

Department of Education, Science and Training



SUBMISSION TO

**THE SENATE EMPLOYMENT, WORKPLACE
RELATIONS AND EDUCATION REFERENCES
COMMITTEE**

**INQUIRY INTO CURRENT AND FUTURE
SKILLS NEEDS**

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Department of Education, Science and Training
Submission to the Senate Employment, Workplace Relations and
Education References Committee
Inquiry into Current and Future Skills Needs

The Department of Education, Science and Training (DEST) welcomes the opportunity to make this submission to the Senate Employment, Workplace Relations and Education References Committee Inquiry into Current and Future Skills Needs.

The Commonwealth takes a national leadership role in education and training. The States and Territories have primary responsibility for the management and delivery of education and training in schools and through vocational education and training, while the Commonwealth is responsible for funding and policy-making in the higher education sector.

This submission sets out the role of the Commonwealth in addressing skills needs both through its leadership in education and training and through specific Commonwealth programmes and initiatives.

As the vocational education and training sector provides vocational training for new labour market entrants and for those seeking further training or a change of career, the submission outlines the sector and its role in detail, in particular the part played by New Apprenticeships.

In addition to providing basic foundation skills, especially literacy and numeracy, schools are providing an increasing number of school students with basic vocational training, including in some cases part time work with employers as New Apprentices. This aspect is covered as is the Commonwealth's work to improve the provision of careers information and advice.

The submission also outlines a number of specific initiatives in which the Commonwealth is involved which assist industry to meet its current and future skills needs. These include:

- the National Industry Skills Initiative – a partnership between industry and government to identify skills needs and strategies to address them;
- industry liaison and advisory arrangements;
- the Information Technology Skills Hub;
- *Backing Australia's Ability* – addressing skills needs in science and innovation; and
- reviews of teaching and teacher education, nursing education and rural veterinary services.

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1. INTRODUCTION AND BACKGROUND TO THE COMMONWEALTH'S ROLE IN ADDRESSING SKILLS NEEDS

1.1 THE COMMONWEALTH'S ROLE

The Commonwealth takes a national leadership role in education, science and training and works with various industries, States and Territories to advance education and training systems in the schools, vocational education and training and higher education sectors.

States and Territories operate within the framework of the national policies and strategies for schools and vocational education and training to address priorities and needs in their individual jurisdictions. They have primary responsibility for the management and administration of compulsory and post-compulsory schooling.

For vocational education and training they are responsible for their own training systems. This includes State-level planning, regulation of training providers and the New Apprenticeships system, allocation of funds to public and private providers, setting student fees and charges and managing the TAFE system.

Industry engagement is vital to the effectiveness of the vocational education and training system. The significant national reforms to the vocational education and training system that have occurred in the last decade have been driven by a need to ensure that the vocational education and training system is responsive to the current and future needs of industry.

Industry representation in vocational education and training is wide ranging and includes membership on the Board of the Australian National Training Authority, involvement in industry advisory arrangements in relation to vocational education and training and in the development of Industry Training Packages which form the basis for all nationally recognised vocational training in Australia.

Skills development in Australia is delivered through a variety of mechanisms:

- in compulsory schooling through the development of foundation skills especially the literacy and numeracy skills required for virtually every form of employment in today's economy. Increasingly schools in the senior years also provide training in vocational skills and in some case part-time work with employers as New Apprentices;
- in the vocational education and training sector through the development and implementation of a flexible and quality system responsive to industry's current and future skills needs;

- in Higher Education by providing the educational foundation for entry to the professions and associate professional occupations, and increasingly through providing higher level training in a variety of occupation specific areas. Additional professional skills priorities are determined with targeted reviews of, for example, nursing and teaching education and veterinary rural services; and
- in science and research through the very substantial Commonwealth focus on skills development for new technologies and innovation through *Backing Australia's Ability*.

In relation to school education, the Commonwealth works with the States and Territories through the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA). The Commonwealth, through MCEETYA, provides leadership in identifying national standards and priorities to achieve the agreed National Goals for Schooling.

