

Assessment of variables: A selection of centres and Advanced Placement Programs in the United States were observed.

Main results: A background to the introduction of flexible progression is outlined. Before 1990 school students in New South Wales were unable to move ahead of their cohort to undertake more advanced studies or to present for secondary school examinations early. In the early 1900s as school syllabuses became outcome-based, mandatory hours were replaced by more indicative time requirements, which allowed students to progress faster to the next stage of schooling. Flexible progression allowed students to progress through stages at a pace in line with their abilities. Accordingly students were able to sit the School or Higher School Certificate in New South Wales ahead of their age cohort. Under acceleration guidelines, students in New South Wales schools are able to complete examination requirements in a chosen subject or subjects and then move on to study Distinction Courses. These are specifically developed university-level courses in Cosmology, Comparative Literature and Philosophy, which are delivered by Universities through distance education. More recently universities in conjunction with schools have developed courses to cater for the particular needs of high-ability students in their final years of secondary schooling. These courses and Distinction courses attract some credit or advanced standing in first-year university courses. The author highlights

some existing obstacles to student achievement despite flexible progression:

- The curriculum does not provide a sufficiently broad range of challenging courses.
- The Higher School Certificate examination upon which university entry is based may act as a barrier to students who have accelerated in an area of strength but need high results in all of their subjects to obtain university entry. These students may decide not to accelerate.
- Improved articulation between senior school studies and first-year university studies must be a priority for there to be clear and planned pathways for students.
- Better support services need to be offered to students and their parents. These need to be linked with education systems and schools.

The author notes a number of significant findings from his observation of educational programs in the United States. The provision of advanced learning opportunities in mainstream schools visited in the US were seen to significantly raise the standard of student achievement across a whole school at every level of schooling. Advanced study programs, especially the Advanced Placement (AP) program developed by the College Entrance Examination Board, provide gifted and talented students with the opportunity to commence university-level studies for which they can receive advanced standing and credit transfer into university courses. In some cases students can enter university courses while still completing high school graduation requirements. More than 90% of the universities and colleges in the United States and Canada as well as universities and colleges in 20 other countries have a policy of granting incoming students credit, placement or both, for qualifying AP examination grades. Consequently transition from high school to tertiary studies is much smoother. Staff at Washington High School and Central Academy, which the author visited, commented on the very positive influence that the AP program had on the high school. Standards across the school had risen, student enthusiasm increased and teachers voluntarily undertook further training and development. In contrast critics perceive that the AP program narrows the curriculum as teachers focus on exam results. Organisation and timetabling can also be difficult for school administrators. There are fewer opportunities for gifted and talented

students to complete university courses in their senior school years. One exception is the Texas Academy of Mathematics and Science (TAMS) at the University of North Texas in Denton, Texas. Students are able to complete their first two years of university in the areas of Mathematics and Science whilst earning their high school diploma. The Academy admits up to 200 Grade 10 students per year from public and private schools across Texas. TAMS pays for tuition, books and other academic fees whilst families meet the cost of boarding. TAMS also provides workshops on study skills, time management and examination preparation. The Academy of Young Scholars at the University of Washington provides gifted students who are entering 10th grade with the opportunity of spending their next two years in a transition and early entrance program at the University. Instead of students accelerating into higher grades at school they spend one highly concentrated year of university preparation with other very able students in the Transition School and then as part of the Early Entrance Program, they enter the University of Washington. The university continues to support these students with mentors and academic advisers. University-based institutes that specialise in supporting the education of gifted and talented students are well established in the United States. The Centre for Talent Development (CTD) was set up in 1981 at Northwestern University at Evanston, Chicago. The Centre provides opportunities for gifted learners from diverse backgrounds and assists students to develop their gifts through research, special programs, activities and scholarships. There is also a flexible admissions policy for students not able to demonstrate their ability on standardised tests or students who have been home schooled. The Centre creates models of education to address the learning and social-emotional needs of academically gifted and talented children from a wide range of socio-economic backgrounds. The Centre conducts research on the effectiveness of these models and also provides expert information to parents. The Centre's Talent Search Programs identify academically gifted students across grades 3 to 9 and provide counselling materials to help students understand their scores and to provide appropriately for their future. Extensive Saturday programs and summer academic programs are provided. The students also participate in educational and community service programs to promote civic responsibility. The Centre for

Talented Youth (CTY) at Johns Hopkins University, Baltimore began the first academic talent search in 1972 under the direction of Professor Julian Stanley. The centre also provides summer academic programs and day courses at over 20 locations across the US. In addition the centre conducts research, runs educational forums and provides assessment, planning and counselling services. The Centre for Gifted Education in The School of Education at the College of William and Mary in Virginia runs professional development for teachers and conducts research in gifted education. The development of exemplary curriculum frameworks and units of study for classroom use is a Centre priority. Professional development courses and summer schools are run for teachers and Saturday and Summer schools are run for students. The Belin-Blank Centre for Gifted Education and Talent Development at the University of Iowa in Iowa City is an example of another exemplary centre. It provides identification and support services for students, their parents and teachers. There is a particular commitment to the professional development of teachers. There is also a wide range of programs for students across Grades 3 to 12, which can vary from one day to six weeks in duration. The Centre has also begun an Online Advanced Placement Academy program to give students an opportunity to take Advanced Placement courses that are not available at the school site. The focus of this program is rural and isolated schools. The Centre runs two talent searches for Grades 3 to 6 and for middle school students. In addition there is a National Recognition Program open to Grade 10 students demonstrating high aptitude in English, Mathematics, reading or Science reasoning. In 1998 the Centre extended its elementary talent search to Australia through the Australian Primary Talent Search (APTS), which was offered by the Gifted Education Research, Resource and Information Centre (GERRIC) at the University of New South Wales. A relatively small number of well established university-based gifted education and talent development centres in the US provide leadership and best practice in identification and support services for gifted students.

