The Senate

Standing Committee on Employment, Workplace Relations and Education

Quality of school education

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Acronyms

Australian Bureau of Statistics (ABS)
Australian Council for Educational Research (ACER)
Australian Curriculum Studies Association (ACSA)
An Exceptional Schooling Outcomes Project (AESOP)
Australian Research Council (ARC)
Bachelor of Education (B.Ed)
Certificate of Education (CE)
Council of Australian Governments (COAG)
Department of Education and Training, Western Australia (DET)
Department of Education, Science and Training (DEST)
Diploma of Education (Dip. Ed.)
Equivalent National Tertiary Entrance Rank (ENTER)
Fringe Benefits Tax (FBT)
Higher Education Contribution Scheme (HECS)
Higher Education Loan Program (HELP)
Higher School Certificate (HSC)
Information and Communications Technology (ICT)
Key Learning Area (KLA)
Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA)
National Inquiry into the Teaching of Literacy (NITL)
New South Wales, Department of Education and Training (DET)
Organisation for Economic Co-operation and Development (OECD)
Outcomes-Based Education (OBE)
Programme for International Student Assessment (PISA)
Queensland Department of Education, Training and the Arts (DETA)
Socio Economic Status (SES)
Studies of Society and Its Environment (SOSE)
Tertiary Entrance (TE)
Tertiary Entrance Ranking (TER)
Trends in International Mathematics and Science Study (TIMSS)
Vocational Education Training (VET)

Terms of Reference

The Senate Employment, Workplace Relations and Education Committee will conduct an inquiry into the current level of academic standards of school education, with particular reference to:

1. Whether school education prepares students adequately for further education, training and employment, including, but not limited to:

    a. the extent to which each stage of schooling (early primary; middle schooling; senior secondary) equips students with the required knowledge and skills to progress successfully through to the next stage; and

    b. the extent to which schools provide students with the core knowledge and skills they need to participate in further education and training, and as members of the community.

2. The standards of academic achievement expected of students qualifying for the senior secondary school certificate in each state and territory.

3. How such academic standards compare between states and territories and with those of other countries.

Referred by the Senate on 8 February 2007

Recommendations

Preface

The committee's intention in this inquiry has been to consider the issues arising in the current debate on how to achieve the best education for students progressing through twelve years of school. Every committee inquiry is a 'learning experience' for the senators who take part. In this case the learning has resulted in a broad consensus that a more rigorous approach to teacher training and to curriculum design, is required to improve educational achievement levels across the country.

To deal with curriculum first, it is the committee's view that it should embody two elements. First, it should reflect the accumulation of knowledge, wisdom and skills, and pass these on. Second, it should try to ensure that this knowledge, wisdom and skill is relevant to the work and life challenges to be faced by those whose experience of the world will be different in unforeseen ways. Relevance here may be determined by foreseeable vocational need and technological change, and by the unchanging nature of human needs and the human condition. The learning which allows teachers to survive is not 'relevant' to students. 'The 'relevant' curriculum is that which is directed at the need for a broadening and deepening learning experience and for acquiring new knowledge and new skills. There is much stimulating discussion in academic circles, currently, about the radical possibilities for schooling as the 21st century progresses. The committee applauds this, but fears the possibility of curriculum fads and fashions to which school systems and university education faculties are frequently prone.

The committee has also reviewed the extent of curriculum change over the past 15 years, noting aspects which have proved to be unfortunate, and which are currently being put right. However, the committee also notes that there is much to be done, particularly in developing standardised assessment methods which would ensure comparability of standards across the country.

Convincing evidence presented to the committee has stressed the centrality of good teaching as the factor which has most bearing on educational quality. Good teachers are the key to good performance. Good schools are those which are made up of good teachers. The committee has found that at a time of growing consensus on curriculum improvements, the threat to improved standards may result from the insufficient numbers of more able recruits to the teaching profession, and the failure of employing authorities to place a sufficiently high priority on measures which maintain the professional and intellectual vigour of teachers. This is particularly so in the case of teachers who have been at the chalkface for many years and whose sense of vocation is under strain.

It appears that in some respects the training offered to teachers does not match the needs of schools for more rigorous and challenging teaching. While this may in part be attributed to declining entry standards to teaching, the committee notes that there is some dissatisfaction with the ability of many new teachers to cope with the challenges of teaching. A great deal of emphasis has been placed recently on improving the

experience of practise teaching, including its duration, vis-à-vis the time spent on more theoretical aspects of training. This committee has other concerns. It believes that many new teachers have insufficient grounding in the actual subject content they are teaching. That is, they do not know enough history, have limited appreciation of literature through not reading enough of it, and are ignorant of, and frightened of, mathematics and science. This has a direct effect on the quality of educational outcomes because it can impede student intellectual growth.

Schools are our most public institutions. They are the most vulnerable to criticism and are often perceived as failing in their mission. The committee agrees that much of this criticism is unfair, and based on misperceptions. It takes little account of the need for schools and teachers to accommodate and deal with students whose social conditioning, often in dysfunctional families, thwarts their willingness to learn and weakens their ambitions.

But often the criticism is not unfair. Schools and systems need to acknowledge that such criticism often result from informed observation of poor performance or neglect of students' leaning difficulties. The growth of skills and abilities may be stymied as much by the absence of challenge as by class disruption or slow progress of some students in a class. The failure to organise a school so as to maximise learning opportunities for all students partly explains the existence of the long tail of under-achievement which characterises the relative performance of Australian schools, compared to those in Canada, in the various international comparative surveys.

The committee acknowledges the clear evidence that schools, in most cases, achieve very well. It accepts the judgement that teachers are as dedicated and professional as could be found in any advanced OECD country. Yet the task of schooling is relentless. There can be no room for complacency, and the best teachers are always striving to do better. To improve the quality of school education will mean raising the level of achievement across all schools.

The committee's terms of reference for this inquiry were broad, and so they provided space in which the committee was able to respond to what the submissions and witnesses identified as being important. While the committee has noted that media commentary and public controversy have centred on curriculum issues recently, it emerged that the issue of teaching quality came to be seen as being equally significant. For this reason the committee has paid particular attention to teaching methods, training, and matters relating to the profession. It has covered curriculum issues in some but not all subjects. Science and languages have not been dealt with in the detail of mathematics and the teaching of literacy. These have been given most emphasis because that is where some of the quality and underachievement issues were identified in submissions.

This has been a most interesting and rewarding inquiry for members of this committee. The committee thanks the 76 organisations and individuals who made submissions to this inquiry, and those who appeared before the committee at its public hearings. The committee commends the quality of evidence given, and the reasoned

points of view presented from many standpoints: academics, school systems, principals' associations, professional associations and individuals with particular interests to share with the committee.

The committee commends this report to the Senate.

Senator Judith Troeth
Chairman

Chapter 1

Introduction

> Education systems are often like vehicles that have been to the panel beater too many times. After 15 years they need a new fender, the engine needs repairs to keep running, the tyres need changing and woops it's time to replace this sparkplug. But governments have to keep these cars on the road even if sometimes the wheels don't align and the windscreen is broken. And it's a remarkable testament to the fortitude and commitment of teachers that they keep the vehicle on the road even when both the road and the map keep changing.[1]

1.1 This introductory chapter deals broadly with the two issues addressed in the terms of reference: the quality of teaching, and the quality of curriculum. The committee has attempted to deal with both these issues. The most balanced, rigorous and user-friendly curriculum that can be devised still requires skilled and dedicated teachers to implement it. Good teachers will bring to bear their knowledge, skill and experience to manage or improvise with a poorly designed curriculum so as to achieve their objectives.

1.2 Schooling in Australia has traditionally placed emphasis on individual achievement and personal fulfilment. A great deal of evidence to this inquiry has pointed to the declining standards in school mathematics, and its flow-on effects on the viability of university enrolments in engineering and science and, in due course, an industry sector starved of skills. On another level, we see the strong but relatively recent trend toward vocational education in schools, mainly in service industries. It is claimed that one of the most useful aspects of school-based VET courses is the inculcation of a work ethic, as part of a transition to work, as distinct from an expectation that schools will be able to teach immediately marketable skills in technical fields. Yet there is intermittent criticism about the inherent bias in the school curriculum and even among teachers and principals, in favour of an academic emphasis in school education rather than skilling students for entry into the trades.

1.3 It is apparent to the committee that those most worried about declining standards are those who take the long view as to the purpose of education. The committee has an old-fashioned view that knowledge, skills and values are accumulated, practised and assimilated in stages corresponding to an individual's capacity to grow. Thus, every stage of education is crucial from the beginning. There is a time to learn to read, and for children who miss out, the chance of catching up, even despite costly remedial work, is minimal. There is an optimum time to learn the

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1 Professor Allan Luke quoted in Jacqui Elson-Green, 'Keeping education on the road: gospel according to Luke', *Campus Review*, December 17-23 2003, p. 11.

basics of algebra. Missing out means that calculus, and further scientifically based training, is beyond most students. Concern about standards of school education is in large measure a concern about whether Australia will have sufficient 'critical mass' of appropriately skilled and educated people to run the businesses and the services of the country in years to come.

1.4 An inquiry into the quality standards of schooling is complicated by the fact that in this federal democracy, states and territories have responsibility for staffing and running schools, and where, across the country, an average of 35 per cent of students are enrolled in wide diversity of non-government schools. Added to this is the fact that while on a global level of comparison schools in this country perform at the top levels of achievement, there are worrying signs of Australian educational under-achievement which advanced countries in Europe do not exhibit and which leading Asian nations are overcoming.

1.5 Public commentary about curriculum issues has filled press columns and the airwaves regularly, if intermittently, over the past 15 years or more. But the relative quality of teaching is seldom under the spotlight. The school is at once the most visible and most public of our institutions, but the classroom remains a private place. Fair measurement of the effectiveness of teachers is a challenge that will need to be taken-up, as is the effectiveness of their training and further professional development.

1.6 As for curriculum, the committee notes a general agreement that school curricula should be standards-based, rather than, as in the past, outcomes-based. The constructivist tendencies of the 1990s are being reversed in those states which adopted them, most dramatically perhaps in Western Australia. The changes will be obvious to teachers as new syllabuses are written. The Australian Council for Educational Research (ACER) has submitted that future school curricula should begin with an analysis of the kinds of learning likely to be needed in the future. It should make clear what students are expected to learn and to do, as well as specifying minimum standards.[2]

1.7 The 'back to basics' movement may have led some commentators to believe that the development of basic skills is the main objective of schooling. It is not. They are a means toward learning higher order skills and deeper understandings.

The quality of education debate

1.8 This inquiry was announced at a time when a great deal of commentary was issuing from some elements in the press. The commentary alleged an agenda being pursued by those who aim at radically stripping core cultural traditions from the curriculum.

2 Australian Council for Educational Research, *Submission 38*, p. 3.

1.9 The committee believes that this is a difficult issue because public perceptions of the school system deserve a public airing. What is being alleged is not constructive. What is often remarkable is the generalised nature of much school criticism. Individual schools are rarely criticised. As one academic rhetorically asked the committee when this phenomenon was raised:

> Why are people satisfied with what they experience at their local school with their children but are somewhat dissatisfied, it seems, with the education system at large…[even though]…that is not generally based on any immediate experience? You could postulate a whole set of things, but I would suggest that one of the strong reasons would be the sort of campaign that is being waged in the media, which would tend to influence people, and yet their experience at the local level, quite clearly, is highly satisfactory.[3]

1.10 The committee notes these comments from Professor Alan Reid. He states that a quality educational discussion and debate in a healthy education system will be of a constructive nature, not only within the profession but within the community, and between the community and the profession. Such discussion should be civil and respectful, recognising the complexity of the educational task of preparing young people for life in a contemporary world. He continues:

> Unfortunately, the last five years in Australia have witnessed a debate which bears none of these characteristics. The so-called culture wars have indeed produced the opposite, thus rather than stability and respect. Rather than recognising the complexity of education today, the debate operates in simple binaries. For example, it seems that you cannot study a contemporary cultural phenomenon, such as *Big Brother*, and Shakespeare. It seems to be argued that it has to be one or the other.
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> Rather than being evidence based, there is a narrow and selective use of evidence to confirm an already established view—for example, critics seem to trawl through curriculum documents looking for examples of things with which they take issue, assuming that because it is written on a page it is translated into action, as though teachers behave like automatons; there is no recognition that the formal curriculum, the official intended curriculum, is only a smart part of curriculum itself—or generalisations are made on the basis of partial evidence.[4]

1.11 It is the responsibility of those elected to parliaments to support the improvement of education standards through whatever influence they have, and to ensure that debate about education needs and reforms is constructive and well-informed. Hence this report. The teaching profession is especially vulnerable to blanket criticism of its work. Yet a sense of vocation that energises and sustains the core of the profession. The committee does not regard schools and school systems as being 'sacred cows', immune from criticism, but because schools survive and thrive on the basis of public trust, that criticism must be constructive.

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3 Professor Alan Reid, *Committee Hansard*, Melbourne, 25 July 2007, p. 3.

4 Ibid, pp 2- 3.

Quality teaching

1.12 'Quality' is a relatively new descriptive concept in its application to schooling. It embraces notions of a sense of enjoyment in learning a rich mixture of content and ideas which are stimulating and appropriate and which therefore add to intellectual growth, as recognised by the examiners or assessors, leading to a further stage of learning post-school. The 'quality inputs' are the curriculum or syllabus, the teaching materials, and most importantly the skill and knowledge of the teacher. The 'output quality' depends on the degree to which the student is motivated and able to respond to this stimulus.

1.13 In considering the issue of quality, the committee has focussed on four main areas: the quality of teaching; the quality of curriculum and resources; the quality of teaching and learning outcomes; and the quality of assessment instruments by which achievement is measured. In this introductory chapter, the committee sets out a synopsis of its findings and its views on the key matters, which will be elaborated on in following chapters.

1.14 There is a considerable range of opinion among educators as to the determinants of quality teaching. Some witnesses, as well as academics, researchers and commentators writing in sources which the committee has drawn on, place a great deal of emphasis on the need for innovative teaching methods, and relevant, accessible curriculum and materials. On the face of it, these would appear desirable and even essential requirements. For instance, in the recent ACER publication, *Re-imagining Science Education*, Professor Russell Tytler reviews the nature of what he describes as the 'current crisis in science education'. Professor Tytler urges a re-thinking about the nature of science knowledge dealt with in schools, moving away from authoritarian knowledge structures to more flexible, challenging conceptions of classroom activity, and more varied ways of thinking about knowledge.[5] Yet the committee is also impressed with findings that show successful science teaching based on more conventional characteristics of quality teaching, namely clear and high expectations, essential knowledge, a fair degree of teacher direction and security, teacher knowledge, and a structured teaching and learning regime. These are findings from very recent research, undertaken as part of the University of New England's AESOP project, which put a different perspective on the view expressed above.[6] Although they may bear out the observation of Professor Tytler that traditional school science is 'resilient', there may also be less conflict between these perspectives than may first appear.

1.15 The committee is reluctant to engage in the arguments that rage about curriculum philosophy, but notes that the evidence it received, or consulted, indicates

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5 Russell Tytler, *Re-imagining Science Education: Engaging students in science for Australia's future*, ACER, 2007, p. 67.

6 Debra Panizzon, Geoff Barnes, John Pegg, *Exceptional Outcomes in Science Education*, AESOP, 2007.

that among educators, those at the chalk-face favour pragmatism and practicality over vision-based theory any day. There also appears to be a divide between those like Professor Tytler and representatives of the Australian Association of Mathematics Teachers who are concerned or conscious about student attitudes and the effects of social change, and those who tend to hold on to concepts which emphasise knowledge and rigour, and who are sceptical about the need to adjust to what is perceived to be in the interest of students.

1.16 The views expressed in testimony, in submissions, and in the selection of research and commentary the committee has consulted, have provided the committee with a great deal of empirical evidence and an even larger number of perceptions and opinions. The latter should not be underrated. Public debate is informed by facts and their interpretation. Education is highly contested ground, and provokes sharp differences of opinion about how education is best delivered and for what purpose. No-one the committee spoke to was indifferent to the need for quality schooling, and everyone was able to relate it to personal fulfilment and the common good.

The importance of teaching quality

1.17 Most education authorities appearing before the committee rated teaching quality as the most important determinant of successful schooling outcomes. There is good evidence for this.

1.18 The committee notes the research carried out in New Zealand by Professor John Hattie on the major source of variance in student achievement. Over several years Professor Hattie has looked at factors which influence academic success and his conclusions are as follows:

- The ability and application of students accounts for 50 per cent of the variance of achievement. Bright students will have steeper trajectories of learning than those who are less bright.
- Home influences account only for about 5-10 per cent of the variance, in part because parental influence does not bear on the management of the classroom.
- Schools and school principals account for 5-10 per cent of variance.
- Peer pressure can be positive or unfavourable to performance but is less influential than generally believed, and accounts for 5-10 per cent of variance.
- Teachers account for about 30 per cent of variance. It is what teachers know, do, and care about which is very powerful in the learning process.[7]

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7 John Hattie,*Teachers Make a Difference: What is the research evidence?*, Australian Council for Education Research Annual Conference on Building Teacher Quality, October 2003, pp 1-2.

1.19 A wealth of other research supports these conclusions. A four year longitudinal study carried out by ACER in 1993-96 called the Victorian Quality Schools Project confirmed evidence from other counties that teachers have the most significant influence on educational quality. The Victorian study sampled nearly 14 000 students drawn from 90 public, Catholic and independent primary and secondary schools. One of the ACER researchers on the project, Dr Ken Rowe noted:

> Of particular interest was the finding that whereas students' inattentive behaviours had significant negative effects on their progress in literacy and numeracy, achievement mediated by quality teaching had notably stronger effects on decreasing their early and subsequent inattentive behaviours in the classroom (or increasing both their early and subsequent attentive behaviours). Above all the findings underscored the importance of teacher quality by highlighting the crucial role that teachers have in meeting the cognitive, affective and behavioural needs of all students, as well as providing normative classroom environment conditions that are conducive to learning.[8]

1.20 The committee also notes research published in 2007 by Andrew Leigh of the Research School of Social Sciences at the Australian National University, which was a mathematically-based assessment of teacher performance against literacy test results. The sampling was very large, with 10 000 primary teachers included in the research field. Dr Leigh's research showed a wide variation in teacher performance, which is a result consistent with other ways of measuring performance.[9]

The training of quality teachers

1.21 Teacher quality is linked to the quality of teacher training, but there appears to be no settled opinion on how strong this link is or how it can be measured. A recent report on teacher education accreditation states that its implementation is not yet well established. University courses are approved by academic boards, having first been developed by faculty members, usually with some limited contribution from references groups, or course advisory committees outside the university. There is no national system of accreditation, although a variety of state processes exist since registration bodies have been established in all states, mostly at the endorsement or approval level.[10] The emphasis is on 'collaboration' and 'liaison' rather than formal accreditation. In theory, employing authorities, that is, state education departments, diocesan Catholic education offices and independent schools, have some influence on

8 Dr Ken Rowe, *The Importance of Teacher Quality as a Key Determinant of Student's Experiences and Outcomes of Schooling*, Paper given to the ACER Research Council, 2003, p. 21.

9 Andrew Leigh, *Estimating Teacher Effectiveness From Two-year Changes in Students' Test Scores*, Research School of Social Sciences, ANU, 2007.

10 Dr Lawrence Ingvarson et al, *Teacher Education Accreditation: A review of national and international trends and practices*, Teaching Australia, August 2006, pp10-11.

the content of teacher training courses, but there is no formal way in which this is exercised.

1.22 Deans of education have expressed support for national accreditation. They argue that current arrangements result in unnecessary duplication of work, especially for universities preparing students to work in different states. This will not be a straight-forward task. National accreditation will need agreement on professional principles as well as subject specialisations, content and pedagogical knowledge. However, MCEETYA already has a national framework for professional standards for teaching as a basic document. The committee believes that national accreditation is a worthwhile goal in building the professional profile of teaching and facilitating improvements to professional standards.

1.23 It appears to the committee that state and territory education ministers have retained considerable powers, as in the instance of the NSW Minister recently instructing teacher training institutions to ensure that teachers in training are taught the formalities of English grammar. This has occurred since the establishment of the NSW Institute of Teaching in July 2006, which has taken over from the Department of Education and Training (DET) in the accreditation of teachers.

1.24 In this report the committee has expressed concerns about perceived weaknesses in teacher training. Some of these may be the consequence of factors outside the control of universities, namely the academic quality of school-leavers wanting to become teachers, although it might be argued that entry levels should be raised to keep out those whose literacy and numeracy are of doubtful standard, and who barely managed to achieve a minimum TER score. But this relates to the main complaint; that teacher training neglects subject or discipline content. This is especially true with mathematics and language and literacy study. Evidence was almost overwhelming that without a safe level of subject content teachers lack confidence in their ability to teach, and this is obvious to school students.

1.25 The committee noted also that there appeared to be a divide between educationists in universities and academics who are in a position to advise and contribute to subject or discipline specific content. Compared to this, other issues which have received attention in other inquiries, like inadequate practicum time, can usually be attributed to financial constraints or administrative problems. The infusion of more rigorous content would, however, appear easier to achieve.

Professional entry levels and training standards

1.26 Teaching has long ceased to attract its fair share of the best and brightest intellects entering universities around the country each year. Some of the biggest teaching schools are accepting entry-level students with TER scores so low as to be equivalent to failure in other states.[11] The House of Representatives committee inquiry

11 Professor Bill Louden, *Submission 73*, p. 3.

into teacher education, which reported in February 2007, received submissions showing various indicators of declining academic entry standards for students entering education faculties. For instance, only four out of 31 universities required Year 12 mathematics at any level, with another eight being content with Year 11 mathematics levels. The University of Melbourne claimed in its submission to the House inquiry that an insistence on Year 12 mathematics would have resulted in half of the currently accepted applicants being rejected. Many universities appear to place a great deal of confidence in their ability to instil an adequate component of academic rigour over the four years of the B.Ed degree, sufficient, that is, to cover the gap between poor or mediocre school results, and what is expected at graduation.[12] The committee doubts whether the community can be reassured that this confidence is not misplaced.

1.27 The committee heard a great deal of adverse comment on the performance of teacher training faculties in universities. It was said that in many institutions, discipline content was minimal, and that subject method was largely concerned with the interpretation of curriculum documents and with course planning. It was also claimed that language teaching did not, in many institutions, include any systematic instruction in phonemic awareness as part of teaching children to read. There was an implication that constructivist philosophy of learning was deeply embedded in the education faculties, which inhibited the study of phonemic awareness, and appeared to affect attitudes to the teaching of mathematics as well. The committee acknowledges that much of this evidence is anecdotal, and off-the-record. There is reluctance by academics to engage in open discussions of their issues.

1.28 Another major issue concerns the superficiality in which subject content is dealt with in education faculties. In the case of mathematics and science this is well-documented. It is a problem recognised in some education faculties, as Professor Michael O'Neill from the University of Notre Dame told the committee in Western Australia:

> We do our level best, but we are faced with that perennial tension: we have an absolute obligation not only to give to our students sound content knowledge in the disciplines in which they will teach but also to give them the pedagogical skills that enable them to teach well. So we have to try to get that mix right. Where we cannot go is to deny them content, to give less content, in favour of more pedagogy. That is an absolute anathema, in my view. I think a deep knowledge of your discipline is utterly vital to be a good practitioner, and you can then perfect the 'how to teach' once you are mentored properly in the school system after graduation. But we have to get that balance right in the preservice degrees.[13]

12 House of Representatives Standing Committee on Education and Vocational Training, *Top of the Class: report on the inquiry into teacher education*, February 2007, p. 59.

13 Professor Michael O'Neill, *Committee Hansard*, Perth, 2 July 2007, p. 41.

1.29 The committee did not take this to infer that Notre Dame was failing to maintain this balance, only that it is a matter of concern, as it is at Edith Cowan University. As Professor Greg Robson explained:

> Our challenge is a flow-on from the general curriculum challenge that we face. We have to prepare our primary school teachers for the curriculum as intended, and getting the time available to get people really well versed in eight learning areas is a heck of a challenge. Instead of having curriculum that, as people have often said, is a mile wide and an inch deep, I think we would do better if we focused on depth. I think that would serve our interests and the interests of the youngsters far better.[14]

1.30 Finally, the committee refers to the findings of the DEST-appointed Committee for the Review of Teaching and Teacher Education, chaired by Professor Kwong Lee Dow, and which reported in 2003. This inquiry made a comprehensive study of the needs of teacher education, with particular reference to science and mathematics teachers. This committee notes with interest that two of its conclusions were that attention was required in regard to: first, changes in program content and course requirements [in teacher training] to ensure that all future primary school teachers have a trained capacity to teach the science, mathematics and technology components of the primary school curriculum and that there is a sufficient number of teachers with expert knowledge to provide school leadership roles in these areas of the curriculum; and second, that there should be more collaboration between education, science and mathematics faculties to enhance quality through maximising use of resources and to increase the numbers of students specialising to become science, technology and mathematics teachers.[15] The committee believes this may be an acknowledgement that relations between academics in education faculties and these in the relevant subject disciplines have become estranged in recent years, though it is hard to elicit comment 'on the record'.

1.31 The committee takes the conventional view that both subject content and method are important, but understands that classroom management and teaching method may preoccupy the minds of trainees and beginning teachers. The committee takes most seriously the comments that are made elsewhere in the report of subordination of content to method, to the extent where a great deal of essential knowledge is not covered at all in a four year long degree course. The committee believes that Professor Robson's view on specialisation has much to commend it.

1.32 Over 100 separate inquiries have been conducted into teacher training over the past several years. One of the most recent comprehensive inquiries was done by the Education and Training Committee of the Victorian Parliament, which reported in February 2005. It found that in Victoria there were significant gaps in the current content of education courses, including classroom management skills, student

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14 Professor Greg Robson, *Committee Hansard*, Perth, 2 July 2007, p. 41.

15 Committee for the Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future, Main Report*, DEST 2003, p. 145.

assessment and reporting methods, time management and organisational skills, and methods of dealing with students who have learning disabilities.[16] It is unlikely that deficiencies identified in Victoria would be confined to that state.

1.33 There were also a number of criticisms made of practicum arrangements for B.Ed and Dip.Ed. students obtaining experience in schools. It was stated by the Victorian parliamentary committee that the teaching practicum was a key area of contention because of the inadequate time given over to practise teaching. There were also complaints about lack of adequate supervision from university faculty staff. The House of Representatives report on teacher training gives considerable detail of similar findings. The main problem has been clearly identified as one of inadequate funding, which has seen a dramatic decline in the number of academics employed in education faculties at a time of greatly increased enrolments. The committee notes that the Government has responded in some measure to this deficiency with additional appropriations for teacher training in the 2007-08 budget.[17]

Investment in teacher quality

1.34 As noted in the previous section, concern about teacher quality has resulted in the establishment in all states and territories of accrediting agencies to ensure that training institutions and universities produce teachers who are competent to practise soon after their graduation. The committee notes that it will take some time to develop agreed models for professional teaching standards. It strongly commends the likely support to come from such bodies to the professional knowledge content of teaching courses, and **recommends** that agencies take the lead in co-ordinating an effective program for professional development and continuing education for the profession.

Becoming serious about professional development

1.35 The committee does not believe that professional development has ever been established, in any jurisdiction, on a properly professional level. The anecdotal evidence suggests that courses are mandated only when important new curriculum or assessment initiatives are being introduced, or when identified school or system-wide problems need to be addressed in areas such as legal responsibilities of teachers.

1.36 Following its inquiry into the status of the teaching profession, this committee reported in 1998 that much of the evidence it received referred to the *ad hoc* and piecemeal nature of professional development, and to its poor intellectual quality and

16 Parliament of Victoria: Education and Training Committee, *Step Up, Step In, Step Out: Report on the Inquiry into the Suitability of Pre-Service Teacher Training in Victoria*, February 2005, p. xx1.

17 An additional $77 million was appropriated for the 2007-11 triennium to be spent on teacher practicums. *Portfolio Budget Statements 2007-08, DEST*, Paper No. 1.5, p. 43.

lack of conceptual framework. It was often crammed into busy times of the year, had no official accreditation and no official recognition.[18]

1.37 While the committee received little evidence on the current state of professional development for this inquiry, it received a strong impression that nothing much has changed over the past nine years.

1.38 One particular issue closely related to professional development is that of incentive. Quite simply, the committee has been told of poor incentives for teachers to raise their level of knowledge, and broaden their skills via professional development. There is neither a strong market for highly accomplished practitioners, nor is there a profession-wide system by which teachers can gain a respected and portable certification of their accomplishments. The issue of teacher pay, which is addressed in Chapter 6, does not assist in this regard and could be construed by some people as a disincentive.[19]

> Teachers need constant motivation to stay abreast of the changing and growing scope of science knowledge and professional opportunities, yet the reward for this is sometimes obscure and the means of achieving this unclear (who pays, who replaces staff on study leave, secondment or placements).[20]

1.39 Some witnesses told the committee that the Commonwealth could assist teachers in obtaining further formal post-graduate qualifications and removal of the Fringe Benefits Tax (FBT) requirements for teacher training scholarships. Extending the FBT concessions that apply to health employees to education employees would make teacher employment packages significantly more attractive and comparative to those of other professions.[21]

1.40 However, the committee notes that possession of a post-graduate degree may not necessarily improve a teacher's performance. Recent research has not identified any improvement in learning outcomes of students as a result of teachers having post-graduate degrees,[22] although there is clearly a need to have additionally-qualified teachers in special-needs education. Whether obtaining higher degrees for the purposes of promotion or professional satisfaction should attract a tax-payer subsidy is another matter. As the Australian Education Union submission pointed out, there has been criticism that some of the post-graduate courses are not directly—or even indirectly in some cases—applicable to the classroom. The committee accepts the

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18 Senate EET References Committee. *A Class Act: Inquiry into the Status of the Teaching Profession*, March 2008, p. 217 *passim*.

19 Australian Council for Educational Research, *Submission 38*, p. 6.

20 Professor Margaret Britz et al, *Submission 61*, p. 2.

21 Queensland Department of Education, Training and the Arts, *Submission 54*, p. 21.

22 Andrew Leigh, *Estimating Teacher Effectiveness From Two-Year Changes in Students' Test Scores*, 2007, p. 19 at http://econrsss.anu.edu.au/-aleigh/

Union's view that some of the best professional learning for teachers is actually collective and school-based, and that what teachers particularly like in their professional learning is to deal with the problems they are encountering in the classroom every day.[23] It would be a bonus, according to the Union if teachers could get a university credit for school-based professional learning in collective ways.

Remuneration and reward

1.41 A number of submissions, and not only those from teacher unions, noted that while pay scales for beginning teachers were as good, or even better, than in comparable occupations, the progression to the top increment was rapid: teachers reached their salary peak in their mid-thirties. The salary structure did not place much value on teacher quality, but rather encouraged promotion out of the classroom in graduated stages to administrative positions. The committee believes that the current incremental scale may be one reason for the poor retention rate.

1.42 The committee was interested in the views of teachers and employing authorities on the matter of performance pay for teachers. However, performance pay is not the only way of recognising and rewarding the dedication of teachers. The committee was told of practices used in independent schools in Western Australia to recognise outstanding service. This can be done by organising exchange postings at other schools, including interstate and overseas schools, professional development through paid leave to work in industry, or assistance with HECS/HELP fees for a higher degree. The committee believes these reward mechanisms should become more general, and should be afforded by schools and school systems.

> That of course costs schools. It costs money to send a teacher to wherever you are going to send them and also to replace that teacher in your school, if you do not have an exchange. But that one works very well. We have other schools that have actually said to teachers: 'If you can find a placement in industry, we will pay you while you do four to six weeks in industry, working in SFIA and IT. You can go and work for a computing company for four to six weeks to get some industry experience and we will cover you.' Again, that is a really valuable way of doing it. It is really the schools and the teachers in the schools who know best who the good teachers are and who perhaps should get rewarded—rather than an outside person saying, 'If you can tick all these boxes, we will give it to you'.[24]

1.43 Ticking the boxes is a reference to reward schemes which exist in a number of jurisdictions whereby teachers apply for a special classification carrying a salary bonus which recognises their higher level of teaching skill. It is inevitably a highly bureaucratic process, with successful attainment often dependent on the weight of

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23 Mr Roy Martin, Australian Education Union, *Committee Hansard,* Melbourne, 25 June 2007, p. 6.

24 Mrs Valerie Gould, Association of Independent Schools of Western Australia, *Committee Hansard,* Perth, 2 July 2007, p. 8.

supporting documentation. Nor does the outcome always carry much benefit for the school. Finding an appropriate role for teachers with a higher teaching classification is often difficult.

1.44 The committee formed a view that a system of performance based remuneration for teachers is both desirable and inevitable. The committee also formed the view that the system of performance based remuneration that is introduced needs to ensure that individual classroom teachers have the necessary incentives to improve all areas of their teaching practise, including student academic achievement, and also a system which gives school principals the greatest ability to attract and retain the best teachers.

The curriculum debate

1.45 At the time the committee commenced this inquiry, it was under the impression that quality standards in school education hinged on curriculum settings. The current debate on standards drew much of its heat from interpretations of curriculum documents, and the statements of educators and others on course content. As well as concern expressed about content and rigour, there was much talk of the need to ensure some nationally uniform pattern of core subjects, assessed in a way which would give assurance of uniform standards of learning achievement across the country.

1.46 Following consideration of submissions and other evidence, the prevailing opinion is that it is teachers, and not curriculum structures or frameworks, which truly make a difference. What drives improvement in schooling are good teachers. Good schools are the schools with lots of good teachers.[25] It was clear that the value of even the best curriculum that could be devised and agreed to can only be realised through quality teaching. But it was also clear that aspects of the current curriculum make the task of effective teaching more difficult. Decisions about an effective curriculum for the 21st century are yet to be made, and there is as yet no consensus about how we should negotiate a curriculum which addresses the task of national development for the decades to come. So while the committee has agreed that teaching quality is its main topic in this report, it believes that quality curriculum development is also essential in setting and maintaining standards. The two requirements are linked throughout the report.

1.47 The literature defining the limits and scope of the term 'curriculum' is voluminous. Some educationists have variously taken the term 'curriculum' to refer only to setting the objectives of learning and measuring the outcomes. There is evidence of this thinking in the curriculum frameworks that were argued over in the 1990s. For others, the curriculum embraces the process of learning inside the classroom, as well as extraneous experience which influences classroom learning. As

25 Professor Bill Louden, *Submission 73*, p. 3.

in so many perspectives on schooling, the temptation to adhere to only one side of a binary divide is ever present, and the committee is mindful of this.

1.48 Between these two approaches is the mainstream view of curriculum as a document or set of documents which set out learning objectives, indicating, to a greater or lesser extent, the content and subject matter of learning, with some indications of appropriate treatment of the material in the classroom, and suggested teaching methods. Accordingly, for the purposes of this report, the committee has taken curriculum to refer broadly to what is being taught, and learned, and how this knowledge or experience is conveyed to the student. The committee believes that is what most people would understand a curriculum to be, and how it would work.

Recovering from the 1990s

1.49 The proponents of major curriculum development changes in the early 1990s did not quite manage to achieve their goal of establishing a national curriculum. Those efforts did, however, leave a legacy of eight key learning areas (KLAs): English, mathematics, science, languages other than English (LOTE), studies of society and its environment (SOSE), technology, and health and physical education. Each of the key learning areas had a 'statement' which defined the learning area and provided the framework for what would be taught. In addition, each KLA had a 'profile' which set out what skills and knowledge students were expected to learn. These had been developed co-operatively by the state education agencies and attendant educationists. By July 1993 the spirit of co-operation between the states had eroded, and they went their separate ways, although carrying a great deal of shared experience with them. The terminology and philosophical approach to curriculum developed in those years hangs on in some states.