In relation to vocational education and training, the Commonwealth works with the States through the Australian National Training Authority (ANTA) Ministerial Council to ensure high quality outcomes for students and national consistency and coherence. The Commonwealth also works directly with industry to ensure that the vocational education and training system is responsive to industry needs.

The Commonwealth has the primary responsibility for funding and policy-making in the higher education sector. Apart from the Australian National University and the Australian Maritime College, the States and Territories are responsible for legislation to establish universities and for the accreditation of higher education courses.

1.2 AUSTRALIA'S SKILLS NEEDS

In recent years, there have been substantial changes in Australia's economic base, closely reflected in the labour market. These changes have included the relative decline of the manufacturing and agricultural sectors, and substantial increases in the professions and the service sector. The Department of Employment and Workplace Relations (DEWR) outlines developments that forecast changes to skills and employment for the years immediately ahead. These include further strong growth in some service sectors and limited if any employment growth in other sectors, for example manufacturing employment, although manufacturing associated activity contributes to growth in many other industries¹.

¹ 2002, DEWR, June, *Job Outlook*, p2

Such changes have profound implications for the national education system, nowhere more so than in the VET sector. For example, Australia's apprenticeship system was, until the 1990s, highly focused on "traditional trades", particularly in the manufacturing sector. While there has been a substantial shift of focus into faster growing sectors of the economy, it should be noted that 'trades and related workers' still account for some 36%² of New Apprenticeships but only 13%³ of employment. Despite a training system that is flexible and responsive to industry needs, skill shortages can, and do develop from time to time in particular occupations and the education and training systems are not the only influences on skills available to industry.

Access to skilled labour is also dependent on factors such as loss of workers from industries or sectors and the inward and outward migration of skilled workers. Nevertheless, the education and training system makes a major contribution to meeting Australia's skills needs through the training of new entrants to the labour market, through updating the skills of existing workers and through providing training for people who wish or need to change their careers. In the planning process for future educational provision a close understanding of changes in the nature of the workforce is essential.

1.3 SKILLS DEVELOPMENT THROUGH EDUCATION AND TRAINING

All three of the major education sectors play a part in skilling the workforce. Schools provide basic foundation skills, and especially the literacy and numeracy skills required for virtually every form of employment in today's economy. Schools also provide an increasing number of school students with basic vocational training, including in some cases part time work with employers as New Apprentices. The Higher Education sector provides the educational foundation for entry to the professions and associate professional occupations, and increasingly provides higher level training in a variety of occupation specific areas. The VET sector primarily offers vocational training at the diploma and certificate levels for new labour market entrants, including New Apprentices, and those seeking further training or a change of career in later life, together with second chance opportunities for disadvantaged students.

While recognising and adapting to the substantial changes in Australia's economic base and employment market, the education and training system has also shown dramatic growth in recent years. Participation in higher education by the Australian working age population rose

² 2003, NCVET, December quarter, *Australian Apprentice and Trainee Statistics 2002* – (Trades and Related Workers incorporate all occupations under the Australian Standard Classification of Occupations (ASCO) 4 and includes all trades e.g. carpenters, plumbers, electricians etc. and related occupations such as farm overseers, nurserypersons, gardeners, florists and chemical, petroleum and gas plant operators)

³ 2003, DEST, extrapolation of ABS Labour Force Survey November 2002 (6203.0)

from 3.5% in 1985 to 4.7% in 2001⁴, while participation in publicly funded VET among the working age population rose from 9% in 1985 to 13% in 2001, with around 1.76 million Australians undertaking a VET course in that year⁵. There has been strong growth since the mid 1990s in New Apprenticeships, with Australia now ranked fourth in the OECD in terms of the size of our New Apprenticeships system – a comparison which holds good even if the lower Australian Qualifications Framework (AQF) Certificates Level II are excluded. Record numbers of New Apprenticeships have been achieved and employer incentives have been reviewed to encourage higher levels of New Apprenticeships completions.

