



21C Learning: Curriculum and Assessment Policy in Victoria, Australia

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Building a Future



Introduction

The theme of this paper is the knowledge economy and the new demands on every teacher in every classroom. The challenge of schooling in the global knowledge economy of 21st century is to equip students with the knowledge, skills and behaviours to prosper in our modern and ever-changing world. This places the relentless pursuit of effective learning and teaching at the centre of reform. Many education systems are modernising their curriculum and assessment policies to support reform and this paper discusses the approach being taken in Victoria, Australia.

To quote Thomas Friedman, the current phase of globalisation is “about individuals’ power to collaborate... and has shrunk the world from small to tiny and is accelerating at an extraordinary pace”. An educated population in this environment is comprised of individuals who have the skills of enquiry, or know-how, can manipulate higher levels of technical skills, have high degrees of personal autonomy and are flexible and mobile. This calls for a curriculum that is different to that which underpinned education in the 20th century.

To support the commitment by the Victorian Government to ensure all young people have an excellent education for the global knowledge economy, the *Victorian Essential Learning Standards* were adopted in all schools from 2005 for years Preparatory to Year 10. The Standards comprise three interwoven strands: discipline based learning, (Arts, English and other languages, Humanities, Mathematics and Science); interdisciplinary learning (e.g. communication and problem solving); and physical, personal and social learning (Civics and Citizenship, Health and Physical Education). A parallel assessment system was introduced to record students’ progress against standards across all three strands and invites student and parent input along with teacher judgement in designing how students can progress in all three strands. Companion resources were also developed to support teachers improve their teaching skills, both generally and related to specific subjects.

Progress to date indicates a high level of school support and some significant achievements. The challenges ahead revolve around the need to plan the new curriculum across the whole school, with highly expert teachers, and better understand how to integrate interdisciplinary skills such as problem solving and communication to build the capabilities necessary for a truly innovative and networked society.

Understanding the global knowledge economy

Discussion of the implications of globalisation and the knowledge economy is now relatively familiar in education policy. Nevertheless, it is still a formidable challenge for policy makers to absorb an understanding of the scale and rapidity of change flowing from globalisation and to adjust the policy levers to anticipate the future environment for schools. Often discussion is only about the impact of information and communication technologies on young peoples' lives and the need to reconcile classroom learning with young peoples' everyday experience with new learning technologies. This is of course important, but a more pressing need is to respond to the challenges of the global knowledge economy for schooling in a broader sense and answer questions like what is 21st century knowledge and skills and are they different to the present; how to tailor to individuals needs so that *all* become intensely capable in globally recognised skills; and, what capabilities do teachers require for this environment?

The perspectives of three commentators are useful in sharpening the focus on globalisation and the implication for education.

First is Thomas Friedman and his seminal account of the globalised world in the 21st century.

There have been three great eras of globalisation... Globalisation 1.0 was about *countries and muscle*... how much horse power your country had to deploy... Globalisation 2.0 was about *multinational companies* ... with the movement of goods and information... and shrank the world from medium to small... Globalisation 3.0 is about *individuals'* power to collaborate... and has shrunk the world from small to tiny and is happening at an extraordinary pace¹

Globalisation 1.0 lasted from Columbus in 1492 until around 1800. It was about countries finding their power base in the world through industrial innovation, might and imperialism. Friedman calls it globalisation driven by 'countries and muscle' - how much energy such as steam power a country could assemble and how much force it needed to exert through imperialism to ensure its powerbase.

Globalisation 2.0 was about the dynamics of the multinationals from 1800-2000. This era was about the global movement of goods and information from continent to continent and the creation of a global marketplace. It was about breakthroughs in hardware and the world shrank from medium to small. In the first half of the era, globalisation was powered by the reduced costs of transportation and the second half by telecommunications and the information revolution.

¹ Thomas Friedman, While I was sleeping, *The World is Flat: A Brief History of the Globalised World in the 21st century*, Allen Lane, London, 2005.