Conclusion: Observations from parents, teachers, students and administrators about the introduction of a gifted program (Advanced Study Program) to the school was that it:

- raised the standards of student achievement across the whole school
- provided a boost in terms of school morale to students, teachers and parents
- encouraged teachers to take further professional training
- led to more positive attitudes to learning across the school
- significantly extended opportunities available to gifted students.

Students, their families and teachers receive outstanding support from gifted education and talent development centres. The success of students and the quality of programs in schools can be linked directly to this support.

The author recommends that:

- The school curriculum should contain a range of challenging university-level courses to prepare students for university. These courses should attract advanced standing/credit transfer into university courses.
- A pilot program should be initiated to provide students with the opportunity to undertake first-year university courses whilst completing senior high school.
- Schools should provide programs that specifically prepare students to enter high-level courses, for example, research and academic writing skills.
- Researchers in the field of gifted education should evaluate the impact of gifted programs on student achievement in order to encourage more schools to offer gifted education programs.
- Universities should establish gifted education and talent development centres within educational faculties to develop support services for gifted and talented students, their parents, carers, teachers and schools.

Commentary: The author provides a succinct account of a number of programs and centres in the United States. It is clear that Advanced Placement Programs are successful in the United States on a number of levels. They ensure a smoother transition to university and provide challenging work to students whilst at high school. They also have a positive impact on the whole school population. There are good recommendations for the introduction of similar opportunities for students in Australia.

Plunkett, M. and Harvey, D. (1999)
Accelerated Learning Program: Lessons from a country college. *Australasian Journal of Gifted Education* 8(2), 16–20.

Objective: To evaluate an acceleration program in a rural college

Participants: 25 students (13 boys and 12 girls), the majority of whom were 12 years old at the time of first interview. 17 parents and 4 teachers were also interviewed.

Setting: A rural town; local industry is farm based. The town and surrounding area has a population of approximately 6000 people.

Method: Structured interviews for students, teachers and parent groups

Assessment of variables: The evaluation process was carried out in a rural school with an accelerated learning program.

Main results: The author provides a context for the study indicating that the participating rural school in this study was one of eight metropolitan and three rural colleges that have followed the model of University High School. The first accelerated program was established in 1981 at University High School. Murphy's ten-year longitudinal study (1995) found that students in the program were happy, confident and were adjusted. Murphy agreed with previous findings that accelerating a group of similar peers is probably the safest method of accelerating gifted children.

The program in this rural college was set up in 1996 to bring together a group of motivated, academically capable, but not necessarily gifted students who could be accelerated through the basic curriculum and given the opportunity to pursue topics at a broader and deeper level. It was not intended that students would be able to skip grades or graduate from school early. Monash University agreed to evaluate the program. The authors provide a history of how the program was set up in the school. Year 6 teachers in the feeder primary schools were asked to nominate students. When parents and children agreed, the school administered tests in English, Maths and Science developed by New South Wales University. Members of the school planning committee interviewed all successful candidates. Places were then offered to the top 25 students. Students were accelerated in the subjects of English, Maths and Study of Society and Environment (SOSE).

Parent comments about the program were generally positive. Although all wanted their children to continue with the program many had no clear expectations about the purpose or outcomes of the program. There were also concerns about excessive homework and communication with teachers. However most parents believed these were initial teething problems of the new program. Teacher perceptions about the program were variable. Main concerns included lack of preparation time, the need for further professional development and more involvement in the planning process. Overall the program appears to have been a success. The authors make suggestions for other schools contemplating a similar program:

- That primary schools are well informed about the demands of the program. As they provide the nominations it is important that organisational skills and motivation are considered as prerequisites.
- Testing procedures during selection processes need to weight maths results to better reflect the influence mathematical ability seems to have on the success of the program.
- Future research needs to pay attention to levels of self-esteem and achievement and to compare them with those in the normal classroom.
- Communication between the school and parents is essential.
- Teachers need to feel they are fully involved in the program. Involvement in progress meetings and professional development are essential.
- A lot of planning needs to go into introducing the program.

Conclusion: The study concludes that accelerating the curriculum for a group of academically advanced, though not specifically gifted children, despite some problems was considered a successful venture by those directly involved and is a viable option for a rural secondary college.

Commentary: The number of acceleration programs in Victorian schools is growing. The accelerated program in this rural college appears to have been an overall success. The author provides useful advice for other schools considering such a program.

Plunkett, M., Harvey, D. and Harvey, B. (2003) Survived or thrived? Reflections of graduates of an accelerated learning program. *Australasian Journal of Gifted Education 12(2)*, 5–18.