Within the school system, over 61% of 17 year olds were in school in 2001⁶, compared with slightly less than 30% as recently as 1981⁷. The international PISA study has recently shown that out of 32 participating countries, Australian students were significantly outperformed by students from only one other country in each of reading and mathematical literacy and two other countries in scientific literacy⁸. Around 170,000 school students undertook VET in schools in 2001, with close to 6,000 undertaking school-based New Apprenticeships⁹. While the apparent Year 12 retention rate has plateaued at 72-73% since the mid nineties, around 81% of the 15-19 years age group were participating in some form of education in 2000, slightly above the OECD country mean¹⁰. For older age groups education participation is substantially above the OECD country mean.

In its paper *National and State Skill Shortage Lists, Australia – 2003*, DEWR indicates that the nature and cause of skills shortages are complex with influencing factors including the effects of economic and demographic changes, cyclic fluctuations in labour demand and regional and industry skills mismatches¹¹. These occur at all stages of the economic cycle but are most likely to be evident when, as at present, unemployment is at a historically low level. The Commonwealth has recognised the key role of the education system in addressing industry's skills needs and has taken active steps to better align the system to anticipate and address those skills needs. Around \$230 million has been provided for the national vocational education

⁴ 2001, Department of Education, Science and Training (unpublished data)

⁵ 2001, NCVET, *Australian vocational education and training statistics, 2001*

⁶ 2001, Australian Bureau of Statistics, *Schools Australia*

⁷ 1981, Australian Bureau of Statistics, *Estimated Resident Population Publication (ABS 3201)*

⁸ 2000, Australian Council for Educational Research, *The PISA study of students' reading, mathematical and scientific literacy*

⁹ 2002, Ministerial Council on Education, Employment, Training and Youth Affairs, *Report from the Taskforce on Transition from School, pp89 and 108*

¹⁰ 2002, OECD, *Education at a Glance*

¹¹ 2003, DEWR, *National and State Skill Shortage Lists, Australia – 2003*, p10

and training system over the three years of the current Australian National Training Authority (ANTA) Agreement, tied to growth in New Apprenticeships and the development of training innovation plans by each of the States and Territories.

1.4 INDUSTRY'S ROLE IN SKILLS DEVELOPMENT

Industry leadership of the sector has been maintained through the ANTA Board, and active steps have been taken through the ANTA Ministerial Council to promote a truly national VET system that is consistent and of high quality.

The National Industry Skills Initiative has supported industry-led Working Groups to analyse the reasons for skills needs in identified industries and devise Action Plans through which Task Forces are addressing the identified skills needs. The Working Groups have undertaken or are undertaking skills needs investigations in 11 industries to this point – Aerospace, Building & Construction, Electrotechnology, Emerging Technologies, Engineering, Food (Commercial Cookery), Marine Manufacturing, Sales and Service, Retail, Retail Motor, Road Freight Transport and Rural. The implementation of Action Plans to address confirmed skills needs through Task Forces is underway.

The IT Skills Hub and reviews of nursing and teaching have examined skill supply issues in each of those areas. In the schools sector active support has been given to the development of VET in Schools through the Transitions Task Force established by the Ministerial Council on Education, Employment, Training and Youth Affairs.

The Department's submission describes these initiatives and others in the context of the Commonwealth's role in each of the education sectors. It includes an analysis of the educational research which may help to inform the work of the Committee as it undertakes its examination of Australia's current and future skill needs.

2. EDUCATION AND TRAINING FOR SKILLS NEEDS IN AUSTRALIA

This Section describes the way in which education and training makes significant contributions to meeting current and future skill needs in Australia.

2.1 POST-COMPULSORY EDUCATION AND TRAINING

Post-compulsory education and training plays a critical role in the development of skills for the workforce. The VET sector plays a particularly important role in that it provides both entry level training for many new entrants to the labour market as well as further training for those in employment or seeking a career change. As a key part of VET, New Apprenticeships contribute substantially to maintaining a skilled workforce.