Globalisation 3.0 according to Friedman is about individuals and their empowerment in a world that is being flattened – ironically the shape of the world that Columbus disproved. Moreover, this flattening is happening at an alarming speed, unlike other eras. In this era, no region is unconnected to the globalising forces and individuals are empowered to act irrespective of where they are. While previous eras were driven by horsepower, then hardware, this era is driven by software that massively enhances interconnectivity. Individuals ask where do *I* fit in the global competition and opportunities of the day and how can *I* collaborate with others. And, of course, while previous eras were driven by Europe and America, this era is the whole world.

Friedman was stimulated to write this account from observing the extraordinary growth of sophisticated information services in India – please forget the image of the Indian call centre! While those services are in considerable number, there are far more complex knowledge and service industries being established and fuelling a predication of growth of around 9 percent. A population of more than one billion, liberalisation of the economy, an expanding core of highly educated and the dynamics of the global knowledge economy will arguably take India to be one of the largest economies by 2020 along with China.

Another perspective on globalisation comes from the late Peter Drucker, the longstanding American commentator on business and the shape of the workplace. He too talks about disaggregating known hierarchies and predictable entities in the changed role of individuals and the increasing power of knowledge. In commenting on the future workplace and the perspective of managers in Western economies he says,

Would you believe that you are going to work permanently with people who work for you but are not your employees?²

The point is that hierarchies and predictable entities in working life will increasingly dissolve. Managers who talk about people who report to them will be outdated in a more flexible and information rich environment. You will no longer talk about subordinates but talk about success in terms of access to information to complete a job, the different kinds of relationships a job requires, how work is outsourced to specialist designers and so on. This is an environment where individuals will be taking more responsibility for themselves and where information will replace authority.

In addition, the nature of information or knowledge is changing. The OECD has drawn a distinction between know–what, know–why, know–how and know–who.

² Harris. TG., 'The Post – Capitalist Executive: An interview with Peter Drucker', in K Ohmae (ed), *The evolving Global economy: making sense of the new World order*, The Harvard Business Review Book series, 1995.

The rapidity of knowledge development, the immense capacity for storing and retrieving knowledge and increasing value of intangible assets has shifted the core focus in knowledge from know–what to know–how. The importance of relationships and collaboration also places a premium on know–who.

Rosabeth Moss Kanter, Harvard Business School, at a recent education forum in Shanghai for IBM³ talked about the extraordinary changes in business organisation over the past five years. Many major companies are now globally or horizontally integrated with subsidiaries no longer replicating each other by producing their own motor vehicles or financial services. Production is now spread globally according to where the best combination of skills is located for a particular function. Value is now being created through intangible assets such as the capacity to innovate and networks are not only about technology but are driven by highly autonomous and flexible individuals. She stresses the skills needed for this environment are those that deal with concepts and relationships, transparency and interconnectedness as well as broad technical competencies. She asks education systems to teach about judgment, communication, problem solving and the like so as to ensure all can play a part and gain the rewards of globalisation. Box 1 below summarises some of the attributes of education being sought for the global knowledge economy.

Box 1: Key words for education in the global knowledge economy

1. Intensely capable individuals
2. Individualisation and choice
3. Problem solving and creativity
4. Integrative skills: collaboration
5. Form and operate in networks
6. Interpersonal and communication skills

From this perspective on globalisation, how can Australia afford not to have the total population educated to the fullest extent to operate in a competitive knowledge economy? We will face intense global economic competition in a shrinking world and, with neighbours India and China projected to have a substantial proportion of the world's population by 2020, and already in hot pursuit of the world's best education, we need to keep pace with change. Australia will not be able to compete on price; the industries where Australia can hope to compete are at the high–skill, high value–added end of the scale, where knowledge it at a premium. Australia will need accelerated innovation, like Finland and Ireland and other small population nations to compete globally as well as meet emerging demand for services that can only be delivered domestically.

³ IBM Inaugural Asia Pacific Reinventing Education Summit, Shanghai, June 2007

National policy: human capital focus

Australian governments have recently said that the most important economic resource in the 21st century is the capacity of our nation's people or our human capital and the National Reform Agenda⁴ establishes education as central to this.