Objective: To determine participant perceptions of the impact of the Accelerated Learning Program on students

Design: Surveys and interviews

Setting: A rural secondary college in Victoria consisting of a junior and senior college

Participants: 19 of the original cohort of Year 7 students beginning the program were revisited in Year 12, in addition to three late entrants to the program and 39 Year 12 students who had not been part of the program.

Assessment of variables: The Year 12 Educational Experience Survey was specifically designed for this group in response to issues raised by a number of teachers and students.

Main result: The Accelerated Learning Program (ALP) was introduced into the secondary college in an attempt to meet the particular cognitive and social needs of fast learners. The study showed that ALP students were more likely to be involved in sport (64%) compared with mainstream students (41%). Both groups were involved in extra-curricular activities but the ALP group participated in more activities per individual. This is contrary to the notion in the research that gifted students will miss out on a broad curriculum and extra-curricular activities if accelerated.

In regard to leadership all four school leaders were former ALP students which indicates that ALP students were not viewed negatively by respondents from outside the group. The self-efficacy of the mainstream group had a higher mean but the difference was not statistically significant. When asked to rate their level of confidence to achieve on ENTER (Victorian Tertiary Entrance Ranking) it was commensurate with their potential. ALP students felt they could cope with the pressure and study and achieve future goals.

Both groups agreed that the friends they made in Year 7 remained their main friends within and outside school. However the ALP group felt that they had more similar academic ability with their friends than did the mainstream students. This was not surprising as this was the way they were

graded. Most of the ALP group (935) felt that they would continue their friendships outside school in contrast to the mainstream (51%). Both groups felt teachers assisted them and that they received enough support. ALP responses however were not as positive towards teachers in challenging them to do their best. In contrast, 82% of ALP students felt that teachers had high expectations compared to 46% of mainstream students. 50% of ALP students felt that teachers took a personal interest in them compared to 10% of mainstream students. ALP students (45%) enjoyed the work they did in class but this was lower than mainstream responses of 64%. Although some of these results appear contradictory ALP students frequently mentioned competition in positive terms. Both groups were very positive about their six-year experience however ALP students were the most positive. ALP students expressed frustration in senior high school when they were mixed with mainstream students. They felt held back by students who they felt did not wish to learn as much.

Conclusion: The Program for Accelerated Learning appears to have been successful in catering for the learning needs of intellectually gifted students in this rural school. Students discussed many benefits including increased motivation, a high work ethic, higher teacher expectations that motivated them to work harder and a healthy sense of competition with class peers. Teachers were supportive of the program overall however a number of concerns were raised relating to staffing, training of staff and the level of acceptance of the program.

Commentary: This study is valuable because it examines the effects of the ALP on both gifted and mainstream students. Both groups of students appear to have benefited from the program. The concerns raised by students and staff would be useful to schools looking to implement a similar program. There appears to be some anecdotal evidence towards a trend of overall better VCE performance.

Quek, C. (2003) Interview with Dr Miraca Gross. *Gifted and Talented International 18(2)*, 101–108.

Objective: To explore with the author new material in the new second edition of *Exceptionally Gifted Children*.

Design: Interview

Setting: An interview with Dr Gross on a private visit to the Centre for Gifted Education at the College of William and Mary.

Assessment of variables: New information is provided on the original 40 young people in Dr Gross's original longitudinal study and an additional 20 young people have been added. The researcher has lost touch with one of the previous subjects.

Main results: The new edition of *Exceptionally Gifted Children* is a synthesis of the findings of the first ten-year longitudinal study of 40 exceptionally gifted (160–179) and profoundly gifted (IQ 180+) students conducted since 1983. The revised edition incorporates cutting-edge research that has shed greater light on some of the previous findings and also reports on the young people's development from 1993 to 2003 when in adolescence and young adulthood. The number of young people has increased from 40 to 60 and the number of in-depth case studies has increased by 18.

The author points out the difficulties of longitudinal studies. They are time-consuming, travel can be expensive and consequently it is difficult to stay in touch face-to-face. The subjects' life partner relationships show a common pattern. They are generally based on deep and close friendships. Partners tend to be moderately or highly gifted with shared similar interests. Partners were wide-spread in terms of socio-economic status. The subjects did not necessarily choose partners from within their own socio-economic backgrounds. The majority of students who were mathematically gifted have gone into maths or science and plan to become research mathematicians or scientists. An interesting fact was that many of the subjects have gone into careers as predicted in helping people. When Dr Gross was asked what was the best program template for exceptionally gifted children she replied that there was no one template. All gifted children have different needs. An individualised educational program (IEP) was seen as appropriate.

Dr Gross strongly advocates against these children being placed in a mixed-ability classroom. The majority of the subjects who were retained in mixed-ability classrooms were intellectually unhappy and developed social and emotional difficulties. Emotional maturity tends to be closer to mental age than chronological age. Dr Gross comments that the other children don't

understand gifted children and they in turn do not understand the other children. Consequently it is seen as indefensible. Radical acceleration is seen as highly beneficial for exceptionally and profoundly gifted children. Of the 60 young people in the study 17 were permitted radical acceleration. All achieved success academically at a very high level.