1.50 In retrospect, political influences had less to do with rejection of a national curriculum than differences in educational philosophy. New South Wales appears to have had deep-seated suspicions of the constructivist foundations of KLA statements and profiles, and preferred a standards-based curriculum supported by detailed syllabuses. Victoria appears to have shared these views in large measure. Both states have a traditional outlook on matters of curriculum and assessment, which is largely impervious to political influence, and, essentially, the view they held in the early 1990's they hold today. Mathematics teachers were also unhappy with the foundational underpinnings of their KLA documents. A contemporary researcher, Professor Ken Eltis, who chaired a committee appointed by the NSW Minister for Education to look at outcomes and profiles, found that there were serious doubts among maths teachers about the validity of what was being proposed at the national level. One head of a mathematics department submitted to the Eltis committee that 'while knowledge, argument, proof and understanding should be fundamental to the

teaching of mathematics, in conformity to the national profiles, every attempt was made to remove the words 'prove' and 'know' entirely from the advanced syllabus.'[26]

1.51 Overall, there was barely-suppressed fury and frustration felt by teachers all over the country at decisions being made without their input or consent, but which they would be responsible for implementing.

1.52 The committee notes that the experience of the 1990s has illustrated the importance of process in the quest for greater national consistency in curricula. Greater national consistency should be achieved by establishing core standards that all education systems must meet.

1.53 Comprehensive negotiation of the curriculum means enlisting the direct participation of teachers and principals' councils, in a painstaking and lengthy process of discussion about rationales, objectives, resources, and other practicalities. All this must be accompanied by public debate. In essence, the leaders of any future debate on a national curriculum will need to take charge of an inclusive *modus operandi* if success is to be achieved.

The crowded curriculum

1.54 One of the legacies of the 1990's has been the conscientious attempt to cover the key learning aims in primary education.

1.55 The committee heard much about the problems teachers and students have in fitting the curriculum into the limited class time available. As is described in a later chapter, there is often only a perfunctory attempt to do justice to the eight KLAs in the primary schools, and specialisation in secondary school means that few students will cover this field. Outside the core 'learnings' in primary school, English, mathematics and SOSE, are optional 'learnings' and skills which, although desirable, may not be taught at a satisfactory level of depth. Some senators thought that SOSE, an amalgam of history, geography and economics, to name a few, fails to provide a proper basis for later studies in these disciplines. The core curriculum is relatively easy to agree on, except when it comes to the 'trimmings' to the core, and that point of argument is usually reached quickly.

1.56 The committee canvassed the views of teachers and teacher educators about decisions about what to teach and in what depth. Professor Robson of Edith Cowan University in Perth told the committee that:

> The first problem is the level of mandate that has now been in place for some little while that has basically said that each of these learning areas is of equal importance. That bumps up against the reality in primary schools, in particular, where the bulk of the time that is actually spent, and should be spent, is in literacy and numeracy. So you have teachers beavering away,

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26 Professor Ken Eltis, *Focussing on Learning: Report of the Review of Outcomes and Profiles in New South Wales Schooling*, DET, August 1995, p. 41.

> trying to do their best, and the pressures that are coming down on them are around those other things that they somehow have to fit in. I think the first thing we have to do is pull back from that mandate, which says that these eight areas are all equally important. They are not, in the context of primary schooling, in my view. Some things are more important than others, and that is what we should recognise and make clear. That also applies to, if you like, the content within learning areas. In getting these developments in place, you have had these 'curriculum experts' who invest in each of their learning areas—again, more stuff, more things to be covered than most teachers could think of in a career. Again, take the English learning area. My view is that reading and writing is actually more important than the viewing strand. If youngsters do not get those through their formal schooling, they will not progress.[27]

1.57 The committee would agree with Professor Robson that schools pressed for time need to concentrate on the essentials necessary for students' further intellectual growth. After consideration of the needs profile of local students and the resources available, this is a decision for a school community.

Outcomes-based education

1.58 The committee became familiar with controversy over the teaching theory described as 'outcomes-based teaching and learning'. Some comments on outcomes-based education are necessary in the light of the submissions which the committee received.

1.59 Outcomes-based education was given its opportunity in the early 1990s when it became the basis for national curriculum statements and profiles developed at that time. As will be discussed, outcomes-based education has been blamed for falling standards across all subject areas. Most academics when asked about outcomes-based learning appeared reluctant to commit their views to Hansard, except to point out that both the learning theory in question and the debate over its effectiveness should now be regarded as *passé.* This is especially the case in New South Wales and Victoria where the adoption of outcomes-based learning was never taken seriously, beyond the adoption of some useful classroom teaching methods. The syllabuses in New South Wales were never driven by outcomes-based theory, although there was some genuflection to it in key competency statements. It is noteworthy that the approach in New South Wales was to use the syllabus as a starting point for the development of outcome statements, rather than the other way round as in the national statements and profiles.[28]

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27 Professor Gregory Robson, Edith Cowan University, *Committee Hansard*, Perth, 2 July 2007, p. 45.

28 Professor Ken Eltis, *Focussing on Learning: Report of the Review of Outcomes and Profiles in New South Wales Schooling*, DET, August 1995, p. 79.

1.60 Nonetheless, the committee is aware that support for constructivist theory is strongly entrenched in some university faculties of education. There is evidence of constructivist thinking in some submissions, and as recently as 2004, DEST commissioned the Catholic Education Office in South Australia to undertake an investigation into effective constructivist teaching methods in the teaching of numeracy. The committee notes also that some criticisms of outcomes-based learning have little to do with the theory itself. The committee received evidence on recent controversies surrounding outcomes-based education in Western Australia and of the imminent reintroduction of syllabuses that provide curriculum support for teachers.

1.61 The committee is reluctant to take sides in a technical debate. It accepts, however, the evidence that outcomes-based education has been difficult for teachers to come to grips with, and has been especially stressful for teachers who have to cope without a solid content-based syllabus. It notes that many teachers lack sufficient content knowledge to make their own way through unhelpful outcomes-based curriculum documents which may list a bewildering number of learning outcomes but not much else. While noting that some teaching methods based on constructivist theory, like discovery-based inquiry methods of learning, have solid and lasting value, the committee is generally convinced that a return to standards-based curricula, supported by user-friendly syllabuses, is essential. As ACER advised in its submission:

> Standards-based school curricula should make clear what teachers are expected to teach and what students are expected to learn and do as a result of schooling, as well as specifying minimally acceptable standards for skills in areas such as literacy, numeracy and science. This focus on the desired outcomes of schooling is in welcome contrast to an earlier preoccupation with inputs and processes.[29]

1.62 The committee concurs that this is likely to be more conducive to improved achievement standards.

A national curriculum: how far do we go?

1.63 In 2007, a consensus appears to have developed that the national curriculum, still-born in the 1990s, has in principle approval for further development, with the added encouragement that progress toward uniformity and harmonisation should proceed where there is agreement. The committee found a general readiness by stakeholders to agree to an 'edging-forward'. Some of the old wounds have healed, and as MCEETYA has recognised, there is work to be done. For some stakeholders in education, there is already enough common ground in what is taught in schools to suggest that we may already have a national curriculum. For MCEETYA and the Commonwealth, there are areas of advancement which contain the seeds of dispute.

29 Australian Council for Educational Research, *Submission 38*, p. 3.

1.64 As noted earlier in this chapter, any serious attempt to develop and implement a national curriculum will be a task requiring a great deal of political finesse, particularly at the Commonwealth level. The committee agrees that there are several matters in relation to a national curriculum which have to be agreed to before significant progress can be made.

Creating a process for negotiation

1.65 The first is an agreed national curriculum rationale. There must be agreement on why it is needed. The reason will have to go further than matters of technical consistency and practical convenience, such as that it is easier for children who belong to mobile families to transition to different education systems.[30] The committee believes that raising academic standards nationwide is a sufficient rationale and agrees with Professor Reid, who has done much thinking on this issue, that this rationale will need to include consideration of the kind of knowledge and the set of skills that will be needed to deal with national challenges.[31] Associated with this is agreement on national principles and values we need to preserve. A national curriculum must serve the nation and promote its identity and prosperity. Its nationalist rationale becomes even more necessary in an era of globalisation, when the country is in most need of an educational benchmark to protect its standards, and to underpin its democratic credentials.

1.66 Second, if a rationale is agreed to, there must be robust commitment to define the scope of what a curriculum might mean and what it will cover. To proceed to a negotiation stage will require agreement in principle to place on the table for debate such currently contentious issues as commonality of achievement assessment scales, defined by a common set of descriptors. It may be necessary for states and territories to agree on a standard proportion of external assessment.

1.67 Third, agreement on the rationale for a national curriculum and its scope will also contain the seeds of agreement on how the process is to proceed. In all likelihood a conservative consensus will emerge when issues are debated. If unacceptably radical or impractical views are to be marginalised or discarded—as they will be—this can only be done through a transparent public process. MCEETYA will need to ensure that a climate of trust is maintained in order that technical and theoretical pedagogical contributions are given their due weight, and that the agenda is not threatened by populist dissention. Agreement can only be confidently accepted following an ample period of informed debate, in which professional advice is given due regard.

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30 A reason often cited for the adoption of a national schools curriculum is remove disadvantage from families which move regularly between states on job postings. Only about 3 per cent of students are affected by this, and the extent of their disadvantage is not known. Advice to the committee suggests that interstate movements are no more problematic than transfers within states, and that there is no significant disadvantage.

31 Professor Alan Reid, Australian Curriculum Studies Association, *Committee Hansard*, Melbourne, 25 July 2007, pp 3-5.

Current policies

1.68 The Commonwealth has announced measures in the current budget that will require states and territories to comply with certain matters relating to standardisation of curriculum-related decrees. Non-compliance will presumably result in states and territories foregoing certain Commonwealth direct grants.

1.69 The committee agrees with the policy thrust of measures on which the Commonwealth is insisting. These include decisions about compulsory Australian history, a Year 10 core curriculum, requirements for schools to hang values posters, benchmarking for numeracy and literacy, and the imposition of A-E reporting. The committee found that most of these measures receive general support among educators, but recognises that these should be part of a more systematic and strategic approach.

1.70 The committee's earlier comments about the need for respectful debate are apposite in this context. Governments, too, are participants in the perpetual debate on schooling and they should be careful that their long-term reformist goals are not compromised by bluster and confusion about where and how the effects of reform will be felt.

Measuring the quality of learning and certifying the outcomes

1.71 Broad agreement on common curriculum frameworks and content has been relatively easy to achieve. Negotiation and drafting processes involve a range of skilled and experienced educators across sectors and jurisdictions, most of them well-known to one another. The results of continued work will certainly be shown in the production of more common-use teaching materials, and less time spent by officials in different agencies all engaged in doing the same work. A matter which is far more contentious, even though directly related to the curriculum, is the measurement and recording of student achievement in meeting curriculum objectives.

1.72 There has so far been no agreement on standardised terminology for describing or classifying achievement levels at the end of Year 12, enabling valid comparison of students across states and territories. In this regard, DEST has commissioned ACER to do some work developing a common assessment framework. The committee covers these issues in two of the chapters that follow.

1.73 The committee believes that negotiations and arrangements for comparable assessment instruments across states and territories will be difficult. Final year assessment decisions are difficult enough to negotiate within states—to note the recent experiences in Western Australia as an instance of this—and to have Queensland and the ACT include an external examination component will require them to act in ways which will be very unpopular within those jurisdictions. But as the committee reports, a common assessment framework will go far toward ensuring compliance with any standards-based national curriculum which finally emerges. On balance, the committee believes that an external examination component to a final Year 12 assessment is the only way to guarantee comparability of standards and ensure the

integrity of a national Year 12 certificate, as well as ensuring rigorous academic standards.

1.74 The committee has heard views about the standardisation of Year 12 certificates. Despite the availability of published research commissioned by DEST, the issue appears to be remote from the consciousness of most school-based educators. There are some large hurdles to jump before such a certificate could have any credibility, and these have to do with the assessment arrangements previously discussed.

The long tail of underachievement

1.75 A third issue or theme which arises from this inquiry is evident in the research data reporting the relative performance of Australian schools against international benchmarks. That is, the presence of a long tail of under-achievement shows the difference in performance quality across the country.

1.76 A number of references are made to the problem in submissions and testimony. First, there are some difficult political issues to note. The most significant issue is the declining status of local high schools in lower middle class localities which have seen the establishment of more systemic and independent schools. A baby-boomer generation of people who were sufficiently well-educated at local high schools to attend university have chosen to send their own children to independent schools, thus reducing the aspirational middle-class cohort in local high schools. Professor Louden made some pertinent remarks in his submission about the effects of what he terms 'residualisation', where local public high schools are left with a residue of students after many local parents have opted to send their students to independent schools:

> In working class neighbourhoods, where we used to have strong government schools that gave working class kids a terrific opportunity to get into tertiary education, many of those schools now struggle with an academic program because the kids who live in the neighbourhood do not go to the government school, they go to the local low fee Anglican school. Fees are only a couple of thousand dollars, but they have all the advantages of private schools, that is, the selection for caring about education.
>
> I am sure that is an unintended consequence of federal policy but it is a serious one. More and more I worry about whether government schools such as Mt Druitt or Koondoola can manage to provide a decent program, because the able kids, the ambitious kids from working class neighbourhoods, have just gone next door, often on the same block of land, but when they get there they are wearing uniforms and doing home work. That makes it harder and harder to maintain high standards in the other school. So residualisation is a real problem and has the seeds of very serious social unrest over time. In Australia, traditionally, we have not had the dreadful sink schools that there are in the Midlands of Britain or in inner cities in the United States. We have not had schools where nobody is

> successful. The impact of residualisation is a matter of time. I am very gloomy about that.[32]

1.77 The committee recognises the danger of standards in a school declining as a consequence of it losing a critical mass of students with high aspirations. There were no suggestions made as to how this social movement can be reversed. In the committee's view it is too simplistic to attribute this problem to the significant increase in the number of non-government schools. It may well be the case that parents make their choices on the basis of finding a suitable peer group for their children; one which can support their own and their children's educational aspirations.

1.78 There are countervailing initiatives and influences at work. Efforts are being made in some states to improve the academic performance of government schools. The continued success of the selective schools in New South Wales is significant enough to have an effect on real estate values. The gloom that the committee may share with Professor Louden would be the knowledge that good teachers are not in plentiful supply, even if there is funding to attract them to under-performing schools. The real equity challenge over the long-term will be to attract high-achievers into the teaching profession and to keep them there.

Education is local - A final note

1.79 It is remarkable that most submissions to this inquiry, and most representations from teachers' professional and industrial organisations, system agencies and individual schools as well as a high proportion of academics, had little to say about the need for nationally consistent curriculum and assessment arrangements. No one opposed these ideas: it was simply that they were not very high on the priority list of education needs. For all the continued interest on the part of successive Commonwealth ministers, and initiatives and directives signalled through DEST programs, those at the sharp end of education continue to look at problems and solutions from a state and local perspective. The committee believes that with six state governments the national perspective must not be forgotten.

1.80 In one of its past inquiries into indigenous education funding the committee found that government school principals in the Northern Territory and Queensland, accustomed to dealing with their own district and head office managers, objected to the application of lengthy and complicated processes, and unfamiliar protocols.[33] For all its use of funding power to drive initiatives, states and territories remain preoccupied with their own policies and agendas, and afford them a high priority. As state and territory governments run the schools and employ the teachers, this is scarcely surprising.

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32 Professor Bill Louden, *Submission 73*, p. 2.

33 Senate EWRE Committee, *Indigenous Education Funding Arrangements*, June 2005.

1.81 There are lessons here for the Commonwealth about the level at which it works best, but there are also encouraging signs that in several respects the involvement of the Commonwealth is having a desirable effect. There has always been a view that it is a Commonwealth responsibility to keep other jurisdictions up to the mark. As further chapters of this report indicate, some of the most crucial decisions involving quality outcomes will require much more negotiation than direction.

Chapter 2

Standards, Assessment and Reporting

> While we can be pleased to be significantly ahead of the OECD average and many OECD countries on all measures, we ought also to accept the challenge to match those ahead of us. We should not need the fiction of a quality crisis to inspire us to do even better.[1]

2.1 A lay person is often struck by the fact that students may pass through six or even more years at school and remain functionally illiterate. More commonly, students may complete the final two years of secondary school and emerge with a restricted vocabulary, and without a firm grasp of how to construct a complex sentence. There is ample anecdotal evidence that such people have managed to make it through to higher education.

2.2 In this chapter the committee looks at current assessment programs, international tests which spotlight Australia's position, and their implications, benchmark tests, the need for national consistency in standards for levels of achievement, and ways of reporting these levels so as to have agreed understandings of what they mean.

Are standards declining?

2.3 Submissions state that there is a general decline in academic standards. The proportion of Australian students achieving only minimal literacy and numeracy skills are cited as evidence of the decline. The proportion of Australian students achieving below those levels required for effective functioning in adult society are also cited as evidence. The relatively poor performance in Trends in International Mathematics and Science Study (TIMSS) results was said to be most worrisome.[2]

2.4 University academics are in a strong position to see fluctuations in standards over a period of time. One told the committee:

> The fact that academic standards are falling at schools and the university sector generally is undeniable. This is best seen at the second level universities and the less academic schools. Top universities, like ANU, Sydney, Melbourne, etc, will see this to a lesser extent because the shrinking market of well-trained school students will hit them last.[3]

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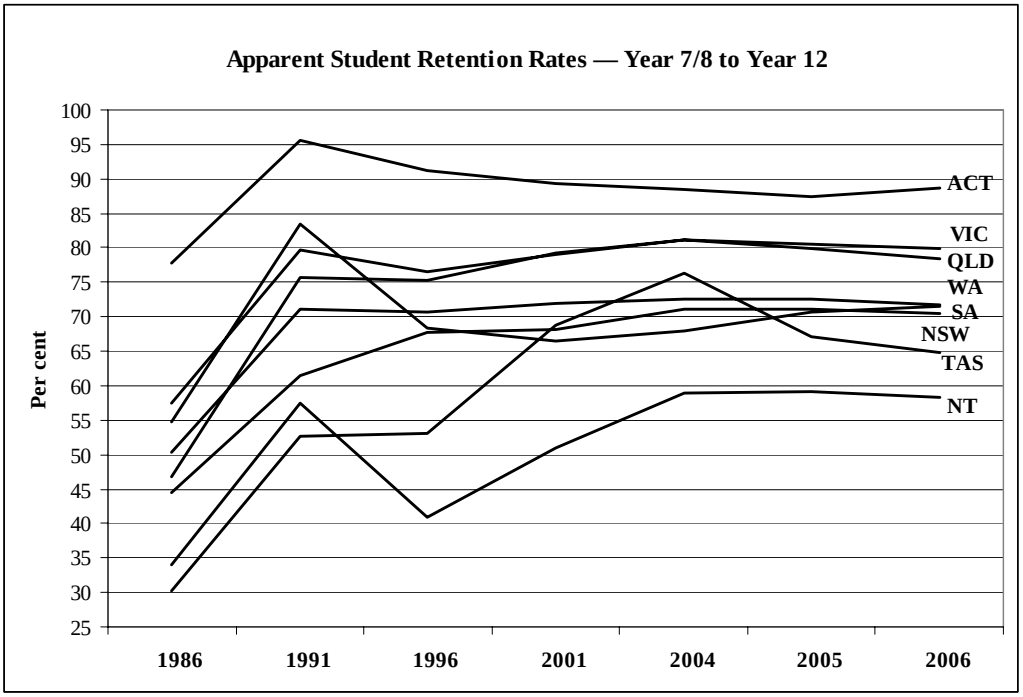
1 Barry McGaw, 'Resourced for a world of difference', *The Australian*, 1 August 2007, p. 25.

2 Australian Council for Educational Research, *Submission 38*, p. 2; Dr Kevin Donnelly, *Submission 9*, pp 3-4.

3 Professor Igor Bray, *Submission 6*, p. 1.

2.5 Another measure of the general decline in standards is in school completion rates. Australia has one of the world's lowest secondary school completion rates. This is behind East Asia, North America, Scandinavia, and much of continental Europe. Among 20-24 year olds, 17 per cent of Australians have neither completed secondary school nor are in education. For Norway, the corresponding figure is currently only 4 per cent.[4]

2.6 Some states and jurisdictions perform better than others in school completion rates and tertiary enrolments. For example, in Victoria, 85 per cent of 20-24 year olds had completed Year 12 or its equivalent in 2005, compared with 82.9 per cent in 1999. That was higher than the national average of 82.7 per cent. In 2006 the percentage of Year 12 school completers who enrolled in university increased from 46.1 per cent in 2003 to 47.4 per cent in 2007.[5] A graph showing relative performance over recent years is set out below:



Source: Australian Bureau of Statistics, *Schools, Australia 2006.*

2.7 Other submissions argue strongly that claims of declining standards are irresponsible, and have branded it as political scaremongering serving only to undermine confidence in teachers and education systems across the country.

> Scapegoating teachers undermines morale, excludes the very experience, deep understanding and insight that in situ experience brings, and presumes the solution without considering the problems.[6]

4 Australian Council for Educational Research, *Submission 38*, p. 2.

5 Dr Dahle Suggett, Department of Education, Victoria, *Committee Hansard*, Melbourne, 26 June 2007, p. 19.

6 Australian Education Union, *Submission 14*, p. 4.

2.8 As evidence of the lack of a general crisis, those of this opinion point to students' results in both national and international testing. The Australian Literacy Educators' Association denied that there is a problem with the teaching of literacy and instead argued that students just don't bother to learn literacy, or perhaps just don't bother to apply their literacy knowledge and skills.[7]

2.9 It makes more sense to isolate problem areas and deal with them appropriately. There are a number of quite distinct improvements that can be made to literacy and mathematics teaching. Some have to do with teaching method and with improvements to teacher training. Some have to do with curriculum and assessment.

National Assessment Programs

2.10 National assessment programs are intended to promote educational reform and enhance student outcomes. At present, there are three national assessment programs: science (samples of Year 6 students), civics and citizenship (samples of Year 6 & Year 10 students), and information and communications technology (ICT) literacy (samples of Year 6 & Year 10 students). These programs are conducted in a three-year cycle.

2.11 In 2003 the first sample assessment was conducted. The National Science Assessment determined that 58.2 per cent of students achieved at or bettered the 'proficient' standard, while 7.7 per cent of students achieved at higher proficiency levels.

2.12 In 2004 the second sample assessment was undertaken in Civics and Citizenship. Results from this assessment indicated that 50 per cent of Year 6 students achieved at or bettered the 'proficient' standard with 8 per cent performing at a higher proficiency. Among Year 10 students, only 39 per cent of students achieved at or bettered the 'proficient' standard and 5 per cent performed at a higher proficiency.

2.13 In 2005 the focus was upon ICT literacy. The results of this assessment are not yet available.

2.14 The national assessment programs do not comprehensively describe Australian students' levels of achievement in the three targeted areas. These programs apply only to a limited number of students, and the significance of their results depends upon a variety of contextual factors.

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7 Dr Jan Turbill, Australian Literacy Educators' Association, *Committee Hansard*, Canberra, 11 July 2007, p. 13; Queensland Secondary Principals' Association, *Submission 56*, p. 1; Australian Education Union, *Submission 14*, p. 2.

English and Mathematics

2.15 Perhaps the best known and earliest programs of assessment were English and mathematics. These programs are more commonly known by reference to their assessment standards: the 'literacy and numeracy benchmarks'. The national benchmarks state the minimum acceptable standards of literacy and numeracy for Years 3, 5 and 7, and were approved by the Ministers of Education in 2000. Students in these years, and in some states and territories Year 9 students, participate annually in the English and mathematics national assessments. From 2008 the state-wide tests will be replaced by a national assessment program and include the Year 9 cohort.

2.16 The committee notes that the *2005 National Report on Schooling, National Benchmark Results, Reading Writing and Numeracy, Years 3, 5, and 7* is yet to be fully released. While the 2005 results, released in a preliminary paper, are detailed below, the 2004 results were utilised throughout the inquiry. The committee further notes that the results in 2004 and 2005 were consistent. Generally, student performance appears to be consistently high with a majority of students achieving at the benchmark level or higher in all states and territories. The trends in most areas tested show considerable stability over the life of the tests.

2.17 The benchmarking process is intended to support the National Goal that every child leaving primary school should be numerate and able to read, write and spell at an appropriate level. The development and implementation of the National Literacy and Numeracy Plan underpins this policy goal.

2.18 The literacy and numeracy benchmark tests seek to test the minimum standards of performance below which students will have difficulty progressing satisfactorily at school, and require increasing levels of proficiency from Year 3 though to Years 5 and 7.

2.19 The benchmark reporting builds an incremental picture of student achievement over time. Fundamentally, its purpose is to assist teachers' professional development and to enable interventionist support for students at risk.

	Year 3	Year 5	Year 7
Reading	92.7%	87.5%	89.8%
Writing	92.8%	93.3%	92.2%
Numeracy	94.1%	90.8%	81.8%

Source: MCEETYA, 2005 National Report on Schooling, National Benchmark Results, Preliminary Paper, Reading Writing and Numeracy, Years 3, 5, and 7

2.20 There were a few common trends throughout the 2005 results which bear mentioning. First, girls performed better than boys in reading and writing, whereas boys performed better than girls in numeracy. Secondly, the proportion of Indigenous

students achieving either at or above the benchmark level was substantially less than the proportion for non-Indigenous students. Thirdly, trend data suggests that Indigenous student performance is improving in literacy but not numeracy. While most students are reading, writing and spelling at an acceptable minimum level, there is room for improvement in some areas.[8]

2.21 The literacy and numeracy benchmark tests are of limited use as they do not apply to later stages of schooling. In fact, the results suggest that some students might complete compulsory schooling (Year 10) equipped with minimal literacy and numeracy skills. At present, there is no indication of what standards are actually achieved from Year 8 onward. It is conceivable that student achievement declines, particularly in the post-compulsory schooling years (Years 11–12) when curricula might be geared to matriculation requirements.

2.22 This lack of information will be partially remedied in 2007 with the anticipated endorsement and introduction of Year 9 benchmark standards and full cohort testing. The committee acknowledges MCEETYA's initiative in this regard, as well as its support for testing students' full range of abilities, rather than just the minimum benchmark standards.

National assessment program for literacy and numeracy

2.23 Notwithstanding the states' and territories' mixed commitment, they have raised concerns about financial, organisational and logistical costs which will be incurred with nationwide testing. For instance, Queensland has estimated that its costs in administering the assessment program will more than double. In Western Australia, Catholic and independent schools will receive no funding from the state to cover their costs of the testing.

International assessment programs

2.24 There are two internationally recognised assessment programs providing comparative achievement data across many countries. These were frequently referred to during the course of the inquiry. They test achievement in mathematics, reading, and science literacy: the Program for International Student Assessment (PISA), conducted every three years by the Organisation for Economic Co-operation and Development (OECD), which tests a sample of 15-year-old students, and the Trends in International Mathematics and Science Study (TIMSS), conducted every four years by the International Association for the Evaluation of Educational Achievement which tests a sample of students in Years 4 and 8.

PISA

2.25 PISA is a survey of the knowledge and skills of 15-year old students. In 2003, approximately 276 000 students in 41 countries participated in PISA which tested

8 Australian Association for the Teaching of English, *Submission 3*, p. 3.

mathematical, scientific and reading literacy, as well as an additional area, problem solving. PISA assesses students' ability to apply their knowledge and skills to real life problems and situations, rather than how well they have learned a specific curriculum.

2.26 Australia's PISA 2003 results were described as good to excellent in each of the tested areas. In mathematical literacy, four countries outperformed Australia, an increase of two countries following the PISA 2000 assessment. Three countries returned significantly higher results in scientific literacy compared with two countries in PISA 2000. In reading literacy, only one country achieved significantly higher results than Australia, a result identical to the results from PISA 2000. Problem solving was tested for the first time in 2003 and the results indicate that four countries outperformed Australia.

2.27 Generally, Australian students' results were consistently and significantly above the OECD average. The Australian Mathematical Sciences Institute submission noted that PISA results are frequently quoted as indicating that Australian students are performing well in mathematics compared with other nations. While this was commendable, it is not a valid assessment of the mathematics knowledge as only a fragment of mathematics' curriculum is tested. Some of the questions are effectively general aptitude tests rather than mathematical ones.

2.28 The results from PISA are often hailed as evidence of Australian students' high academic achievement in the areas of literacy and numeracy.[9] While this appears to be true for students, the committee was constantly reminded in evidence about that proportion of students who did not perform so well in the PISA assessment.

TIMSS

2.29 TIMSS is different from PISA in that it is closely linked to the mathematics and science curricula of participating countries. According to the Australian Mathematical Sciences Institute, TIMSS is the best guide as to how Australia is comparing internationally in mathematics because it concentrates on content. It is designed to measure trends in students' knowledge and abilities.

2.30 In 2003, 46 countries participated in TIMSS with Australian students in fourth and eighth grade undertaking the assessments. By Year 8 the curriculum and expectations of students are similar internationally, and differences in school starting ages have had time to even out. In addition, the Year 8 TIMSS tends to have more countries involved. Many educationists regard this test as providing much more useful information than PISA. Some countries, eg highly performing ones such as Singapore, participate in TIMSS but not in PISA.[10] The committee notes that this is probably the

9 For instance, Australian Association for the Teaching of English, *Submission 3*, p. 2; Association of Principals of Catholic Secondary Schools in Australia, *Submission 16*, p. 2.

10 Ms Yvonne Meyer, *Submission 17*, p. 2; Australian Mathematical Sciences Institute, *Submission 42*, p. 2.

reason why PISA results are generally more favourably perceived than TIMMS, which gives rise to as much concern as it does gratification.

2.31 Australian TIMSS results show that there is much to be concerned about. Two points stand out: the first is the long tail of under-achievement indicating a high percentage of students who, early in their secondary education, are unlikely to have acquired the necessary background skills for intermediate and advanced level mathematics courses at Years 11 and 12; the second is the low percentage in the highest level compared with the leading countries, bearing out the view of senior teachers and academics that expectations of Australian students are mostly 'average' and that they are insufficiently motivated and challenged.[11]

2.32 Australia's 2003 TIMSS results showed that fourth-grade students performed above the international average in both science and mathematics. However, the average score in mathematics was not significantly higher than the international average. In both tested areas there was negligible improvement over an eight year period. While Australia's results were similar to some industrialised countries, Australian students did not perform as well as students from the United States and Britain.

2.33 Eighth-grade students performed well above the international average in both science and mathematics. In science there was a reasonable improvement on the 1995 TIMSS results, whereas there was a slight decline in the average mathematics score. While the Australian results were generally comparable to some industrialised countries, they were arguably lower than the Asia-Pacific regional average.

General responses to the international test results

2.34 The committee was told the Australian model for the teaching of literacy is viewed favourably abroad, so much so that some countries which are improving in PISA are moving toward similar models.[12] The committee notes the majority of submissions and evidence affirmed and applauded the strong performance of most students in PISA and TIMSS. The majority of submissions and evidence, however, made a strong point in identifying the large tail of students, who are not meeting the minimum benchmarks.

> 30 per cent of Australian 15-year olds [are] not achieving a level of reading proficiency regarded by the OECD as being needed to meet the demands of lifelong learning in a rapidly changing knowledge-intensive society. Of even greater significance is that 11.8 per cent of 15-year-olds—that is about 30,000 students each year—achieve only at or below level 1 in these tests.[13]

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11 Australian Mathematical Sciences Institute, *Submission 42*, p. 2.

12 Mr Mark Howie, Australian Association for the Teaching of English, *Committee Hansard*, Canberra, 11 July 2007, pp 19-20.

13 Mr Bill Burmester, DEST, *Committee Hansard*, Canberra, 11 July 2007, p. 26.

2.35 The committee is most concerned that these results are put in perspective. There appears to be a large proportion of students who are not achieving a minimal standard of literacy and numeracy and whose opportunities in life will be curtailed as a result of that failure. Despite protestations to the contrary, the committee fears that they may encourage complacency.

2.36 In identifying the source of the problem, Professor Bill Louden from the University of Western Australia told the committee:

> We do very well with the top third of the population…If there is a black hole it is in the bottom half of the population academically and year 12, and throughout for the bottom half of kids we just do not have it right anywhere beyond years 3 or 4…In terms of standards, kids in the bottom quartile of mathematics performance at year 5 probably learn no more mathematics, although they do another five years of mathematics. Kids who are in the top quartile in year 5 mathematics—in the top five per cent particularly—become marvellously facile in mathematics, continue to learn every year and then go off to university and do university mathematics. But there are a lot of kids who are just marking time. The economy has no place for them, schools are not really organised for them and do not find them easy to teach. So that is where the standards problems are.[14]

2.37 This observation was supported by Professor Greg Robson from Edith Cowan University:

> The problem we have across schools and school systems is—to use a sporting analogy—that it is a patchy performance. It is not consistently high in as many places as it should be. We have pockets—and they are reasonably substantial pockets—of high performance accompanied by areas where we know we need to do much better.[15]

2.38 The Australian Education Union agreed:

> The evidence, looked at rationally, overwhelming indicates that the major problem facing Australia is low achievement associated with students from low SES backgrounds, including, but not limited to, those from Indigenous backgrounds and those in rural and remote areas.[16]

2.39 In the Northern Territory achievement levels are consistently well below those of other states and territories. This is partially due to the high proportion of indigenous students and a widely dispersed population with many small communities. However, these problems exist to some degree within other jurisdictions, such as Queensland, Western Australia and New South Wales. The committee believes that the serious

14 Professor Bill Louden, *Submission 73*, pp 1-2.

15 Professor Gregory Robson, Edith Cowan University, *Committee Hansard*, Perth, 2 July 2007, p. 37.

16 Australian Education Union, *Submission 14*, p. 4.

problems afflicting education in the Northern Territory are due also to school availability and notoriously poor attendance levels.

2.40 Socio-economic status does not appear to be a relevant factor in those countries which perform better than Australia in PISA and TIMSS. However, the Australian Council for Educational Research (ACER) indicated to the committee that the socio-economic background of students is not necessarily the determining factor of low achievement:

> Increasing variability across the years of school sometimes is reflected in growing gaps between students from lower and higher socio-economic backgrounds and between Indigenous and non-Indigenous students. It is important to note that although students' socioeconomic background is correlated with school achievement, the correlation is not high (generally less than 0.3).[17]

2.41 The apparent problem of low socio-economic status has been resolved at the school level in some schools. For instance, in Victoria, Catholic school enrolments are very evenly distributed across income and social groups, being almost 10 per cent in each SES decile. Yet the academic results achieved by those schools are higher than might otherwise be expected. The committee believes that the socio-economic status factor is surmountable, as it has been in past generations which have seen an 'aspirational' cohort rise from their working class origins. The difficulty for schools and teachers is to motivate students to develop an interest in their own educational growth.[18]

2.42 Another instance of the significant variability in students' levels of achievement is the 7 per cent of Australian girls and 17 per cent of Australian boys who perform at the lowest international literacy standard. There is no obviously apparent reason for the gender disparity, but might simply be attributable to the disengagement of boys in classroom activity. In Year 8 mathematics only 7 per cent of Australian students perform at an advanced level compared with 44 per cent of Singaporean students. According to Professor Michael O'Neill, this evidences a perennial tension between process and content.[19]

> We have this tension in teaching and in schooling where we have had less emphasis on core knowledge and the core disciplines and greater emphasis on applied knowledge and process.[20]

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17 Australian Council for Educational Research, *Submission 38*, p. 1.

18 Catholic Education Commission of Victoria, *Submission 15*, p. 2.

19 Australian Council for Educational Research, *Submission 38*, p. 1; Dr Phillip McKenzie, Australian Council for Educational Research, *Committee Hansard*, Melbourne, 25 June 2007, p. 45.