Historically, Australian economic prosperity has been largely due to the value of natural resources; there is not a history of linking the role and capability of our human resources to prosperity and success. Moreover, Australia has sustained economic growth for over a decade and, due to significant micro-economic reforms, has moved in OECD tables from 16th to 7th in terms of per capita GDP.⁵ We have very low inflation, very low unemployment, and we are anticipating continued prosperity in the short and medium term largely due to expanding demand from our Asian neighbours for our resources. We are currently experiencing a commodities boom.

So why propose an urgent human capital agenda? Australia's population is small and ageing, a commodities boom will not last forever, knowledge industries are in their infancy and our education levels (e.g. participation) are below OECD standards on indicators such as percentage of the population with post school qualifications, even though our performance on PISA tests is very high. While we improve in education performance, others are improving at a more rapid rate – Korea and Hong Kong, China for example.

For Australia to make the necessary transition to compete successfully in the global knowledge economy, the economists refer to the 3 Ps: *population*—Australia is a middle level country with around 20 million so we need to keep growing; *participation*—we need maximum levels of engagement by the population in the contemporary workforce (research suggests that educational attainment is the single most positive influence on workforce participation people); and *productivity*—we need all to have the highest levels of skills and knowledge for innovation and sustained growth. The pressure on the education sector to deliver these gains is considerable.

⁴ *Governments Working Together: a third wave of national reform: a new national reform initiative for COAG (the Third Wave)*, August 2005

⁵ *Year Book Australia*, Commonwealth of Australia, Canberra, 2007

Victoria: student learning for 21st century

The direction taken in Victoria over the past four years in response to the new demands on education has included: the redesign of the curriculum to meet the demands of 21st century society; a new approach to assessment and reporting to focus more closely on individuals' development and involve parents more closely; and, extensive professional learning to equip teachers with more advanced teaching skills. These changes involve every teacher in every classroom in Victoria. (The reforms to curriculum, assessment and pedagogy have been in context with a wider package of reforms that includes the funding model, accountability, facilities design and innovation, leadership development and school improvement.)

The core objective is to improve student achievement and to equip all young people to thrive in the global knowledge economy and society. The *Blueprint for Government Schools*⁶ issued in Victoria in 2003, responds to an environment that requires young people to have not only a solid foundation in knowledge and skills that enable more advanced learning, but also the ability to apply knowledge, create new ideas and problem solve and have the general competencies to be flexible, work in teams and communicate.

This reform has been based on core beliefs about learning and teaching that are grounded in modern educational research.⁷ These beliefs are:

- *Higher order learning is possible for all*
Research consistently confirms that almost all students can engage in higher order learning given the right conditions, and that all students can make progress with sufficient time and support.
- *Schools and particularly teachers make a difference*
Research demonstrates the capacity of good schools and good teaching to make a positive difference to student outcomes.
- *If students are assisted to work hard and make an effort they improve*
A student's ability is one factor in achievement; however, the amount of effort a student makes has even more to do with their success at school.