VOCATIONAL EDUCATION AND TRAINING

The VET sector comprises a variety of recognised providers - publicly funded institutes of Technical and Further Education (TAFE); combined TAFE and university bodies in some States and Territories; adult and community education organisations that also deliver VET; private sector training organisations and, increasingly, individual enterprises and schools. There are now over 4,000 Registered Training Organisations (RTOs) operating in the sector. Many of these providers also offer programmes in addition to recognised VET (such as adult and community education and fully commercial non-accredited training).

The effectiveness of Commonwealth VET initiatives is demonstrated by increases in national VET enrolments by 38%, from 1.3 million in 1995 to 1.76 million in 2001. New Apprentices in training have also more than doubled from around 140,000 in 1995 to almost 375,000 at the end of 2002. In addition, the participation of specific groups such as older people and those from rural and remote areas has improved substantially. In 2001, there were 327,218¹² VET clients aged 45 and over, a 90.5% increase from 1995, and 542,300 clients from rural and remote areas, a 42.8% increase from 1995.

A further level of effectiveness is confirmed in the *Employer Satisfaction and Student Outcomes Surveys*¹³ that have shown that employers express high levels of satisfaction with VET. Around 8 out of 10 employers with recent VET graduates are satisfied with the training organisation.

¹² 2001, NCVER, unpublished data

¹³ 2001, NCVER, *Employer Satisfaction and Student Outcomes Surveys*

Student satisfaction is also high with 80% of VET graduates overall indicating that they were satisfied with their training.

VET programmes range from basic adult education to New Apprenticeships, and advanced technical and business diplomas. Clients study on a full-time and part-time basis. Around half of VET clients undertake relatively short programmes of training, which are often parts of a qualification, while others undertake more extended programmes, leading to complete qualifications under the Australian Qualifications Framework.

In some States and Territories upper secondary education courses, that can result in, or lead to, a VET qualification, are delivered by VET providers including VET programmes specifically designed to be undertaken by secondary school students, in conjunction with secondary school subjects. This is an expanding area of VET activity.

National VET vision and priorities

The Commonwealth, State and Territory Ministers have agreed to the following vision for VET in the National Strategy for 1998-2003:

*To ensure that the skills of the Australian labour force are sufficient to support internationally competitive commerce and industry and to provide individuals with opportunities to optimise their potential.*¹⁴

The Annual National Priorities each year identify a number of priorities that flow from the VET National Strategy and the ANTA Agreement with the States and Territories. The Annual National Priorities for 2003 in a condensed form are to:

- strengthen the role of vocational education and training in Australia, including in relation to employment and in supporting innovation in business and industry;
- improve pathways between the vocational education and training sector and the schools and higher education sectors;
- enhance the capability of VET professionals to provide quality learning experiences and facilitate innovative partnerships;
- achieve agreed outcomes for 2003 for increasing opportunities for people with a disability and for Aboriginal and Torres Strait Islander people in VET;
- achieve improved training outcomes for older workers;

¹⁴ 1998, ANTA Minco, *Australia's National Strategy for Vocational Education and Training 1998 – 2003*

- improve the client focus of VET, particularly for individuals and small business; and
- refine Training Packages and their implementation to improve their quality and enhance their flexibility.

Responsibility for vocational education and training

VET in Australia is essentially a partnership between the Commonwealth, the States and Territories and industry. The Commonwealth is involved in VET through an agreed set of national arrangements for sharing responsibility with States and Territories. The current mechanism for giving effect to these national arrangements is the ANTA Agreement, which sets out the roles and responsibilities for each party, including a major role for industry.

Industry is involved closely in VET sector policy and planning at all levels. For instance, the ANTA Board, which directly advises all Australian Ministers with responsibility for vocational education and training, is industry led to help ensure that the training system is responsive to the needs of industry. ANTA works with industry so that national VET planning processes are informed by industry assessments of current and future skill needs.

Reform of the Vocational Education and Training System

The main focus for reform has centred on the National Training Framework (including industry Training Packages now offering qualifications in over 500 occupations), New Apprenticeships (doubling the number of people in training since 1995), the programme of User Choice (offering flexibility for employers and New Apprentices to choose the training organisation to suit their training and business needs) and VET in Schools (supporting the school to work transition with industry skills). These reforms are the result of industry demands for greater responsiveness, flexibility and national consistency in the training system and criticism of the previously cumbersome training regulatory arrangements. They have also been designed to expand training opportunities to new industries.