When asked, 'When should a child be accelerated?', Dr Goss replied that it should occur when the need becomes apparent. Of the subjects accelerated by one year or not at all the majority developed very poor social relationships as children and adolescents and many developed very poor relationships in adulthood. It was interesting to note that for the exceptionally gifted a single grade skip is of little more value than no acceleration at all. In addition it was noted that children who are mathematically gifted are more likely to be accelerated than those who are verbally gifted. Radical acceleration was perceived to be more thoughtfully planned and structured than single-grade acceleration. Those subjects who were accelerated by two or more years tended to have a wider range of interests; most played at least one musical instrument and had a keen interest in sport. These students fitted in socially with their new peers, perhaps appearing 'less strange'. Students whose interests were more esoteric were less likely to be radically accelerated. Subjects who were accelerated by one year were generally very happy for the first year but as time passed and they developed academically more radically, they began to stand out as unusual again. When allowed to accelerate a second time they were much happier and more readily accepted by other students.

Subjects who came from very supportive families with a high respect for education tended to be better adjusted. More than half of the 60 parents regularly do voluntary work for physically and intellectually disabled. They instilled in their children the belief that we should pass on to the community whatever we are able to give. Intellectually gifted children's expectations of friendship differ significantly from those of their age peers of average ability. Profoundly gifted girls aged 6–7 display conceptions of friendship that don't normally develop until age 11 or 12. Consequently, these students tend to be rejected by their peers. It is in the earlier years of school rather than the later grades that intellectually gifted children are more at risk of social isolation

if placed in mixed-ability classrooms. Dr Gross encourages parents of gifted children to read to them and to encourage them to develop their own interests. She suggests parents learn more about gifted education and be prepared to talk to school administrators and teachers about appropriate provisions for their children. It is recommended that parents work closely to develop a partnership with their school and that children are tested at an early age.

Conclusion: Dr Gross emphasises the importance of considering the different levels of intellectual giftedness — mildly, moderately, highly, exceptionally or profoundly gifted — and for appropriate provisions to be provided accordingly. It is recommended there be more teacher training and inservice courses to deal with the different levels of giftedness. Teachers are encouraged to read more widely in journals of educational psychology so that they learn more about the cognitive and affective characteristics and needs of the children and adolescents whom they teach.

Commentary: The interview provides a vehicle to explore the finer intricacies of acceleration with a leading authority. Case study material provides warmth and interest to support the research data.

Ryan, M. and Geake, J. (2003) A vertical mathematics curriculum for gifted primary students. *Australasian Journal of Gifted Education* 12(1), 31–42.

Objective: To evaluate the effectiveness of the vertical curriculum model for students identified as intellectually gifted by the Raven's Progressive Matrices Test

Design: Evaluation of pre- and post-test scores from the Progressive Achievement Tests in Mathematics (PAT Math).

Setting: A Victorian independent school in Australia

Main results: The authors outline the disadvantages of age lock-step progression as the basis for school organisation. For gifted students these may include: boredom, loneliness, alienation and underachievement. The authors recommend a vertical curriculum structure, which allows students to be grouped according to levels of readiness. In this system students may choose to work above or below their chronological peers after discussions with their

teachers and parents. This study sought to evaluate the effectiveness of a vertical curriculum structure in a primary school. The syllabus chosen was mathematics. Years 5 and 6 were grouped into five clinics based on their stage of development, mathematical readiness, intellectual ability and teacher recommendation rather than chronological age. Intellectual ability was determined by non-verbal reasoning ability score measured by the Raven's Progressive Matrices; mathematical readiness was measured by the Progressive Achievement Tests in Mathematics (PATMATH); teacher recommendations were based on anecdotal records, observations and past and current experiences with the student. Gifted students were concentrated in the R clinic where the curriculum was accelerated by one or two years. The time period of the study was one full year. The study focussed on both achievement and progress of the students. The cohort of 88 students consisted of 51 boys and 37 girls. Their chronological ages varied from 9 years to 12 years 7 months. In terms of mental age the range was broad, from 6 years and 5 months to 17 years and 5 months. The first question was whether the vertical semester system benefitted the group as a whole. There was a positive shift in the distribution across the stanines of the PATMath scaled scores between February and December. 10 out of the 11 gifted students achieved PATMath scores in December that were equivalent or above CSF Level 5 or a Year 7 level of mathematics. Two students achieved the equivalent of 36-months mathematical progress and eight students achieved the equivalent of 24 months mathematical progress in the 11 months of the normal school program. The student who did not progress beyond the normally expected level was later identified as having Short-Term Auditory processing difficulties. The vertical curriculum mathematics program that operated in this study was part of the school's core sequenced program and not an *ad hoc* enrichment program. It was enthusiastically supported by teachers involved, as it reduced the range of abilities in each clinic. Teaching the gifted students was felt not to be an extra job, as these students were 'average' for CSF Level5.

Conclusion: An advantage of the vertical curriculum is that there is no labelling of children that can be associated with gifted education or other ability-streamed programs. Notably the mathematical progress of the lowest level was

just as great as that of the highest level R Clinic. The Vertical Curricular Program allowed all students to work through the course on the basis of their readiness and ability rather than on their age or year group.

Commentary: The study shows the advantages of a vertical curriculum program to all students including the gifted. Part of the reason for the success of the program is the support of staff and the fact that this was an integrated program in the school curriculum which did not specifically label students.