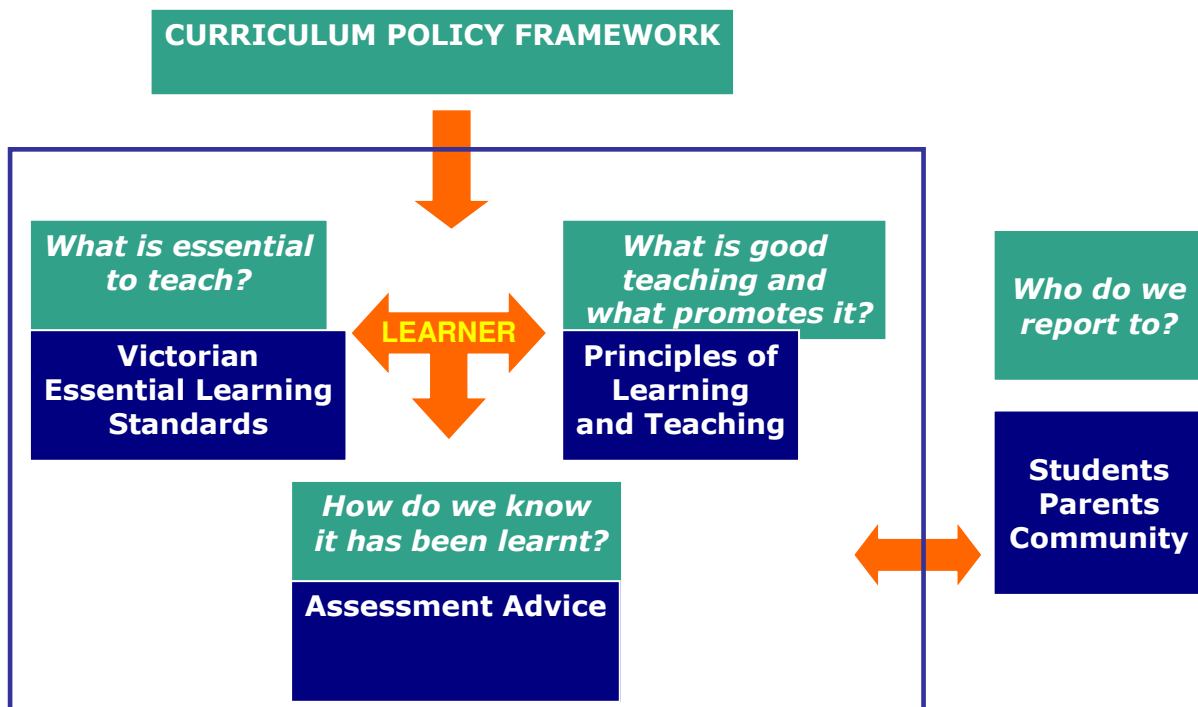
⁶ *Blueprint for Government School*, Department of Education and Training, Victoria, Australia 2003

⁷ Bransford, John D., Brown, Ann, L and Cocking, Rodney, R (Eds), *How People Learn: Brain, Mind, Experience and School*, National Academy Press, Washington DC 1999

- *An assessment culture in classrooms and schools is a critical factor in individualising learning and assuring student achievement*
This involves students, teachers and parents in planning how learning will occur and monitoring progress. This is often described as ‘assessment for learning’ or formative assessment. British research concluded that formative assessment is one of the most important interventions for improvement in student achievement.⁸
- *Failure is not an option for students, teachers or schools*
Patterns of inequity must be addressed. All students must succeed at school and all schools can improve.

These beliefs place the learner’s needs at the centre of curriculum design, pedagogy and assessment and reporting. The diagram below is a representation of the policy framework developed for the student learning reforms in Victoria. The discussion that follows covers each of these elements.

Box 2



⁸ Black, P., and Williams, D., 'Assessment and Classroom Learning', in *Assessment in Education: Principles, Policy and Practice*. Carfax, Oxfordshire 1998 Vol 5, no 1 pp7-743.

New curriculum standards

To support the commitment to an excellent contemporary education for all students in Victoria, the Government has specified the essential standards for all schools to use in planning their P-10 curriculum. The standards are supported by a wide range of curriculum planning resources. The Victorian school system devolves many decisions to the school level, on the assumption that students' learning needs vary and that key decisions about how to meet the needs of all students is best managed at the school level. School level decisions are taken within a state wide accountability framework that reflects the policies set by government.

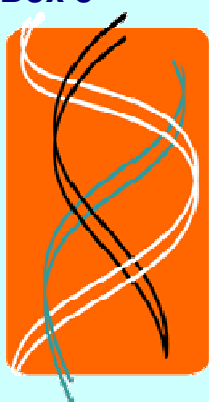
The *Victorian Essential Learning Standards*⁹ describe the essential standards for students to achieve from Prep to Year 10 across Victorian schools. The Standards clearly define what students should know and be able to do at different levels of compulsory schooling and require schools to plan their curriculum and customise what is taught to best meet the needs of their students. The Standards are based on the premise that all students are entitled to an education that covers knowledge, skills and behaviours that are of enduring value and underpin the rigorous conceptual learning, within and beyond school, which is required for effective functioning in a knowledge-based world.