20 Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 35.

2.43 The committee understands this to mean that test results show that Australian students know less as a consequence of their pursuit of 'relevance'. While all mathematics experts talk about the need for 'deep knowledge and understanding' it appears that this can only come about through children undertaking tasks which would be criticised in this country as being 'mechanical', as if that disadvantaged them. It is an issue that will be taken up in a later chapter.

2.44 The rigour and validity of the PISA assessment was also called into question. In literacy, PISA does not mark students down for errors in spelling, grammar, punctuation and style. More importantly, in mathematics, PISA assesses life-skills rather than concepts, skills and preparation for further study.

2.45 Although Australian students performed well overall in TIMSS 2003, there is concern over the apparent lack of improvement in comparison to other countries. With the exception of Year 8 science, levels of performance of Australian students has been maintained but not improved. Other countries, by comparison, are doing better now than they were previously.[21]

> Australia's economic competitors are outperforming us. This is a national concern as well as providing Australian students with an education that will place them in a weaker position in the global world in which they live and work.[22]

Standards

2.46 The committee noted a number of submissions presenting arguments that the inquiry, like the prevailing school policies, was much too preoccupied with standards. Some of these views are set down and commented on below. The reference to the word 'standards' provoked adverse comment from some submitters. It was argued that the focus was misdirected, and that the associated testing regimes were contrary to excellence in teaching and that 'standards' are themselves a construct of convenience:

> ['Standards'] appear to be primarily constructs of convenience that express themselves mainly in statistical terms (eg benchmarks) and they reflect certain expectations of those who have a special interest in the capabilities of the graduates moving out of the respective stages of the schooling process (ie Yr 2, Yr 6, Yr 10, Yr 12)… The focal point in the debate is 'standards' but this disguises the core endeavour of effective educational practice: a disposition to apply the outcomes of one's learning to the multitude of real-life contexts that will punctuate one's life.[23]

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21 Queensland Department of Education, Training and the Arts, *Submission 54*, p. 27; Australian Education Union, *Submission 14*, p. 13; Professor Gregory Robson, Edith Cowan University, *Committee Hansard*, Perth, 2 July 2007, p. 37.

22 Dr John Ridd, *Submission 4*, pp 1-2.

23 Australian Association of Christian Schools Ltd, *Submission 34*, pp 2 & 6.

2.47 In supporting standards-based curricula the committee accepts that it has a special interest in the capabilities of those who progress successfully though the stages of their schooling. The future depends on this happening. There is no philosophical conflict between the goal of reaching desired levels of academic success and learning to cope with real life. The goals of schooling are necessarily wide.

> The measure of a student's achievement and success is not simply a grade or a number. Standards of academic achievement are too often defined in a narrow, quantitative way. Standards should be clearly justified, defined and criterion-referenced and as a general rule, exist to support authentic and deep learning.[24]

2.48 The committee would not argue that success must always be measured in academic terms. Individuals learn when they are ready. The committee's view is that standards should be justified, defined and criterion referenced. The problem is that many schools and systems have not yet reached this point. The committee would generally agree that the setting down of standards—what students are expected to know and understand in their various subjects—is important if we are to ensure that particular levels of competence are comparable across the country, and that they can be reported on accordingly. Standards ensure an acceptable minimum or average performance equating to competence. They are not set to ensure homogeneity. The committee accepts the views expressed by the Association of Heads of Independent Schools of Australia who submitted:

> Data should be at the school, regional and national level and must be used to provide standards as reference points, not used for standardisation. Standardisation constrains the professional responses that schools or classroom teachers are able to provide. Standardisation is antithetical to excellence and it will not provide the skills of literacy numeracy and scientific knowledge, attitudes and behaviours that adults of the mid 21st century will require.[25]

2.49 The committee also acknowledges the value of opinion expressed by the Queensland Catholic Education Commission, and others, who stressed that education was broader than exams:

> Obviously test results have a small part to play in the overall educational scene…Education is about much more than just testing young people. If you get down to that notion of testing a very limited slice of the curriculum and putting great value in those results, excluding everything else, what you risk is cutting out the richness and the broadness of a young person's curriculum and cutting out some of their local context and how important that is. So, yes, test results have a part, but it is a part of a whole big picture

24 Lutheran Education Australia, *Submission 41*, p. 5.

25 Association of Heads of Independent Schools of Australia, *Submission 18*, p. 1.

> that looks at the development of a young person socially, emotionally, physically and intellectually.[26]

2.50 The committee is aware of the dangers of overassessment, as recent British experience has shown, just as it is aware that not all things learnt at school can or should be tested. But the committee also believes that some educators place too little emphasis on testing, on the basis of certain philosophical issues they have concerning competitiveness and freedom from anxiety. Both anxiety and competitiveness are life-skill challenges which should be encountered and dealt with in a friendly and supportive school environment.

2.51 Whatever the view taken of 'standards' the committee believes they serve a useful function in that they identify minimum performance targets. This allows for current levels of achievement to be identified and for learning to be customised to serve the needs of individual students. As the ACER repeatedly stresses, it is all about promoting growth. That is also the purpose of benchmarking tests:

> When the [benchmarking] was introduced, it was introduced with a view to realising the data's potential for diagnosis and timely intervention and improvement, so it had a strong equity agenda. That requires that the shift of emphasis be less on measurement and more on using the data to inform classroom pedagogy and diagnosis of need.[27]

2.52 The committee has been told that among educators there is a fundamental belief that all students are capable of progressing beyond their current levels of achievement. The challenge is to understand each student's current level of achievement and to provide opportunities likely to facilitate further growth. First and foremost, this requires sound and reliable information or data.

> It is vital that teachers are provided with standards-based assessment instruments…constructed and calibrated on nationally consistent, common measurement scales that are qualitatively described.[28]

Progressive failure

2.53 The long performance tail identified in international testing suggests that early in secondary school there is already a high percentage of students who are unlikely to have acquired the necessary foundation skills. Worse, the gap between students meeting the international benchmarks and those who do not, increases as students progress through school. In Western Australia, for example, the percentage of children meeting the literacy benchmark for Years 3, 5 and 7 are 92.8 per cent, 90.5 per cent

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26 Mrs Diane Anderson, Queensland Catholic Education Commission, *Committee Hansard*, Brisbane, 5 June 2007, p. 65. Also, Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, p. 90.

27 Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, pp 85-86.

28 Australian Council for Educational Research, *Submission 38*, p. 4.

and 81 per cent: a declining average. This suggests that Australia is failing to properly address the problems of illiteracy in students.[29]

Benchmark testing

2.54 Considerable concern has been expressed in both submissions and evidence about the validity of benchmark testing.

2.55 These tests are intended to test the minimum standards of performance below which students will have difficulty progressing satisfactorily at school. It is intended as a 'safety net' to identify students at risk of failure. As one experienced Queensland educator told the committee:

> The whole purpose of a test is that they send a signal. The moment they send that signal there should be immediate allocation of appropriate resources to the areas where there are deficiencies...There is no point in having testing unless it is immediately followed by remedial measures…I do not think that happens to such a large extent.[30]

2.56 It is argued in some circles that this focus on minimum achievement in basic areas can lead to teachers giving more attention to students around the threshold benchmark, rather than all students across a broader curriculum. The committee considers this to be a spurious objection, if only because it assumes a lack of professionalism on the part of teachers. Testing has an obvious remedial purpose in primary school years, and it is not a valid criticism that benchmark testing does not trigger remedial attention.

Criticism of benchmark testing

2.57 Some submissions criticised the standards of achievement indicated by the 'benchmarks'. Not everyone agrees that benchmark tests identify students at risk. As one parent submitted:

> Each year the states and territories publish information proclaiming that almost all students 'meet the benchmark'. However, the 'benchmark' is an arbitrary illusion that can be manipulated in order to deliver whatever result is required for whatever purpose. To announce that most students 'meet the benchmark' is a meaningless statement that provides false assurances to the general public.[31]

2.58 This assertion was strenuously rejected by the Victorian Curriculum and Assessment Authority which helps to administer the tests:

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29 Australian Mathematical Sciences Institute, *Submission 42,* p. 3; Ms Christine Cook, Department of Education and Training, Western Australia, *Committee Hansard*, Perth, 2 July 2007, pp 73-74.

30 Professor Kenneth Wiltshire, *Committee Hansard*, Brisbane, 5 June 2007, pp 14-15.

31 Ms Yvonne Meyer, *Submission 17*, p. 2.

> At the moment in the national testing there is only one benchmark, and it is a minimum proficiency one. It is admittedly not at a spectacularly high level. The point of establishing a minimum proficiency is to give a warning sign, if you like, that if a student is below that then they genuinely need additional support. So typically we have seen figures in the reports showing that in the high 80s to 90 per cent of students at most levels reach the benchmark. They are very consistent figures around the country. They vary up and down by one or two per cent by and large, but they are reasonably consistent…There is certainly no manipulation of the data. They are objectively marked. They are subject to quality assurance processes. The data are published freely back to schools…It is a transparent process as far as schools are concerned…It is run according to standard international assessment processes and we use experts to do it.[32]

2.59 Professor Claire Wyatt-Smith from Griffith University was similarly critical of the minimal benchmark standards:

> Teachers have indeed gone away from using identification of students at the thresholds on literacy coming from the test because they see they are so low that students who are above the minimum are at educational risk in their schools. I suggest that there is a need to look for what the minimum really represents now.[33]

2.60 The education unions submitted that national benchmark tests are often used to place responsibility on teachers for 'poor' outcomes. It was argued by the Independent Education Union that such testing does not respect or involve the expertise and professional judgement of the teaching profession, nor does it have teachers' full support and confidence.[34] There was some confirmation of this from education faculty academics from Griffith University:

> The data is not routinely used by teachers in conjunction with their own classroom assessment evidence. This is largely a result of the teachers' lack of professional development about how they might use the data for improvement (as distinct from measurement) purposes. In effect, the reported data are seen as a series of terminal points instead of a means of tracking performance for individuals and groups over time. The data is therefore being used for neither its intended purpose, nor to generate informed debate…There is also research evidence showing that quality literacy and numeracy assessment by teachers can lead to improvement for all students. There is no doubt that socioeconomic disadvantage is a key consideration in analysing student achievement data. However, this does not sufficiently explain continued or prolonged underperformance in certain

32 Mr John Firth, Victorian Curriculum and Assessment Authority, *Committee Hansard*, Melbourne, 26 June 2007, p. 20.

33 Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, pp 86-87. Also, Dr Kerry Hempenstall, *Committee Hansard*, Melbourne, 25 June 2007, p. 21.

34 Independent Education Union of Australia, *Submission 55*, pp 8-9.

> geographic areas and groups in our society; poverty does not equate to inevitable underperformance.[35]

2.61 On the face of it, the committee rejects these criticisms. Self interest dictates these criticisms. It was suggested that if the data were more 'user friendly' and teachers were properly trained in its use, it might be better used. This is a priority task for system and school administrators. It occurs to the committee that it is very surprising that schools would endure the likely disruption of school routine to administer these tests and then not bother to use the results. The committee heard no comment from school principals on this issue. It notes confirmation in Griffith University's submission from the dean of the faculty at the Brisbane hearings:

> The improvement data nexus was not followed through to the hands of teachers where that could be realised, and in fact teachers were the recipients of the information rather than the users of it. They became accountability measures rather than pedagogical devices.[36]

2.62 The committee noted that teachers tended to regard mandatory testing as extraneous:

> Any primary schoolteacher worth their salt can look around the class of 28 and say: that kid needs this; that kid needs that. They do not need a test to all them that. What they need is the resources to help those youngsters through.[37]

2.63 The Australian Literacy Educators' Association pointed that within the classroom the teacher is constantly assessing a student to determine whether a particular strategy is working.[38] The committee acknowledges that benchmarking policy probably has, at its core, an element of supervision. It is a case of keeping teachers up to the mark. No government or school system, however, would be likely to put it in those terms.

Limitations of standardised tests

2.64 Another primary concern expressed in submissions was that standardised testing is limited. The Australian Primary Principals' Association noted that the use of multiple-choice questions was a limited mechanism which signalled an indifference to the role of the curriculum. The testing methods meant that much of the syllabus that

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35 Dr Glenn Finger et al, *Submission 46*, p. 6.

36 Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, p. 86. Also, Ms Janine McIntosh, International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, p. 34.

37 Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 35. Also, Dr Ruth Fielding-Barnsley, *Committee Hansard*, Brisbane, 6 June 2007, p. 4; Dr Kerry Hempenstall, *Committee Hansard*, Melbourne, 25 June 2007, p. 21.

38 Dr Jan Turbill, Australian Literacy Educators' Association, *Committee Hansard*, Canberra, 11 July 2007, p. 14.

was really important to students, such as thinking mathematically and using language properly, could not be tested.[39] A similar point was made by the Australian Education Union, which submitted that much of what is important in schooling is not measured by standardised tests. The problem with them was that they focused attention on those areas of the curriculum that are tested, so that what is tested becomes what is viewed as important. Consequently, the range of things to be tested was expanded in order that they be seen as important.[40] The president of the Australian Education Union explained to the committee:

> In a normal circumstance a teacher uses a test to tell the teacher about what the child is learning and to inform the teacher about future remediation. That is one of the problems with those standardised tests: they do not do that. By the time the results come back it is probably too late to do anything about that particular class. It provides a useful snapshot about where your class is in relation to the rest of the state or the rest of the country. It should not be used to do anything more than that….We believes that the bulk of the results could be achieved by sample testing rather than by testing the whole cohort.[41]

2.65 Another major criticism was that standardised testing could result in a culture of teachers teaching simply to pass the test.

> If there are national tests, have no doubt our teachers will teach the test. They want the children to succeed. They want them to look good in the eyes of their peers. They want their school to have good data. So teachers will teach the test at the cost of professional freedom and at the cost of creativity in the classroom and so on.[42]

2.66 The committee believes that system administrators and schools should review procedures in the light of classroom experience.

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39 Dr Ian Chambers, Australian Primary Principals' Association, *Committee Hansard*, Sydney, 17 May 2007, p. 21.

40 Australian Education Union, *Submission 14*, p. 7; Professor Alan Reid, Australian Curriculum Studies Association, *Committee Hansard*, Melbourne, 25 July 2007, p. 2. For example, some qualities which are difficult to measure with standardised testing include creativity, critical thinking, resourcefulness, curiosity, spontaneity, et cetera.

41 Ms Pat Byrne, Australian Education Union, *Committee Hansard*, Melbourne, 25 June 2007, pp 7-8 & 9. Also, Mr Chris Watt, Independent Education Union of Australia, *Committee Hansard*, Melbourne, 26 June 2007, p. 12.

42 Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 38. Also, Mr Chris Watt, Independent Education Union of Australia, *Committee Hansard*, Melbourne, 26 June 2007, p. 13; Australian Primary Principals' Association, *Submission 43*, p. 15 noting that 'teaching to the test' subverts the fundamental purpose of education by stifling genuine learning.

Benchmark testing – the committee's final word

2.67 Notwithstanding these comments, formed by knowledge and experience, the committee believes that some form of standardised diagnostic testing is necessary in all schools. It agrees with the Australian Primary Principals' Association that care needs to be taken that testing and assessment remain firmly linked to the purpose of achieving improvements in learning for students. Nor should the measurement of outcomes be an end in itself, as distinct from a means to achieve continuing improvements for students.[43] The committee accepts that refinements should be made, and that these should follow a process of consultation with teachers which appears to have so far been neglected. It finds the indifference of teachers to the testing regime—and we don't really know the extent of this—to be significant because it emphasises a point made elsewhere in this report to the effect that teachers can be led but they cannot be driven. Benchmark testing has a place in a national curriculum, but it should be part of a negotiated whole-of-curriculum approach.

'League tables'

2.68 Under the budget measures announced for 2007-08, the Government has announced that in the next quadrennium schools will have to report on their performance in literacy and numeracy benchmark tests.

2.69 Some witnesses expressed support for publishing lists of schools in rank order of academic performance, whereas others were emphatically opposed to the idea. It appears to be contrary to the spirit of the times. Many years have passed since the rank order of students in the NSW Leaving Certificate were published in the newspapers, including separate lists of those ranked in subjects at honours level, together with all successful students and their grades, identified with the schools they attended.

2.70 Schools appear nervous about having their students' assessed standards identified because of the concept of 'league tables'. The objection was that the data could be used to make unfair comparisons of schools. A number of variables affect the quality of education and schools indicated as 'underperforming' might be adversely affected by factors beyond their control.[44] This sensitivity appears to be directly targeted by the Government's policy, agreed to by COAG, to identify schools with the achievement levels of their students.

2.71 Most teaching bodies appearing before the committee expressed the view that such publication was unfair.

> If you are in the top 10, that is fantastic but if you are a bit below that, that is whatever it is. I do not know how we get across to our parent body or to anyone else who might pick up the paper and have a look at where my

43 Australian Primary Principals' Association, *Submission 43*, p. 11.

44 Professor Max Coltheart, *Committee Hansard*, Sydney, 17 May 2007, p. 5; Australian Education Union, *Submission 14*, p. 33.

> school sits that I had a year 8 student who when he came into my school could not read but still passed his year 12 English. How do we measure and report on that? I think that is a greater achievement perhaps than getting all your kids past year 12 in the end.[45]

2.72 Interestingly, this viewpoint seems to be most strongly expressed by Catholic systems and by representatives of Lutheran and evangelical Protestant schools, many of which are newly established and sometimes struggle to find experienced teachers.

2.73 Despite these comments, the committee sees some public benefit in parents and the wider community being able to rank and compare schools against each other in some key areas of comparison, for instance academic achievement. This would allow parents to have a more informed choice in deciding which school is best for their child. It would also apply healthy competitive pressure to improve their relative rankings.

Reporting progress

2.74 The committee acknowledges that there are wide variations in students' levels of achievement. Children begin school with different levels of individual development and school readiness. They also learn at different rates, with some students requiring more time to learn than their peers. The gaps in levels of achievement widens over time so that, for instance, by Year 5 the top 10 per cent of children in reading are at least five years ahead of the bottom 10 per cent of readers.[46]

2.75 The variation in students' skills levels upon transition from primary school to secondary school can be highly evident. As with universities and matriculating students, teachers are sometimes compelled to re-teach skills.

2.76 It is essential that students have a firm grasp on the fundamentals, without which it is impossible to build further knowledge, skills and understandings. A failure to grasp the basics can be a fatal flaw in education, and limit the range of options and opportunities for further success in life. Yet the word 'failure', is taboo in education circles, as one academic explained:

> We have almost expunged the word ‘failure’ from our vocabulary in this country and in others in education. I think it is time we used the ‘f’ word again…In the interests of self-esteem we belittle success. We have demeaned success because we have expunged failure. Success is valued only at the risk of failure.[47]

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45 Mr Mark Rathjen, Living Waters Lutheran College, *Committee Hansard*, Perth, 2 July 2007, pp 55-56.

46 Australian Council for Educational Research, *Submission 38*, p. 1.

47 Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 44.

2.77 An experienced former teacher also expressed misgivings about the tendency of schools to protect the self-esteem of students:

> Too often, we do not let them fail, take risks or become creative because we are so busy with following very clear guidelines, protecting them and so forth. What we are losing here is the ability of students to take care of themselves. I think that will have a very big impact on us as well.[48]

2.78 Another opinion from a former academic takes this up:

> What is happening is a diminution of standards, a negation of the concept of excellence—this one-size-fits-all model that says that nobody will fail, we'll all be happy, and we wouldn't want to hurt anybody's self-esteem by saying that they could work harder and improve.[49]

2.79 The committee supports plain English report cards as the best way to inform children and parents of academic achievement and progression.

Parental concerns about reporting

2.80 The committee received some submissions from parents who were highly disappointed with their child's levels of achievement. This disappointment was heightened by the relevant school's failure to adequately inform the parent of how his or her child was progressing.

2.81 The Year 7 or Year 8 teacher will have the task of dealing with low-performing students while catering for high-achieving. An inexperienced teacher can fail at both ends of the scale.[50] One parent submitted that she had been misled by a reporting practice which was verging on dishonesty:

> My son has attended our local Catholic primary school since Prep. The school kept sending home good reports and awards that told me my son was progressing and these reports have been disguising the fact that my son has not learnt to read. My son is 12 years old and has a reading age of just 6.2 years, according to several educational psychological assessments. He is therefore 6 years behind, still at a Grade Prep/1 level when he actually is in Grade 6...My son faces high school in 8 months at a very shocking pre-school standard.[51]

2.82 Another parent, Yvonne Meyer, provided the committee with another instance of how parents may be misinformed:

> People think words mean one thing, and they do not; they mean something completely different—such as being fobbed off with these overly optimistic

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48 Mrs Valerie Gould, Association of Independent Schools of Western Australia, *Committee Hansard*, Perth, 2 July 2007, p. 3.

49 Professor Stephen Kessell, *Committee Hansard*, Perth, 2 July 2007, p. 62.

50 Ms Joy Schultz, *Submission 59*, p. 1.

51 Private Submission, *Submission 23*, pp 1-2. Also, Private Submission, *Submission 29*, pp 1-2.

> school reports. Few parents realise, for example, that here in Victoria, in year 12, the kids are graded across nine levels, from A+ all the way down to E, essentially, although they do not call it that. C is in the middle. C should be the average grade. Yet the most commonly awarded grade at year 12 is A. So in fact A is average, A+ is above average and B is average. So, if a child comes home with a B, the parent thinks, 'Well, that's pretty good,' because one assumes that C is average and a B is above average. It is only when parents are told that 35 per cent of students in year 12 are awarded an A that suddenly the meaning becomes apparent. But parents are not told this.[52]

2.83 The point of this is that information to parents on the progress and achievement of their children should be readily comprehensible and adequately convey whether a child is progressing as well as might reasonably be expected. The committee could not say precisely what form of reporting would best serve the needs of parents and students except that there was general agreement that current reporting terminology is inadequate. There is often confusion about whether marks and grades are given on the basis of criterion referencing or normative referencing. The distinction should be made clear to parents, and other interpretation explanations given on the reports. This is a responsibility for school systems, and possibly state boards of studies as well. The following comments confirm the committee's concerns:

> The provision of a ranking on some graded or numerical scale [fails to] give parents the kind of information they really want…It also has the potential to lead to unrealistic expectations…The essence of feedback to parents must be descriptive.[53]

2.84 If school principals believe this issue remains a problem after so many decades of reporting, it is time that some serious research-based policy be determined. The committee also understands the importance of reporting on the overall growth of a student, as expressed below:

> The current accountability requirements are perceived to be onerous and make significant additional demands on teachers' time. Assessment should be beneficial to students' learning and the reporting of achievement should be informative to their parents. The norm-based standards of assessment…only focus on a very limited aspect of the assessment of learning. Students need to be given the opportunity to demonstrate their knowledge and understanding in a variety of ways.[54]

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52 Ms Yvonne Meyer, *Committee Hansard*, Melbourne, 25 June 2007, p. 56.

53 Australian Primary Principals' Association, *Submission 43*, p. 14. Also, Dr Glenn Finger et al, *Submission 46*, p. 6.

54 Lutheran Education Australia, *Submission 41*, p. 6. Also, Mr Chris Watt, Independent Education Union of Australia, *Committee Hansard*, Melbourne, 26 June 2007, p. 13.

2.85 Another submitter strongly criticised the Queensland assessment systems for being vague, wordy, undefined and dependent on an 'overall judgement'.[55]

2.86 However, the most confusing method of reporting students' results was described at the committee's hearing in Perth. In Western Australia, the committee was told:

> The government sector has now set targets for years 3, 5, 7 and 9 so that, if students get a level 2 in year 3, they will be given a B; if they get a level 3 in year 5, they will be given a B; and so on as it goes up. Because the levels are quite broad, it actually divides those levels into three bands—first, middle and high. It may be that you are part of the way through level 4 in year 7 to get a B but you have to be all the way to the end of year 4 and year 9 to get a B. They have been aligned against the levels and the levels are clearly defined. Teachers will make judgements on what level the student is at and then, depending on the year of schooling, an algorithm will tell you if you are an A, B, C, D or E student.
>
> Basically saying that if you have all level 3s and above in year 5 you would be a B student, but if you had some level 4s in year 5 you would probably be an A student. It is about how many level 3s or 4s you have according to the year. If you got a level 4 in year 3, you would be an A student. If you got a level 4 in year 5, you would be an A student. If you got a level 4 in year 7, you would be an A student. But if you got a level 4 in year 9, you would only be a B student. [56]

2.87 With due deference to the experienced teacher who is the witness quoted, the committee has only a hazy understanding of what this all means, even after several readings of the Hansard. That itself is a matter of concern. As described in a later chapter of this report, Western Australia is recovering from a prolonged bout of outcomes based education, and this may be part of a residue of policy which remains to be swept away. It serves, however, to illustrate the tension between the need to report progress to parents in an intelligible way, and at the same time to ensure that assessment of achievement is carried out in a way which accords with the best teaching and learning practice. The committee understands that there will be problems in negotiating something that gives due weight to concerns on both sides.

2.88 The Commonwealth has insisted that states and territories report to parents about student progress on an A-E scale. This has caused problems for Western Australia, as explained above. One example of the problems caused by the Commonwealth requirements was described by Professor Louden, now head of the Curriculum Council in that state.

> Local teachers are struggling trying to find a way to match the federal government’s desire to have every children [sic] get an A, B, C or D, which

55 Dr John Ridd, *Submission 4*, p. 11.

56 Mrs Valerie Gould, Association of Independent Schools of Western Australia, *Committee Hansard*, Perth, 2 July 2007, pp 8-9.

> is a funding contingent issue for the state government. The state government does not believe in it...So they have very highly elaborate ways of generating marks which then get converted. My view, as it happens, is that the federal minister was right to pick out talking to parents that they found that our Australian reporting system is obtuse. They could not figure out what they meant and they were full of words and words. The community view was to just give them a mark.[57]

2.89 This was then complicated by the awarding of an A grade to the students who achieved the benchmark level set:

> I would have thought that an A grade would have been better delivered to students who are a number of bands above the minimal standard. That is where I think the system here fell apart with the grades.[58]

2.90 While the reporting might be against the standards, not every parent in Western Australia will be informed about levels and bands. Perhaps this is why the independent schools in Western Australia have in some instances reverted to percentages. Not only does this peculiar reporting method significantly increase teachers' administrative workloads, it might also be counter-productive for those children who are the lower performers or disengaged with education.[59]

2.91 The committee emphasises that while the problems in Western Australia are not found elsewhere, they illustrate a point of tension in reporting that is felt much more widely. It is also hoped that these tensions in the west will fade as policy is revised.

Conclusion

2.92 The committee might be reassured by the results of the PISA and TIMSS tests, which put Australia toward the top of all but the highest category of performance, but it believes that there is a warning in the existence of a long tail of underperformance. It notes also that Canada, a country with many points of commonality with Australia, has the same performance but without the tail. In the next two chapters of the report, education quality issues will be discussed in such a way as to explain why this tail exists, and what can be done to shorten it.

2.93 On the more immediate issues discussed in this chapter, the committee is concerned that benchmark testing, which it supports, is not being taken up more enthusiastically by schools. It notes the reasons why this is so, and **recommends** that

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57 Professor Bill Louden, *Submission 73*, p. 7.

58 Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 44.

59 Mrs Valerie Gould, Association of Independent Schools of Western Australia, *Committee Hansard*, Perth, 2 July 2007, p. 10.

efforts be made to give the tests more credibility and usefulness as teaching instruments.

2.94 Finally, the committee notes the continuing argument over reporting. While it believes that the A-E scale carries much more meaning for parents than other systems that have been in use, it is time to examine more closely the need for information to be provided which explains students' results and where students are achieving relative to others. The use of performance indicators should give parents an honest view of how their children are performing against the standards.

Recommendation 1

The committee recommends that efforts be made to give the national benchmark tests more credibility and usefulness as teaching instruments.

Chapter 3

Quality Teaching

3.1 The single most important influence on academic achievement is the quality of teaching. Quality teaching engages students and is the key to higher learning for all. Quality teaching requires that those entering the profession are committed to their vocation, have a strong academic grounding relevant to their field of teaching, including theories of teaching and learning, and have the capacity to grow in knowledge and skill as they promote growth in their students.

3.2 The committee points out that this chapter contains ideas and evidence which is closely related to the following chapter on curriculum. It is often difficult to separate the issues which arise from a consideration of both, but consideration of teaching quality requires its own space.

The importance of quality teachers

3.3 Teaching is a highly complex activity. There are many variables affecting the quality of teaching, most obviously the students. The fact that some students do not achieve academically may not be due to poor quality teachers, but research has unambiguously shown that the teacher is the most important influence on the performance of students.

3.4 Ultimately, there is a need to properly define the meaning of quality teaching. The Organisation for Economic Co-operation and Development (OECD) has stated that qualifications, experience and tests of academic ability form only part of the picture. Other important indicators include personal attributes, relational attributes, teacher leadership, professional attributes and capabilities, continuing professional learning, and professional standards and certification.[1]

3.5 The lack of an encompassing definition hinders the recognition and rewarding of excellence in teaching. Specifically in terms of academic achievement, however, the committee has to agree with the loose definition supplied by Dr Grant Kleeman from the Australian Geography Teachers Association:

> Some students thrive by engaging with other students and with a teacher in discussions and debates. Other students thrive by essentially sitting there summarising the text book, if you like, and the factual recall of information.

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1 Organisation for Economic Co-operation and Development, *Teachers Matter: Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, 2005. Also, Dr Glenn Finger et al, *Submission 46*, pp 1-2; Australian Council for Educational Research, *Submission 38*, p. 6; Australian Literacy Educators' Association, *Submission 26*, p. 2.

> An effective teacher is the one who can cater for those diverse needs within the classroom by using a range of instructions and strategies.[2]

The training of teachers

3.6 Teacher training is undertaken in two ways. Most trainee teachers, and nearly all those intending to teach in primary schools, take a four year Bachelor of Education degree (B.Ed). Those with ambitions to enter secondary teaching very often take the option of completing a one-year Diploma of Education course after completion of an undergraduate degree. Subject specialists need to have this background for reasons that will become clear later in this section.

Content and theory

3.7 The committee found a great deal of dissatisfaction expressed with the B.Ed, mainly due to the poor grounding offered in some universities' subject disciplines. There is, admittedly a paucity of research in this area, but the evidence in regard to mathematics teaching has been fairly well surveyed. The Australian Mathematical Sciences Institute submitted that some universities with large numbers of education students have very few mathematics academics, and few B.Ed primary degrees require that their students take sufficient courses in mathematics content over the four years of study. Most B.Ed students have either a weak or non-existent record of mathematics study in years 11 and 12.[3] The aversion to mathematics among some primary school teachers is referred to elsewhere in this report.

3.8 The committee believes that there is a case for reviewing the academic rigour of B.Ed courses in view of the fact that what has been found with mathematics is probably true also of other disciplines. The committee also notes that matriculation entry-level standards for the B.Ed are very low in some universities, and that a great deal of basic 'catch-up' work in the key learning areas needs to be factored into course content and course structures.

3.9 Trainee teachers are, for good reasons, mostly concerned with issues of classroom management, and other anxieties of this kind, but the results of a poor grounding in teaching theory and content knowledge can affect performance in the classroom for much longer than is required to gain confidence in classroom management. The committee was more concerned about this than the fact that trainee teachers often felt ill-prepared or under-prepared for teaching upon completion of their course. It was claimed that this was usually due to an overemphasis on educational psychology and theory with too little instruction on the practical arts of teaching. As one witness stated:

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2 Dr Grant Kleeman, *Committee Hansard*, Sydney, 17 May 2007, pp 58-59. Also, Mr Robert Johnston, *Committee Hansard*, Sydney, 17 May 2007, p. 62.

3 Australian Mathematical Sciences Institute, *Submission 42*, p. 1.

> Many teachers are arguing that they get very little useful information from the academic education teaching they receive and that most of it gets thrown away once they are in the classroom and are dealing with the realities of the day. I do not know how many of you have dealt with primary age children, but can you imagine 30 of them in front of you? Theory goes out the window very quickly.[4]

3.10 The committee is troubled by the tenor of this reported criticism. A lack of understanding of teaching theory is one reason why quality standards are not always what they should be. It notes a long-standing anti-intellectual attitude amongst some in the profession which often surfaces with a deputy principal or head of department telling a new teacher on the first day to 'forget all that stuff from the Dip Ed. Your training starts here.' The failure to relate theory to practice, when this occurs, is a serious weakness in any teaching method course.

3.11 The President of the Queensland Secondary Principals' Association, Mr Ian Ferguson told the committee of a variation on the comments above:

> [Graduate teachers] were quite critical of aspects of their teacher training courses in terms of the relevance of some courses they were doing which seemed to be developed at the whim of the tertiary educator because they liked it or were keen on it. We found that the [graduate teachers] wanted more relevant courses. They valued their internship or their prac training, their time in the school, so highly.[5]

3.12 The committee is wary of drawing too many conclusions, but it did gain an impression that 'whims' of education faculty academics or elements of dogmatism may not be uncommon. A great deal of evidence to the committee was purely anecdotal, with submitters and witnesses drawing on their personal observations and experience.

3.13 The committee also became aware of the importance of subject content knowledge. It was implicit in a number of submissions and in testimony. It was noted that in evidence given to the House of Representatives' inquiry into teacher education in 2005 an Australian Research Council (ARC) researcher made this point:

> The research indicates that you cannot use what are known to be effective teaching techniques unless you do understand the content deeply. If you do not understand, you are forced back on to the worst didactic textbook, going-by-the-rule book sort of teaching. A deep understanding frees you up to use good pedagogy, to discuss ideas, to relax, to open up the discussion, to throw away the textbook and to throw away the work sheets because you

4 Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 23.

5 Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 36. Also, Dr Ruth Fielding-Barnsley, *Committee Hansard*, Brisbane, 6 June 2007, p. 4; Marko Vojkovic, *Submission 2*, p. 2.

> are interested, you understand the ideas and you know how to promote those ideas and that discussion.[6]

3.14 It is over thirty years since the last debates were conducted about the relative merits of integrated education degrees and post-graduate diplomas. The B.Ed arrived concurrently with the lengthening of training courses for primary teachers, the demise of the teachers colleges, and the assumption of their role by the new Commonwealth funded colleges of advanced education.

3.15 The committee is concerned enough about the apparent decline in discipline course content in the B.Ed to propose that there is a strong case for a change in the culture of teacher training. In the committee's view there should be a shift away from the practice of secondary teachers obtaining a B.Ed as their academic qualification, toward a more discipline or subject-based degree like a BA or B.Sc, complemented by graduate teacher training qualifications such as the Diploma of Education. The committee believes that this would make a substantial contribution to ensuring that secondary teachers have a strong academic grounding in the disciplines or subjects they will end up teaching in schools.

3.16 The committee believes that studies in pedagogy and teaching theory are likely to be more effective for students with a solid grounding in their teaching discipline, if only by virtue of their increased maturity. This is in line with thinking which is attracting more support in other professions, notably medicine.

Practicum requirements

3.17 Criticism of current arrangements for practice teaching assignments have been covered fully in the report of the House of Representatives Education and Training Committee which was tabled in March 2007. The practicum varies across the country. The Queensland College of Teachers told the committee that up to a quarter of trainee teachers' time is spent in schools. Nationwide, DEST estimated that generally for a two-year degree, it is roughly 45 days, and for a four-year degree it is 90 days.[7] Further consideration of the length of time trainee teachers should spend in schools is not central to this committee's concerns.