Start, K. (1989) *The Tyranny of Age*. Paper presented at the World Conference on the Education of Gifted and Talented Children. Sydney, July 3–7.

Objective: To challenge the belief that the only way the Australian education system can work is by grouping students by chronological age

Setting: Australia

Methods: Literature review and author beliefs

Variability of design: Research literature is provided plus a brief historical review of education legislation. Most of the paper is based on the author's own hypothesis.

Main results: The author provides an analogy of education authorities being a tyrant which imposes on us 'the way' that students will be educated, notably grouping by chronological age. The author argues that the control of age over education is a relatively recent phenomenon. As an example he illustrates how in one-teacher school settings in the Australian outback they took children as they came forward and allocated them by need and not by age. The author relates that having legislated an age for compulsory schooling, administrators were faced with an intake of students by chronological age. The minimum age at which a child could leave school was then legislated and an age ceiling was legislated by default. Start argues that education at the time of publication clones all classmates to a particularly small target within that age class. The author asks a range of questions to add to the debate:

- How do we decide that a child is ready to leave school?
- Should a maximum age for retention be established?

- Should a child who learns quickly move into a college or should the educational content of that context be brought to the child?

The author argues that the answer is to allow the child to progress at the optimum rate of learning without reference to age. The argument about acceleration and social disturbance is seen as having no relevance. Instead it is seen as socially and emotionally damaging to retain a child below its optimum learning environment. The author argues that, if education by chronological age were abolished, gifted education could not be considered elitist or have any pretence of snobbery.

Conclusion: This paper challenges the concept of education by age group and argues that children should be able to progress optimally to full development at their own pace. The author argues that this would remove criticisms of social inequity for appropriate provisions for gifted students.

Commentary: The author puts forward a well thought argument to abolish the education of children totally by age.

Vialle, W., Ashton, T., Carlon, G. and Rankin, F. (2001) *Acceleration: A coat of many colours*. *Roeper Review* 24(1), 14–19.

Objective: To synthesise three research projects concerning acceleration conducted in New South Wales with the aim of exploring issues relevant to the acceleration debate

Design: Research synthesis

Setting: The first project reports on an investigation of the Early Entry policy for gifted young children in a school region in New South Wales (NSW). The second project involves the experiences of students who have accelerated at least one year. The third project examines a vertical semester system allowing students to accelerate within subjects at an academically selective school.

Assessment of variables: The three research projects highlight the issues of teacher attitudes and beliefs towards acceleration particularly social-emotional development and the comparatively small number of students accelerated outside major urban centres.

Main results: The authors provide an Australian context on attitudes towards acceleration.

Australian teachers are generally resistant to acceleration citing the problems of students leaving school early and not being mature enough for university life. The authors describe the prevalent attitude of many teachers and administrators as 'early ripe, early rot'. Although acceleration can take many forms many teachers and administrators associate the word acceleration with radical acceleration or multiple grade-skipping. The author points out that studies in both the United States and Australia repeatedly reflect a pattern of support for acceleration in the research but resistance to acceleration in practice. The authors outline the introduction of the 1991 Government policy, which recommended acceleration as one of the options for gifted students. As a consequence of this there appeared to be a growing number of cases of acceleration in NSW (Bailey 1997), the majority being in the metropolitan areas. Other regions in the state continued to resist the policy (McGrath, 1994). The authors then continue to outline three projects.

The first is the South Coast Project — Early Entry. A disproportionately small number of children have been enrolled early in this region compared to other regions in the state (McGrath 1994, Rankin & Vialle, 1990). For example, Metropolitan North (a region in Sydney with 168 schools) enrolled 22 children whilst the South Coast Region with 174 schools enrolled five students (Rankin & Vialle, 1996). A follow-up survey was completed to determine the small numbers, as only 25 out of 63 schools offered early entry and two schools reported that this option was not available. The survey indicated that only 10 schools received applications for early entry and that these applications were instigated by parents. Only three of the ten schools had actually enrolled children for early entry. Seven of the ten principals who had processed applications for early entry rejected all candidates. These findings concur with that of Whan (1993) who found a 98% rejection rate of early entry candidates by principals in a metropolitan area of New South Wales. The responses indicated a strong resistance to early entry on the part of principals in the South Coast Region of New South Wales. The most common reason that the children were rejected for early entry, cited by 23 of the 27 respondents, related to the social-emotional development of the child. Principals' views were encapsulated in the comment from one principal: 'The socialisation

process and the ability to get along with one's peers is (*sic*) far more valuable to a child's progress than any academically gifted program at this stage of his or her development.' Surveyed parents also commented that parents wanted their child to 'fit in' and to avoid the problems of early exit. Eleven principals stated that immaturity of the child and their physical size were reasons for non-enrolment. Lack of academic ability was the reason least cited for the rejection of early entry candidates. The survey provided evidence that the major factor in preventing young gifted children from entering school early was related to unsubstantiated fears by the region's principals for the social and emotional wellbeing of the children concerned.