The Standards are set at a challenging level rather than a minimum level of competence and are intended to stretch students in their learning. They are structured as standards that serve as the starting points for designing sequences of study. The Standards comprise three interwoven strands that schools use to design the curriculum programs that meet their priorities and their students' needs. The three strands are:

- *Discipline-based learning*, that comprises the core of the curriculum and underpins a person's capacity to make meaning from information and construct ideas. It ensures that all students have acquired a broad general knowledge that enables them to understand their own society (e.g. its history, institutions, economy and values), engage with society's issues, be enriched by society's cultural life and be open to the wider world. This requires a core educational experience in the major discipline areas of English and Language, Science, Mathematics, the Arts and the Humanities.

- *The physical, personal and social learning* that children and young people require to operate effectively in society, as active citizens who understand the need to lead physically active and healthy lives, appreciate the value of cultural diversity, and develop a global perspective. This includes health and physical education, personal learning, interpersonal development, and civics and citizenship.
- *The interdisciplinary learning* that extends beyond the specific content of formal disciplines, enables students to be active learners and high level problem-solvers, and promotes life-long learning and a productive social and economic future. This includes communication, thinking, ICT and design, creativity and technology.

Box 3



Three core interrelated strands:

- Physical, Personal & Social Learning
- Discipline-based Learning
- Interdisciplinary Learning

We know that the skills and knowledge that will be required of young people as knowledge workers will call for a new convergence in the curriculum to enable the complex thinking, communicating, problem solving and ‘learning how to learn’ skills to develop. But, this does not mean the disciplines and their discrete modes of enquiry are diffused. The task is to design a challenging and enjoyable curriculum that truly values the three strands and their carefully managed integration.

Stages of learning in the compulsory years

Students' capacities and learning needs develop over their compulsory years at school. The learning needs of students vary at different stages of schooling and the curriculum needs to reflect this by phasing expectations and standards from Preparatory to Year 10. While students learn at a different pace, they will broadly progress through three major stages:

- *Prep to Year 4, Laying the Foundation*, where the students develop the fundamental knowledge, skills and behaviours in literacy and numeracy, and the basic physical and social capacities (like working in teams and building relationships) that underpin all future learning.

- *Years 5 to 8, Building Breadth and Depth*, where the students progress beyond the foundations to where their literacy and numeracy becomes more sophisticated, and important interdisciplinary capacities (such as problem solving, reflection and creativity) are progressively developed.
- *Years 9 and 10, Developing Pathways*, which constitutes a bridge to the post-compulsory years and where the students begin to focus more clearly on areas of particular interest related to their future schooling and intended pathways beyond school. In Year 9, they need to connect more to the community, increase awareness of future options, and develop important personal and social skills as they become young adults. Year 10 is where the line blurs between the compulsory and post-compulsory years; this is reflected in an increased focus on students' pathways into Years 11 and 12, or their equivalent, and beyond school.

Assessment and reporting

To complement the *Victorian Essential Learning Standards*, a new assessment and reporting system was also established. Assessment is the ongoing process of gathering, analysing and reflecting on evidence to make informed and consistent judgements to improve future student learning. The goal in Victoria has been to provide a range of assessment and reporting practices and instruments to support:

- assessment **for** learning or formative assessment - where teachers use inferences about student progress to inform teaching,
- assessment **as** learning - where students reflect on and monitor their progress to inform future learning goals, and
- assessment **of** learning or summative assessment - where teachers use evidence of student learning to make judgements on student achievements against goals and standards and report to students and parents.

To this end, a range of assessment instruments has been developed. Progression Points show teachers how to make judgements about students' progress through the *Victorian Essential Learning Standards*. This in turn provides rigorous and state wide consistency in the reporting of student progress to parents.

Additionally, Assessment Maps have been designed to help teachers assess student work using the Victorian Essential Learning Standards. They provide a range of annotated student work samples that can be used in conjunction with the progression point to support teachers in developing a common understanding of the standards and making consistent, on-balance judgments about student achievement.