3.18 One practicum issue which did interest the committee was raised by Dr Ruth Fielding-Barnsley in relation to exposure of trainee teachers to schools beyond the life experience of middle class teachers:

> About 70 per cent of our pre-service teachers actually went to private schools...and when they go into these low SES schools, they have no idea

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6 Dr Lawrence Ingvarsen, Australian Council for Educational Research, *Committee Hansard (H of R),* Melbourne, 7 June 2005, pp 13-14.

7 Mr Ewan McDonald, DEST, *Committee Hansard,* Canberra, 11 July 2007, p. 30. Also, Ms Roslyn Bell, Queensland College of Teachers, *Committee Hansard,* Brisbane, 5 June 2007, p. 46.

> what has hit them; they are really at a loss to know how to deal with these children who just do not have the language to understand the instruction.[8]

3.19 The committee believes that exposure to schools which inform them of equity issues is good experience, even if daunting. The committee believes this is one of many good reasons for there to be comprehensive practicum arrangements for each and every trainee or graduate teacher. The task of raising levels of literacy across all schools is indicated by the long tail of low achievement in many schools, when measured against school performance in other countries. The committee believes that education faculties should take advantage of opportunities to show students the extent of these problems.

3.20 In the 2007 Budget the Commonwealth announced that a condition of education faculty funding will shortly be an increase in the time allocated to the practicum. It is anticipated that 60 days will be required for a two year degree or diploma, and 120 days will be required for a four year degree.

Teacher training in literacy

3.21 An important issue for the committee in this inquiry was the role of university education faculties in preparing new teachers in literacy teaching methods. There is general agreement that too many primary school children are failing to learn to read. This results in a cohort of about 20 per cent of students who either cannot read, or who read with such difficulty as to be almost functionally illiterate. A proportion of this 20 per cent is unidentified by current safety-net practices because the student is able to disguise the extent of his or her inability to read. The biggest problem by far is with current teachers, but concern was expressed that education faculties were not playing their part in closing this teaching skill deficiency.

3.22 The literacy issue is perhaps the most important teaching challenge for primary teachers, and they operate in difficult conditions in many schools. Reading deficiencies are most noticeable in schools from lower socio-economic areas. Dr Fielding-Barnsley demonstrated the extent of the problem with a revealing observation from her own experience as a teacher:

> Teachers have a very positive attitude and really know that they must teach phonemic awareness; but they do not actually have the knowledge to support that. So they are teaching phonics in a very rudimentary fashion. But the children, particularly those from low SES backgrounds, are not understanding the instructions…some children in our study do not understand instructions such as, 'Draw a circle around the apple'. This is not just because they do not understand the terms 'draw', 'circle' and 'around' but because they have never seen an apple.[9]

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8 Dr Ruth Fielding-Barnsley, *Committee Hansard*, Brisbane, 6 June 2007, p. 3.

9 Ibid. Also, Dr Glenn Finger et al, *Submission* 46, pp 5-6.

3.23 The teaching of literacy is dealt with further on in this chapter. The point the committee makes here is that, from the evidence, it appears that phonemic awareness has not been sufficiently linked with sound teaching practice during the training of teachers.

3.24 Dr Kerry Hempenstall, an experienced educator in literacy, critiscised the methods taught by universities for the teaching of literacy.

> The state governments produce guidelines very similar to that which teachers are taught in teacher training institutions…Teachers as a group have not really been trained in critical thinking. Much of their education does not involve the use of logic or the use of the scientific method, and many teachers with perhaps an arts background tend to be suspicious of science and research. That is evident in teacher training institutions. Research of the type that one might call hard-nosed is often viewed disparagingly and described disparagingly in teacher education courses.[10]

3.25 There was other evidence that teachers receive either little or no pre-service training on how children learn to read, and how children's learning difficulties can be overcome. Primary Teachers Association representatives told the committee that new teachers generally do not feel confident about the art and craft of teaching literacy and numeracy. This problem was also evident in other subject areas.[11]

3.26 Universities determine their own course content. There is variation between the universities, as would be expected, and it is likely that these variations reflect, to a degree, the interests and specialisation of academic staff. Individuals exercise particular influence, and recruitment of 'like-minded' academics may result in faculties having prevailing views on matters such as teaching and learning theory. It is difficult to know if this is a serious problem. All of the university academics to whom the committee spoke affirmed that their literacy method courses included phonemic approaches. The question appears to be how well the phonics approach is taught; according to some critics, not very well. Dr Hempenstall told the committee that education courses in general do not teach synthetic phonics in the teaching of literacy, and that there are final year trainee teachers who have no knowledge of issues such as phonemic awareness, phonological processing, explicit phonics, or direct instruction.[12] The committee can only note these differing opinions, but according to most authorities, the best practice is to employ a number of different approaches.

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10 Dr Kerry Hempenstall, *Committee Hansard*, Melbourne, 25 June 2007, p. 18.

11 Ms Leonie Trimper, *Committee Hansard*, Sydney, 17 May 2007, p. 29; Ms Joy Schultz, *Submission 59*, p. 3.

12 Dr Kerry Hempenstall, *Submission 5*, p. 2; Ms Yvonne Meyer, *Submission 17*, p. 2; Professor Max Coltheart, *Committee Hansard*, Sydney, 17 May 2007, p. 4.

Internal reforms

3.27 The committee acknowledges that some, if not all, universities are actively reviewing and revising the structure and content of their education courses. Professor Greg Robson from Edith Cowan University told the committee,

> Most of our schools and faculties of education are having a good, hard look and reviewing the process of preparation of teachers. I can only speak for our place, but we continue to wrestle with getting the balance right. In the last round of reviews we have built up the practicum component significantly...That is one part of the balance equation. The second part is to look much more closely at, if you like, the subject content, whether that be in literacy or whether that be in numeracy, and to give that as much weight as we possibly can. The final component in the balance equation is the general education studies. In our last round of reviews we tried to push the balance much more towards those first two: the practicum component and the content of curriculum and subject knowledge component.[13]

Literacy and the 'reading wars'

3.28 An important focus of the committee's work was consideration of evidence concerning weaknesses seen in the teaching of literacy in schools. This has proved to be an intractable problem despite intensive work done in schools, and the application of remedial policies instituted at both state and Commonwealth levels. No primary school can be criticised for failing to recognise the centrality of literacy as the key factor in quality learning, and of the dependence of all future learning on this skill. Still, the failure rate of around 20 per cent persists. This 20 per cent of children is very unevenly distributed and is usually linked to socio-economic conditions in families and neighbourhoods. So a failure in literacy partly indicates a problem of social inequity which is beyond the functional capacity of schools. Some would argue that illiteracy is in the main a consequence of social inequity. But, for the purposes of this inquiry the focus has been on a failure of pedagogy. There are tens of thousands of children who have the capacity to learn to read and write fluently despite their disadvantaged family background.

Whole language v phonics methods

3.29 The committee was interested in the most effective methods of teaching literacy. It read and heard extensive evidence on the importance of a phonemic approach, and rather less on what was claimed to be the dominant method centred on a 'whole of language'. A difficulty for the committee was that most of its knowledge of the 'whole of language' method came by way of evidence from those opposed to its use. The following instance may be cited:

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13 Professor Gregory Robson, Edith Cowan University, *Committee Hansard*, Perth, 2 July 2007, p. 40. Also, Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 41.

> The whole language approach is that you should not distinguish reading from spoken language because language is just a whole. Since nobody needed to teach us to speak, nobody needs to teach us to read. We learn to speak and understand speech just by being in a language community, and the argument is the same thing will happen with reading. That completely ignores the fact that speaking is a biological process that is a part of our brains; reading is as artificial as learning chess or music. So that is why it has to be specifically taught.[14]

3.30 Proponents of phonics told the committee that research shows that children acquire reading using the phonics method, although some children struggle without sufficient phonics instruction. Success with this method does not require additional resources, just teacher training in the phonics method and early focussed instruction.[15]

3.31 However, other evidence argued that the two methods are not incompatible and are used in conjunction with each other. There is a tone to this evidence which suggests that some schools and teachers have been discomfited by the 'literacy war', and that principals have had difficulty over this controversy in discussions with their staff and with parents:

> Schools have borne the brunt of the whole word method and/or the role of phonics. You would find that most teachers are very balanced and recognise that a whole range of strategies have to be used for students and that there is not a one-size-fits-all in the teaching of reading and the teaching of numeracy.[16]

3.32 The committee also notes the diplomacy and reassurance in the responses below, and a welcome recourse to the backing of the NSW syllabus. But there is no indication in either response that the points made in the National Inquiry into the Teaching of Literacy (NITL) have been completely understood. That is, that phonemic teaching of reading requires a great deal of understanding and awareness of the intellectual processes involved:

> The New South Wales syllabus is similar to many other states in that it looks at systematic explicit teaching of all of the skills, that is, phonics as well as a range of reading and language skills. It has resolved the false dichotomy that we see between just teaching purely phonics and teaching whole language. It looks at amalgamating the best of both of those.[17]

3.33 As Dr Fielding-Barnsley explained to the committee, there are complex needs of many children facing reading difficulties, and her comments are interesting in the light of views experienced by principals appearing before the committee:

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14 Professor Max Coltheart, *Committee Hansard*, 17 May 2007, p. 4.

15 Ibid, p. 5.

16 Ms Leonie Trimper, *Committee Hansard*, Sydney, 17 May 2007, p. 20.

17 Dr Ian Chambers, *Committee Hansard*, Sydney, 17 May 2007, p. 28. Also, Australian Education Union, *Submission 14*, p. 24.

> I do not know if I should get into the mechanics of it, but a lot of principals and teachers will say, 'Yes, we teach phonics,' but actually phonics is not enough. Phonics is just matching the letters of the alphabet with the sounds that they make. Most teachers do that. So, yes, we do phonics, but actually it requires a lot more; it requires a grounding of phonological awareness—awareness that the speech sound is made up of individual sounds. Children do not understand that speech is made up of individual sounds and therefore they have trouble matching the letters of the alphabet with the words that they speak. It is a lot more than just phonics, and that is what we are not teaching our teachers.[18]

3.34 The NITL report of the disadvantage suffered by children from lower socio-economic groups exposed exclusively to whole of language found another echo in evidence given by Dr Fielding-Barnsley. She spoke of the shock faced by beginning middle class teachers meeting for the first time children suffering from cultural deprivation they would not have imagined. Such children have limited vocabularies, in part the result of their very limited exposure to average middle class growing experiences. It is less confronting to teach them in a whole-of-language way.

> That brings me to the next point about whole language, which is a way of teaching children to read which is much more attractive to teachers. You can imagine if you were a teacher sitting with a class of 30 children and engaging them in a lovely story every day, and 80 per cent of those children would learn to read. It is a lot more difficult to actually start pulling apart the language—telling them about the sounds of language, playing with the sounds of language and making them understand the alphabetic principle. It is difficult, and teachers need to be taught how to do it; and they are not being taught how to do it. That is where we are losing our 20 per cent of children.[19]

3.35 And phonemically aware and expert teachers can be as eclectic as whole-of language teachers would claim to be:

> It is so many things that we need to make sure our teachers have a sound grounding and understanding of all the things that they need to cover to help those children who find learning difficult. It is not just phonemic awareness. As long as we keep pushing this, we are going to lose other important areas. It is always a balance, and that is what I always tell my students. When they are saying, 'Do I teach whole language or do I teach phonics?' I say, 'Take the best of each. Read to your students.' You must read to the children because this is how you develop their language. But they do need explicit instruction in how our alphabetic code works. You cannot just leave it. It is not going to just happen by magic.' There are no easy solutions. We know what the parts are, but it is a matter of getting everything in there and knowing which children need what sort of intervention. You will have true dyslexic children whose language is

18 Dr Ruth Fielding-Barnsley, *Committee Hansard,* Brisbane, 6 June 2007, pp 11-12.

19 Ibid, p. 4.

> actually very good but still cannot read. They perhaps need a different type of intervention to those children who are failing because they do not have the vocabulary or the language to support their learning. There is no easy answer.[20]

3.36 The committee was highly impressed by the commitment shown by witnesses who emphasised the need for more rigorous and scientifically-based literacy teaching methods. The committee believes that system managers have a responsibility to take up the challenge of encouraging idealism in the pursuit of improved literacy. That will be assisted when more teachers are trained in effective literacy strategies.

3.37 Aside from the reflections upon teacher training, this example highlights the need for the implementation of effective classroom pedagogy. Without this knowledge and skill, teachers are not able to fully impart the foundation skills, such as alphabet knowledge and phonological awareness. This might affect only a portion of the class, yet those children are prevented from learning to read. This prejudices their chances of successful academic progression and learning for life. A quality education for all includes those who are not as academically gifted as their peers, or who are merely slow learners.

3.38 With this in mind, and in view of the under achievement referred to in Chapter 2, the committee was very interested in the NITL. The primary conclusion of that 2005 inquiry was that the dominant Australian approach to the teaching of literacy (the whole language approach) is not in the best interests of students, particularly those having difficulty learning to read. The conclusions and recommendations of the NITL were supported by other recent international surveys, namely, the United Kingdom's Rose Review and the United State's National Reading Panel.[21]

3.39 The NITL made a number of recommendations, including:

- Teachers should be equipped with teaching strategies based on findings from rigorous, evidence-based research that are shown to be effective in enhancing learning to read in all children;
- Teachers should provide systematic, direct and explicit phonics instruction so that children master the essential alphabetic code-breaking skills required for foundational reading proficiency;
- The teaching of reading throughout schooling should be informed by comprehensive, diagnostic and developmentally appropriate assessments of every child, mapped on common scales; and

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20 Ibid, p. 6.

21 Department of Education, Science and Training, *National Inquiry into the Teaching of Literacy*: *Report and Recommendations*, December 2005; Jim Rose, *Independent Review of the Teaching of Early Reading*, March 2006; National Reading Panel, *Teaching Children to Read*, 2000.

- The conditions for teacher registration of graduates from all primary and secondary teacher education programs should include a demonstrated command of personal literacy skills necessary for effective teaching of reading.

3.40 A number of academics told the committee that there is little evidence of any of these recommendations being implemented. There was disturbing evidence that some of the initiatives undertaken subsequent to this report are directly contrary to the recommendations of the report.[22]

3.41 The 'phonic' versus the 'whole language' debate bears strong similarities with the standard syllabus supporters versus the outcomes-based devotees. In both debates there are those in the middle of the fight who deny that it is being waged at all, or that it has been blown out of proportion. Professor Claire Wyatt-Smith from Griffith University told the committee:

> Much is being made of the whole-of-language debate, but it should have been past tense because what is recognised by practitioners in the field is that whole-of-language in and of itself is never going to be sufficient for quality learning experiences in reading. Of course we need phonics. And of course we need whole language and a range of reading materials provided. I would support the findings of the reading inquiry by saying that it was not news. It was not news to the academy, I should say.[23]

3.42 And the Independent Education Union of Australia, with members on both sides of the argument, told the committee:

> The notion that there are various schools of thought that compete with one another in schools about how to teach kids is a nonsense. When you talk to teachers about what they are doing, they are using strategies not just from those camps but from a range of camps…What is important is that teachers have access to quality research that indicates which things work and which things do not, and how you put things together. The other element of it comes back to the individual student: individual students' learning styles and needs are different. Unless you cater for those, there is no point in saying, 'This is the only way you can do it.' It is not going to work for some of those kids, and you are going to need different strategies.[24]

3.43 The committee notes that home-based literacy practices are also important in teaching children how to read. Yet, if teachers are finding the task difficult, parents might well be finding it more so. According to Professor Max Coltheart, there are five

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22 Professor Kevin Wheldall et al, *Submission 27*, pp 1 & 3-4.

23 Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, p. 92. Also, Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 35.

24 Mr Chris Watt, Independent Education Union of Australia, *Committee Hansard*, Melbourne, 26 June 2007, p. 12.

popular commercial products, which have been scientifically validated.[25] However, there does not appear to be any procedure for informing parents of the availability of effective products or programs. Government agencies cannot do so, and professional bodies, such as Specific Learning Difficulties Association of New South Wales, choose not to do so out of fear of litigation. The committee presumes that parents must necessarily rely upon word of mouth, or unofficial advice from teaching experts or professional associations.

Mathematics

3.44 The committee received more evidence in relation to the quality of mathematics teaching than on any other aspect of the curriculum. Many of the submissions and much of the testimony was critical to the point of being pessimistic about the likelihood of improved standards, as well as being fearful of a further decline in standards and performance. There are three related reasons for this, representing a downward spiral of consequences. These are that first, the quality of aspiring teachers is in decline, especially at primary school level; second, this is compounded by the inadequate treatment of mathematics content during teacher training, giving new teachers neither confidence nor enthusiasm to teach mathematics; third, the consequence being that too many children are unprepared at the end of primary school to learn algebra, without which they cannot study mathematics at a higher level in Years 11 and 12.

3.45 There are other consequences. With fewer students studying higher level maths at school, fewer still are qualified to study mathematics at an undergraduate level. This is the pool from which high school mathematics teachers are drawn. Far fewer are choosing to enter the teaching profession, for several obvious reasons.

3.46 To begin with the quality of entry level students to education faculties, the committee notes some forthright comments from Professor Bill Louden from the University of Western Australia.

> One of the things about selection of primary teaching as an occupation is that there is a genetic selection against mathematics ability. People who can do maths do not choose to become primary teachers. To put it in its negative form, one of the reasons you choose to be a primary teacher rather than do a commerce degree is that you are going to have to do two units of first year mathematics in a commerce degree. So there is actually a selection against mathematical ability into primary teaching. That has a larger effect than whether there is anybody in the department who can teach maths.[26]

3.47 Professor Louden described how early tests of numeracy conducted by education faculties showed that a very large proportion of students cannot do grade 5

25 Professor Max Coltheart, *Committee Hansard*, Sydney, 17 May 2007, pp 7-8.

26 Professor Bill Louden, *Submission 73*, pp 10-11.

maths because they never learned a lot of maths at school. They have the same problem in Britain. This, he explained, was a selection effect which could only be changed if we required people to be good at maths. With the current pay, conditions, status and morale of teaching, that would just mean there were no teachers. In order to fix the problem, maths professional development courses in Western Australia put most of their emphasis on trying to teach the teachers some mathematics so that they can teach the children.[27]

3.48 There are differences of opinion about the problems that face mathematics teaching and the causes of them. On the one hand there are those who consider the curriculum old-fashioned, as discussed in the next chapter, and who criticise the outdated pedagogy that they believe is still prevalent. Pedagogy, they believe, should centre mathematics in 'real-life' contexts to ensure engagement and commitment to task. On the other hand are those who see nothing wrong with traditional ways of teaching, and who believe that mathematics should be challenging in its discipline, its requirement for 'automaticity' of response in arithmetical functions, and in the enjoyment students should feel in the realisation of their intellectual growth. There are clear differences in philosophy here.

3.49 The Australian Association of Mathematics Teachers argued that the pedagogy is largely to blame in that it is not teaching students deep learning processes.

> Mathematics teaching methods are frequently poor and modelled on methods used in the ‘60s which focus primarily on the inculcation of mathematical routines and algorithms; these approaches foster memorisation as opposed to deep learning needed by students if they are to be confident users of mathematics.[28]

3.50 The Mathematics Association blamed the fact that out-of-date teaching methods persisted because they were promoted through the media in 'back-to-basics' campaigns, making it difficult for teachers to attempt more appropriate methods.[29] The committee finds this difficult to believe.

3.51 While the Mathematics Association takes the view that out-of-date teaching methods and a failure to make maths sufficiently relevant and exciting to students are matters of concern, others have a different perspective. For them, mathematics is an intellectual task to be mastered to the extent of a student's capability. Their complaint is that the syllabus does not prescribe a sufficiently rigorous program of learning. As the committee was told:

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27 Ibid, p. 11.

28 Australian Association of Mathematics Teachers, *Submission 21*, pp 1-2. Also, Dr Glenn Finger et al, *Submission 46*, p. 7; Association of Consulting Engineers Australia, *Submission 71*, p. 6.

29 Ibid.

> The real issue, we think, comes back to the syllabus, and it goes all the way through. There is a lack of reinforcing of the basics; there is a lack of emphasis on the underlying skills that are necessary to [progress] through. We have heard lots of arguments; I have certainly heard them and I have tried some of them. If we make mathematics and science interesting, if we bring it into real-world problems—if we do all of these things, everyone will love science and want to go on with it. It is a very compelling argument, but it is false—and demonstrably false.[30]

3.52 The committee assumes from this that there is no alternative to some serious application of mathematics basics, and that it should be done early. The committee wanted to know what was at the heart of falling interest and falling achievement levels. Where were things going wrong? The progressive curriculum challenge, with its potential pitfalls was described in these terms:

> We have spent a lot of time trying to work out what the very specific problem was. We think we have tracked it down. The logic goes like this. You need arithmetic to understand fractions. If you do not understand fractions you really cannot understand algebra. Once you take the abstraction away from algebra, fractions are actually harder than algebra. If you do not understand algebra, then you cannot understand calculus. If you do not understand calculus, the world is closed to you as far as science, engineering and technology goes because everything springs from that.[31]

Technology

3.53 Another element of disagreement among mathematics teaching practitioners concerns the use of technology. The Mathematics Association takes the view that the widespread use of calculators and computers has liberated mathematics from the memorising and mechanical chores of the past:

> Back in the sixties and seventies mathematics at school was designed to make every student be a calculator. Well, now that we have those technologies obviously the discipline has changed and also the mathematics in schools need to change to accommodate that. So it is more about inquiry, making sense of what is there in the display on the calculator as opposed to producing numbers and results from exponential equations that you have no idea what they are for.[32]

3.54 The Australian Mathematical Sciences Institute noted the idea that because we have calculators we do not need to do a lot of mathematics dominated a lot of thinking:

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30 Assoc. Professor Wayne Read, James Cook University, *Committee Hansard,* Brisbane, 6 June 2007, p. 13.

31 Ibid, p. 12.

32 Dr Thelma Perso, Australian Association of Mathematics Teachers, *Committee Hansard,* Brisbane, 5 June 2007, p. 59.

> 'that somehow or other the availability of technological tools does away with the need to understand the concepts underpinning these things. That is wrong, in fact. Everyone is saying that you need to have better conceptual skills and better knowledge of core mathematics because otherwise you do not understand the tools that you are using, and you cannot use them appropriately without that knowledge.[33]

3.55 The committee notes that Victoria led the way in allowing graphics calculators into Year 12, but the realisation grew that students were becoming excessively reliant on the calculators, which were getting more powerful. In 2006 Victoria reintroduced a technology-free exam for part of the harder Year 12 subjects. It was claimed that teachers welcomed it with open arms because it meant that the students once again had to start thinking about what they were doing and be able to do things with pen and paper as well. There was reported to be some interest in the concept in Western Australia.

> It really has focused curriculum in Victoria again on how much the students actually understand the key concepts. Mathematics has got to be about that; it cannot just be playing around with ideas and shoving a few things into a calculator. If these students are really going to compete internationally they have to understand key concepts.[34]

Good practice and solid teaching

3.56 The committee had constantly to bear in mind that in classrooms across the country, solid teaching and successful learning is an everyday, routine occurrence. Research evidence supports this. The National Centre of Science, ICT, and Mathematics Education for Rural and Regional Australia (SiMERR), based at the University of New England, has recently undertaken research on what principles, processes and practices in teaching lead to outstanding educational outcomes in core disciplines. Funded by the ARC and the NSW Department of Education and Training, the AESOP study in mathematics teaching involved 50 intensive case studies of seven non-selective high schools, in both country and city locations, drawing students from across the socio-economic spectrum. The schools had one common characteristic: a consistent improvement across low, middle and high achievement bands over four years. The purpose of the inquiry was to identify the reasons for this successful record.

3.57 The researchers identified the following characteristics of successful maths departments: having experienced staff, with a majority having degrees with mathematics majors and therefore confident of their subject and able to 'talk mathematics'; all staff believing in 'solid teaching' (see below) and organised to maximise 'time on task'; having and supporting a well-developed testing regime for

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33 Ms Jan Thomas, Australian Mathematical Sciences Institute and International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, p. 30.

34 Ibid, p. 31.

the purpose of assisting learning. In addition, good maths departments are friendly and have supportive teams, even though methods vary between individuals, with a culture and reputation for caring about students and their learning. In regard to 'solid teaching', the researchers made the following observation:

> All teachers interviewed referred to their style as “traditional” meaning it involved a “standard” approach to classroom instruction. While there were variations to the meaning of a standard approach there was a great deal of commonality in approaches across schools. In particular, there was a clear and consistent structure to lessons.
>
> In practice, this common structure related to similarities in the way teachers started lessons, how lessons proceeded, and how lessons ended. This structure gave a sense of security to students in their learning. Nevertheless, within this structure, there was still variety in these lessons. For students, lessons were not dull, repetitive or boring.
>
> At some stage in the lessons observed students were given practice exercises. Students who finished the work were given additional activities, usually from another source. Teachers made every effort to ensure that students were given an opportunity to learn, or to practise skills, in each lesson. A feature of the lessons observed was that teachers were aware of the need for appropriate revision before proceeding, careful explanation of new concepts, appropriate practice and follow-up.
>
> Common to many lessons observed was an underlying rigour appropriate to the ability of the students. Teachers were conscious of helping and encouraging all students to achieve. Numerous conversations with teachers revealed the importance of “bringing students up to a level rather than pitching the work down”. Every effort was made to ensure that students achieved syllabus outcomes.
>
> Faculty members established supportive classroom environments for their students using an array of teaching aids or interesting approaches to topics. They accepted the need for some change and appeared willing to try new ideas, but did so in an environment of scrutiny. They were skeptical [sic] of educational fads and felt that they had been “burnt” many times before through change for change’s sake. They spoke about being prepared to put in place whatever was needed to ensure that their students were placed in the best position to benefit from changes.
>
> We have battled away with all these new approaches in teaching, group work and so forth…and mathematics-wise we have found it very hard to really move away from set maths lessons…you know your structured maths lessons…As soon as you get the unstructured happening the students are not comfortable (Head Teacher Mathematics).[35]

35 John Pegg, Debra Panizzon, Trevor Lynch, *Identifying and Analysing Processes in NSW Public Schooling producing Outstanding Educational Outcomes in Mathematics*, Conference Paper on forthcoming AESOP Project publication, UNE, 2007, p.6

3.58 The committee believes these descriptions to be interesting in the light of calls from various quarters for change. There is a belief that the needs of students in the 21st century are different. Methods must change because technology has changed. The committee applauds the scepticism which is shown by teachers in the face of these exhortations, especially when success in conventional and traditional ways is evident.

3.59 In conclusion, it is clear to the committee that while many of the factors which militate against higher standards of performance in school mathematics result from social conditions, and which are not easy for governments to influence, the problems we can fix are to do with improved training. The most formidable hurdle to overcome is reluctance on the part of the profession to admit that a high proportion of primary school teachers have an aversion toward, or fear of, mathematics because of their own school experiences. The effects on performance must be significant. If the influence of teaching is as crucial as all authorities agree, there must be very poor transmission of knowledge, if only because of a lack of energy and enthusiasm. A teacher's ignorance and apprehension must be evident in some way, even to young children. This may partly explain the perpetuation of the long tail of underachievement we see in test results.

3.60 The committee is aware that what it has from submissions and testimony gives only a narrow beam of insight into the problem facing mathematics teaching. As can be seen from the AESOP research itself, admittedly a restricted study, there is excellent work going on in classrooms across the country every day. Nonetheless, there are obvious concerns: the rapidly declining proportion of teachers with mathematics majors as part of their degrees; the failure of universities to stipulate high level maths as a pre-requisite for science and engineering and similar degrees, and above all, the failure to ensure that the 'basics' in fractions and algebra are mastered in those crucial Years 6-8, when so much of the essential grounding is achieved.

Conclusion

3.61 The committee is conscious of the fact that some factors relating to improvement in the quality of teaching are beyond the scope of any government. Teaching no longer attracts the same proportion of clever young people as it did forty years ago. It does not attract, as it did, those aiming to rise to secure and respected jobs with middle-class status. Such people now look beyond teaching to better paid professions and occupations. The committee believes, however that those who are attracted to teaching need to be better prepared. Quality teaching is more than ever dependent on quality training. That is the responsibility of university administrators, with prodding from governments where necessary. The committee believes that subject content is a weak spot in teacher training, and universities have the capacity to fix this.

3.62 The committee also notes in conclusion that literacy teaching in primary schools and mathematics teaching in both primary and secondary school can be improved in quality overall. It is concerned that students may be slipping through school without grasping the key skills which need to be acquired as a pre-requisite for

continued learning. The committee does not comprehend why more rigorous method training cannot be applied to literacy teaching using evidence-based data. In similar vein, it believes that much more should be done in teacher training and in professional development courses to remedy teacher deficiencies in content knowledge and instil more confidence in teaching method.

Recommendation 2

The committee recommends that the Government consider ways of restructuring teacher training courses so as to encourage and require aspiring secondary teachers to commence their studies in arts, science and other relevant disciplines before undertaking specific studies in education by degree or diploma.

Recommendation 3

The committee recommends that schools and school systems take particular measures to improve teacher professional development in mathematics.

Recommendation 4

The committee recommends that the Minister take up with Universities Australia the need for administrative changes of a cross-disciplinary nature so as to allow schools and faculties of education to draw on expertise elsewhere in the university for the purposes of giving specialist tuition to trainee teachers in their teaching discipline.

Recommendation 5

The committee recommends that the Minister take up with Universities Australia the need to encourage a more rigorous and evidence-based approach to the preparation of trainee teachers in regard to literacy and mathematics method.

Chapter 4

Curriculum

4.1 Curriculum has been the focus of most discussions about school reform over the past 20 years. There appear to be distinct waves of enthusiasm for curriculum 'reform' (as it is always termed) as educationists work toward redefining what they consider to be the essential learning for a new age. Governments at both state and Commonwealth levels have sought to intervene at particular points, either because they are captured by the reformers, or because they discern popular discontent with prevailing curriculum and teaching practice. In broad terms, the movement toward the national adoption of learning statements and profiles which occupied the time of all jurisdictions in the early to mid 1990s was initiated by the Commonwealth, but the process of change was largely managed by state officials.

4.2 Currently, in the middle of the first decade of the 21st century, the initiative remains with the Commonwealth. The committee notes that while arguments between the states and Commonwealth proceed over details, it appears that governments at both levels are noticing similar things in the 'what, why and how' of teaching and learning in schools they believe should be improved. In the committee's view, the Commonwealth-state arguments about education centre on the extension or defence of the constitutionally defined education 'patch', as in who should have responsibility for what. There appears to be no essential differences of opinion about the direction of a renewed curriculum change. The argument is over the process of collaboration in the pursuit of change.

4.3 The education community understands the political dimension to curriculum change, which is why this inquiry has not provoked any strong views about a national curriculum. There is general agreement in principle that there should be one. The argument is over how far it should extend in regard to content and assessment. Some submissions claim an embryonic national curriculum already exists. Other submissions suggested that while uniformity in curriculum will never eventuate there will be incremental change in the direction of uniformity. The committee does not accept this sanguine view, and argues that improvements in learning outcomes may only be achieved through deliberate and difficult actions which will be unpopular in some states and among some education interest groups.

4.4 In this report there is considerable overlap between observations about curriculum and teaching practice. Thus, some references to science teaching in Chapter 3 include curriculum references which are not repeated here. In this chapter the committee highlights some of the concerns voiced by educationists and parents in regard to what they see as serious deficiencies in curriculum.

The curriculum challenge

4.5 The committee understands the pressures on systems and schools to develop curricula and syllabuses which serve a number of purposes. As stated earlier, the committee believes that the purpose of schooling is to develop the minds of students, over 10 to 12 years of school life, with the associated ability to think for themselves, make informed decisions, and use knowledge and skills in productive and fulfilling ways. This requires the acquisition of knowledge of what is referred to as 'the basics' as well as what a number of submissions refer to as 'deep learning'. And despite the stronger contemporary emphasis on work readiness skills, or perhaps as an adjunct to it, values and attitudes associated with quality learning are also essential. These are commonplace views, seemingly easy for schools to aspire to in many different ways, but are not easy to realise.

4.6 A utilitarian approach to curriculum basics is evident in submissions to the committee. The Queensland College of Teachers submitted that as change is a constant factor in the modern world, education and teachers must prepare students to embrace a diverse and uncertain future.

> Central to a consideration of the future needs of students is acknowledgement of a society faced with rapid social, economic, technological and cultural change. Globalisation, the explosion in the use of ICT, diverse family structures and changing workforce patterns, including a growing tendency towards ‘portfolio’ careers, are impacting on society and the way we prepare young people to be effective citizens. They denote a society where the ability to acquire and apply knowledge, rather than just knowledge itself, is valued.[1]

4.7 Parents too have, in the main, a utilitarian attitude to the school curriculum. For most parents, the philosophical basis for curriculum is a less important matter than knowledge that is useful either for further professional study or technical and job-readiness skills. Parents wish to see evidence of progress.

Outcomes-based education

4.8 The committee noted that some educators at system level, and some academics in the field of education, are intensely irritated by the persistence of this issue, perhaps understandably, because it has provided an opportunity for media commentary on education matters quite unrelated to outcomes-based learning. No-one objects to discussing outcomes in relation to teaching and learning: it is only that there is a lot more to teaching and learning theory than that.

4.9 The committee discusses outcomes-based learning theory in this report because it has been mentioned frequently in submissions. Witnesses have described its characteristics and effects, often in disparaging terms, while others have let it be

1 Queensland College of Teachers, *Submission 53,* p. 3.

known that they are devotees of constructivist theories which guide their teaching practice.

4.10 As noted in Chapter 1, outcomes-based education formed the basis of the eight Key Learning Areas (KLAs) identified during the first attempt at establishing a national curriculum in the early 1990s. It places much emphasis on competencies, but in the process of developing statements and profiles in what were quite intense debates, subject or discipline content was overlooked. New South Wales, in particular, objected to this. The legacy of that phase of curriculum change lasted until very recently in Western Australia, when it finally crashed amidst public and political controversy.

4.11 Outcomes-based education is based on constructivist theory, which in turn is based on the idea that learners actively process and construct new ideas or concepts based on knowledge already acquired. The committee understands that the implementation of outcomes-based learning has been made especially difficult by the lack of emphasis on content and the concentration on the attainment of outcomes, the achievement of which are very difficult to assess. One indicator of the effects of outcomes-based learning on state and territory curricula in the 1990s was the jettisoning of syllabuses and formal testing.