Through these national reforms there is now:

- improved training system flexibility, responsiveness and performance;
- expanded training opportunities through New Apprenticeships;
- an increase in the number of publicly funded training places;
- more client choice of training organisations through the programme of User Choice;
- improved national consistency under the National Training Framework; and
- quality pathways for learners and closer links between schools, the VET system and industry.

The Commonwealth's role has been to drive the reforms of the VET system, with a particular focus on improved consistency and quality and it has achieved significant national results in growth in training participation, numbers of qualified Australian workers and achievement of contemporary industry skills. The implementation of the reforms takes place largely in the States and Territories and, while the Commonwealth can show leadership and pursue implementation through the ANTA Agreement, the impact of the reforms can vary with the level of commitment of the state and territory training agencies.

Industry leads the training system, not only through representation on the ANTA Board, but also through representation on committees such as the National Training Quality Council. Under the national industry Training Package arrangements, industry has a leading role in setting the competency standards for training. The planning and accountability arrangements of the VET system also include a strong role for industry.

The Commonwealth supports the national vocational education and training system through the ANTA Agreement, providing the basis for a joint partnership between the Commonwealth, State and Territory Training Authorities and industry. The Agreement sets out the roles and responsibilities of each party as well as funding, planning and accountability arrangements. It recognises the integral role VET plays in the development of the Australian workforce to ensure the range and depths of skills necessary to increase Australia's productivity and competitiveness.

Two key parts of the planning and accountability arrangements under the ANTA Agreement are the annual national priorities prepared by ANTA in consultation with the States and Territories, the Commonwealth and key industry parties; and the Annual VET Plans which incorporate annual innovation statements from each State and Territory.

The Annual VET Plans show where training effort is to be directed. Innovation Statements required under the current ANTA Agreement include the States' and Territories' assessment of industry requirements, within the overall context of national skill requirements. They show identified shifts in training effort to support emerging industries, the uptake of Training Packages in information technology and new technologies and the development of new VET-industry links in emerging industry areas.

As part of the process of allocating resources, the ANTA Ministerial Council is provided with an assessment of all the Annual VET Plans by the ANTA Board and can consider whether the Plans meet identified national industry training needs. At the ANTA Ministerial Council meeting in Sydney on 15 November 2002, Ministers noted that some of the States and Territories are planning on the basis of enrolments that are reduced by up to 20% in some areas where there

are skill needs such as the manufacturing, rural and construction sectors. At the initiative of the Commonwealth Minister, the Council resolved to give further consideration to skill needs and hold further discussions at their first meeting in 2003.

The Agreement is enabling the development of a single national system from the foundations of the eight separate State and Territory-based VET systems. It has led to nationally agreed arrangements for the regulation and quality assurance of programme accreditation and RTOs.

A quality national training system

Continuous improvement is a feature of the vocational education and training system and helps ensure the vocational education and training system provides quality and flexible training that meets the needs of industry and the workforce. Vocational education and training quality arrangements are known as the National Training Framework, which comprises endorsed national industry Training Packages and the Australian Quality Training Framework (AQTF). The Commonwealth has played a leading role in this initiative.

The AQTF provides the basis to ensure nationally consistent and high quality vocational education and training delivery and assessment. The Framework provides national standards for registration and auditing of training organisations and accreditation of courses. These are called the Standards for Registered Training Organisations and Standards for State and Territory Registering/Course Accrediting Bodies.

The AQTF Standards for Registered Training Organisations apply to all training organisations delivering and assessing nationally-recognised training and issuing national qualifications. They strengthen and clarify requirements for RTOs to support the improvement of their practices and the quality of their services.

The AQTF Standards for State and Territory Registering/Course Accrediting Bodies strengthen and clarify the registration and audit processes and support a nationally consistent approach to audit, registration and the application of sanctions. This, in turn, supports national recognition of RTOs and their services.