The second project relays the experiences of five children who have been accelerated by at least one year. Faith was 11 when he attended Year 7 in the local selective school. He was accelerated from Year 4 to 6 in primary school. Socially he was little affected by the acceleration experience, as most of his friends were older than he was. His only regret was that the acceleration had not occurred earlier. Creighton was also 11 when he was accelerated to the local selective high school. He was accelerated from Year 1 to 3 in primary school. Prior to his acceleration he did not wish to go to school and was constantly feeling sick. Once he was academically challenged he was good in patches. He did however feel burdened by the volume of work. He was happy and enthusiastic about school. It is reported that it made him a more confident person. Acceleration did not change his socialisation pattern. Elijah was in second-year university at the time of the interview. He had been accelerated to Year 6 in three years. When he moved school his acceleration was reversed. Eventually after much protest he was permitted to grade-skip. Prior to his acceleration boredom manifested itself in physical symptoms; once accelerated these symptoms disappeared. Elijah tended to have friends who were older and at various times did not socialise with anyone in his class group. He was happier overall due to the more challenging nature of the work. Kaylie was in Year 1 at six years of age. He experienced no social problems but the majority of his friends were older. Kaylie was also provided with special academic enrichment work. Kate was nine at the time of this study. She was accelerated from Year 3 into Year 5 and then home schooled because of ongoing social problems. Previously when bored

she exhibited physical symptoms. Kate's social and emotional problems did not improve. Each of the five students exhibited physical illness prior to acceleration. These symptoms disappeared when the students were given more challenging work. Each of the students was happier socially and emotionally after acceleration. There were still instances when the work became unchallenging and this shows a need for further acceleration.

The third project was a vertical semester system allowing students to accelerate within subjects at an academically selective school. Fifty students from Years 8, 9 and 10 were surveyed and 33 students responded. All were placed within the top of the class within 6 to 10 weeks but then became dissatisfied. Students found that the teachers were teacher-centred in the classroom rather than using a problem-solving approach. 10% of the students decided to return to their age cohort rather than maintain an A average. 87% of students surveyed felt the vertical semester program was a positive initiative that met students' academic needs.

Conclusion: The three studies dispel the myths of acceleration causing social-emotional problems for gifted students. The importance of teacher and educational management knowledge of research in the field is illustrated.

Commentary: Results from the three projects all supported acceleration as being beneficial to gifted students. Participant numbers were small but consistent. Students were overwhelmingly positive about their acceleration experience, in stark contrast to the negative attitudes and beliefs expressed by educators. The projects highlight the importance of acknowledging and taking into account the views of gifted students in determining their educational provisions.

Wellisch, M. (1995) Young gifted and talented children: Early childhood teacher attitudes and practices on the north coast of New South Wales. *Journal of Australian Research in Early Childhood Education* 2(1), 131–139.

Objective: To determine what are rural early childhood teachers' attitudes to young gifted and talented children in early childhood centres. Do they recognise needs and provide programs? Do attitudes and programs of teachers who have not completed training differ?

Method: 46 surveys and 8 interviews

Setting: North Coast of New South Wales — rural population

Participants: 46 trained early childhood teachers on the North Coast

Main results: Of the teachers surveyed, 36/47 had not attended any gifted and talented education training. There were no significant data to show that those with training had more positive views towards gifted and talented or that they programmed more appropriately to meet these children's needs. Younger teachers (less than 5 years' experience) responded more negatively than more experienced teachers. In the qualitative section even a small amount of training made a difference to early childhood teachers' attitudes, ability to identify but not program for gifted children. Negative characteristics were noted by untrained teachers, indicating that training contributes to conversion of negative impressions (Copenhaver & McIntyre, 1992). Lack of program provision by teachers is partly due to failure of teachers to identify and the reluctance of teachers to label children largely due to a concern with equity. The final cause was the strong teacher belief in the adequacy of developmentally appropriate practice. The interview results showed that early childhood teachers in the North Coast of New South Wales generally do not identify gifted and talented children. The author indicates that lack of teacher training is the predominant reason for this. Teachers without exposure to gifted and talented training were not concerned with the provision of a special program for gifted and talented children. In contrast teachers interested in gifted and talented children spoke of a number of opportunities to gain further information whilst untrained teachers commented on the lack of information. The author argues that this shows a need for inclusion of a compulsory course in gifted and talented in pre-service training. Many of the teachers were aware of the existence of the gifted and talented child and some were also aware of the need for special programming. However many felt unqualified to cater for their needs and were waiting for outside direction or guidance. Short inservices were not found to be sufficient for programming but were seen as sufficient for identifying gifted and talented children. The author suggests that short courses are good for raising awareness but longer courses are needed for skill in differentiation. Even when courses were available teachers tended to choose inservices that helped students with disabilities.

The author suggests that these findings may be due to the rural factor. The majority of respondents were aged in their thirties and trained before 1992. The author states that these teachers seem to prefer to pursue special interest areas rather than gain new information. The author suggests that further research compare the teaching methods of early childhood teachers trained in gifted education with those who have no training and further suggests a need for pre-service training.

Commentary: The study raises interesting questions as to the need for pre-service and teacher training to skill teachers sufficiently to provide appropriately for gifted and talented children.

Wood, G. (1988) High school acceleration. In A. Jacobs & G. Barnsley (Eds.), *Gifted children: The challenge continues* (pp.181–185). Sydney: New South Wales Association for Gifted and Talented Children.