4.12 Education researcher and commentator Dr Kevin Donnelly stated the problem of outcomes-based education without a syllabus ('road map') as it affects standards:

> In an outcomes based approach, as we adopted it in Australia, teachers are not given that road map, they are given an OBE document, a framework or an outline that concentrates on what students should know at the end in outcomes that they should be able to demonstrate or achieve. The way a lot of those outcomes have been written is very generic and vague, and there might be hundreds of them. For example, in primary school, if a teacher is teaching four or five subjects they might have to deal with hundreds and hundreds of outcomes statements with even more indicators. They have to then map back and write a syllabus to implement in the classroom. So they are coming at it from two different angles.[2]

4.13 Constructivist approaches to teaching extend through both primary and secondary years. The committee heard most of the criticism to outcomes-based education from the perspective of secondary school teaching and learning. But the committee also notes the connection between constructivism in this context and the whole-of-language approach to teaching children to read. As the report of the National Inquiry into the Teaching of Literacy stated:

> Essentially, the whole-language approach to teaching and learning reflects a constructivist philosophy of learning in which children are viewed as inherently active, self-regulating learners who construct knowledge for themselves, with little or no explicit decoding instruction. However, there is

2 Dr Kevin Donnelly, *Committee Hansard,* Melbourne, 25 June 2007, p. 31.

> a strong body of evidence that whole-language approaches are not in the best interests of children experiencing learning difficulties and especially those experiencing reading difficulties. Similarly, for children from disadvantaged backgrounds who often do not have rich phonological knowledge and phonemic awareness upon which to base new learning, being taught under constructivist modes has the effect of compounding their disadvantage once they begin school. This is particularly the case for children from non-English speaking backgrounds, including Indigenous children where English may be their second or third language.[3]

4.14 The committee notes that constructivist thinking is still alive and well. The committee received evidence from the Middle Years of Schooling Association (MYSA) which gives quite explicit support to teaching practices associated with outcomes-based education. MYSA submitted that middle school teachers had more success in teaching the core knowledge and skills when using a constructivist approach to teaching. The type of learning experiences and the opportunity for students to become independent learners are significant contributing factors to students being 'successful' in senior secondary and further education, although the Association admitted that measurement of this success was difficult to quantify.[4]

4.15 The committee noted that MYSA equated knowledge with 'quantity' as distinct from the more process-driven 'access and application realm...which is preferred and which assists students to achieve higher standards'. MYSA values process over knowledge, presumably on the basis that process enables knowledge to be 'googled' in a trice.[5]

4.16 The committee takes the view that a large proportion of students will require direction in order to succeed, and they are happier and more secure in a structured learning environment where their group-work and individual learning can be more accurately monitored and assessed. It notes the critical weight of opinion against a doctrinaire view of outcomes-based leaning, which is explained here:

> Australian operational views of constructivism…confuse a theory of knowing with a theory of teaching. We confuse the need for the child to construct her own knowledge with a form of pedagogy which sees it as the child's responsibility to achieve that. We focus on the action of the student in the construction of knowledge rather than the action of the teacher in engaging with the child's current misconceptions and structuring experiences to challenge those misconceptions...The constructivist theory of knowing has been used to justify a non-interventionist theory of pedagogy, whereas it is a fair interpretation to argue that constructivism requires vigorous interventionist teaching: how, after all, is a student with

3 DEST, *Teaching Reading*, Report of the National Inquiry into the Teaching of Literacy, p. 28.

4 Middle Years of Schooling Association, *Submission 10*, p. 4.

5 Ibid.

> misconceptions supposed to challenge them unaided? How does she even know they are misconceptions?[6]

4.17 Bruce Wilson argues that a view of teaching is needed which emphasises the role of the teacher is to intervene vigorously and systematically on the basis of excellent knowledge of a subject and being conscious of student conceptions and misconceptions in that field. The purpose of the intervention is to ensure that the child's construction of knowledge leads her to a more correct understanding of the domain.

4.18 The committee notes one final point. Outcomes-based education neglected content, although the syllabus documents were full of very explicit outcomes. It was up to schools and teachers to build the content foundation beneath the superstructure of outcomes. This was especially difficult for teachers with a shaky grasp of their subject discipline. As one Australian Council for Educational Research (ACER) researcher told the committee:

> It sounds pretty trite, but when I was teaching—I was a teacher in Victorian country high schools in the mid-seventies—basically we were allowed to teach pretty much what we wanted to. There was a real counterreaction to what had been seen as an oppressive centralised curriculum regime. But it went too far the other way. I was not, as a young teacher, really equipped to develop curriculum myself or to design appropriate methodologies for teaching.[7]

4.19 The task of teachers in the construction of teaching material has been made much more difficult in recent years with the scaling back of regional or district teaching support centres, where formerly, curriculum specialists were appointed to assist schools and their staff in such matters. The committee notes, as a side issue only, that much of the curriculum reform since the 1990s has been driven by state governments 'rationalising' crucial non-school appointments as a cost saving measure. It could not have come at a worse time.

The syllabus or standards approach

4.20 With the generally unsatisfactory experience of outcomes-based education, there has been a general return to reliance on a syllabus approach to curriculum design and teaching practice. The committee understands this to involve a focus on content related to specific year levels and curriculum descriptors that are concise, measurable and based on traditional academic disciplines. As is noted elsewhere this is 'business as usual' in New South Wales and Victoria. The radical changes in Western Australia are described in Chapter 5. The submission from the Tasmanian Department of

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6 Bruce Wilson, *Unlocking potential*. Paper given at the 2005 ANZSOG conference, University of Sydney, quoted in *Teaching Reading – National Inquiry into the Teaching of Literacy*, DEST, December 2005, p. 29.

7 Dr Phillip McKenzie, Australian Council for Educational Research, *Committee Hansard*, Melbourne, 25 June 2007, p. 42.

Education gives a brief indication that 'curriculum area descriptions' (syllabuses) are currently being developed which include course content and assessment guidelines.[8] The submission from the South Australia Department of Education and Children's Services is, however, uninformative on matters of curriculum detail.

4.21 The committee noted the work that has been done in Queensland on the new Queensland Curriculum, Assessment and Reporting Framework. This is a comprehensive Years 1-10 statement of essential learnings on core knowledge and skills, and containing five point scale standards and assessment guidelines.[9] At its Brisbane hearings the committee heard evidence that the old outcomes-based syllabuses were 'far too generic and vague', and there was a need to replace them with syllabuses that gave students several opportunities to learn the things that were important, that is, deeper learning rather than a superficial coverage.[10]

4.22 The committee notes that a syllabus approach to curriculum makes system-wide curriculum support easier and school or department based efforts toward collaborative materials preparation much more feasible. Significantly, the countries that outperform Australia in the Trends in International Mathematics and Science Study (TIMSS) assessments (such as Singapore, Japan, the Republic of Korea, and Hong Kong) have syllabus based approaches to curriculum documentation.[11]

Deep learning

4.23 The committee heard a great deal about 'deep learning' during public hearings. Research into human learning has revealed the importance of deep understanding of concepts and principles. Knowledge of facts and procedures is crucial, but deep understanding allows knowledge to be organised and conclusions to be reached about what knowledge is relevant to a problem. ACER told the committee that:

> School curricula need to promote the development of students' higher-order skills and deep understanding of subject matter. That is, the development of basic skills is an essential but not sufficient objective of a national curriculum. For example, the ability to read and understand a newspaper opinion column depends first on basic skills in recognising and decoding words. But a deeper understanding requires skills of critical analysis: an ability to 'read between the lines'; an understanding of the nature of opinion; and an understanding of the connections and motivations of the writer(s).[12]

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8 Department of Education, Tasmania, *Submission 35*, p. 6.

9 Queensland, Department of Education, Training and the Arts, *Submission 54*, pp 7-9.

10 Ms Lesley Englert, *Committee Hansard*, Brisbane, 5 June 2007, p. 80.

11 Queensland, Department of Education, Training and the Arts, *Submission 54*, pp 12 & 15-19.

12 Australian Council for Educational Research, *Submission 38*, p. 3.

4.24 Recognition of the importance of deep learning was reflected in a number of submissions to the committee. Vincent Feeney of the Association of Principals of Catholic Secondary Schools in Australia told the committee:

> We often talk about rich learning or rich knowledge. We talk about students arriving at their own knowledge. People sometimes look at the internet and say, 'There's so much knowledge out there.' That is not knowledge; that is information. In the 21st century we have to train young people with the skills to turn that information into knowledge. Being gen Y, they want to turn it into their own knowledge and their own understanding. Because adaptability is going to be a great 21st-century skill, I think we need to have a different balance between content and skills.[13]

4.25 Bruce Wilson supported the development of 'deep understanding', or higher-order skills, and argued against curriculum frameworks that do not clearly and practically identify desired student outcomes; that specify very little core curriculum and only advise specified content; and that are structured around the conceptually inadequate and practically difficult key learning areas.

4.26 As a means of promoting higher-order skills, Bruce Wilson proposed two reform measures. First, dispensing with the KLAs and moving beyond outcomes, which would involve identifying and prioritising subjects for various stages of schooling (for example, English and mathematics as the only core curriculum for the first three years of schooling). Second, limiting the number of student achievement standards and including characteristics of depth of learning and mandatory content.[14]

4.27 The committee was quite attracted to the first proposition. Dr Kevin Donnelly had described debate in the United States as focussing upon the concern that much of the existing curriculum is a 'mile wide and an inch deep'. This appeared to be Mr Bruce Wilson's concurrent criticism, and one which had appeared at various intervals throughout the inquiry:

> Instead of covering so much ground, the alternative is to focus on core areas, such as literacy and numeracy in the early years, and to ensure that foundation learning occurs before broadening what students encounter.[15]

4.28 Professor Bill Louden submitted that notwithstanding its simplicity, this really was a solution:

> The older you get, the more important it is that you have skilful teaching at breadth. The younger you are, the more important it is that—if you are in

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13 Mr Vincent Feeney, Association of Principals of Catholic Secondary Schools in Australia, *Committee Hansard*, Melbourne, 25 June 2007, p. 71.

14 Bruce Wilson, *How we got the curriculum wrong*, Paper presented at Queensland Secondary Principals' Association (QSPA) Conference 2003, 4-6 June, Gold Coast, p. 5.

15 Dr Kevin Donnelly, *Submission 9*, p. 23. Also, Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, p. 35; Professor Gregory Robson, Edith Cowan University, *Committee Hansard*, Perth, 2 July 2007, pp 41 & 45.

> P[rep] it is all about literacy, if you are in year 3 it is about literacy and numeracy. If you are in year 5 it is about science, if you are in year 7 it is about science and social studies and literacy. There is a build-up. There is depth and there is breadth.[16]

4.29 In Western Australia, the Department of Education and Training is commencing an implementation program:

> A couple of months ago...we made a decision, with the minister, to have a close look at the curriculum emphases in the phases of schooling. We have instructed our schools that, in the early years, they need to be spending at least 50 per cent of their instructional time on literacy and numeracy as the key foundation or the building blocks for the future. We have already made that move…We recognise that, building up through the years, science becomes a key emphasis area in the middle years and beyond, expanding to the fuller range of learning areas.[17]

4.30 The committee commends this positive move. It would assist in un-cluttering the curriculum and enable better use of schools' limited resources. It would allow students more time to learn complex concepts and skills, and to develop conceptual understandings and acquire factual knowledge. The committee will be interested in the outcome of Western Australia's experiment.

Course content and teaching issues

4.31 The committee undertook no survey of current school curricula, a technical exercise beyond the scope of the inquiry. This section takes account of views and commentary made in submissions and other sources concerning current curriculum issues.

Primary school curriculum issues

4.32 There are around 7 000 primary schools across the states and territories, with an enrolment of nearly 2 million students. The primary curriculum across the country is divided into KLAs, or broad subject categories, thought to be essential for a broad education. The overall curriculum framework is the responsibility of state and territory education departments. Various documents underpin these with the content detail differing across jurisdictions.

4.33 There are three main organisers of the curriculum at primary school level. The first is literacy and numeracy, which have pre-eminent importance in schools. Second, other subjects like social studies, art, music and physical education, and possibly a foreign language introduction course. Finally, primary schools are also expected to deliver learning in a third 'mandated' or value content area, which consists of

16 Professor Bill Louden, *Submission 73*, p. 8.

17 Ms Sharyn O'Neill, Department of Education and Training, Western Australia, *Committee Hansard*, Perth, 2 July 2007, p. 80.

education in specific areas of living skills, such as bike education, water safety, and sex education. Topics in this area of the curriculum are sometimes mandated as a consequence of pressures being exerted by community interest groups.[18]

4.34 The public generally believes that if primary schools are not equipping students with basic skills and abilities, they are failing in their fundamental responsibility. The committee was told that, generally, the primary school curriculum is satisfactory in preparing primary school students for secondary school. It was noted that children with learning difficulties in primary school often transition to secondary school without resolving these difficulties. This impedes progress and high achievement in secondary school. Secondary school has a specific additional consideration for students as they become adolescents and fall within the middle years. The committee notes the weight of evidence about the crucial importance of primary education, and the fact that a poor start in literacy and numeracy skills makes it difficult, if not impossible, for a high proportion of students to make up lost ground.

4.35 Contrary to learning expectations, primary principals point to considerable evidence over the past 20 years of a decline, rather than an enhancement, in the importance of primary schools as a foundation of life-long learning.[19]

4.36 A recently published report commissioned by DEST is a response to pressure being felt among primary principals and teachers resulting from the higher incidence of students with learning and behavioural difficulties. There is clearly a high incidence of these problems concentrated in a relatively small number of schools. In such schools there is a resources shortfall. It is also recognised that expert consultancy is limited or unavailable. The DEST study used the benchmark of whether primary schools generally met the test of the National Goals for Schooling in the Twenty-First Century.

4.37 The report notes that the resources need is spread unevenly and can only be addressed by a targeted funding strategy. It called for more transparent processes in this allocation, including at the school level. Schools finding it difficult to cope with the full range of KLAs would need to focus teaching and assessment on fewer core outcomes. The tone of the report suggests the unlikelihood of significantly increased funding. Nonetheless, in no state or system was there any evidence that, in general, primary schools had sufficient resources to meet the National Goals of Schooling.[20]

4.38 Finally, the committee encourages a more general move to institute a system whereby specialist teachers take a leadership responsibility for a particular KLA. This responsibility would include teaching content and method advice and mentoring. In any reasonable sized primary school there are teachers with a particular interest or skill in mathematics, literacy, music or social science. The committee heard that this

18 Australian Primary Principals' Association, *Submission 43*, p. 8.

19 Ibid, p. 6.

20 DEST, *The Sufficiency of Resources for Australian Primary Schools*, 28 June 2007, p. 107.

arrangement is current in some schools. It would also boost the interest of students in particular disciplines in preparation for high school, as specialist teachers can advise on ways to accelerate learning in particular subjects. The Australian Geography Teachers' Association has also claimed that having a subject leader in each discipline at primary school level would enable teachers to more effectively develop integrated units of work. This would assist in managing the cluttered curriculum.[21]

The 'cluttered curriculum'

4.39 Everyone the committee spoke to agreed that the school curriculum was cluttered with a huge range of obligatory teaching and learning prescriptives. The problem appears to be far worse in primary schools. As the committee was told:

> What has happened over the years is that we have taken on a heck of a lot of societal concerns. Someone was saying to me in the Catholic sector that there were 68 extra areas that they were now looking at regarding sex education, literacy, financial literacy, dog safety, road safety and a whole variety of programs that I think once were mainly the parents' responsibility. The pendulum has swung way too far now and schools are picking that up. Interest groups and governments have worked out that primary schools are obviously a very good avenue to reach every child in the nation if you have a key message, and they are important messages. We do not deny that dog safety and road safety are absolutely critical, but of course when they come in nothing goes out. When you look at our key learning areas and if you look at the time being spent, over half the week to go on two areas with just the KLAs and then you have got half a week for the rest. So it is absolutely impossible. Schools are saying that primary schools are now like working in a pressure cooker.[22]

4.40 The submission from Lutheran Education Australia made a similar comment on the unrealistic expectations placed on primary schools:

> [Teachers'] work is often made more difficult by a barrage of new requirements and initiatives. The expectation that teachers can incorporate each new initiative, no matter how worthwhile, into the curriculum without the additional expectations impacting on the time available for learning in other areas, and the maintenance of high standards, is not a reasonable one! The overall impact of all these initiatives is a curriculum that is fragmented and cluttered.[23]

4.41 One of the 'unrealistic expectations' is the extension of the concept of loco parentus in secondary schools as well as primary schools, whereby teachers are now required by regulation to be:

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21 Australian Geography Teachers' Association, *Submission 25*, p. 2.

22 Ms Leonie Trimper, *Committee Hansard,* Sydney, 17 May 2007, p. 18.

23 Lutheran Education Australia, *Submission 41*, p. 2.

> active, and in some cases proactive, caregivers for school-age children. These tasks are often complex and demanding. In one local school this very week these tasks included not only evacuating students during a school fire, but controlling students who were keen to take video images with their mobile telephones to forward to media outlets; administration arrangements with the exclusion of a number of students; the correct procedures for injecting students experiencing life-threatening allergic responses; and efforts to coordinate a regional response to student behaviour and engagement.[24]

4.42 The committee sees no easy solution for schools being saddled with surrogate parental responsibilities. As will be noted elsewhere in this report, however, there are tasks in a school which can be done by para-professional and support staff. This is not a well-known concept in Australia but is being extended in some European countries.

4.43 In Britain the government investigated restructuring the teaching profession and reforming the school workforce to assist teachers with their workloads. At the heart of its proposal was an increase in support staff combined with a reduction in bureaucracy.[25] A subsequent independent audit of the program found that these two measures had benefited teachers by freeing up their time and allowing them to focus to a greater extent upon improving the quality of teaching and learning. In many primary schools, teaching assistants undertake administrative chores, and some were able to assist with the teaching of the curriculum. Some problems were noted in less affluent areas where the recruitment of suitable teacher's assistants was more difficult. This could also be the case for rural or remote schools in Australia. Another initiative of note was the common practice in secondary schools of employing external staff, normally on short term contracts, to invigilate external examinations instead of the teachers. The British experience shows that there are effective and simple methods for assisting teachers with the delivery of curriculum and some of these methods could usefully be employed in Australian schools where the cluttered curriculum is said to significantly effect the teaching of the KLAs. The teaching of key learning areas must be the first imperative.

4.44 'Uncluttering' the curriculum is to re-order learning priorities to meet primary learning objectives. As the committee was told, not all KLAs are being addressed in primary school. Some are treated in a cursory manner, and some are completely disregarded. Only a few schools have an introduction to a foreign language program. If there is no specialist music teacher the school will get by with some singing. There may be no science taught in the absence of a teacher who knows anything about it. This raises an equity issue which is in some ways the corollary to the overcrowded curriculum problem. In the recent DEST commissioned paper referred to above, the equity issue which relates to the daily work of the school is put in stark relief:

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24 Dr Glenn Finger et al, *Submission 46*, p. 3.

25 Department for Education and Skills, *Time for Standards: Reforming the School Workforce*¸ October 2002.

> It is not simply a resource insufficiency problem, however. Most schools do not have enough time in the school week to provide the level of curriculum breadth and depth now expected of all primary schools. This can create a pressure cooker environment when expectations of what teachers should be doing exceed the time available. The primary school day now operates on a businesslike basis and there is little opportunity for exuberance, celebration, and fun –features missed by contemporary primary school principals and teachers. Primary principals commented that their schools were becoming more like high schools and saw this as detrimental to their mission.[26]

4.45 The committee was told of the practice in France of matters of social responsibility and community concerns being taught after school by relevant community groups.

> …my understanding is that teachers come in in the morning and part of the early afternoon is spent on literacy and numeracy, et cetera, and then another group come in and teach instrumental music and they do the physical education at that time so that the day is expanded.[27]

4.46 The problem could be addressed through an integrated curriculum with relaxed individual subject outcomes and more parent directed learning, especially in the area of student welfare. This would allow for more teaching time in literacy and numeracy. Teachers from Cardiff Primary School wrote that:

> …parents must bear some responsibility of their child's education within the family unit. Parent directed learning, with assistance in homework, set assignment work, leadership development and behavioural discipline, is seen as a valuable tool in preparing students for further education. Rather than simply decreasing time spent investing in child welfare during school hours, refocusing these responsibilities to the family unit…will create more face-to-face teaching time for areas such as literacy and numeracy to be increased.[28]

4.47 The committee believes that primary schools could take a far more imaginative approach in regard to the organisation of the teaching day. System authorities have responsibilities in regard to budgeting for employment of part-time teacher assistants. Local community members with suitable skills could volunteer in the range of tasks currently burdening teachers, including administrative tasks. A 'public service' culture which has taken hold in school systems is incompatible with putting learning first and being grounded in local community needs.

4.48 As this report was in the final draft stages, the committee noted that the Australian Primary Principals' Association had released its draft Primary School Charter, which declared areas of learning which are traditionally their responsibility

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26 DEST, *The Sufficiency of Resources for Australian Primary Schools*, 28 June 2007, p. 102.

27 Ms Leonie Trimper, *Committee Hansard,* Sydney, 17 May 2007, p. 26.

28 Cardiff Primary School, *Submission 8*, p. 8.

should remain with them and be taught in schools only after essential core subjects had been adequately dealt with. The charter declares that priority will be given to the core curriculum: English, maths, science and history, with art, sport, music and languages having a supplementary place.[29]

The curriculum for social sciences and the humanities

4.49 As stated earlier in this report, the committee did not undertake any systematic investigation of state curricula**,** nor did it consider all disciplines within curricula. It took note only of curriculum issues that were in contention, especially in cases where there was public concern evident about the value or the quality standards of what was being taught. Quality issues were raised most frequently in relation to mathematics and the teaching of literacy, but there were also questions raised about the relative value of subjects taught under the umbrella of social science.

Studies of Society and Environment

4.50 Before the curriculum changes in the 1990's, history and geography were usually taught as separate subjects throughout the secondary years. Since then, with the adoption of the KLAs, these subjects have been subsumed—in Years 7 to 10—into a subject known in most states and territories as Studies of Society and Environment (SOSE). The nomenclature varies slightly between states. In New South Wales, history has retained its status as a separate subject, existing alongside SOSE.

4.51 SOSE was intended to demonstrate the value of an interdisciplinary approach to learning the social sciences, where contemporary themes could be explored in their geographical, historical and economic dimensions. Its supporters point out that such an approach is very common at university level. The committee questions whether it is too ambitious for Years 8-9 to embark on a case study with almost no basic knowledge of the disciplines to be integrated. Without a detailed content syllabus such an educational task in Years 7-9 would be almost impossible. The response to this objection would probably be that knowledge is sought and applied to the case studies as relevant, and this quest would be a pathway to understanding through discovery learning, a student-directed exercise in other words.

4.52 The committee noted that in relation to content and teaching approval, SOSE was a model of the constructivist curriculum. As the committee was told:

> That is really the basic philosophy, that all students are entitled to all of this knowledge about their society and their environment. Having a broad spectrum subject allows us to encompass any new, emerging fields such as that of sustainability, which I mentioned as the National Action Plan for Education for Sustainability, which encourages students to think in terms of the triple bottom line, the environmental, social and economic areas. That is

29 Justine Ferrari, 'Primary schools to focus on the basics', *The Australian*, 2 August 2007, p. 3. For a criticism of the Charter, see Michael Clyne, Susy Puszka and Leonie Brown, 'Why we must fear core values', *The Age*, 3 September 2007, p. 20.

> the sort of thing that we can take on board easily. We can take on board all the aspects of the civics statement of learning that has now been mandated. We can do that easily, but single disciplines cannot do it as easily.[30]

4.53 The committee remains unconvinced that this approach to learning about the history and current state of the world, or even Australia, is likely to lead to any memorable insights, discoveries or accumulations of significant knowledge. It notes the validity of comment from Joy Schultz, a highly experienced Queensland teacher and long-time office-holder in the Social Educators Association of Australia, on the need for extensive professional development of SOSE teachers. It also notes, however, that Ms Schultz identifies the main problem as being the unfamiliarity of older teachers with discovery learning methods. The committee is more concerned with the often inadequate knowledge base among newer teachers studying for the B.Ed. As Ms Schultz notes, there is a serious shortage of teachers in the system with specialist knowledge in the social sciences.[31]

4.54 At the MCEETYA meeting in Darwin in April 2007, it was agreed that SOSE would be disaggregated in the secondary school curriculum. The committee did not receive any indication that this decision was at all unpopular. According to witnesses before the committee, teachers with specific training would always be interested in curriculum which taps into their expertise, professional interests and training. The problem with SOSE was that teachers had no real commitment to that amalgam.

4.55 SOSE teachers expressed their disappointment with the MCEETYA decision, and the committee appreciates that this decision will take a long time to filter through school systems. New syllabuses will need to be written—a time consuming process in most jurisdictions—and there were doubts expressed about whether there were sufficient numbers of specialist teachers able to take on the resurgent enrolments in history and geography.

4.56 Will the demise of SOSE be a windfall for history and geography? History teachers were mildly complementary of SOSE. As one of them told the committee:

> I think the introduction of SOSE was certainly well intentioned. In terms of intellectual development, it was well reasoned. What we should be doing in schools is making links between disparate disciplines rather than creating barriers between them. But it is another example of an initiative which in theory sounded good but which in practice, for a range of reasons…did not materialise terribly well at the chalkface.[32]

4.57 One of these reasons has to do with timetabling and the shortage of qualified teachers. As another history teacher explained:

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30 Ms Joy Schultz, *Committee Hansard*, Brisbane, 5 June 2007, p. 103.

31 Ms Joy Schultz, *Submission 59*, p. 3.

32 Mr Rodney Knight, Victorian History Teachers' Association, *Committee Hansard*, Melbourne, 26 June 2007, p. 5.

> One of the problems has been that too often SOSE has been a residual subject. By that, I mean they do the timetable and then they have a PE teacher with two spare periods. What can that period teacher do? They can do two periods of SOSE, because any fool can teach SOSE—not that I am calling period teachers fools and I am glad I am protected by parliamentary privilege here. In my own experience as a head of department, SOSE sometimes became a dumping ground for other things that people did not want to do or which were deemed necessary—for example, driver education.[33]

4.58 The committee believes that despite the difficulties of disaggregating the SOSE curriculum, the profile of history needs to be raised. Also, that resources, including professional development, and provision for history and geography units, need to be embedded in the B.Ed courses in universities.

History

4.59 The compulsory study of history in Years 7-10 has been strongly promoted by a succession of Commonwealth education ministers. The committee notes that this has aroused controversy involving assumptions about what themes and content a 'Commonwealth-sanctioned' Australian history course might contain. It notes that there is no discernable opposition to compulsory history. In this regard the New South Wales curriculum has provided the exemplary model for curriculum policy, at a national level, as it has in the teaching of other disciplines. Victoria has also kept faith with history, where it is regarded as an 'essential learning'. In other jurisdictions the tradition of teaching history in Years 7-10 has long since died out, and its incorporation into SOSE has been almost total.

4.60 The committee was interested in the responses of history teachers to the proposed 200 hours of history teaching to be mandated in Years 8-10. It was pointed out by members of the Australian History Teachers' Association that finding 200 hours even over three years was going to be difficult and could only be achieved by dispensing with other, possibly worthier, parts of the curriculum. There was also some doubt that the 200 hours would deliver the desired outcomes, particularly with the inadequate supply of qualified teachers. The Association estimated that there is already a shortfall of 10 000 qualified history teachers.

4.61 There might be some unforeseen consequences. Based on New South Wales' experience, a decline might be expected in the number of Australian history senior students. Students undertaking ancient and medieval history, hugely popular subjects

33 Mr Nicholas Ewbank, Australian History Teachers' Association, *Committee Hansard,* Melbourne, 26 June 2007, p. 5.

in New South Wales, would be aggrieved if these courses were removed from the Years 8-10 curriculum in order to make way for Australian history.[34]

4.62 The committee strongly holds the view that Australian history should be taught as a stand alone core, and compulsory subject in years 9 and 10 to ensure that every student has the opportunity to learn their national history.

Geography

4.63 The committee was delighted to learn that geography is alive and well, and on the verge of resurgence despite an apparent decline in popularity. This decline is largely attributed to the expansion of the curriculum. The decline in enrolments has also had positive consequences. The nature of the candidature has changed in that much more able students are now choosing to study geography. At university level also, those studying geography are spread over a much broader range of units and specialities.

4.64 The Australian Geography Teachers' Association is alive to the desirability of having a prescriptive national framework that actually drives the teaching of geography in schools. It believes that teachers should be challenged by new knowledge and new pedagogies.[35] Geography, like history, has suffered from being subsumed within SOSE to the point where geographic concepts and knowledge are not being imparted, or explored by students. As part of SOSE there is no systematic support for the cumulative understanding of the discipline's concepts and the development of its skills. In other words, there is no encouragement for learning growth, or evidence of it. The committee understands this to be the basic weakness of outcomes-based education. The committee hopes, as do geography teachers, that the new umbrella category of disciplines, Humanities and Social Sciences, does not ultimately form a de facto SOSE.[36]

4.65 Geography teachers advised the committee that it is theoretically possible for primary school students to acquire basic geographical knowledge, understandings and skills within the KLA of SOSE, Science (which includes some aspects of physical geography) and mathematics (which includes some elements of mapping skills). This depends upon quality teaching using structured and sequenced units which create a foundation for later studies. At the secondary school level, however, the only way to provide continuity and progression is to teach the discipline of geography as a stand-

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34 Mr Nicholas Ewbank, Mr Rodney Knight and Mr Michael Spurr, Australian History Teachers' Association and Victorian History Teachers' Association, *Committee Hansard,* Melbourne, 26 June 2007, pp 4-5.

35 Dr Grant Kleeman, Australian Geography Teachers' Association, *Committee Hansard,* Sydney, 17 May 2007, p. 56.

36 Mr Nicholas Ewbank, Mr Rodney Knight and Mr Michael Spurr, Australian History Teachers' Association and Victorian History Teachers' Association, *Committee Hansard,* Melbourne, 26 June 2007, p. 4.

alone subject. Concepts need time to develop and must be systematically revisited to deepen understanding. Similarly, skills need to be revisited and practised in a variety of contexts. The committee noted that this evidence underlined the importance of learning growth.[37]

4.66 The committee heard an affirmation of learning objectives which would be recognised by SOSE teachers:

> One of the criticisms of SOSE has been that people pursue particular perspectives within that framework. What the traditional disciplines do is they encourage students to look at geographical phenomena and issues from a variety of perspectives with the expectation that the students will then formulate their own attitudes and opinions related to those issues rather than being inculcated with a particular perspective.[38]

4.67 The committee noted the enthusiasm of geography teachers to outdo SOSE in its cross-disciplinary capability. The Australian Geography Teachers' Association saw geography as developing knowledge, understandings and skills essential to managing some of the most important issues facing the country, such as water shortages, climate change urban growth, and demography. Geography links the natural and social sciences, and its holistic approach to the study of people and their environments contrasts with a more selective study of elements than occurs in other subjects.[39]

The mathematics curriculum

4.68 The committee heard more about the mathematics curriculum and mathematics teaching than about any other subject. It would not be an unfair generalisation to observe, on the basis of evidence the committee received, that the degree of rigour in mathematics teaching in a state or territory is an indication of overall educational quality.

4.69 There are serious concerns about mathematics curriculum and syllabus standards in some states. It appears on the basis of the evidence available that standards are declining in this subject, compared to other subjects, including English. The problems are at both the bottom of the school and the top: the failure to instil the required level of 'numeracy' in the primary school years; and the failure to encourage the required degree of rigour in a larger proportion of students in the senior secondary years.

4.70 The Year 8 test data shows that for many students, failure begins in primary schools. There are claimed to be three contributing factors: the first is that the curriculum is deficient; the second is that many primary teachers lack the knowledge

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37 Australian Geography Teachers' Association, *Submission 25*, p. 2.

38 Dr Grant Kleeman, Australian Geography Teachers' Association, *Committee Hansard*, Sydney, 17 May 2007, p. 50.

39 Ibid.

of mathematics to teach it well; and the third is that, according to anecdotal evidence, too little time is spent in teaching mathematics.[40]

Views on standards

4.71 There appear to be two distinct views on weakness in the mathematics curriculum (even though it varies widely from state to state). One view, broadly speaking, is that the curriculum is too conservative and places too much emphasis on mundane tasks which weaken the enthusiasm of students. For these critics, mathematics must be relevant and useful for everyday circumstances of life. The emphasis should be on mathematics as 'numeracy'. The other view, broadly speaking is that mathematics is full of concepts to be mastered at a time when the minds of students are most receptive, and that there should be developed an 'automaticity' of understanding fundamentals of 'number-crunching' to allow for higher order understandings of more advanced concepts. Without that there is little prospect of growth in mathematical understanding.

4.72 The Australian Association of Mathematics Teachers argued that there needs to be a forward-looking approach to defining new 'basics' appropriate for the 21st century, not just those of the past that are the subject of current, ill-informed calls for a 'back to the basics' movement. One point of weakness described was that curricula are interpreted as lists of content to be taught as opposed to approaches that embed *working mathematically* meta-cognitive processes through research-based pedagogies.[41]

4.73 The committee was interested to hear a comment reported by the President of the Association of Principals of Catholic Secondary Schools in Australia, from one academic educationist 'that in his view 80 per cent of the present content of (the Victorian) year 10 maths syllabus could be done away with. I did not ask him, but I assume he meant that only 20 per cent has a degree of academic value'.[42]

4.74 The committee asked the Australian Mathematical Sciences Institute for its response. Professor Garth Gaudry replied:

> I think it is an exaggerated position, no matter which state's paper curriculum you look at. I do not think that is a sustainable position. I would say there is too much emphasis on rather trivial aspects, and I refer again to what is called 'chance and data and statistics'. I am not for one moment seeking to diminish the importance of those areas, but there is a very strong push from educationists to spend a lot of time playing around badly with

40 Ibid.

41 Zevenbergen, R. and Lerman, S. (2005) *Numeracy, Equity ICT: Final Report.* Brisbane: Centre for Learning Research, Griffith University, recently found that teachers make little use of ICTs to support learning. Also, Assoc. Professor Wayne Read, James Cook University, *Committee Hansard,* Brisbane, 6 June 2007, p. 13.

42 Mr Vincent Feeney, Association of Principals of Catholic Secondary Schools in Australia, *Committee Hansard,* Melbourne, 25 June 2007, p. 77.

> areas that are in principle quite difficult, even from kindergarten. It pops up in every syllabus and there is really not much to say. Suppose you start at year 6 and go through for a couple of years of secondary school. You are starting to repeat yourself because to go much further you require serious mathematical tools. I would make comments like that but certainly not the extreme comments.[43]

4.75 The Association of Mathematics Teachers submission emphasised the importance of applying mathematical knowledge and skill to general life experiences including the workplace. It argued that achievement standards at the Year 11 and 12 levels should include more than content, but also employability skills and the application of knowledge to 'real-life' contexts.[44] The priorities of the Association are summed up in its objection to the numeracy benchmark testing.

> From where we are sitting, for example, the national tests are not testing numeracy, they are actually testing a basic set of mathematics understandings, which perpetuates a myth that kids are numerate or not when actually they are just being tested on whether they have the potential to be numerate, based on their knowledge of certain mathematics.[45]

4.76 Also illustrative of the priorities of the Association was the view expressed to the committee that a balanced view of teaching mathematics for excellence is about students making decisions about how and when to use those skills and in different contexts. The committee finds it difficult to relate this to the need for algebra or simultaneous quadratic equations.

4.77 The committee had some difficulty in following the logic of the position presented to it by the Association. It accepts the concern of the Association that not all children are learning the 'basics', and that there are tensions between what might be required by universities in terms of mathematical preparation compared with what is required by employers. This dilemma is familiar to all teachers and systems. Yet the Association appears to waver between its support for teaching mathematical life-skills, what may be called 'numeracy', and catering for the needs of high achieving students who expect, as their parents do, that their learning progress will continue through school to the highest matriculation levels they can achieve.

4.78 What appears to be missing is an explicit affirmation from the Association of the value of teaching for intellectual growth. The committee agrees that the 'social context' of numeracy is all to the good at one level. But as students progress through the upper primary and early secondary years the enjoyment of learning maths will only become apparent when students can appreciate the measure of their own intellectual development.

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43 Professor Garth Gaudry, *Committee Hansard*, Melbourne, 26 June 2007, p. 29.

44 Ibid.

45 Dr Thelma Perso, Australian Association of Mathematics Teachers, *Committee Hansard*, Brisbane, 5 June 2007, p. 55.

Conclusion

4.79 The Commonwealth's requirement that all states and territories must have some standards based syllabuses ready for the start of the school year in 2009 has resulted in a flurry of activity in several states, particularly those which persisted with outcomes-based documents. The committee believes that this has been among the most worthwhile Commonwealth initiatives in school education.

Chapter 5

Matriculation standards and an Australian Certificate of Education

5.1 The final two years of secondary school should provide students with a quality education that equips them for further education, training and employment. This chapter of the report looks at the wide variation in assessment instruments for Higher School Certificate (and equivalent) qualifications across the country.