The National Training Quality Council (NTQC) is a committee of ANTA and provides leadership in quality assurance in the vocational training system. The NTQC is responsible for monitoring and reporting on the operation of the AQTF as well as national Training Package development and endorsement processes.

As at 18 November 2002, there were 4,197 organisations listed as RTOs on the National Training Information Service. This includes about 87 TAFE institutes (TAFE institutes have about 1,300 provider locations around Australia).

A monitoring report on AQTF implementation by the States and Territories from June to December 2002 was considered at a meeting of the NTQC in February 2003. This included independent auditor reports which showed jurisdictions had processes and policies in place to ensure compliance with the Standards. The AQTF Standards are subject to a continuous improvement process and their implementation will be fully reviewed by the NTQC after July 2003.

The Commonwealth, through ANTA, has provided an additional \$2.5m over three years (2001-2003) to assist with national consistency, including implementing the AQTF.

The New Apprenticeships system, described in detail below, is a key element of the Commonwealth Government's approach to maintaining a skilled and flexible workforce. It combines practical work with structured training that leads to a nationally recognised qualification. All New Apprenticeships qualifications are national (Australian Qualifications Framework) qualifications. New Apprenticeships are now available in over 500 occupations across a diverse range of industries.

The Commonwealth has been working closely with the States and Territories to ensure that New Apprenticeships are delivered in a nationally consistent manner.

A National Code of Good Practice for New Apprenticeships has been developed to assist employers and New Apprentices to better understand their respective rights and responsibilities and to support the adoption of best practice approaches. The Code has been published and is available from New Apprenticeships Centres, as well as from our Department's New Apprenticeships website (www.newapprenticeships.gov.au).

To further ensure that clients can have confidence in the quality of the national training system, and the addressing of their complaints in a consistent and timely manner anywhere in Australia, the ANTA Ministerial Council agreed in November 2002 to consider the development of a national code for handling complaints about quality in vocational education and training.

This code would be a transparent benchmark for jurisdictions to ensure consistent and prompt attention to complaints that may affect more than one jurisdiction. The NTQC is considering the development of the code and will report back to the ANTA Ministerial Council in June 2003.

Other proposals for improving quality arrangements have also been referred for consideration by the NTQC.

Training Packages

Training Packages provide the national standards for training and contribute significantly to the quality of skills development for Australian industry. They create opportunities for training providers to customise training programmes to suit the needs of particular industries and individual enterprises, while still providing nationally recognised qualifications underpinned by industry competency standards and assessment guidelines.

Training Packages are developed by industry-based bodies or enterprises such as national Industry Training Advisory Bodies (ITABs), to meet the identified training needs of those specific industries, industry sectors or enterprises. Funding for national Training Package development is provided by ANTA under the Training Package National Programme.

Each Training Package comprises an integrated set of nationally endorsed competency standards, assessment guidelines and qualifications for a specific industry, industry sector or enterprise. The integration of these three elements has enabled the elimination of a separate competency standards framework and clarifies the direct relationship of competencies to Australian Qualification Framework (AQF) qualifications.

The Training Package approach contributes to nationally consistent competency outcomes, assessment, and training to meet workplace requirements.

Training Packages are subject to a rigorous quality assurance process to ensure they meet the needs of industry. The national industry-agreed Training Packages are endorsed by all State and Territory Training Ministers, and the Commonwealth Minister responsible for Training, before being implemented by each State and Territory. A system of regular evaluation and review ensures Training Packages are updated to reflect the changing needs of industry.

The first Training Packages were endorsed in 1997 and there are now 77 national Training Packages endorsed (70 industry and 7 enterprise). As at 18 December 2002, ten Training Packages have been fully reviewed and 46 are under review. Currently most Training Packages are required to be reviewed within three years of their endorsement to assist in maintaining high quality and industry relevant Packages. Four new Training Packages are currently under development and due for completion in 2003. Training Packages and their underpinning competency standards and qualifications now cover most industries and, it is estimated, over 75% of the workforce. There are many more choices in vocational education

and training than existed under previous traditional arrangements which focused on single institutional pathways to skills training.