It is also important that individual students come to understand that standard of performance that is expected of them. Encouragement is given to teachers to equip students to monitor the quality of their performance against that standard and to ensure that students understand what they need to do to improve their performance.

Reporting on progress

Good assessment provides vital information to report credibly to parents and students on student progress. Reporting is the process by which information on student achievement, including plans for their future learning, is communicated to students, parents and other teachers. The Victorian policy for reporting on progress encourages a variety of assessment methods, fit for purpose, to provide teachers with evidence of what students know and can do, and their particular strengths and weaknesses. Teachers then are equipped report to parents on how far their child has progressed during the year, where they are compared to the relevant standards, and what the teacher, the student and the parent need do to improve the student's performance. The involvement of students in evaluating their own progress is also required. The reporting approach is designed to improve student learning by:

- informing subsequent teachers as a student moves through school
- involving parents in the development of reporting processes
- providing a written report that includes a plan for future learning over the next reporting period
- providing to parents a picture of development over time, and
- including various means of reporting (e.g. three way interviews, digital portfolios, information conversations, school intranet, written reports and information evenings)

Box 4 below summarises the key features of the new Student Report Cards for Victorian schools.

Box 4: New Student Report Card

The Report Card is structured for commonsense reporting to parents. It includes:

Reporting against state wide standards

Where a child is, compared with the expected state wide standard for the year level.

Clear information about strengths and weaknesses

Clear written information about what a child knows and can do. This includes information about any further assistance or expansion needed and what support the school will provide.

A common reporting scale

An A to E scale showing how a child is progressing against the expected standard:

- A: Well above the standard expected at this time of year
- B: Above the standard expected at this time of year
- C: At the standard expected at this time of year
- D: Below the standard expected at this time of year
- E: Well below the standard expected at this time of year

Student reports over time

The report charts a child's progress over time, with a focus on progress from the previous year to the current year.

Written report cards at least twice a year

Parents will receive written report cards at least twice a year.

Improved partnerships between home and school

Report cards include a plan for future learning; parents can become involved and work in partnership with their child's school. Schools will continue to offer parent-teacher interviews.

Student involvement in reporting

Reports include students' reports on their progress – for primary students, progress in class whilst secondary students develop and report against yearly personal learning goals.

So as to assist schools' use of the new student report cards, reporting software assists schools to create report cards that follow a common format and are written in plain English. These new report cards have been introduced so that no matter which Victorian Government school a child attends, parents will receive a clear picture of their child's progress, reported in the same way and against the same state-wide standards in Years Prep to 10.

The introduction of new student reports and a greater focus on quality assessment practice is leading to significant reform in areas of assessment and reporting. This is having positive impacts on teaching, particularly relating to the effective teaching across a range of student performance levels.

Contemporary teaching skills

Over the past decade there has been an explosion of research into how learning occurs and what is good teaching. Research consistently shows that learning is maximised when there is a supportive yet challenging learning environment and a curriculum that takes students' backgrounds and interests into account, and when there are teaching and assessment practices that are flexible and responsive to student needs.

Pedagogy involves much more than its most obvious component, the tasks that teachers set. It also includes the ways in which teachers communicate and interact with students; that is how they question and respond to questions, how they use students' ideas within the teaching and learning process and how they respond and accommodate students' diverse backgrounds and interests. It includes the social and intellectual climate that teachers seek to create within the learning environment and the types of learning that they set out to encourage and promote. It also includes the decisions they make in developing a cohesive yet challenge curriculum program, centred on key ideas and skills that are taught, revisited and built on. Assessment is also a key part of the pedagogical process, with teachers needing to think about how they link and sequence learning activities and how and what they assess.

The development of the *Principles of Learning and Teaching* has provided a basis for teachers to review and develop their teaching practices. The strategy aims to build consistent, comprehensive and improved pedagogical approaches within and across Victorian schools. Its focus is on teaching to meet the diverse needs of students and strengthen learning communities within and beyond the school. The Principles are summarised in the following box.