Objective: Report on the implementation of the cohort acceleration program introduced to a selective high school — Caringbah High School

Design: Case study

Setting: A selective high school in Sydney, New South Wales

Participants: Students in a cohort acceleration program

Assessment of variables: A case study is provided by the author, who is a teacher at the school.

Main results: The author provides background of Caringbah HS in NSW which was established as a comprehensive high school and then made into a selective high school. The school initiated a cohort acceleration program in 1994, which is outlined in this paper. The cohort acceleration program was offered to selected students so that they could complete their secondary education in five years rather than the usual six years. The aim of the program was for students to be provided with educational experiences appropriate for highly gifted students in an appropriately differentiated program. The compaction of the common core curriculum in English, Maths, Science and History/Geography meant that Years 7 and 8 were reduced to one year. Students were invited to apply for the program. Each applicant was interviewed by the counsellor and the

acceleration program director. A cognitive and affective profile of each applicant was developed based on both subjective and objective data. It was seen as imperative that students have a genuine desire to be in the program. Teachers who were interested were invited to teach the program. Faculties developed special programs whereby the normal Year 7/8 program was compacted into one year. Every six weeks each student was surveyed to assess social adjustment, engagement and progress. Teachers also completed a questionnaire about the social adjustment and academic progress of each student. Students were interviewed by the program co-ordinator. Meetings were also held with parents to discuss any concerns and discuss student progress. The Year 7 group is kept together for all subjects and in Year 8 they are kept together for core subjects and integrated for electives. In Year 10 the students are fully integrated. Students in the accelerated classes have coped comfortably with the differentiated curriculum. In comparison to mainstream students they are far happier with their academic performance and enjoy school immensely. Many report that the best aspect of the program is having the opportunity to be with intellectual peers. The author notes that students attracted to the program tended to fit into the divergently gifted type of gifted students described by Betts and Neihart.

Conclusion: The cohort acceleration program offered at this school appears to have been successful for the students and dispels the myths of social emotional maladjustment for students who are accelerated.

Commentary: The author's first-hand experience of the program at the school adds to the interest and readability of the study and provides a real insight into the practicalities of the program.

Young, M., Rogers, K. and Ayres, P. (2007) The state of early tertiary admission in Australia: 2000 to present. *Australasian Journal of Gifted Education* 16(2), 15–25.

Objective: To map the terrain concerning early admission to tertiary education for gifted learners in Australian Universities and to broaden the research base in Australia

Setting: Australia

Design: Collection of data via university websites, emails and follow-up calls

Participants: Australian universities.

Variables: Not all universities responded to or completed requests for information

Main results: The author outlines literature supporting early admission to university and dual enrolment (Lubinski, 2004, VanTassel-Baska, 1992.) Early admission allows a student to enter university without completion of the final school qualifications. Dual enrolment allows a student while still at high school to study at the tertiary level. Rogers in her best-evidence synthesis of 37 studies found that the positive academic effect for early admission to university was substantial (effect size = .30). It is pointed out that in comparison research in Australia is very limited. Gross (2006) in her longitudinal case study of 15 radically accelerated students reported on their young-age entry to university, their academic success and their outstanding careers. The author contacted all Australian universities about early admission, dual enrolment, minimum age requirements for admission and relevant statistics concerning a younger than expected age on university entry. Initially the university homepages were searched for information. For dual enrolment the document 'University credit for school students' (Figgis, Parker, Bowden, Money & Stanley, 2002) was cross-referenced with each university home page. After web searches were completed a direct approach was made by email to each university. Four questions were posed:

- Does your university offer early admission where the exceptionally gifted student has not completed the final high school qualification?
- Does your university offer dual enrolment to students who are still at high school?
- Does your university accept students younger than expected who have completed the relevant state's final high school qualification?
- Is there a minimum age for admission?

To confirm the accuracy of the information collected, a separate email letter was sent to the contact person for each university asking for confirmation of the accuracy of the collected data. Only one university (New South Wales) had a formal written policy in place for early admission, including the gifted student aged 15 years or younger with details about the programs available on its website. This program has accepted 8 students since 1991. For the other 12 universities acceptance of a student younger than

the expected 17 year old occurs informally subject to the discretion of the Dean, the academic registrar or the vice chancellor. At Monash university students under 16 years of age may be admitted with an ENTER rank of at least 95 and have the approval of the Dean of the faculty. Griffith University has a special clause in its admission policy for undergraduates; 'exceptionally talented persons who are less than 16 years of age (Griffith University, 2004) may be accepted via a recommendation to the deputy vice chancellor through the academic registrar. Information about dual enrolment varied greatly between universities. 30 specific dual enrolment programs have been established in universities across all states. These programs provide students with access to tertiary subjects either through on-campus or distance delivery. Four universities provided dual enrolment on a case-by-case basis. Two universities, as well as Open Universities Australia (OUA) with 7 partner universities, enable students to study tertiary subjects. The credit value of the subjects to be taken at university level was varied. Some universities offered high school non-award undergraduate subjects which could later be counted towards a degree. Other universities offer non-award subjects which may be used later for credit towards a degree depending on whether it matched the requirements for the program or not. Other universities offered credit or advanced standing. Five states, New South Wales, Queensland, Tasmania, Victoria and Western Australia have university-developed -endorsed subjects as part of the final secondary certificates. Dual enrolment for New South Wales and the Australian Capital Territory is provided through distinction courses offered by the NSW Board of Studies. Three subjects, Comparative Literature, Cosmology and Philosophy are delivered by distance education by Charles Sturt University (CSU) and the University of New England (UNE). The results contribute as the sixth study in the UAI calculation and credit or advanced standing may be given towards an undergraduate degree. The new Queensland Certificate of Education (QCE) provides for advanced courses of study to be part of the certificate. Between 2005 and the date of publication the new Western Australian Certificate of Education (WACE) enables Year 11 and Year 12 students to enrol in university subjects at Edith Cowan University, Curtin University, Murdoch University and the University of Notre Dame. Subjects at Edith Cowan are non-award bridging courses but the