Industry leadership sharpens the focus on continuing to develop industry-valued skills. This is reflected in the development of competency standards and qualifications in the Training Packages, which set out industry expectations of the level of workplace competency required to function well, in a particular industry.

A recent example of responsiveness of the training system to skills needs identified by industry is the work underway on 'employability skills'. 'Employability skills' are generic skills, capabilities or key competencies and include communication, planning, working with others, problem solving and using technology. The Department through ANTA provided funding to the Business Council of Australia, in conjunction with the Australian Chamber of Commerce and Industry, to analyse and report on industry's requirements for 'employability skills'.

The publication *Employability Skills for the Future*¹⁵ was released in May 2002 and substantially improves our understanding of what skills valued employees have. This Report has stimulated further work with 'employability skills' in the education and training systems in Australia.

The Commonwealth, through ANTA, has committed to a number of further actions including:

- consultations with State and Territory Training Authorities regarding approaches and models for incorporating 'employability skills' into Training Packages;
- identifying a number of Training Packages in which to pilot the 'employability skills' models; and
- establishment of an Employability Skills Cross Sectoral Co-ordination Group.

Training Packages allow a flexible and broad framework within which training and assessment will occur, ensuring that Training Packages do not become 'out of date' as quickly as curriculum-based training. There is the capacity for students and their employers, in conjunction with their RTO, to customise training to meet specialised needs or to upgrade existing skills. Changes to technology or work organisation are therefore more likely to be able to be accommodated within existing Training Packages without necessarily requiring a formal change in the competency standards, although changes in learning strategies would certainly be required.

¹⁵ 2002, Commonwealth, *Employability Skills of the Future*

Information on learning and career pathways for employees is included in the national Training Packages. These provide guidance on sequencing of qualifications, multiple entry points and their relationship with particular occupations, and are relevant both to new entrants to the labour market and to experienced workers requiring re-skilling or skill upgrades.

Development of new and the review of existing Training Packages is increasingly focused on skill development activity to support innovation and emerging technologies and industries. For example, the review of the Electricity Supply Generation Training Package is considering the development of competencies relating to alternative or renewable sources of energy and the minimisation of greenhouse gas emissions. Photonics and bioinformatics are other areas that will be considered for future Training Package development.

ANTA, through the NTQC, is regularly examining ways in which the Training Package development process can be accelerated to respond to newly emerging skill needs, consistent with maintenance of quality standards and the need for adequate consultation. As part of the continuous improvement of Training Packages, proposals for streamlining processes to deal with incremental change were agreed by the NTQC on 7 March 2003. This means there will be quicker responses to reflect the most up-to-date industry practices without waiting for major reviews.

At the ANTA Ministerial Council meeting on 15 November 2002 Ministers agreed that the ANTA Board request the NTQC, in consultation with ANTA Chief Executive Officers' Committee (CEOs), to establish a high level review of Training Packages to ensure teaching and learning are strengthened and that they meet both current and future skill needs.

Model legislation clauses

The vocational education and training legislation that establishes the supporting regulatory framework for government-funded training is the responsibility of the respective States and Territories and varies substantially. The Commonwealth has worked collaboratively with States and Territories and ANTA to make sure that the benefits of the AQTF are reflected in nationally consistent vocational training legislation. To this end 'model legislative clauses' have been developed and were considered by the ANTA Ministerial Council at its meeting on 15 November 2002.

At that Council meeting, all State and Territory Ministers agreed to the implementation of the model legislative clauses by 1 July 2004. States and Territories will use the clauses or substantially similar amendments in their vocational education and training legislation to:

- achieve national effect of registration and accreditation decisions, application of sanctions and legal enforceability of national standards; and
- remove legislative barriers to New Apprenticeships pathways and ensure legally enforceable training agreements.

The implementation of the model legislation clauses will benefit industry and the community through access to a training system that is consistent across all States and Territories.

Progress with implementation of the model clauses in each jurisdiction will be monitored by the ANTA CEOs Committee and reported to the ANTA Ministerial Council.