Variations in standards

5.2 At present, there are no nationally agreed standards for a certificate of attainment for senior secondary students at the end of Year 12. Each state and territory sets its own curriculum and assesses the achievement of its students in its own way. This makes it difficult, if not impossible, to compare Year 12 achievement levels across the jurisdictions. In New South Wales, for instance, the Higher School Certificate (HSC) provides detailed information about students' levels of achievement in relation to explicit standards and the cohort taking each subject. The HSC mark is based on 50 per cent external examination and 50 per cent internal (or school-based) assessment. In Queensland, standards descriptors for each exit level of achievement are published in the corresponding syllabus document. The final marks are arrived at by school-based assessment only. External moderation is used in place of common state-wide exams.

5.3 In 2007, the Australian Council for Educational Research (ACER) conducted a review of Australia's Year 12 curricula and achievement standards in five subjects. The Year 12 Curriculum Content and Achievement Standards report (The Year 12 Report) concluded that there either was, or appeared to be, standards variation across most subjects. In some subject areas, such as high-level mathematics, these differences were considered significant.[1]

5.4 By way of example, Professor Garth Gaudry from the International Centre of Excellence for Education in Mathematics cited his examination of one Queensland school's Year 12 mathematics examination:

> I had a look at the examination questions themselves, and I think it was two questions that formed the other 20 per cent. They are called indicator questions or something like that, because the higher grades are based on those particular questions. By New South Wales standards, they were abysmal. Probably the highest level question would be considered a routine

1 Australian Council for Educational Research, *Year 12 Curriculum Content and Achievement Standards*, 31 January 2007.

> question, essentially theory, in three-unit mathematics in New South Wales.[2]

5.5 In Queensland, this lack of comparability makes it difficult to determine matriculating students' actual knowledge, skills and understandings, as distinct from what may be set down as syllabus outcomes. This has a wide range of implications for universities as there is no other way to compare student performance. The committee notes that this problem would exist also for employers who may have particular expectations of a student's level of achievement.

5.6 At present, students completing Year 12 gain entry into university according to a national Tertiary Entrance Rank (TER). Some submissions argued that this arrangement allows for broad consistency and comparability of standards across Australia. The committee notes claims that current matriculation arrangements appear to be working well, including those which see students applying to study interstate. But as a DEST official explained, statistical methods are used by universities in an attempt to equalise entry scores: this really amounts to data manipulation that is done independently in each of the states. Moreover, the committee has doubts, as does the government, that current arrangements provide an understanding of the relative performance of systems. This would give some guidance as to the quality of outcomes. As a DEST official advised the committee:

> The important thing to bear in mind, though, is that the government's proposal relates to moderation of the subjects the student is studying rather than just moderation of the student body, which the ACT and the Queensland government systems attempt to do. They do some degree of moderation, but it does not go to the knowledge or assessment of individual students in particular subjects. [3]

5.7 As noted elsewhere in this report, we currently have no evidence, for instance, that the challenge of top-level physics in one state is equal to that in others, and that the same test of difficulty is applied. The findings of this inquiry, and the methods by which jurisdictions calculate TERs and negotiate interstate credit transfers, leave the issue open to doubt.[4]

Assessment

5.8 Across the country assessment methods vary, as noted earlier, as to proportion of school-based assessment and external exams. External common examinations assess student achievement in a particular subject where all the examination questions

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2 Professor Garth Gaudry, International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, p. 28.

3 Mr Bill Burmester, DEST, *Committee Hansard*, Canberra, 11 July 2007, p. 34.

4 Ibid. Also, Queensland Catholic Education Commission, *Submission 45*, p. 4; Queensland Department of Education, Training and the Arts, *Submission 54*, p. 23; Newcastle Students' Association, *Submission 30*.

are based on a common state syllabus. School-based assessment is devised, constructed and implemented by schools, not necessarily based on an official syllabus. With school-based assessment, teachers have to be trained to become consistent judges of the quality of student work, and there has to be a quality assurance process in place to guarantee comparability of results. To achieve this moderation, teachers need to engage in professional conversations about curriculum, pedagogy and standards.

5.9 The Year 12 Report identified nationwide differences in key assessment practices. The differences were primarily evidenced in the balance between external examinations and school-based assessments. For example, there are no external examinations in Queensland and the ACT. A system of externally moderated school-based assessment has operated in Queensland since 1973 on which the ACT system was modelled in 1976. The other six states and territories have combinations of external examinations and internal assessments which have varied in proportion over time.

Queensland assessment

5.10 The committee noted the zealous way in which witnesses from Queensland championed their school-based system of Year 12 assessment. This system is based on recommendations contained in the 1973 Radford report. Professor Claire Wyatt-Smith from Griffith University told the committee,

> If you want to see innovative quality assessment practices, look to Queensland…It is a well kept secret. To people who do not understand how the system works it could look a rather suspicious practice to be having high-stakes assessment in the hands of teachers, but the systems checks and balances are certainly in place and the quality considerations around how teachers work with standards with students are there as well.[5]

5.11 The Queensland Department of Education, Training and the Arts, as chief custodians of the system, told the committee:

> The continuous assessment does mean that classroom teachers on a regular basis are constantly diagnosing, assessing and having a look at how students are going, [and are] able to set assessment items that enable students to…demonstrate that they have deep thinking and deep knowledge.[6]

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5 Professor Claire Wyatt-Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, p. 91. Also, Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 31.

6 Ms Lesley Englert, Queensland Department of Education, Training and the Arts, *Committee Hansard*, Brisbane, 5 June 2007, p. 77. Also, Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 25; Mrs Diane Anderson, Queensland Catholic Education Commission, *Committee Hansard*, Brisbane, 5 June 2007, pp 64-65; Ms Joy Schultz, *Committee Hansard*, Brisbane, 5 June 2007, p. 99.

5.12 The committee notes that other states have come to accept that a proportion of school-based assessment is important in giving due recognition to continuing achievement over a period of time. However, a significant number of criticisms were made of the school-based externally moderated system.

5.13 One of the most forthright comments was heard from Professor Kenneth Wiltshire, who argued that the end of external Year 12 exams has resulted in declining standards. Professor Wiltshire told the committee:

> The argument advanced at the time that this was all too draconian, that measuring people's performance on one day is not fair and how can it all be done in one day. You have heard all of these arguments…Also the inquiry said let us trust the teachers. Why do we need external checks; a good teacher knows what they are doing. Like a lot of these reforms for the first five to 10 years maybe it worked pretty well.[7]

5.14 Professor Wiltshire did not elaborate, but the committee assumes that for several years into the new assessment system, teachers experienced with the old ways were consciously or unconsciously benchmarking students against what went before. This was certainly the case in the ACT where the original courses for the Year 12 Certificate owed much to NSW Years 11 and 12 syllabus standards. Teachers in Canberra who had, initially, taught HSC courses had the same expectations of their students under the new assessment arrangements.

5.15 The McGaw Report, which investigated reforming the HSC, looked at school-based assessment. It was never seriously considered as an alternative to the HSC. Professor Barry McGaw reported a number of objectionable elements to school-based assessment, including that it put too much onus on teachers, was inimical to student-teacher relationships, and lacked the necessary degree of objectivity which is the outstanding characteristic of external public examinations. It is significant that while some academics have noted praiseworthy aspects of the Queensland system, only the ACT has emulated this model.[8]

5.16 Others are also critical of what they see in Queensland. Professor Gaudry questioned the accountability and rigour within the Queensland system.[9] Professor Bill Louden from the University of Western Australia pointed out that notwithstanding its defenders:

> Nobody who runs a certification authority in any of the other states is rushing to do what Queensland does…There is a powerful effect of external

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7 Professor Kenneth Wiltshire, *Committee Hansard*, Brisbane, 5 June 2007, p. 13. Also, Dr Thelma Perso, Australian Association of Mathematics Teachers Inc, *Committee Hansard*, Brisbane, 5 June 2007, p. 60.

8 Professor Barry McGaw, *Shaping Their Future: recommendations for reform of the Higher School Certificate*, Department of Education and Training, New South Wales, 1997, p. 85.

9 Professor Garth Gaudry, International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, p. 28.

> examinations on kids, the intensity of effort….If you have an assessment at school in a non-examination system you do not have to be automatic, you can take your time and polish it up. Examinations are important.[10]

5.17 Professor Alan Reid from the Australian Curriculum Studies Association told the committee he admired the professional judgement element of the Queensland system but conceded that the South Australian review of its Certificate of Education would not be recommending emulating the Queensland model.[11]

5.18 The committee notes that Queensland and the ACT are under pressure from the Commonwealth to re-introduce an external examination as part of the Year 12 assessment. The committee is sympathetic to this idea. It rejects arguments that public examinations place undue pressure and stress on students. The experience of external exams is one of life's rituals for most young people in Australia, a 'rite of passage' into the real world of competitive stress. Nonetheless, the committee anticipates that Queensland's regard for its method of assessing its Year 12 Certificate is likely to result in strenuous resistance to Commonwealth demands.

Western Australia reporting

5.19 The generally high performance of schools in Western Australia, as indicated by national benchmark and international comparative tests, is remarkable in view of the fact that, by most accounts, Western Australia has recently suffered from prolonged disruption to its education program (and progress). This arose from an unusually doctrinaire adherence to outcomes-based education, strongly championed by the Curriculum Council. Soon after the introduction of a new curriculum framework in 1998, it became clear that subject specific outcomes were causing problems for teachers and that it was difficult to convert outcomes to traditional assessment. Thus, Western Australia has had more difficulty than other states in conforming to the Commonwealth's directive to report student progress on an A-E scale.

5.20 The problem was compounded when the Curriculum Council decided that outcomes would replace the entire syllabus in each subject, and that traditional marks would be replaced by other achievement indicators consistent with outcomes-based learning theory. The effect on Years 11 and 12 curriculum and assessment has been serious enough to provoke opposition to outcomes-based learning, at that level, in both government and independent schools. The practicalities of implementing a learning theory characterised by nebulous jargon in reams of documents, but without a syllabus, resulted in a demoralised teacher workforce. There was considerable public controversy stirred by the *West Australian*, culminating in the resignation of a minister, a director-general of education, and head of the Curriculum Council. The

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10 Professor Bill Louden, *Submission 73*, p. 12.

11 Professor Alan Reid, Australian Curriculum Studies Association, *Committee Hansard*, Melbourne, 25 July 2007, p. 14.

committee understands that the process of cleaning up after this debacle has now commenced.[12] The Director-General of the Western Australia Department of Education explained the rationale for earlier decisions, and the outcomes of those decisions:

> In allowing schools to determine their curriculum as based on the needs and contexts of students and their communities, there arose the perception that what students should learn was becoming increasingly subjective and less clearly defined. The new courses were structured with a shift of emphasis away from specific content that should be taught toward a clearer definition of what students should know and understand as a result of their learning. A consequence of this was less explicit reference to the traditional canon of the subject disciplines in the course documentation. Together, these two factors were interpreted as "dumbing down" the curriculum. This view was strongly reinforced through media coverage of new courses.[13]

5.21 A new curriculum framework and outcomes and standards framework is to be implemented in 2008. Syllabuses are being reintroduced, with more explicit content and in a format that closely reflects the design of previous matriculation subjects. New assessment policy includes the introduction of intelligible grades and marks.[14] The committee was pleased to note that the Department is using 'teacher juries' to inform additional course refinements and ensure that the voice of the profession is heard.

Curriculum

5.22 The committee received evidence regarding the curriculum for the final years of schooling which the committee has chosen to include in this chapter.

English and literacy

5.23 The English curriculum for Years 11 and 12 has been subject to considerable criticism, much of it, as indicated in an earlier chapter, based on 'culture wars' beliefs, and betraying an ignorance of the needs and interests of contemporary students, including the most academically able.

5.24 Some criticisms seem founded on a belief that syllabuses require a post-modernist approach to the study of literature. This accusation is based on revelations of some notorious exam questions. The committee notes from anecdotal evidence that the study of literature in some schools and jurisdictions has been affected by this accusation. There is almost certainly some basis of truth in complaints made about new fashions in the teaching of literature. Whether such influences come from academic fashions in English faculties, which are taught to aspiring English teachers,

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12 Professor Stephen Kessell, 'Changes have not solved OBE problem', *West Australian*, 14 July 2006, p. 18 and WA, Department of Education and Training, *Submission 70*, pp 2-3.

13 Ms Sharyn O'Neill, Answers to Questions on Notice, Report Tabled Papers.

14 Ibid.

is not for this inquiry to consider. It is probably more likely to originate there than from a particular emphasis in a curriculum document. According to one submission, there is no real evidence, or academic consensus, to suggest that senior school English curricula have 'succumbed' to an overtly post-modern approach in either their creation or implementation.[15]

5.25 However, the committee also notes comment from the president of the Australian Academy of the Humanities, and a highly experienced curriculum expert in English. Professor Graeme Turner commented that the literary component in English is being reduced in importance because syllabus writers regard literature as useful only in reflecting social developments and tensions. Professor Turner believes this has happened because the study of literature in English has been weakened by the power of vocationalism and cultural studies. The way has been cleared for multiliteracies and media literacy.[16] The committee takes this claim to mean that English literature has been transformed into a social science, and the elements which once defined it as a humanity—character, art, literary style and moral purpose—are no longer considered important.

5.26 Dissatisfaction with the direction in which the study of literature is being taken are reported from time to time. Most recently a group of former senior education leaders in New South Wales described the English curriculum as 'compromised'. Their concern is that English curricula increasingly focus on basic literacy test skills to the detriment of the broader scope, aims and aspirations of the subject, an echo of Professor Turner's comments above. Dr Graham Little, who wrote the 1972 NSW English syllabus for Years 7 to 10, further criticised the current English syllabus for its surfeit of information about how to set a test that is compatible with computer marking.[17]

5.27 The committee has no comment to make on this controversy other than to suggest that university departments of English become more involved in defending traditional literary values at the school level. The emergence of 'new media' and 'new literacies' in no way diminishes the value and importance of students developing their minds and sensibilities through reading literature of enduring value.

5.28 The Year 12 Report found that senior school English curricula across the country have very little in common. Over 18 TE (matriculation level) English courses are on offer There are no specific texts that all students are required to study, and there is a mere 25 per cent commonality in the study of ‘text types’. There is only a 30 per cent degree of commonality in the essential skills, understandings and objectives that Year 12 students are expected to develop. These range from ‘using correct spelling, punctuation and grammar’ to ‘making meaning through texts’.

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15 Australian Council of State School Organisations, *Submission 12*, p. 4.

16 Professor Graeme Turner, *The Australian*, 30 May 2007, p. 25.

17 Anna Patty, 'Educators round on English syllabus', *The Sydney Morning Herald*, 1 September 2007.

5.29 Year 12 students do not participate in any national or international benchmark testing. There is no statistical data on which to make a judgement about the validity of criticisms that many students finishing high school have low levels of literacy skill. The evidence provided to the committee was purely anecdotal, and provided by academics observing the calibre of matriculating students. A representative comment was that from Dr Kerry Hempenstall:

> I find myself correcting fundamental errors…The problems are evident in spelling and in basic grammar mistakes: inappropriate use of commas, colons and semi-colons, conjunctions; producing run-on sentences, or overly long sentences; and a lack of understanding of how best to join sentence fragments. Other problems include subject-object agreement, tenses, and singular/plural confusions. When university post-graduate students need help with spelling and punctuation, it appears that we have a significant problem with the teaching of literacy generally.[18]

5.30 While some academics do not see the correction, or the teaching, of basic literacy as their role, the committee tends to agree with those academics who perceive of all educators as teachers of literacy. Professor Wyatt-Smith unequivocally told the committee:

> The reported deterioration in students' literacy levels in university is a bit like the blame culture going up the next rung of the ladder. The secondaries blame the primaries, the primaries blame the parents, and the universities blame the teachers…The notion that teachers at any levels, indeed university levels, can abrogate their responsibility for teaching the literacy demands of economics, physics and so on is also a myth of the past and it is high time university educators took it onboard that they are responsible for literacy education and numeracy education as well.[19]

5.31 For Professor Wyatt-Smith there is a real problem with the teaching of literacy, and implicitly the results of that teaching. The Queensland Department of Education, Training and the Arts advised that as matriculating students are not required to study English to qualify for a TER, their literacy levels might be less than ordinary. The committee notes that this does not explain any failure to acquire basic literacy skills in Years 1-10 when the study of English is compulsory in all curricula.

5.32 The committee believes that the neglect of literacy at Year 12 may have much to do with the 'strategic thinking' which students have to engage in to maximise their chances of being accepted into university. This was confirmed by the Executive Officer of the Council of Professional Teaching Associations of Victoria who told the committee:

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18 Dr Kerry Hempenstall, *Submission 5*, p. 2. Also, Professor James Allan, *Committee Hansard*, Brisbane, 5 June 2007, pp 2-5; Professor Stephen Kessell, *Committee Hansard*, Perth, 2 July 2007, p. 60.

19 Professor Claire Wyatt- Smith, Griffith University, *Committee Hansard*, Brisbane, 5 June 2007, p. 87.

> In terms of senior subjects often, in order to get a high tertiary entrance score, students will take the easier options or the options that are scaled up…Students are doing this but…there are schools that encourage their students to do that so that when the league tables are published schools X, Y and Z come out looking very good…This is not across the board but …it happens. That is a concern...Students say, 'Why should I when I can probably do something much easier and it will probably still get me into first-year science or whatever?'[20]

5.33 Regardless of whether senior students matriculate, or engage in other forms of further education, training or employment, the committee believes that all Year 11 and 12 students should be assessed as having reached a certain standard of literacy, and in the case of matriculants, that standard should be sufficiently high as not to impede their chances of success in further study.

Mathematics

5.34 The committee was told that enrolments in mathematics are declining in senior secondary school. The nationwide statistics, as a percentage of Year 12 students, are shown in the following tables.

National participation by Year 12 students in advanced and intermediate mathematics in 1995 and 2004.

Advanced mathematics students, as a percentage of Year 12

	NSW	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***(AUS)***
1995	18.9	11.4	12.6	12.6	11.8	4.6	12.2	5.8	(14.1)
2004	15.0	12.6	8.4	8.2	9.1	5.5	11.9	3.2	(11.7)

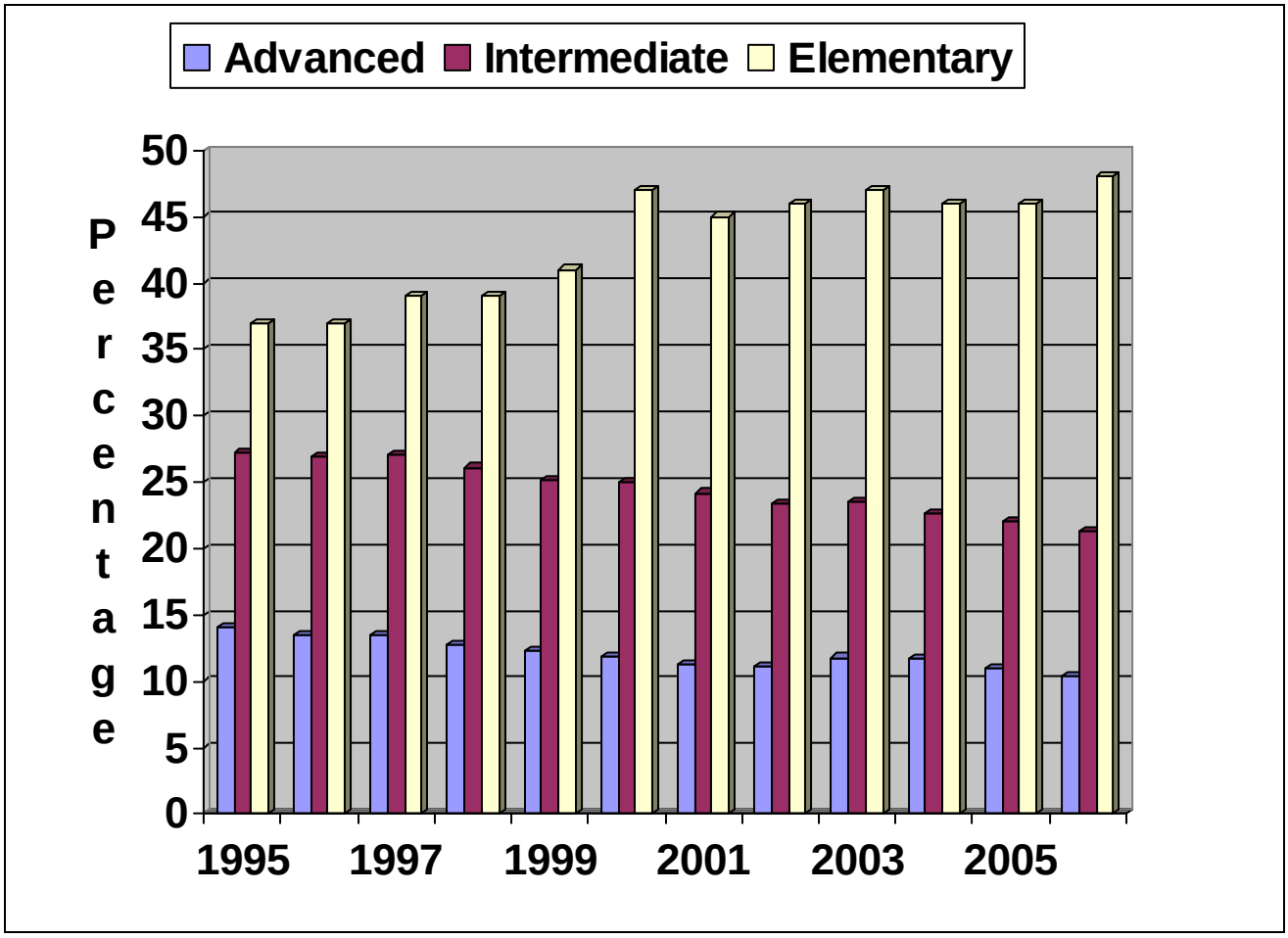
Intermediate mathematics students, as a percentage of Year 12

	NSW	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***(AUS)***
1995	30.0	24.4	33.7	18.8	23.6	15.3	27.6	9.7	(27.2)
2004	20.1	24.2	31.7	13.4	16.0	14.3	28.0	9.9	(22.6)

Source: Australian Academy of Science, *Mathematics and Statistics: Critical Skills for Australia's Future: The National Strategic Review of Mathematical Sciences Research in Australia*, December 2006, p. 54.

20 Mrs Olwyn Gray, Council of Professional Teaching Associations of Victoria, *Committee Hansard*, Melbourne, 25 June 2007, p. 64. Also, Ms Lesley Englert, Queensland Department of Education, Training and the Arts, *Committee Hansard*, Brisbane, 5 June 2007, p. 84.

Year 12 Mathematics Students in Australia 1995-2006



Source: Professor Hyam Rubinstein and Jan Thomas, *National Numeracy Review – Draft Submission*, AMSI, 18 July 2007, Attachment 1 p. 12.

5.35 There are various reasons for the decline in mathematics enrolments: poor career advice, a plethora of subject choice, inadequate maths options, and the need to maximise university entrance scores. One witness estimated that only 64 per cent of secondary schools were actually in a position to offer the most advanced Year 12 mathematics subjects.

> The decline in the number of students taking advanced and intermediate level courses at Year 12 shows that many students are not equipped with the mathematics they need for further study.[21]

5.36 Inadequate teaching in the early years of secondary school prevents some students from attaining their full potential in mathematics. This means that students disengage from mathematics because their experiences are disappointing.

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21 Australian Mathematical Sciences Institute, *Submission 42*, pp 4-5. Also, Australian Association of Mathematics Teachers, *Submission 21*, p. 2; Dr John Ridd, *Submission 4*, pp 3, 5-6.

5.37 Another factor is often a disincentive to study the subject at the highest level because it is not required by the university in the course which the student is aiming to enter following matriculation. The committee regards this policy on the part of university faculties of engineering and science to be perverse, but it is explained by the competition that exists between universities for engineering and science enrolments. Academics and teachers alike told the committee that universities must share a significant part of the blame for the demise of school mathematics.

> A particularly damaging action by the universities has been to remove the higher-level high school mathematics courses [Maths C in Queensland] from the list of prerequisites especially in engineering...This was done mainly because maintaining student numbers is central to the very survival of university faculties and lowering prerequisites is one way to get more students…With the removal of Maths C as a prerequisite subject for any university subject, there was no longer any compelling reason for students to do this subject in the schools and the numbers dropped rapidly.[22]

5.38 The Australian Mathematical Sciences Institute agreed:

> If universities drop pre-requisites as they have done universally, and accept students into engineering who have not even studied calculus, who can blame schools for dropping advanced courses and permitting their students to hunt for TER points by taking soft options? Failure to reward students for taking more advanced subjects in TER calculations often exacerbates this.[23]

5.39 The committee believes that this is likely to have a serious effect on quality teaching over time. Universities are taking a very short-sighted view of their responsibility to achieve the highest standards. This is one instance where market forces are having an adverse effect on both efficiency and quality.

5.40 In the committee's view, the elimination of university course prerequisites, coupled with students' concern to maximise their university entry scores, has substantially contributed to the weakening of senior school mathematics. The effects on university courses must also be considerable, with a great deal of remedial work required to be done, and possibly the elimination of some of the more challenging material that was once offered in the first two years of the degree.

5.41 Some would respond by arguing that there is only a very small need for pure mathematics courses, and senior secondary schools need to cater for the majority rather than the minority. The committee notes that the anecdotal and unequivocal

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22 Assoc Professor Wayne Read, *Submission 48,* pp 2-3. Also, Dr John Ridd, *Submission 4*, p. 3; Mr Robert Aikenhead, *Committee Hansard*, Melbourne, 25 June 2007, p. 64; Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 25; Mr Bill Burmester, DEST, *Committee Hansard*, Canberra, 11 July 2007, p. 27.

23 Australian Mathematical Sciences Institute, *Submission 42*, p. 5.

evidence presented from academics was that there is a high-end need, which is not being satisfied. As the committee heard:

> During the period 1987-96, we saw a significant reduction in the preparation of our undergraduate students to undertake a science or engineering degree. This occurred despite a progressive increase in our TER cut-off scores during that period.[24]
>
> We are seeing a substantial reduction in the mathematical ability of students entering universities relative to a decade ago, and that this weakness has implications both to the individuals betrayed by the education system and to the development of Australia's scientific capabilities.[25]

5.42 It is vital that Australian students' mathematical needs are met. While there is no benchmark testing to support Professor Stephen Kessell and Dr Richard Rowe's comments, the committee notes the Trends in International Mathematics and Science Study (TIMSS) results in lower levels of schooling, and the evidence that students do not always undertake further mathematics, much less pure mathematics studies in senior school. On balance, the committee believes that there is a serious problem with senior school standards in mathematics. Part of the problem is the curriculum.

Senior school curricula

5.43 The Australian Mathematical Sciences' Institute (AMSI) submitted that senior school mathematics courses vary significantly across the country. It found that the mathematical content and assessment variations were so wide that no two Year 12 courses could be described as equivalent.[26] According to the International Centre of Excellence for Education in Mathematics (ICEEM), the current content and assessment differences stem from separate perceptions of the mathematical topics and skills developed by the various boards of studies. The differences that have developed are striking and cannot be explained by the geographical location of the states and territories.[27]

5.44 This was contrary to the views expressed in the Year 12 Report. That report concluded that there was very high consistency in the 27 tertiary level mathematics courses: approximately 90 per cent consistency in high level (pure) mathematics and about 75 per cent consistency in social mathematics or mathematics for living (applied mathematics).

5.45 AMSI argued that the Year 12 Report did not include any contribution from academics who dealt with first year undergraduate students, nor data collected by the

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24 Professor Stephen Kessell, *Submission 13*, p. 1.

25 Dr Richard Rowe et al, *Submission 20*, p. 3. Also, Dr Peter Ridd, James Cook University, *Committee Hansard*, Brisbane, 6 June 2007, p. 15.

26 Australian Mathematical Sciences Institute, *Submission 42*, p. 4.

27 Frank Barrington and Peter Brown, *Comparison of Year 12 pre-tertiary mathematics subjects in Australia*, October 2005, p. iv.

ICEEM. ICEEM described various jurisdictions as having considerable deficiencies in their senior curricula but admired the outstanding New South Wales curriculum, whose four-unit mathematics course was the best in the country, being both demanding and of extremely high quality.

5.46 The Australian Association of Mathematics Teachers (AAMT) also had concerns about mathematics curricula and standards in senior secondary school, though probably from a quite different perspective, being less concerned with standards and more concerned with whether it meets the needs of average students:

> Standards at this level should include more than content standards, in particular, employability skills, meta-cognitive skills, skills in application and transference of mathematics to problem-solving and real-life contexts, including in the workplace.[28]

5.47 The committee finds the discrepancy between information provided in the Year 12 Report and by AMSI interesting. It suggests that the difference may lie in the fact that the apparent degree of commonality in maths curricula across states is based on a reading of the documents alone. The AMSI information puts emphasis on assessment. As the committee makes clear elsewhere in this report, what is set down in a curriculum document may not necessarily be taught, and if it is the assessment results may vary significantly, depending on the degree of difficulty in tests.

Consultation and collaboration

5.48 There appear to be clear differences of opinion between educators in the field of mathematics in regard to curriculum philosophy. Some flavour of it is picked up in the Hansard transcripts for this inquiry. This should not be a matter of any concern: rather, it is a measure of the intellectual engagement in the profession. But there are real concerns. It is also clear that there appears to be a lack of consultation within universities regarding mathematics knowledge needed by trainee teachers. There is also a concern that collaboration between universities and state curriculum agencies, which was so strong and productive in the past, may now be weakening. As one academic noted in regard to the English curriculum:

> Curriculum councils and their counterparts in other states, who would not be known to a single bureaucrat in the Department of Education because they do their own thing and interact with their own little clique, see

28 Australian Association of Mathematics Teachers, *Submission 21*, p. 1. Also, Professor Garth Gaudry, International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, pp 30-32.

> university input as the dean of the faculty of education from four or five universities, full stop.[29]

5.49 These problems should be relatively easy to fix with the application of some firm leadership and goodwill. The committee encourages a more serious climate of co-operation in the common interest of mathematics teaching and learning. There are some encouraging signs that this need is recognised. As Professor Margaret Britz of Queensland University of Technology told the committee:

> It is time to stop pretending and it is time to actually look at the interface between the secondary education system and the tertiary system in a very complex matrix which varies across each State.[30]

5.50 And later:

> Closer links between the tertiary and secondary sectors, and a concurrent review of what universities can deliver, and how, is needed in the short-term while the issues of curriculum design across the primary and secondary sectors are in focus.[31]

Science

5.51 The Year 12 Report found that physics and chemistry curricula have a very high degree of national consistency, estimated at 85 per cent and 95 per cent, respectively. Unlike mathematics, science appears to be relatively untouched by any standards debate.[32] However, there was evidence provided to the committee about the decline in science enrolments. It suggests that weaknesses in both teaching and in the curriculum are disengaging students in the middle to senior school years.

5.52 According to Megan Motto of the Association of Consulting Engineers Australia:

> Learning about science is a matter of experiencing its effects, doing rather than reading and listening. Encouraging science, engineering and technology (SET) skills at a young age in primary school provides the impetus for interest in the enabling sciences. For most secondary school students science involves learning facts for an exam, remembering

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29 Professor Stephen Kessell, *Committee Hansard*, Perth, 2 July 2007, p. 64. Also, Assoc Professor Wayne Read & Dr Peter Ridd, James Cook University, *Committee Hansard*, Brisbane, 6 June 2007, pp 14-15. Also, Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 27; Ms Jan Thomas, Australian Mathematical Sciences Institute and International Centre of Excellence for Education in Mathematics, *Committee Hansard*, Melbourne, 26 June 2007, p. 32; Professor Margaret Britz, Queensland University of Technology, *Committee Hansard*, Brisbane, 6 June 2007, p. 26.

30 Professor Margaret Britz, Queensland University of Technology, *Committee Hansard*, Brisbane 6 June 2007, p. 31.

31 Professor Margaret Britz et al, *Submission 61*, p. 2. Also, Professor Stephen Kessell, *Submission 13*, pp 1-2.

32 Dr Richard Rowe et al, *Submission 20*, p. 2; Professor Margaret Britz et al, *Submission 61*, p. 1.

> formulae, plugging the right number in to get the correct answer, and the need to perform some short experiments that hopefully produce the result required by the teacher. Many, if not most, students who spend four or six years going through this system become both somewhat naive and disenchanted about the role and process of science.[33]

5.53 Professor Bray also told the committee that the experiential nature of science requires the kind of teacher who is 'a little bit out there' and who loves the discipline: many students are attracted to science when they pick up on a teacher's passion for the discipline. For Ms Motto, this clearly involved an element of quality teaching:

> If you are not fully conversant with your subject area, you are very unlikely to teach it with confidence, much less passion and enthusiasm. This is what translates into students liking the subjects, therefore trying in the subjects and wanting to go further in those subject areas.[34]

5.54 Science qualifications, as in other specialist discipline areas, were another relevant factor in the quality of science teaching. The committee noted statistics quoted from a recent study conducted by the Australian Council of Deans of Science that:

> • Nearly 43 per cent of senior school physics teachers lacked physics majors, and 1 in 4 had not studied the subject beyond the first year at university.
>
> • Among senior school chemistry teachers, 1 in 4 lacked a chemistry major.
>
> • Geology teachers had the lowest levels of discipline specific qualifications. More than half of these teachers had not studied any geology at a tertiary level.[35]

5.55 If boring curricula and uninspired, unqualified teaching are turning students off the study of the enabling sciences, the committee is alarmed. Not only will students fail to realise all available study opportunities, it would also endow them with a weak foundation for further education, training and employment in scientific areas. This could be remedied at university, as it is with mathematics, but the committee's comments applying there apply equally here.[36]

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33 Association of Consulting Engineers Australia, *Submission 71*, p. 5. Also, Australian Council for Educational Research, *Submission 38*, p. 3.

34 Ms Megan Motto, Association of Consulting Engineers Australia, *Committee Hansard*, Canberra, 11 July 2007, p. 38. Also, Professor Margaret Britz, Queensland University of Technology, *Committee Hansard*, Brisbane 6 June 2007, pp 27-9; Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 27.

35 Australian Council of Deans of Science, *'Who's Teaching Science? Meeting the demand for qualified science teachers in Australian secondary schools'*, January 2005, Centre for the Study of Higher Education, University of Melbourne quoted in Association of Consulting Engineers Australia, *Submission 71*, p. 8. Also, Professor Bill Louden, *Submission 73*, p. 10.

36 Dr Richard Rowe et al, *Submission 20*, p. 2.

University expectations

5.56 The committee notes that while senior school science enrolments were said to be in decline, there does not appear to be a crisis of the same magnitude as in mathematics. This was certainly apparent in the smaller number of submissions. Nonetheless, the issues were remarkably similar, with minor variations.[37]

5.57 Dr Rowe and his colleagues from James Cook University put forward a case for 'competence' in the enabling sciences in first year undergraduate students. Without such critical competence, university training is a difficult, inefficient and frustrating process.[38]

5.58 The submission from Professor Britz and her colleagues was one of the few which directly addressed the issue of whether there is an actual decline in academic standards for senior school science:

> The tertiary science sector is expected to deliver many outcomes building on the knowledge, skills and experience of high school graduates who are increasingly recognised as poorly prepared to acquire the professional and generic attributes during a three- or four-year degree.[39]

5.59 At the committee's Brisbane hearing, Professor Britz elaborated:

> We have problems in both a lack of hard wiring in the basic knowledge of the disciplines and a diversity of experience that students walk in with—sometimes with subjects that we may call ‘soft science’ and often with minimum qualifications in English and one form of mathematics. That means that we face the challenge of remedial action in the first year in trying to catch students up.[40]

5.60 This is not to say that all science undergraduates, or even mathematics, law or education undergraduates, are inadequately prepared for further education by the senior school system. In fact, academics were keen to note that they do teach some brilliant and enthusiastic young people.