other three universities offer accredited undergraduate courses. The units do not contribute to the tertiary entrance score. The Open University of Australia has no admission process. This is a viable alternative for many gifted students under 17 years of age who live in an area where they could not access courses in face-to-face mode. In this way they can access dual enrolment by studying first year university subjects. The University of Western Australia (UWA) offers individual courses to the general public through ACCESS UWA. As there are no entrance requirements it is possible for high school students to access tertiary study as a continuing education student and gain credit towards a degree. Charles Sturt University also offers an Associate student program open to the general public. The University of Sydney also commented that students could be enrolled as non-award candidates in units of study at the discretion of the dean. Universities were all asked the questions:

- Does your university accept students younger than expected who have completed the relevant state's final high school qualification?
- Is there a minimum age for admission?

To confirm the accuracy of the information collected a separate email letter was sent to the contact person for each university asking for confirmation of the collected data. It was difficult to ascertain a minimum age for admission to university. Some universities said there was no minimum age but claimed that if candidates were younger than the usual school-leaving age it would be subject to approval. One university commented that if there was a compulsory component of practicum or industry experience, age restrictions might be imposed by third parties such as employees. The search for statistics on admission to university of students younger than 17 years brought mixed results. The authors noted that the important fact arising from the search is that the students under 17 years have more than doubled during the years 2000 to 2005.

Conclusion: There are increasing opportunities for students at Australian universities even though information is often difficult to find. Students have opportunities for early admission and dual enrolment in every state.

Commentary: A detailed summary of available opportunities for accelerated students to begin

university at a younger age than normal or to commence dual enrolment is outlined. The authors' frustration in ascertaining reliable information in some cases shows the need for a more formal publication of information.

Young, M., Rogers, K. B. and Ayres, P. (2009) Getting in: Australian university decision-making processes when gifted learners apply for early admission. *Australasian Journal of Gifted Education* 18(2), 43–54.

This study investigated the Australian universities' decision-making processes that might allow a student younger than 17 years of age to gain early admission into a university program of study. Designated contact people from eleven universities were interviewed. The study found that, in the eleven universities that participated in the interviews, gifted students had successfully enrolled at a young age, but that there were few formal policies and processes put in place to facilitate early admission. With very few exceptions students who do get accepted are very much left to their own devices and support systems. At the same time, analysis of the interview data showed that, in general, significant negative beliefs associated with gifted students were clearly expressed: social adjustment, social maturity, age-related activities, and duty of care were key concerns with the officials. The study concluded that there is a need for more education about accelerative practices, highlighting the positive effects of acceleration as well as the negative effects when acceleration is appropriate but not implemented. The study also noted the complications arising from differences between state education systems, making it difficult for national coordination of acceleration practices.

Young, M. (2010) *Admission to Australian universities for accelerated students: Issues of access, attitude and adjustment*. Doctoral Dissertation. Sydney: The University of New South Wales.

University admission is a significant issue for gifted students who have been accelerated. This study explored access to Australian universities for accelerated students, examined the attitude of Australian universities to admission of accelerated students, and investigated issues of accelerated students' adjustment to university. The study comprised three stages.

First, the study collected and summarised available data on early admission, dual enrolment, minimum admission age, and admission of students younger than 17 years to Australian universities. Second, personnel from eleven Australian universities were interviewed about the decision-making process that allowed such students to gain admission earlier than usual. Issues of support, advertising and national coordination were also examined. Third, twelve accelerated students were interviewed about their adjustment to university, and any hurdles they identified. A qualitative analysis compared responses and key themes from the second and third stages.

The study found that, in Australia, while dual enrolment is widely practised, early admission to university (enrolment in a university program without having graduated from high school) is little understood, known or practised. Information about admission options for accelerated students was not readily accessible; admission ages varied across Australia; and dual enrolment results were treated in different ways. For the universities that did accept accelerated students, it was on a case-by-case basis, processes were ad hoc and decision-making was left to the discretion of a head of school or faculty. While the universities did show some understanding of issues related to giftedness, there were still deep concerns about social and emotional development, duty of care, issues of equity, and cost of support. State differences made national coordination of early admissions processes unlikely.

The study also found that the students interviewed were happy to have escaped an unstimulating curriculum and the social environment unaccepting of difference, and any hurdles tended to be short-lived. Significant factors in adjusting to the university environment were finding success with academic challenges, making friends, and participating in extra-curricular activities. The students were appreciative of being treated as regular undergraduates, but suggested that more formal support may have enhanced their adjustment to university.

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