Box 5: Principles of Learning and Teaching

Students learn best when:

- the learning environment is supportive and productive
- the learning environment promotes independence, interdependence and self motivation
- students' needs, backgrounds, perspectives and interests are reflected in the learning program
- students are challenged and supported to develop deep levels of thinking and application
- assessment practices are an integral part of teaching and learning
- learning connects strongly with communities and practice beyond the classroom

The strategy comprises the principles, interactive tools and face to face professional learning and coaching. The approach is an action research cycle that consists of mapping personal practice across the six principles, articulating goals, critical inquiry into practice and context, enacting change in pedagogy, critical reflection, and articulating new goals.

Teaching skills are also specific to different disciplines .Teachers need pedagogical specific knowledge about how to teach in particular disciplines – rather than only knowledge about a particular subject matter or just about teaching in general. Accordingly, resources have also been developed that focus on the teaching of specific disciplines such as English and Mathematics and Science, to provide teachers with detailed advice on teaching strategies that are linked to the *Victorian Essential Learning Standards*. These materials, the P-10 English and Mathematics Developmental Continua are founded on evidence-based approaches to teaching and learning that provide teachers with explicit guidance to ensure all students are able to progress in their learning through the standards in these discipline areas.

Progress to date

Surveys of schools in 2005 and 2006 show that the new policies and the support resources are received very positively

A summary of progress to date across a range of performance indicators is in the box below. Victoria is in the 3rd year for some schools of the reform to student learning and the 2nd year for the majority therefore the progress is only indicative of the direction- but results are modest but positive.

Box 6: Progress to date

	<i>Primary</i>	<i>Secondary</i>
Staff morale	Improvement	Improvement
Student achievement • Reading, Year 2	Improvement	-
Student achievement • Teacher judgements	Improvement	Improvement
Student achievement • Statewide literacy and numeracy assessment	Static or slight improvement	Static or slight improvement
Student perceptions of teachers and school	Improvement	Improvement (in the lower years)

What's next?

Victoria is confident that the curriculum and assessment policies developed to date provide a solid basis for delivering the 21st century learning that is the theme of this paper. The next steps will be to advance the policies in a number of directions – four possible aspects are briefly discussed below.

Firstly, the demanding higher order skills for problem solving, research, creativity, innovation and the like require more development for their full incorporation into the curriculum in all schools. To engage students in extended research and collaboration in a team – modern skills and behaviours for the knowledge economy – calls for changes in other aspects of a school's organisation. Intensive learning of this nature requires excellent access to on-line resources, the freedom to spend extended periods of time on one task, access to a range of expert teachers and the freedom to access resources in the community and so on. Each of these is a challenge to aspects of some schools' organisation and practices.

Secondly, the focus of policy is increasingly on individuals, customising learning and ensuring the progress of each student. Schools need access to more assessment and communication tools and the technology to monitor individual student's progress over their schooling. This in turn will provide greater access for parents to play a role in supporting their child's progress. Victoria's objective for 2009 is to start to roll out a student centred electronic environment that enables real time access for parents to students progress and a record of progress that teachers can track overtime.

Thirdly, the capability, flexibility and diversity of the teaching workforce are central to success in meeting the educational needs of globalisation. Victoria will continue to develop teacher knowledge and skills, particularly in relation to the priority areas of the curriculum. Teachers are part of a profession and that calls for continued support for the growth of their professional and expert knowledge. The schools and classroom of the future should also provide access to a greater diversity of people who can support a student's learning.

Finally, there is the question of equity. For Australia, the challenge is to ensure the skills for the global knowledge economy are available to all our population so that our economic growth is sustained through maximum participation and productivity – our human capital agenda – and our society is cohesive and forward looking. In The OECD PISA data, Australia's education system is high quality but lower equity. Even where Australia is currently high performing, such as tying with 7 other countries in 2nd place in reading in 2000, and 5th place in science in 2003, on the equity dimension Australia is behind countries like Finland and Canada. We need further strategies to ensure high equity as well as high quality in our education.

The global environment requires all Australia's population to be equipped to make an economic contribution and social prosperity requires all our population to have access to productive work and understandings that will enable them to manage in an information rich global environment.

The task of education is central to this and the role of curriculum and assessment is pivotal for success.