5.61 The committee is concerned about the serious skills shortages in the areas of mathematics, the sciences, and engineering. It is in Australia's economic interests to encourage all students, but most especially those at senior secondary level, to maintain an interest in, choose to study and reach their full potential in these areas.

5.62 There is increasing discussion about the need for more innovative curriculum in science. The Chief Scientist is lending weight to this argument, although it probably

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37 Mr Robert Aikenhead, *Committee Hansard*, Melbourne, 25 June 2007, p. 63.

38 Dr Richard Rowe et al, *Submission 20*, p. 1.

39 Professor Margaret Britz et al, *Submission 60*, p. 1.

40 Professor Margaret Britz, Queensland University of Technology, *Committee Hansard*, Brisbane 6 June 2007, p. 27.

has more relevance to science teaching in the lower secondary school. This issue was referred to earlier in this report. In Year 12 the committee considers the challenge to be to encourage students to undertake and perform at high levels in mathematics. That requires having teachers with degrees in subjects like physics and chemistry, and such graduates are now hard to recruit into the teaching profession. Thus the issue of standards and examination performance, and certification are closely tied up with factors that are less under the control—if at all—of governments or regulatory bodies.

An Australian Certificate of Education

5.63 The committee considered the idea of students across the country being issued with a common senior school certificate at the end of Year 12 and believes that the principle has some attraction.

5.64 In 2007, the Australian Council for Educational Research (ACER) reported on possible models and implementation arrangements for a single national senior school certificate. The proposed Australian Certificate of Education (ACE) would replace the existing nine senior school certificates. The ACE report noted the many jurisdictional differences, which, in its view, were difficult to explain or justify, and which did not reflect students' needs or best interests. In some instances, such as the reporting of students' results, ACER believed that the differences actually disadvantaged students. The jurisdictional differences also resulted in significant duplication of effort, and expense, across bodies responsible for senior secondary curricula and assessment.[41]

5.65 In regard to HSC-type qualifications, all state and territory education systems were satisfied either with what they had in place or what reforms were anticipated. Where they were not, education departments pointed to extensive and expensive initiatives aimed at correcting any deficiencies. Tasmania, South Australia and Western Australia are currently revising their Year 12 certification, with particular emphasis on how final achievement gradings are to be arrived at. A chart showing the variations in assessments across states and territories is below.

Proportions of external and internal Year 12 assessment for matriculation

	NSW	QLD	VIC	WA	SA	TAS	ACT	NT
External exam	50	0	50-66*	50	0-50	40-60	0	0-50
School-based assessment	50	100	34-50	50	50-100	40-60	100	50-100

* this range is for core subjects only, some non-core subjects can have as little as 30 per cent or as much as 75 percent externally examined

41 Australian Council for Educational Research, *Year 12 Curriculum Content and Achievement Standards*, DEST, 31 January 2007.

5.66 As discussed earlier in this chapter, the lack of external assessment in Queensland has made it difficult to be confident that there can be any reliable comparison made with achievement levels in other states. The committee believes that there is a strong justification for external examinations. The most obvious advantage is in ensuring that the curriculum or the syllabus is covered as intended. It also ensures that there is comparability in the level of difficulty in the questions that are asked across states and territories. It is not necessary to have a standardised national examination paper to ensure this, but a year-by-year moderation of exam papers across states will achieve this purpose. Finally, the committee believes that there are important learning benefits to be gained from external examinations. They provide an extra incentive or motivation to learn, and give students an insight into a wider world of learning.

5.67 The committee **recommends** that all Australian states and territories adopt and implement a substantial proportion of Year 12 assessment to an external examination.

5.68 The committee also understands, as earlier discussed, that any proposal for an ACE would not require a national test, but would be awarded by states on the basis of agreed curriculum and assessment instruments. Each awarding body could continue to offer or accredit a variety of subjects and courses that would count toward the ACE, including vocational studies. There would continue to be diversity and responsiveness to local needs under the umbrella of the single national qualification.

5.69 Education unions argued that the need for an ACE has been overstated. While conceding that an ACE might have some advantages, the Independent Education Union of Australia agued that this is not a policy issue created by educators, state or territory ministers, parent organisations, or the community. Education unions regarded the certificate as another Commonwealth initiative inappropriately linked to funding conditions.[42]

5.70 A few schools and systems expressed concern with the proposal for an ACE. The Australian Association of Christian Schools specifically feared for the autonomy of independent schools:

> Whatever advantages there might be in defining uniform standards for senior school certification across Australia, these must be carefully weighed against the disadvantages of destroying effective school-based practices that have produced strong outcomes at the senior school level. This particularly applies in the non-government sector where, for philosophical and religious reasons, learning is not necessarily pragmatic and utilitarian in its focus.[43]

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42 Independent Education Union of Australia, *Submission 55*, p. 27 and Australian Education Union, *Submission 14*, p. 30.

43 Australian Association of Christian Schools, *Submission 34*, p. 7. Also, Lutheran Education Australia, *Submission 41*, p. 5.

5.71 With that view in mind, the committee noted that the Association of Consulting Engineers supported a national Year 12 certificate for what could be described as utilitarian reasons. These included: comparability of results across the country; nationally high and consistent curriculum standards; and more efficient use of limited resources. For instance, rather than developing seven separate syllabuses or curriculum frameworks for a particular subject, awarding bodies could share some syllabus and assessment materials.[44] In relation to these points, the committee notes that, in subjects which particularly concern consulting engineers, there is already a high degree of commonality in curricula, and some evidence of national collaboration in curriculum construction. However, this does not guarantee comparability of standards and results.

Setting national standards

5.72 All curriculum documents should specify the standards to be reached, and indicating what might be considered minimal level rising to outstanding achievement level. The ACE Report recommended that nationally agreed standards be developed in those subjects for which core curriculum is identified. The committee agrees that this is essential.

5.73 At the April 2007 MCEETYA meeting in Darwin, the states agreed to work collaboratively, and with other relevant educational bodies, to develop nationally consistent curricula setting core content and achievement standards expected of students at the end of Year 12, and at key junctures up to that point. The focus is on three subject areas: English, Maths and Science. The committee welcomes these efforts to determine minimum levels of achievement for all students, and strongly supports the process of extensive consultation.

5.74 The previous year, MCEETYA had also agreed to work toward improved consistency of reporting for senior secondary students' achievement levels. A working party has been established to investigate a common scale for reporting all senior secondary subject results, and a quality assurance process. This includes reporting on options for common scale reporting and an indicative timeline for the development of comparative procedures. The committee believes that MCEETYA's April 2007 announcement should assist the June 2006 commitment, but a year has now passed and the working party has not even announced its own investigative timeline. The committee hopes that the project commitment remains strong. In the meantime, the ACE Report has been delivered and presents one specific option which might also assist the MCEETYA working party.

5.75 The ACE Report proposed five nationally agreed standards in each subject. Standards labelled A to E were stated to be the preferred option with each standard representing a defined and illustrated level of achievement in the subject. The committee notes that this should anticipate some of the objections to that method of

44 Association of Consulting Engineers Australia, *Submission 71*, p. 7.

reporting. In states and territories which also report results on numerical scales, there would be a need for a process to interpret students' scores in terms of the nationally agreed standards.

5.76 One of the key features of the ACE Report was a recommendation for the creation of a national standards body, including a 'subject panel'. The 'subject panel' would comprise assessment specialists and incorporate international benchmarking standards. It was argued that a single national body would be appropriate to ensure the necessary co-ordination in senior secondary arrangements, and for setting standards for the certificate.[45]

5.77 Responsibility for setting standards will be a matter for delicate negotiation. The committee agrees that a national standards body, or national subject panel, must go beyond heeding the prevailing ideology or philosophy of state and territory authorities of the day. There must be genuine consultation and consideration of the views of all stakeholders, including academics, subject associations, professional bodies and community or parent representatives. According to one parent:

> Consultation does not extend to parents. One of the problems we have is that in many instances parents are used as justification for decisions, yet there has not been the consultation. In the state situation we do have that consultation. We would hope that it would occur at the federal level as well.[46]

5.78 From an academic perspective, Associate Professor Wayne Read remarked on the need to have discipline or subject experts involved in setting standards:

> The first and foremost thing is that this really is a quality assurance thing. We have to be involved. Universities and genuine end users have to be involved in the process of defining the level, the quality, of these students…We have to start adopting Australia-wide, worldwide standards. There has to be some common set of core skills that everyone understands and represents…Assessment has to be independent of education faculties and basically of education departments. If you produce a fine ball bearing you can throw it out there into the marketplace and anyone can measure it.[47]

5.79 The committee notes that objections to what some see as the excessive influence of academics on curriculum content is a long-standing tradition. It appears to the committee that for a number of years academics have been in retreat from their

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45 Australian Council for Educational Research, *Year 12 Curriculum Content and Achievement Standards*, DEST, 31 January 2007, pp 75-76.

46 Mr Paul Dickie, Parents and Friends Federation of Catholic Schools, Queensland, *Committee Hansard*, Brisbane, 5 June 2007, p. 64. Also, Ms Yvonne Meyer, *Committee Hansard*, Melbourne, 25 June 2007, p. 57; Professor Stephen Kessell, *Committee Hansard*, Perth, 2 July 2007, p. 65.

47 Assoc Professor Wayne Read, James Cook University, *Committee Hansard*, Brisbane, 6 June 2007, p. 14.

responsibilities to advise school curriculum agencies on standards issues, in part because of work pressures. This has been an unfortunate development. Universities are a community resource and their usefulness should be seen to rise above petty jealousies, especially in education.

Conclusion

5.80 While the committee believes that the development and implementation of an Australian Certificate of Education should be further investigated by MCEETYA there are more important priorities. A national certificate has lesser claims for priority than the negotiation of comparable assessment practices. Without that agreement, consulting engineers and all similar occupational associations with a scientific or engineering basis, or relevant university faculties, will not be certain that matriculants will have a proper foundation of school knowledge to engage in higher education. Elsewhere in this report is recorded the experiences of academics who regularly encounter this problem. It is the principal justification for a large component of external assessment by examination.

Recommendation 6

The committee therefore recommends the Government and MCEETYA work expeditiously toward the negotiation of a comparable Year 12 curriculum that will embrace the principle of common standards and expectations of achievement at designated levels of study, and agreed common standards of assessment, including a significant component of external examination.

Chapter 6

The teaching profession

> The underlying problem is that the social status of teaching has dropped dramatically. Every occupation that has been invented since 1970 is a graduate occupation and has gone into the occupational hierarchy above teaching. When I was a boy most accountants did not have degrees. Now the biggest faculty in every university is a commerce faculty, and they are all people who are expecting to earn more and have higher social status than teaching. The burgeoning of the university industry in Australia is actually about the creation of degreed occupations of a higher status than teaching.[1]

6.1 When this committee inquired into the status of the teaching profession in 1996-97, it observed that teaching was a highly complex and demanding activity, buffeted by shrinking budgets, alarmist media reports, unsupportive ministers, a crowded curriculum, and the disappearance of support services. It went on to describe how, despite what it saw as evidence of strong commitment and innovative teaching practices, there was a morale crisis related to the belief that the status of the profession was disturbingly low. Few teachers recommended that their brighter students enter teaching, and the academic entry level to university teacher training courses was notoriously low.[2]

6.2 What has changed over the past ten years? On the whole, not a great deal, except that the political and economic context has changed. The committee perceives that there is now an appreciation of the need for a more enlightened and collaborative approach to schools' policy. There is more funding available than 10 years ago. The debilitating years of bureaucratic restructuring and frustrating curriculum experiments are now a receding memory in most jurisdictions. Even perceptions of professional status are beginning to change, due in part to innovations like state teacher registration boards. But fundamental problems identified in the 1998 report remain, especially in regard to entry into the profession and teacher retention rates. This inquiry has uncovered concerns not directly referred to in the earlier report: the academic content of teaching degrees, particularly discipline-based knowledge; and the quality of teaching. The committee hopes that there may be more willingness in this first decade of the 21st century to take a more honest look at cherished mindsets and institutional deficiencies with a resolve to fix as much as we can.

6.3 In the meantime, across the country, a high proportion of teachers remain under considerable strain. This inquiry does not have as its central focus the pressures

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1 Professor Bill Louden, *Submission 73*, p. 4.

2 Senate EET References Committee, *A Class Act: Inquiry into the Status of the Teaching Profession*, March 1998, p. 1.

on teachers, but in noting evidence touching on teaching quality, and the demands of the curriculum, some consideration of issues affecting the profession can scarcely be avoided.

The school milieu

6.4 First, it is important to consider the task and operational field of the profession. One does not enter teaching without a sense of the importance of imparting knowledge or skills, or of bringing about some improvement or development in the minds and outlooks of students. As Dr Geoff Masters and his colleagues at the Australian Council for Educational Research (ACER) have reminded the committee, no concept is more central to the work of teachers than the concept of growth, and that teachers have a fundamental belief that all learners are capable of progressing beyond their current level of achievement.[3] As another ACER researcher told the committee in relation to why people enter the profession:

> The research shows that key drivers are the pleasure and stimulation that they get from working with children and colleagues and seeing kids develop and learn.[4]

6.5 That is what good teaching is about, but as the committee heard, teachers find many impediments laid in their path. They are confronted by resistance to learning. They are often confounded by students with such a lack of any sense of appropriate behaviour, social skills and worldly experience, across entire classes that it is hard for inexperienced teachers to establish a learning connection or point from which to progress. This is why teachers tend to gravitate to middle-class schools in middle-class suburbs.

6.6 The committee also believes that a proportion of teachers, who have spent 20 years or more in the classroom, are in danger of losing their drive and their enthusiasm in learning new skills and knowledge. This may partly arise from a lack of challenging professional development. It is not a phenomenon confined to teaching, but its effects have more consequences there than in most other jobs because of the need to be seen to perform. In combination with low morale, which also affects teachers' performance, this would account for what is probably an unacceptably high level of under-performance. The committee has no evidence on the incidence of this problem. It is an area of school and system administration which appears to be under-researched. The committee is not concerned here with demonstrably incapable performance, which is usually so obvious that it has to be 'managed'. It is concerned with lacklustre teaching which relies on habit, old method and old knowledge, and which can be safely ignored or tolerated by school management as well as by bored and underachieving students.

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3 Geoff Masters, Marion Meiers and Ken Rowe, *Assessment and Reporting of Learning Progress: The importance of monitoring growth*, ACER, April 2005, p. 1.

4 Dr Phillip McKenzie, Australian Council for Educational Research, *Committee Hansard*, Melbourne, 25 June 2007, p. 41. Also, Mr Robert Aikenhead, *Committee Hansard*, Melbourne, 25 June 2007, p. 67.

One correspondent to the Ramsey inquiry into teacher quality in New South Wales (see below) wrote:

> …a teacher might well get fired for predatory sexual behaviour with a young student, but others who mess up the lives and achievements prospects of their students through low professional competence remain entrenched in the system.[5]

6.7 Such teachers may be rehabilitated, but identification, diagnosis and treatment is a challenge which appears not to be a priority. This challenge may be taken up by the newly established teacher registration bodies, but the committee fears that employing authorities will have the capacity to frustrate quality teaching measures which are administratively inconvenient.

6.8 In his review of teacher education in New South Wales, Dr Gregor Ramsey described the incidence of stagnation in schools which occurred when teachers' long periods of 'professional passivity' weakened their morale and self-image. This culture rewarded patience, not learning, and was an anomaly in a society which normally rewards performance and creativity. Dr Ramsey also noted that there are degrees of proficiency amongst teachers, and until some standards have been agreed, and measures put in place to enforce them, the standing of teaching in the community will not improve.

6.9 Notwithstanding this teaching milieu, in schools geared toward student growth and achievement, it is easy to understand why Australian students do well in relation to the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). In other schools, the reasons for a long tail of under achievement are also easy to identify. Education writer and former academic Alan Barcan has some depressing comments to make on a sub-culture of under-achievement:

> With values trending from stable and predictable to situational, it is no longer possible to assume that students will value qualities like application, ambition and achievement…The well-documented emergence amongst adolescents of a deep caution, even cynicism, about institutions, authority, government and education are, almost certainly, incrementally taking their toll on student performance. Though certainly not universal in their impacts, the valuing of work and the setting of personal goals is giving way to short-term self-focused living for many adolescents and, with it, the motivation for learning and the commitment to pursuing academic targets have both come under considerable pressure…The inability of many families to provide basic knowledge and values, the primitive culture of many peer groups, the deteriorating culture pervading the media, mean that

5 Gregor Ramsay, *Quality Matters: Revitalising teaching: Critical times, critical choices*, DET, New South Wales, November 2002, p. 127.

> many students are no longer capable of absorbing even a simplified version of the traditional culture.[6]

6.10 In Chapter 1 the committee recognised the issue of inequity as one which dogged efforts to improve education standards across all schools. There is not much that schools can do to influence the lives of students away from school. It is the burden that students bring to school which so often disadvantages their performance. Education authorities and schools go to considerable lengths to perform an overall duty of care for students, but the committee believes that teachers are already up against the limits of their capacity to substitute for parents in areas of life skills, personal values, and behaviour. Some submissions were critical of the failure to understand what schools are confronted with today. As the Australian Education Union pointed out:

> The students who come to school today live in a very different world from that which adults inhabited when they were at school. Their experiences, their environment, their expectations and the expectations placed upon them have changed radically from the past. They are in many ways more sophisticated, but at the same time much of what happens in their lives outside school makes it that much more difficult for them to succeed.[7]

6.11 The committee did not receive explicit submissions on the learning culture of schools, but there was considerable weight put on the problems of inequity, and the failure of schools to deal with under-achieving students, especially those in the compulsory years of schooling who were marking time because, for one reason or another, they had reached the end of their growth in formal schooling. The implication for teachers is whether, if they were more skilled or experienced, and perhaps better resourced, they might have made a difference. The committee suggests that the experience of too much failure is a disillusioning experience for a high proportion of relatively inexperienced teachers, and this leads to high attrition rates.

Attraction and retention

6.12 Across the country the committee heard a common refrain of schools and systems needing more teachers and retaining them longer. Insufficient numbers are being attracted.[8] The effects of these shortages will become more serious problem for schools as the more senior and experienced teachers resign or retire. The shortage extends across the curriculum. While the shortage particularly affects rural, remote or 'difficult' schools, it is not confined to any one sector or state. There is a severe shortage of some specialist teachers, especially in mathematics and the sciences. As related earlier, the proportion of secondary school mathematics teachers with majors in mathematics in their degrees is declining steadily. Such is the shortage that teachers

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6 Alan Barcan, 'The disputed curriculum', *Quadrant*, June 2005, p. 45.

7 Australian Education Union, *Submission 14*, p. 24.

8 Mr Ian Ferguson, Queensland Secondary Principals' Association, *Committee Hansard*, Brisbane, 5 June 2007, p. 32.

are often asked to teach subjects in which they have no expertise. The Independent Education Union of Australia described it as unacceptable that most teachers can report that during their career they have been required to teach some part of the curriculum for which they are not well-qualified, and then have to bear criticisms of the quality of their teaching.[9]

6.13 Teaching quality is compromised when a teacher does not have the knowledge or understanding of a particular subject. Some teachers may acquire it over time, usually through formal study, and, or intrinsic interest. This is unlikely to be commonplace. A teacher without the necessary literacies would not be able to teach the subject with confidence or accuracy. It is also possible that the subject is taught without depth, or alternately, greater emphasis is given to those parts of the curriculum in which the teacher does have expertise.[10] In relation to this, the committee notes evidence given to the House of Representatives committee looking at teacher education in 2005 by Dr Lawrence Ingvarson from ACER who said:

> The research indicates that you cannot use what are known to be effective teaching techniques unless you do understand the content deeply. If you do not understand, you are forced back on to the worst didactic textbook, going-by-the-rule book sort of teaching. A deep understanding frees you up to use good pedagogy, to discuss ideas, to relax, to open up the discussion, to throw away the textbook and to throw away the work sheets because you are interested, you understand the ideas and you know how to promote those ideas and that discussion.[11]

6.14 This is what the committee understands to be good teaching. It begins with enthusiasm for the imparting of knowledge and ideas, and drawing an equal measure of enthusiastic response from students. However, there might be some evidence of a lack of enthusiasm from the outset.

6.15 The committee heard that many new entrants into the profession see teaching as only a temporary job. It is a port of call on the way to what many hope will be a more desirable career destination. Young graduates, in particular those with strong academic degrees, find it hard to imagine spending thirty years in the classroom doing much the same thing as when they started. The committee believes that this will always be a characteristic of the teaching profession. Many enter the profession but only those with a strong sense of vocation stay on.

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9 Independent Education Union of Australia, *Submission 55*, p. 24.

10 Ms Louise Zarmati, *Committee Hansard*, Sydney, 17 May 2007, p. 69; Mrs Olwyn Gray, Council of Professional Teaching Associations of Victoria, *Committee Hansard*, Melbourne, 25 June 2007, p. 62; Ms Joy Schultz, *Submission 59*, p. 3.

11 Dr Lawrence Ingvarson, Evidence to the H of R Committee on Education and Training, *H of R Committee Hansard*, 7 June 2005, p. 13.

6.16 But the committee also believes that much more should be done by schools and systems to reduce this waste of talent. There is an important role for principals in mentoring and encouraging obviously talented teachers. In theory, independent schools should have an advantage in keeping teachers on because long-term staffing policy is within their capacity to manage more effectively than in systemic schools. Granting more staffing autonomy to public schools is an important reform.

Quality of entrants to the profession

6.17 The committee was told that the problem of attraction and retention is in addition to the lower intellectual quality of people entering the teaching profession.

> In 1983, the average person entering teacher education was at the 74th percentile of the aptitude distribution...By 2003, the average percentile rank of those entering teacher education had fallen to 61. …Focusing on women (who make up about three-quarters of new teachers), the probability of a woman in the top 20 per cent of the academic aptitude distribution entering teaching approximately halved from 1983 to 2003. Meanwhile, the probability of a woman in the bottom 50 per cent...doubled.[12]

6.18 This information is consistent with evidence from Professor Bill Louden. He pointed to entry scores for trainee teachers and concluded that many got into university with very low TER scores. Universities admitting such students ran very large teacher training programs.

> When you start thinking of the size of these institutions and multiply that by the standard, who are the big providers and what are their standards like, you would have to say that there is a problem…People often talk about the problems in physics and mathematics and I do too, but underlying that the larger problem is that the genetic subsidy of women to teaching has been withdrawn. Women used to think they could not be lawyers. They are often not happy being lawyers either, but they used to think they could not be lawyers, that they could do nursing or teaching. The old bursary schemes that paid for working class people's higher education have been withdrawn, so there is no longer a kind of a working class intellectual subsidy into teaching. The women that teaching attracts are nothing like, on average, the same intellectual standard as those before.[13]

6.19 The percentile decline is not evident at every university and is undoubtedly due to some universities having lowered their Tertiary Entrance Ranking (TER) for education courses. Clearly, the universities have their reasons for making such adjustments. One such reason would be the issue of supply and demand. While universities continue to offer education courses, the demand for places within those courses has changed. There are now a huge range of options available to tertiary

12 Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 22.

13 Professor Bill Louden, *Submission 73*, p. 4.

students, and those students with the highest TERs are not usually interested in a teaching career.[14]

6.20 The percentile decline does not take into consideration those students who enter university other than via the TER system, such as mature age students. Nor is it wise to suggest that the TER is the sole indicator of academic quality. The committee does, however, believe that there is a correlation between a teacher's academic achievement and that of his or her student. The apparent decline in the calibre of trainee teachers, as evidenced by the TER requirements, is therefore a matter of concern.[15]

Overcoming teacher shortages

6.21 The committee acknowledges that there will be no quick and easy answer to solving the current teacher shortages.[16] This section of the report considers aspects of teaching conditions which could be improved to make the profession more attractive. As a preliminary comment, however, the committee states its belief that regardless of what improvements to teaching conditions are made, it is unlikely that there will be significant increases in the number of high-achieving school leavers wanting to take up teaching. The attractions of other professions will always be more apparent than the vocational satisfaction that teaching offers more altruistic spirits. To compound this problem, there will be an increasing proportion of teachers who will see their teaching careers as relatively brief, a pathway to some other occupation. For at least two generations teaching has been a working class or rural springboard to better paid jobs. That pathway to social mobility is now obsolete because too many other occupations fit that purpose.

Teaching: a profession or not?

6.22 As noted at the head of this chapter, Professor Louden told the committee that the underlying problem is that the social status of teaching has dropped dramatically over the past 30 years, and that every occupation since invented is a graduate occupation which has gone into the occupational hierarchy above teaching. The result has been ambivalence over the professional status of teaching. That is, whether teaching is a profession or not.

6.23 The questioning of school performance, and the failure to attract people of the same calibre into teaching, has influenced current interest in teacher certification and

14 Mr Gary Barnes, Queensland Department of Education, Training and the Arts, *Committee Hansard*, Brisbane, 5 June 2007, p. 44; Professor Bill Louden, *Submission 73*, p. 4.

15 Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 21.

16 Professor Igor Bray, *Submission 6*, p. 1; Mr Vincent Feeney, Association of Principals of Catholic Secondary Schools in Australia, *Committee Hansard*, Melbourne, 25 June 2007, p. 70; Dr Glenn Finger et al, *Submission 46*, p. 3; Independent Education Union of Australia, *Submission 55*, p. 22.

performance pay. The view is that teachers are responsible to an extent in organising the salvation of the profession, even though in the case of teacher registration agencies, state governments have led the way. The professional status of teachers is influenced to a large extent by the fact that they are all employees. They operate under the school and (for most of them) systemic authority. Their autonomy at the chalkface is regulated by a curriculum, a syllabus, and by whatever collegial or departmental agreements guide them in their teaching. A school is a social learning organisation in which teachers have a crucial role, and they also operate under a myriad of social and community constraints. They are public servants in the widest meaning of this term. They are professionals, in a more narrow sense however, in that they must be certified as being qualified, have special expertise, responsibilities and a duty of care, with duties extending beyond any formal hours of work, and an obligation for continuing self-education.

6.24 The issue of morale is crucial in teaching because job satisfaction depends almost entirely on the sense of fulfilling a vocation. It relies on seeing evidence of intellectual and character growth in one's students. The committee thinks it likely that most teachers give little thought as to whether they are regarded as professionals or not, when morale and job satisfaction levels are high. It is the stresses and strains on teachers, and criticisms of their efforts, that have concentrated minds on this matter. The Association of Principals of Catholic Secondary Schools in Australia submitted that:

> If we want people to believe they are professionals, first of all we must tell them they are, we must treat them as if they are and we must provide them with conditions that enable them to be professional.[17]

6.25 But the committee believes that the professional status of teachers is much more complicated. A brief description of a profession is one which arises when any trade or occupation transforms itself through:

> The development of formal qualifications based upon education and examinations, the emergence of regulatory bodies with power to admit and discipline members, and some degree of monopoly rights.[18]

6.26 There are many important characteristics of a profession which are not present within the 'teaching profession', including, fundamentally, an autonomous and powerful regulatory or professional body whose function it is to define, promote, oversee, support, and regulate the affairs of its members. The committee notes that the teaching profession is seeking to acquire some characteristics of the more established professions, but the committee believes that, for reasons that go beyond the capacity

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17 Mr Vincent Feeney, Association of Principals of Catholic Secondary Schools in Australia, *Committee Hansard*, Melbourne, 25 June 2007, p. 72. Also, Professor Alan Reid, Australian Curriculum Studies Association, *Committee Hansard*, Melbourne, 25 July 2007, p. 13.

18 Alan Bullock & Stephen Trombley, *The New Fontana Dictionary of Modern Thought*, London, Harper-Collins, 1999, p. 689.

of any government or society to order, teaching will continue to be buffeted as much as any other occupation.

Teacher registration bodies

6.27 The committee believes that registration and accreditation bodies will have interesting challenges to face in their progress toward becoming the gate-keepers to the profession. This has the potential to bring them into conflict with employers. Currently, it appears that state registration bodies are more often creatures of education departments. The committee noted that one of the witnesses representing the Queensland College of Educators was concurrently an official of the education department in that state. On the face of it, this represents a conflict of interest.

6.28 Potentially, an independent college of educators could accredit teachers only in subjects which they are qualified to teach on the basis of their university qualifications or specialisations. This would be entirely consistent with the role of any other professional accrediting agency concerned with maintaining quality standards. However, it would be an attitude or action which school systems and employing authorities would strenuously resist because it would restrict the authority of a school or a principal to direct a teacher to take a particular class. It is commonplace for teachers to be directed to take classes in subjects for which they are not properly qualified, if only because of schools' legal duty of care. The committee is of the opinion that it is unlikely that state-based or national professional regulatory bodies for teaching could ever be relied on to back quality standards of professional teaching in the circumstance described above.

Remuneration

6.29 For many witnesses, the most essential element of professional treatment was that of remuneration. Professor Igor Bray argued that immediately increasing base pay would send a message to the community that teaching is valued. The Independent Education Union of Australia maintained that if the base pay is not right, then the profession does not have the standing and capacity to recruit.[19]

6.30 The fact that the base pay is not right was highlighted by many other witnesses. Professor Michael O'Neill from the University of Notre Dame provided an interesting comparison to the committee,

> We need to bring the three Rs back to teaching. But they are not the three Rs you would think I am talking about; they are 'remuneration, remuneration, remuneration'. We have a very sad tale to tell in Australia. It takes teachers in Western Australia nine years to hit a ceiling…First-year teachers [in the Republic of Ireland] start on a salary of $55,000, while most of our teachers start on $45,000. Over 25 years, [teachers in the

19 Professor Igor Bray, *Committee Hansard*, Perth, 2 July 2007, p. 32; Mr Chris Watt, Independent Education Union of Australia, *Committee Hansard*, Melbourne, 26 June 2007, p. 14.

> Republic of Ireland] rise to a salary of $100,000. That gives them status and a position in society. But, first and foremost, it gives them something to hold onto; it retains them in the profession. They can see that their career is not finished after nine years…At my colleague's university, students enter with a TER that is equivalent to the TER for law students and medical students. They fight for places in education faculties.[20]

6.31 According to ACER:

> The typical salary scale for teachers in Australia does not place high value on evidence of teacher quality. Consequently, it is a weak instrument for improving student achievement. It does not provide incentives for professional development nor reward evidence of attaining high standards of performance. Thirteen of 30 OECD countries report that they adjust the base salary of teachers on the basis of outstanding performance in teaching, or successful completion of professional development activities...Australia is not one of them.
>
> While progression to the top of the salary ladder is rapid in Australia – it takes only 9-10 years for most Australian teachers to reach the top of the scale compared with 24 years on average in OECD countries – there are no further career stages based on evidence of attaining higher levels of teaching standards. The implicit message in most Australian salary scales is that teachers are not expected to improve their performance after nine years.[21]

6.32 A table of current salaries adjacent shows the incremental stages for government schools across the country.

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20 Professor Michael O'Neill, University of Notre Dame Australia, *Committee Hansard*, Perth, 2 July 2007, pp 35-36.

21 Australian Council for Educational Research, *Submission 38*, p. 6. Also, Dr Glenn Finger et al, *Submission 46*, pp 4-5; Mr Marko Vojkovic, *Submission 2*, p. 1.

Current government school salaries in incremental stages, 2005 and 2006.

NORTHERN TERRITORY		VICTORIA			QUEENSLAND		SOUTH AUSTRALIA	
30/1/06			1/1/06	1/10/06	1/5/2006		From 1/4/06	
					4.0 per cent			
T1	37,652	Graduate Classroom Teacher			Band 1		Special Authority	
T2	41,647	G-1	**44,783**		1	39,943		40,173
T3	44,539	G-2	46,060		2	41,078		
T4	**47,656**	G-3	47,372		3	42,455	BAND 1 TEACHER	
T5	50,992	G-4	48,722		4	43,916	1	**46,077**
T6	54,561	Accomplished Classroom Teacher			Band 2		2	48,454
T7	58,382	A-1	51,539		1	45,145	3	50,831
T8	62,468	A-2	53,008		2	47,647	4	53,206
T9	**66,839**	A-3	54,519		3	50,141	5	55,587
		A-4	56,072		4	52,643	6	57,964
Teachers of Exemplary Practice (TEP)		A-5	57,671		5	55,153	7	60,340
		Expert Classroom Teacher			Band 3		8	**62,709**
Allowances:		E-1	59,458		1	57,243		
		E-2	61,302		2	59,345	AST 1/KEY TEACHER	
TEP 1 = 7.5 per cent of salary to max of 96 per cent of ET2		E-3	**63,202**	3/4/5YT max	3	61,432		65,477
		E-3a	64,531		4	63,645	AST 2	
TEP 2 = 12.5 per cent of salary to max of ET2		Leading Teacher			Senior Teacher (4 Year Trained)			68,542
		LT1-1	66,371			66,562		
TEP 3 = 20 per cent of salary to max of ET4		LT1-2	68,262					
		LT1-3	70,208					
		LT2-1	72,209					
		LT2-2	74,266					
		LT2-3	76,383					

TASMANIA		AUSTRALIAN CAPITAL TERRITORY			WESTERN AUSTRALIA		NEW SOUTH WALES	
From: 9/3/06		From: 1/7/05			From:	August 2006	From:	1/1/06
1	40,860	1.1	43,073	3YT min	Level 1			
2	42,144	1.2	**46,565**	4YT min	1	34,704	Step 1	36,936
3	43,431	1.3	48,894	5YT min	2	36,507	Step 2 (2YT)	40,259
4	**44,711**	1.4	51,222		3	38,614	Step 3 (3YT)	42,943
5	47,009	1.5	53,551		4	40,278	Step 4	45,167
6	49,431	1.6	56,460		5	**42,885**	Step 5 (4YT)	**47,621**
7	51,976	1.7	59,370		6	45,410	Step 6 (5YT)	50,072
8	54,658	1.8	62,282		7	49,546	Step 7	52,527
9	57,472	1.9	**66,353**	3/4/5YT max	8	54,479	Step 8	54,983
10	60,394				Level 2		Step 9	57,435
11	63,200	*Note: Expired Agreement (March 2006)*			1	56,573	Step 10	59,888
12	**65,389**				2	58,900	Step 11	62,341
					3	**62,863**	Step 12	64,798
					Senior Teacher 1	64,495	Step 13	**69,334**
					Senior Teacher 2	65,785		
					Level 3 Classroom Teacher	71,149		

Source: Lawrence Ingvarson, Elizabeth Kleinhenz, Jenny Wilkinson, *Research on Performance Pay for Teachers*, ACER, March 2007, p. 37.

6.33 The committee found general agreement between educators on how poorly teachers are paid. Their relatively low pay affects the quality of entrants to the profession, and this damages prospects for an improvement in education standards at all levels. There are flow-on effects to business profitability and efficiencies in public services. The committee is in favour of a significant across the board pay increase. This should be implemented regardless of whatever additional performance pay arrangement is finally determined.

6.34 The committee is aware, however, that this would be a bold step for governments to take. It would have the effect of elevating teachers' salaries well over the rate paid to, for instance, health care workers generally. While it would signal a long-term commitment to getting the basics of future national growth right, it would also arouse some antagonism from those who would see more benefit in alternative uses of the funding. While public schools teachers' salaries are the province of state and territory governments, the non-government school sector has traditionally been supported by the Commonwealth, and additional funding avenues for teachers in this sector would need to be explored.

6.35 Opponents of significantly higher pay would also argue—as would many educationists—that higher salaries may not have the desired affect of attracting a brighter cohort of trainees into the profession, because of the peculiar nature and challenges of the job, and the fact that it makes special vocational demands without the guarantee of corresponding vocational satisfaction.

6.36 The committee believes that there are strong grounds for increasing the base rate of pay for teachers across the current salary range. This should incorporate some new scale which would spread the increments over a longer span of a teacher's career. Arguably, the increments are now too closely grouped in the first eight or ten years of service.

Performance pay

6.37 The issue of teaching quality, which occupied up to half of the committee's time, quite naturally led to questions about performance pay. The issue has recently aroused public discussion. Some witnesses were less than enthusiastic with the idea of performance pay, as were submissions from teacher unions and other associations. The committee recognises that the failure to elicit informed comment was probably due to the fact that many educationists have not yet focussed on the issue. The committee notes the ACER claim that a lack of understanding about the complexity of developing valid and professionally credible methods for gathering data about teaching and assessing teacher performance is the reason why performance pay schemes have failed over the past 30 years.[22]

22 Australian Council for Educational Research, *Submission 38*, p. 6.

6.38 It is fair to report that performance pay is not opposed by many people on grounds of principle so much as on grounds of practicality. There is justifiable reservation about how a scheme could fairly reward those whose efforts and achievements are not easily measurable. This is particularly the case with teachers of students with disabilities and learning difficulties, and where teams of teachers contribute to quality learning outcome in ways which are difficult to disaggregate.

6.39 The purpose of performance pay is to encourage and reward excellence and effort, provide incentive, and improve the quality of student achievement overall. The committee recognises that there is a desire among all those associated with school education to revitalise the teaching profession, and this is the source of interest in performance pay. The committee is of the view that teachers' salaries ought to be increased across the board and has recommended that this be done. However, the view is also widespread, and shared by the committee, that teachers of outstanding merit should be rewarded with salary supplements, indicating to the community that the vocation of teaching is valued.

6.40 Although the Government has a stated policy in support of performance pay, it is at an early stage of development. This is evident from a reading of the ACER research paper published in March 2007 which indicates the scope of ideas for performance pay, and the need to engage in extensive investigation of models which would be most appropriate for schools.[23] In June 2007, the Minister for Education, Science and Training, the Hon Julie Bishop MP announced a tender for an expert to develop models which could be tested. The committee anticipates that this will be a formidable task and makes the following references to important points arising from the ACER research paper.

6.41 Dr Ingvarson and his team noted that any valid and reliable scheme for assessing individual teacher performance requires multiple and independent sources of evidence, and independent assessment of that evidence. No single measure, such as exam results or a principal's assessment, would alone provide a reliable basis for making a decision about performance pay eligibility.

6.42 There are currently three approved schemes for performance pay operating in a number of states and territories, all of them having origins in the Advanced Skills Teacher concept. This has been promoted by unions since the early 1990s, but the concept is seen by disinterested observers to contain many flaws. These flaws are evident in the various performance pay schemes.

6.43 There are three categories of performance pay schemes. The first is a merit pay scheme, once used in many school districts in the United States. This scheme is not standards or criterion based; evidence in support of the award is often unreliable and of doubtful validity; and there is usually a fixed pool of funds. In the second

23 Dr Lawrence Ingvarson, Elizabeth Kleinhenz and Jenny Wilkinson, *Research on Performance Pay for Teachers,* ACER, March 2007.

category are knowledge and skills-based schemes. These are also common in the United States where bonuses are paid for the acquisition of post-graduate qualifications. This has the merit of valuing teacher growth and development, even though there is no evidence that having post-graduate qualifications improves classroom performance. Finally, there is the certification approach, which is an endorsement by a professional body that a member has attained a specified level of knowledge and skill. An application would be voluntary and made to one of the embryonic state certification agencies like the NSW Institute of Teachers.[24]

6.44 At this stage of the debate, such considerations were academic to most witnesses. The Australian Education Union told the committee:

> We support a process that recognises that a teacher has met professional standards that have been set and agreed by the profession and that are externally assessed…It is a method that does not produce any negative results within a school in terms of competition to the point of divisiveness or being seen as an arbitrary decision by a school principal or anyone else…Having said that, we are very concerned that the notion of performance pay—or additional bonus, if you like—would become a substitute for real increases across the board in teacher salaries.[25]

6.45 The committee would not want performance pay to be a substitute for real increases in salaries. The Australian Education Union's conditional support for performance pay drew attention to concerns which were foremost in the minds of other witnesses. Dr Glenn Finger and his associates from Griffith University highlighted issues of equity:

> The opportunities for and challenges of being an effective teacher are not uniformly distributed across schools and schooling situations. To discriminate against teachers [who] work in schools and communities that fail to afford support for their activities will only exacerbate the social divide within Australia, erode the commitment and enthusiasm of teachers working in challenging schooling situations and further demark many public schools.[26]

6.46 Contextual factors, the complex nature of teaching and learning, and the collaborative nature of people working together to produce learning outcomes were concerns also echoed in the remarks of the Queensland Secondary Principals' Association, which strongly opposed the entire concept of performance pay, especially one based on student results. While this is almost certainly a misconception, the committee noted that this is a common view:

> In terms of taking…students from where they were to where they were heading and achieving, the distance travelled was enormous but the results

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24 Ibid, pp 13-17.

25 Ms Pat Byrne, Australian Education Union, *Committee Hansard*, Melbourne, 25 June 2007, p. 4.

26 Dr Glenn Finger et al, *Submission 46*, p. 5.

> were still poor. That to me is the basis of what is wrong with performance pay. If you look for a simple measure of student results, it just does not take into account context…The damage this would do to the totality, to the wholeness, of a teaching staff would be enormous. If of a staff of 65 you said, 'Those seven teachers are really doing well, by whatever measure,' then what does that do to the rest of the staff? The product—a student's success—this year is attributable to the teacher of the year before, the year before, the year before and the year before, not the person in front of the class now.[27]

6.47 Of more significance is the point that teachers will need to have confidence in the integrity of the system. Teachers are not to be compared with stockbrokers or FOREX dealers: they are team players. Stated below is one commonplace suspicion:

> I feel very uneasy about [performance pay] because I know how performance, whether it is in education or in industry at the other end of town, can be manipulated. You can cook the books and look as if you are an absolute whiz-bang when really there is no substance there. The other thing too …is that—and I saw this when they introduced performance pay [in Victoria]—other people ride on the backs of their colleagues.[28]

6.48 The committee considers that concerns raised about the effect of performance pay on secondary school departmental work teams, which operate on the basis of strong collegiality, are matters that need to be treated seriously. There is potential for individual performance pay to create considerable tension in school communities, and lead to a serious loss of trust and collegial spirit. This would damage rather than enhance teaching quality. The committee believes that work needs to be done to develop credible group performance bonus pay schemes which reward team effort and acknowledge *esprit de corps*. Nevertheless, the committee believes that the difficulties associated with introducing a performance based pay scheme can be overcome.

6.49 Another perspective on performance reward was raised in evidence from the Association of Independent Schools of Western Australia (AISWA). AISWA argued that quality teachers should be rewarded in a manner which re-invests in the individual teacher and the teaching profession, for example, professional development opportunities, teacher exchange and industry work experiences, or payment of Higher Education Loan Program (HELP) fees for higher qualifications.[29] Some of these schemes have been operating for many years, but should have been more extensively offered.

6.50 Dr Ingvarson and his team expressed the view that successful implementation of performance-based pay schemes for individual teachers is unlikely to become a

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27 Mr Ian Ferguson, *Committee Hansard*, Brisbane, 5 June 2007, p. 27.

28 Mrs Olwyn Gray, Council of Professional Teaching Associations of Victoria, *Committee Hansard*, Melbourne, 25 June 2007, p. 67.

29 Mrs Valerie Gould, Association of Independent Schools of Western Australia, *Committee Hansard*, Perth, 2 July 2007, p. 8.

reality without the backing of a major research program to develop the capacity to measure teacher knowledge and skill. It is unlikely that teachers will become favourably disposed to such a scheme unless it involves them and their professional associations. This is already beginning. Several teacher professional associations, notably the National Council for the Teaching of Mathematics, have developed a set of teaching standards which might mark the way for future acceptance of performance-based pay schemes. The committee believes that the teaching profession will need to take this at its own pace. That way it has more chance of success in achieving the aim of revitalising the profession.

Conclusion

6.51 Excellence in teaching must be encouraged by all reasonable means. This is as important for the quality of education throughout Australia as it is for the vitality of the teaching profession. The inquiry has found that higher remuneration and some form of performance pay would be instrumental in enhancing the quantity and quality of the teaching profession.

Recommendation 7

That the Government takes steps to improve the remuneration of teachers so as to raise the professions entry standards and retention rates by providing incentives.

Opposition Senators' Report

1.1 This inquiry into learning performance in schools has been far too ambitious an undertaking. It required more time and resources, and not least a span of attention by committee members which could not reasonably have been expected of senators. For this reason Opposition senators have formed the view that the inquiry has had only limited usefulness, and that the conclusions drawn in the committee majority report, and the recommendations made, need to be treated with caution. The sampling of stakeholder opinion was limited, as was the amount of empirical research available on some issues. This is not a reflection on the high quality of most submissions or the value of testimony given to the committee. It is only that inquiries like this tend to be coloured by 'snapshots' and hearsay more than they should be. The committee, being conscious of the achievement and hard work proceeding in schools, should have acknowledged the successful learning experienced in most schools, and the research demonstrating that improved standards are being achieved. Opposition senators are confident that this perspective is likely to be shared by education stakeholders regardless of the views they take on the issues covered in the report.

1.2 As this report will outline, far too much reliance has been placed on opinion expressed as 'evidence', and too much credence has been placed on 'evidence' which suggests a clear decline in standards. Qualitative research indicates that there are problems in some areas, but there was no substantial evidence to indicate declining standards overall or across the board. The committee certainly heard no evidence of any deterioration in teaching standards. What it heard about was increasing pressure on teachers resulting from the consequences of social inequity and funding shortages. It heard about the lack of incentives to attract talented people into the teaching profession.

1.3 The committee also heard of the failure of Commonwealth policies in two crucial areas: its failure to adequately fund programs addressing the needs of underachieving schools; and its failure to provide constructive policy leadership for improving school programs and raising standards. The need for a leadership role from the Commonwealth is not in question. What is most evident is the adversarial and ideologically driven agendas of the current minister and her predecessor, both of whom have attempted to wield power without responsibility over jurisdictions and systems whose task it is to run schools.

The conduct of the inquiry

1.4 Opposition senators would support a constructive and thoughtful inquiry into raising quality and standards in school education. While believing that achievement levels are relatively high, on the basis of international comparisons and reported data which is now available from the states, Opposition senators agree that improvement is possible, and that there are areas of under-performance which need remedying.

1.5 There were some reservations, however, about the timing of the inquiry, especially in light of rhetoric from some Government party senators which suggested that school education is an ideological battleground. While the majority report refers to the ill-informed coterie of commentators who regularly criticise teachers for their failure to ensure high academic standards, Opposition senators make the point that too many members in both Houses give credence to such critics by quoting them approvingly, probably for political purposes.

1.6 Opposition senators recall the questioning of Professor Ken Wiltshire as an opportunity for some senators to reflect on the Leader of the Opposition. On other occasions some senators appeared ready to criticise some established teaching subjects on the basis of their content, failing to consider how inappropriate that might be in the context of a public hearing. Such incidents, not significant in themselves, created a sense of unease about a possible political agenda that might have been running in the ranks of Government party members.

1.7 Finally, in the conduct of the inquiry, Opposition senators note that its duration has been less than twelve months, but that the examination of evidence by the committee only began in March 2007. The broad terms of this inquiry have meant that much ground needed to be covered, and this has not occurred.

Past inquiries

1.8 Opposition senators note that the terms of reference for this inquiry overlay a great deal of policy area which has been the subject of numerous previous reports commissioned by this government over the past decade (see Attachment A). None of these inquiries, or their recommendations, have borne fruit. It begs the question of how the Government will react to yet another set of recommendations.

1.9 This lack of response was referred to in a number of the submissions. For instance, the Independent Education Union of Australia suggesting that an audit of the reports and recommendations from parliamentary inquiries over the last decade be undertaken.[1]

1.10 Another submission, from Dr Glenn Finger et al from Griffith University in Queensland highlighted the issue:

> We support, in principle, the recommendations of the *Top of the Class Report on the inquiry into teacher education and the Teaching and Leading for Quality Australian Schools: A Review and Synthesis of Research-Based Knowledge* report for Teaching Australia. However, we note that these are the most recent of many similar reports which have not been thoroughly and sufficiently resourced and acted upon.[2]

1 Independent Education Union of Australia, *Submission 55*, p. 5.

2 Dr Glenn Finger et al, *Submission 46*, p. 3.

1.10 A similar picture emerges with reports commissioned by the Minister, through DEST. Professor Kevin Wheldall and his colleagues were instrumental in bringing about the 2005 National Inquiry into the Teaching of Literacy but noted that:

> Since the 'Nelson Report' was released there has been little done of appreciable significance to implement its findings. More seriously, what has been done has been paying little more than lip service to the Report's recommendations...We regard the decision…as evidence of either the unwillingness or the complete inability of federal and state governments to allow educational policy to be determined by the best available scientific evidence on how best to teach children to read.[3]

1.11 This sentiment was echoed in a number of other submissions, with Dr Kerry Hempenstall noting also that little productive change has as yet eventuated at the classroom level.[4] When asked to explain the lack of action taken following the National Inquiry into the Teaching of Literacy, Professor Bill Louden from the University of Western Australia added:

> I think that the lack of action is a mystery which could only be explained by within-cabinet interactions, the capacity of ministers to get their programs up. It could not be explained by anything rational or scientific. We did an inquiry and the inquiry was quite clear.[5]

1.12 Professor Louden pointed to teacher education as one example of an area in which a lack of funding had failed to provide a solution to a problem identified in numerous inquiries:

> We have had 101 inquiries into teacher education in Australia since 1979. The House of Representatives report listed 100 in its appendix. It is not an un-inquired into problem. One teacher education program I know went from 210 academic staff in teacher education and 3,500 students to 70 staff and 4,500 students. Do you think they did that because they thought having fewer people around made the tearoom easier to manage? No. It was because their funding was halved in real terms in 15 years. In the universities everyone is always whining about this and no-one wants to hear a Dean of Education whining about funding for teacher education, but that is actually true.[6]

1.13 In particular, Opposition Senators note that one of the Government party senators' recommendations in the report is to call for an inquiry into the remuneration of teachers. Opposition senators not only disagree with the Government party senators of the committee on the issue of performance pay, but condemn the Government for initiating yet another inquiry with a history of failing to act on previous inquiries and

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3 Professor Kevin Wheldall et al, *Submission 27*, p. 5.

4 Dr Kerry Hempenstall, *Submission 5*, p. 2.

5 Professor Bill Louden, *Submission 73*, p. 7.

6 Professor Bill Louden, *Submission 73*, p. 14.

their recommendations. The Opposition Senators must question whether the Government is genuinely committed to long-term enduring solutions in school education.

The current inquiry

1.14 Opposition senators believe that the inquiry has highlighted the need to focus on quality teaching and quality curriculum. They also note with some disbelief the failure of Government senators to fully acknowledge, or seek to address, the link between lower educational outcomes and socio-economic disadvantage.

Inequity as the enemy of quality

1.15 A common theme throughout submissions was the strong socio-economic relationship between achieving and under achieving students, and the inability of the current education system to adequately address this inequity. Government senators acknowledged this relationship but did not appear to take it seriously. The committee majority report concluded that:

> …the apparent problem of low socio-economic status has been resolved at the school level in some schools…The committee feels that the socio-economic status factor is surmountable, as it has been in past generations which have seen an 'aspirational' cohort rise from their working class origins. The difficulty for schools and teachers is to motivate students to develop an interest in their own educational growth.[7]

1.16 The Australian Council for Educational Research, the Australian Education Union, the Independent Education Union and the Association of Heads of Independent Schools of Australia all noted the significant issue surrounding equity in the Australian education system.

1.17 Government senators cited evidence from the Australian Council for Educational Research that the correlation between socio-economic status and results was insignificant as justification for the Government's dismissal of the socio-economic issue, however the same submission notes:

> The OECD has ranked Australia highly in terms of the current attainments of 15 year-olds…[however] students from low socio-economic and indigenous backgrounds tend to be over-represented in the tail of the achievement distribution. This means that increasing variability across the years of school sometimes is reflected in growing gaps between students from lower and higher socio-economic backgrounds and between indigenous and non-indigenous students.[8]

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7 Committee majority report, Chapter 2, p. 9.

8 Australian Council for Educational Research, *Submission 38*, p. 1.

1.18 The trend is clear also in the submission from the Australian Education Union, which analysed Australia's performance in PISA. The Union concluded that while all states and territories performed at or above the international average:

> The most notable and worrying element of the Australian results was that in the 2000 results in relation to reading literacy Australia was found to have 'high achievement, low equity'. The presence of a 'long tail' was caused by the comparatively wide spread of results across the achievement spectrum compared to several other countries with similar achievement levels.[9]

1.19 While student background may not be the only factor leading to under-performance in national and international testing, it is identified by many as a key factor, and one that Opposition senators feel should not be dismissed.

1.20 A number of submissions noted that unlike some OECD countries Australia maintains a substantial non-government school sector. This sector is growing for a number of reasons. One is the run-down condition of some of government schools. Opposition senators take the view that there is a justifiable argument for the provision of increased Commonwealth funding to all schools particularly needy government schools. Equal educational opportunities should exist for all students irrespective of SES, geographic location, or physical disability. As the Independent Education Union told the committee:

> The responsibility for quality must be a collective one across governments, education systems, the teaching profession and the community. There should be an emphasis on collaboration not competition between schools or sectors.[10]

1.21 The long 'tail' of underachievement indicated by the PISA and TIMMS tests of comparative standards can in large measure be attributed to pockets of socio-economic disadvantage reflected in the performance of schools in some localities. These schools are in urgent need of remedial programs run by specialist trained teachers in literacy and numeracy, or more resources and intervention strategies.

1.22 Opposition senators are highly concerned with the correlation between low performance and social disadvantage. The need for early intervention for those students who are not able to meet literacy and numeracy benchmarks, and additional targeted funding for schools on the basis of need and fairness are noted. Australia's position on the international rating scale will not improve unless standards are raised across all schools.

Performance Pay

1.23 A key focus of the committee majority report is teacher quality, including issues of remuneration and the Government's flawed performance pay approach.

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9 Australian Education Union, *Submission 14*, p. 11.

10 Independent Education Union of Australia, *Submission 55*, p. 17.

Opposition senators' concerns about the effect of performance pay on the teaching profession need to be treated seriously. In some states and territories, such as the Northern Territory, there is already a discernible and negative effect. In relation to performance pay, the majority of the committee concluded that:

> …some form of performance pay would be instrumental in enhancing the quantity and quality of the teaching profession...The committee believes that the teaching profession will need to take this at its own pace.[11]

1.24 Opposition Senators recognise the importance of rewarding quality teaching. The Government's so-called performance pay approach is fundamentally flawed. Opposition Senators believe teachers should be rewarded for what they teach and where they teach, and that this should be done in cooperation with the teaching profession.

1.25 Opposition senators believe there is an urgent need to address the declining status of teaching in Australia, including increased rewards for quality teachers, but rejects the need for the Government's performance pay approach, noting the failure of these schemes internationally.

Curriculum and assessment

1.26 The importance of quality curriculum cannot be overstated. Opposition senators believe that rapidly developing a system of national assessment, including compulsory external examinations, is premature. On the issue of compulsory external assessment, Opposition senators cannot identify any substantial educational reason, or demonstrable case, for such arrangements automatically improving outcomes or curriculum rigour.

1.27 Opposition Senators believe the development of a high quality, rigorous national curriculum is central to ensuring high academic standards across all states and territories, and that it is curriculum which should be prioritised over assessment procedures.

Recommendation 1

Opposition senators recommend that the committee conduct an audit of inquiries into school education over the past decade, including an assessment of the government's response to recommendations.

11 Committee majority report, Chapter 6, p. 15.

Recommendation 2

Opposition senators recommend that additional targeted funding for schools should be provided on the basis of need and fairness to address inequity in educational outcomes, social disadvantage, and rural and regional locations.

Recommendation 3

Opposition senators recommend urgent action to improve the status and quality of teaching, including a program to reward quality teachers for what they teach and where they teach.

Recommendation 4

Opposition senators recommend a National Curriculum Board led by an eminent educationalist with representatives from each state and territory as well as the Catholic and independent sectors be established to develop a national curriculum.

Senator Gavin Marshall

Deputy Chair

ATTACHMENT A

School Education Reports Commissioned by the Howard Government

Year	Report
1998	National Standards and Guidelines for Initial Teacher Education Project (Australia), *Preparing a Profession: Report of the National Standards and Guidelines for Initial Teacher Education Project*, Australian Council of Deans of Education, Canberra, 1998.
2001	Department of Education, Training and Youth Affairs, *PD 2000 Australia: A National Mapping of School Teacher Professional Development*, Canberra, 2001.
	Goodrum, D., Hackling, M. and Rennie, L., *The Status and Quality of Teaching and Learning of Science in Australian Schools: a research report*, Department of Education, Training and Youth Affairs, Canberra, 2001.
2002	Ballantyne, R., Bain, J. D., and Preston, B., *Teacher Education Courses and Completions: Initial Teacher Education Courses and 1999, 2000 and 2001Completions*, Evaluations and Investigations Programme, Higher Education Group, Department of Education, Science and Training, Canberra, 2002.
	Department of Education, Science and Training, *An Ethic of Care: Effective Programmes for Beginning Teachers*, Canberra, 2002.
	Department of Education, Science and Training, *Raising the Standards: A Proposal for the Development of an ICT Competency Framework for Teachers*, Canberra, 2002.
2003	Ballantyne, R., McLean, S. V., and Macpherson, I., *Knowledge and Skills Required for Creating a Culture of Innovation: Supporting Innovative Teaching and Learning*, Paper prepared for the Review of Teaching and Teacher Education, Department of Education, Science and Training, Canberra, 2003.
	Committee for the Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future: Advancing Innovation, Science, Technology and Mathematics* (3 vols), Department of Education, Science and Training, Canberra, 2003.
	Committee for the Review of Teaching and Teacher Education, *Discussion Paper: Young People, Schools and Innovation: Towards an Action Plan for the School Sector*, Department of Education, Science and Training, Canberra, 2003.
	Committee for the Review of Teaching and Teacher Education, *Interim Report: Attracting and Retaining Teachers of Science, Technology and Mathematics*, Department of Education, Science and Training, Canberra, 2003.
	Lawrance, G. A. and Palmer, D. H., *Clever Teachers, Clever Sciences: Preparing Teachers for the Challenge of Teaching Science, Mathematics and Technology in 21st Century Australia*, Evaluations and Investigations Programme, Research Analysis and Evaluation Group, Department of Education, Science and Training, Canberra, 2003.

	Ministerial Council on Education, Employment Training and Youth Affairs, Teacher Quality and Educational Leadership Taskforce, *A National Framework for Professional Standards for Teaching,* November 2003.
	Ministerial Council on Education, Employment Training and Youth Affairs, Teacher Quality and Educational Leadership Taskforce, *Demand and Supply of Primary and Secondary School Teachers in Australia*, 2003.
	Skilbeck, M. and Connell, H., *Attracting, Developing and Retaining Effective Teachers: Australian Country Background Report*, Department of Education, Science and Training, Canberra, 2003.
	Smith, D. L., *Learning, Teaching and Innovation: A Review Of Literature On Facilitating Innovation In Students, Schools and Teacher Education with Particular Emphasis on Mathematics, Science and Technology*, Department of Education, Science and Training, Canberra, 2003.
2004	Department of Education, Science and Training, *National Institute for Quality Teaching and School Leadership Implementation Strategy Report: Report to the Australian Government Department of Education, Science and Training*, Allen Consulting Group, Melbourne, 2004.
	Ministerial Council on Education, Employment Training and Youth Affairs, Teacher Quality and Educational Leadership Taskforce, *Nationally aligning graduate level teaching standards*, unpublished survey, 2004.
	Ministerial Council on Education, Employment Training and Youth Affairs, Teacher Quality and Educational Leadership Taskforce, *Pre-Service Teacher Education in Australia*, unpublished, June 2004.
	Skilbeck, M & Connell, H, *Teachers for the Future: The changing nature of society and related issues for the teaching workforce*, A report for the Teacher Quality and Educational Leadership Taskforce of the Ministerial Council for Education, Employment, Training and Youth Affairs, September 2004.
2005	Department of Education, Science and Training, *Teaching Reading, National Inquiry into the Teaching of Literacy*, Report, December 2005.
2006	Department of Education, Science and Training, *Attitudes to Teaching as a Career: A Synthesis of Attitudinal Research*, Canberra, May 2006.
2007	*Top of the Class: Report on the Inquiry into Teacher Education*, House of Representatives Standing Committee on Employment and Vocational Training, February 2007

Appendix 1

List of submissions

Sub No:	From:
1	Dr Michael Watt, TAS
2	Mr Marko Vojkovic, WA
3	Australian Association for the Teaching of English, SA
4	Dr John Ridd, QLD
5	Dr Kerry Hempenstall, VIC
6	Mr Igor Bray, WA
7	Mackillop Senior College, NSW
8	Cardiff Primary School, NSW
9	Dr Kevin Donnelly (Education Strategies), VIC
10	Middle Years of Schooling Association, QLD
11	Mr Bruce Gillam, WA
12	Mr Alexander Holt, Australian Council of State School Organisations
13	Professor Stephen R Kessell, WA
14	Australian Education Union, VIC
15	Catholic Education Commission of Victoria, VIC
16	Association of Principals of Catholic Secondary Schools in Australia, WA
17	Ms Yvonne Meyer,
18	Association of Heads of Independent Schools of Australia, ACT
19	Isolated Children's Parents' Association of New South Wales Inc, NSW
20	Dr Richard Rowe et al, James Cook University, QLD
21	Australian Association of Mathematics
22	Dr Greg McPhan
23	Private Submission
24	DALE Christian School, NSW
25	Australian Geography Teachers Association Ltd, Institute of Australian Geographers Inc, Australian Academy of Science national Committee for Geography, Geographical Society of New South Wales Inc, Royal Geographical Society of Queensland Inc
26	Australian Literacy Educators' Association, SA
27	Professor Kevin Wheldall et al, NSW
27a	Response to submission 27 from the Curriculum Corporation, VIC
28	St Joseph's Catholic College, NSW
29	Private Submission

30	The Newcastle Students' Association, NSW
31	Mr Justin Watts
32	ACT Gifted and Talented Local Support Group of New South Wales Association of Gifted and Talented Children, ACT
33	Association of Independent Schools of Western Australia, WA
34	Australian Association of Christian Schools, NSW
35	Department of Education, TAS
36	Mr John Fleming, VIC
37	Ms Marion (Molly) de Lemos, VIC
38	Australian Council for Educational Research
39	Service Skills Australia, NSW
40	Dr Barry Young, QLD
41	Lutheran Education Australia, SA
42	Australian Mathematical Science Institute, VIC
43	Australian Primary Principals Association, ACT
44	Catholic Education Office Adelaide, SA
45	Queensland Catholic Education Commission, QLD
46	Dr Glenn Finger and Professor Robyn Zevenbergen et al, Griffith University, QLD
47	NSW Education and Training Portfolio, NSW
48	Assoc Professor Wayne Read et al, James Cook University, QLD
49	Independent Schools Council of Australia, ACT
50	Mr David Bernard, VIC
51	Mr Nick Ewbank, History Teachers' Association of Australia (HTAA), ACT
52	Ms Louise Zarmati, History Teachers' Association of New South Wales, NSW
53	Queensland College of Teachers, QLD
54	Department of Education, Training and the Arts, QLD
55	Independent Education Union of Australia, VIC
56	Mr Ian Ferguson, Queensland Secondary Principals' Association, QLD
57	Dr Michael Furtado, QLD
58	Association of Independent Schools of South Australia, SA
59	Ms Joy Schultz, QLD
60	Ms Jean Clyde, DIY Reading Tutor TAS
61	Professor Margaret Britz, QLD
62	VAS Research, TAS
63	Australian Curriculum Studies Association, ACT
64	Victorian Government, VIC
65	Group of Eight, ACT
66	Department of Education and Children's Services, SA

67 Australian Sporting Goods Association, VIC
68 The Council of Professional Teaching Associations of Victoria, VIC
69 Australian Music Association, VIC
70 Western Australian Department of Education and Training, WA
71 Association of Consulting Engineers Australia, NSW
72 Department of Education, Science and Training, ACT.
73 Professor Bill Louden, WA

Appendix 2

Hearings and Witnesses

Commonwealth Parliamentary Offices, Sydney, 17 May 2007

Prof Max Coltheart

Australian Primary Principals' Association
Ms Leonie Trimper, *President*
Dr Ian Chambers, *Principal, Hassall Grove Public School*

Service Skills Australia
Ms Susan Briggs, *Industry Specialist for Tourism and Hospitality*
Ms Kate Senior, *Operations Manager*

Australian Geography Teachers' Association
Mr Nick Hutchinson, *President*
Dr Grant Kleeman, *Director*

Institute of Australian Geographers
Prof Jim Walmsley, *President*

Royal Geographic Society of Queensland
Ms Katherine Berg, *Administrator*

Australian Association of Christian Schools
Mr Robert Johnston, *Executive Officer*

History Teachers' Association New South Wales
Ms Louise Zarmati, *Executive Officer*

Commonwealth Parliamentary Offices, Brisbane, 5 June 2007
Professor James Allan
Professor Ken Wiltshire

Queensland Secondary Principals' Association
Mr Ian Ferguson, *President*
Mr Ross Smith, *Vice Principal*
Mr Norm Fuller, *Treasurer*
Mr Graeme Goodger, *Vice President*

Queensland College of Teachers
Ms Roslyn Bell, *Acting Director*
Mr Gary Barnes, *Board Member*

Ms Jill Manitzky, *Acting Assistant Director (Professional Standards)*

Australian Association of Mathematics Teachers
De Thelma Perso, *President*
Mr Will Morony, *Executive Officer*

Queensland Catholic Education Commission
Mr Mike Byrne, *Executive Director*
Ms Terry Creagh, *Assistant Director Education*
Ms Mandy Anderson, *Executive Officer Education*
Mr Kevin Schwede, *ETRF Implementation Team, Non–Government Sector Representative*

Parent & Friends Federation of Queensland
Mr Paul Dickie, *Executive Officer*

Queensland Education Department
Mr Gary Barnes, *Assistant Director-General, Strategic Human Resources*
Ms Lesley Englert, *Assistant Director-General, Curriculum Division*
Ms Zea Johnston, *Assistant Director-General, Strategic Policy and Education Futures Division*
Ms Margo Bampton, Manager, *Organisational Performance, Performance, Monitoring and Reporting Branch*
Professor Claire Wyatt-Smith, *Dean, Faculty of Education, Griffith University*
Professor Robyn Zevenbergen, *Director, Griffith Institute for Educational Research, Centre for Learning and Social Change Research*
Dr Glenn Finger, *Deputy Dean, Learning and Teaching, Griffith University*
Social Educators Association of Australia
Ms Joy Schultz, *Educational Consultant*

Commonwealth Parliamentary Offices, Brisbane, June 6 2007
Dr Ruth Fielding-Barnsley
Associate Professor Wayne Read
Dr Peter Ridd
Professor Margaret Britz
Associate Professor Stephen Ritchie
Mr Stephen Loggie

Parliament House, Melbourne, 25 June 2007

Australian Education Union
Ms Pat Byrne, President
Mr Roy Martin, Federal Research Officer

Dr Kerry Hempenstall

Dr Julie Hamston

Dr Kevin Donelly

Australian Council for Educational Research
Dr Phillip McKenzie, *Acting Research Director (Teaching and Leadership)*

Ms Yvonne Meyer

Council of Professional Teaching Associations of Victoria
Ms Olwyn Gray, *Executive Officer*
Science Teachers' Association of Victoria
Mr Robert Aikenhead, *Executive Officer*

Association of Principals of Catholic Secondary Schools in Australia
Mr Vin Feeney, *President*

Parliament House, Melbourne, 26 June 2007

Independent Education Union of Australia
Mr Chris Watt, *Assistant Federal Secretary*

History Teachers' Association of Victoria
Mr Rodney knight, *President*
Mr Michael Spurr, *Executive Director*

History Teachers' Association of Australia
Mr Nick Ewbank, *President*

Department of Education
Dr Dahle Suggett, *Deputy Secretary, Office for Education Policy & Innovation*
Mr John Firth, *Chief Executive Officer*
Ms Dianne Peck, *Acting General Manager, Student Learning Programs*

Australian Mathematical Sciences Institute
Ms Jan Thomas, *Executive Officer*
Prof Garth Gaudry, *Director, International Centre of Excellence for Education in Mathematics*
Ms Janine McIntosh, *Schools Project Officer, International Centre of Excellence for Education in Mathematics*

Commonwealth Parliamentary Offices, Perth, 2 July 2007
Professor Bill Louden, *Dean, Faculty of Education, The University of Western Australia*

Association of Independent Schools of Western Australia
Ms Valerie Gould, *Deputy Executive Director*

Professor Igor Bray, *Curtin University of Technology*

Professor Greg Robson, *Head, School of Education, Edith Cowan University*

Professor Michael O'Neill, *Dean, College of Education, The University of Notre Dame*

Lutheran Education Australia
Dr Adrienne Jericho, *Executive Director*

Living Waters Lutheran College
Mr Mark Rathjen, *Principal*

Professor Stephen Kessell

Department of Education and Training
Ms Sharyn O'Neill, *Acting Director General*
Ms Chris Cook, *Acting Executive Director*

Parliament House, Canberra, 11 July 2007

Australian Music Association
Mr Ian Harvey, *Executive Officer*

Music Council of Australia
Dr Richard Letts, *Director*

Deakin University, Education Faculty
Associate Professor Stevens

Australian Literacy Educators' Association
Dr Jan Turbill, *President*
Ms Christine Topfer, *Vice President*

Australian Association for the Teaching of English
Mr Mark Howie, *Vice President*
Mr Scott Bulfin, *Director (Victorian Branch)*

Department of Education, Science and Training
Mr Ewen McDonald, *Group Manager*
Ms Trish Mercer, *Group Manager*
Ms Marie Hird, *Branch Manager*
Mr Bill Burmester, Deputy Secretary

Association of Consulting Engineers Australia
Ms Megan Motto, *CEO*
Ms Caroline Ostrowski, *Policy Officer*

Victorian Parliamentary Offices, Melbourne, 25 July 2007

Australian Curriculum Studies Association
Mr Tony McKay, *President*
Prof Alan Reid, *Executive Member*

Appendix 3

Additional information and tabled documents

Additional Information

Information provided by the Department of Education, Training and the Arts, QLD, *June 2007*

Information provided by the Queensland College of Teachers, QLD, *June 2007*

Information provided by the Hon Rod Welford MP on behalf of the Queensland Government, *July 2007*

Tabled Documents

5 June 2007

SEAA	Social Investigation Strategy
SEAA	Different Types of Action

6 June 2007

Ms Ruth Fielding Barnsley	Graph (untitled)
Ms Ruth Fielding Barnsley	Results of First Screening
Ms Ruth Fielding Barnsley	Results of Second Round Screening

25 June 2007

AEU	Educational Leadership
Mr Vin Feeney	Presentation

26 June 2007

DET	Federalist Paper 2

2 July 2007

Professor Igor Bray	Decline & Fall of the West
Professor Igor Bray	A failure to make the grade
Professor Igor Bray	Opening Statement

11 July 2007

AATE Statements of Belief