NEW APPRENTICESHIPS

New Apprenticeships are a key element of the Government's approach to maintaining a skilled and flexible workforce. New Apprenticeships combine paid work with structured training to give people a nationally recognised qualification, which is supported by a training agreement between the employer and the New Apprentice and registered with the relevant State or Territory Training Authority. New Apprenticeships are industry focused and demand-driven.

The Commonwealth's main role in relation to New Apprenticeships is carried out through the management of the Commonwealth New Apprenticeships Incentives Programme, which offers a range of financial incentives to employers for the employment of New Apprentices.

Contracted New Apprenticeships Centres administer the Incentives Programme and provide comprehensive information on training and work options to employers, New Apprentices and other interested persons. The Commonwealth also runs a national marketing strategy for New Apprenticeships.

Growth

The National Centre for Vocational Education Research (NCVER), from their latest figures released in March 2003, estimate that there were 374,800 people in New Apprenticeships training as at 31 December 2002. This is 15% more than at the same time in 2001 and more than double the number in training 5 years ago.¹⁶ Evidence is growing that employers are increasing their investment in training, with data expected shortly from an ABS survey on employer training expenditure. This ABS survey has been fully funded by the Australian National Training Authority.

¹⁶ 2003, NCVER, *Australian apprentice and trainee statistics 2002, December quarter*

The opportunity for training under New Apprenticeships is now very broad having expanded substantially from the original trades. The national Training Packages, which contain the New Apprenticeships qualifications, now cover 80% of industries with New Apprenticeships being available in over 500 occupations. New Apprenticeships can be undertaken on a full-time or part-time basis. They can be commenced while a young person is still at school. Formal training can be undertaken on-the-job, off-the-job or a combination of both. The expansion of the industry qualifications of New Apprenticeships is the result of substantial new industry growth and emerging skills needs.

In the past, apprenticeships were in traditional trades such as building and construction and metals and engineering jobs, hairdressing, cooking and the automotive industry. Although much of the recent growth in New Apprenticeships has been in new areas, it has not been at the expense of these traditional trades. There has been a 22% growth in “traditional apprenticeship” training since 1995 (from (97,610)^{17a} in 1995 to 119,340 in 2002)¹⁷. “Trades and related workers” are still the biggest occupational group in New Apprenticeships, comprising nearly 36%¹⁸ of those in training compared with only some 13%¹⁹ of the workforce. Over one in ten²⁰ of every person working in a traditional trade is a New Apprentice (11.3% of people employed in ‘Trades and Related occupations’). There are just as many young people taking up traditional apprenticeships in the trades as there have ever been, with a 9.5% increase between 1995 and 2002²¹.

Notwithstanding this continued growth in New Apprenticeships, including in traditional trade areas, there are still identified skills needs in some trades, particularly in specialist fields. An example of this is toolmakers where shortages exist in NSW for machine setting, CAD and CNC milling and metal fitters in Victoria where shortages exist for CNC/CAD/CAM, hydraulics and grinding. A full listing of National and State skills shortages is at [Attachment A](#), and are discussed later in this submission under ‘Current Skill Needs’ at page 45.

¹⁷ 2003, NCVER, *Australian apprentice and trainee statistics 2002, December quarter* - (The number for ‘traditional apprenticeships’ is approximated by trades apprenticeships and traineeships at AQF III qualification or above with more than two years expected duration for full-time contracts and more than eight years expected duration for part-time or school based contracts and are based on December 2002 estimates)

^{17^a} 2003, NCVER, *December quarter estimates* (unpublished data)

¹⁸ 2003, NCVER, *Australian apprentice and trainee statistics 2002, December quarter*

¹⁹ 2003, DEST, extrapolation of ABS Labour Force Survey November 2002 (6203.0)

²⁰ 2003, DEST, extrapolation of ABS Labour Force Survey November 2002 (6203.0)

²¹ 2002, NCVER, *Australian apprentice and trainee statistics* (unpublished data)

There is still potential for growth in New Apprenticeships. NCVET, in its 2001 publication *Australian Apprenticeships: facts, fiction and future*, estimated that there is potential for further growth of New Apprenticeships to at least 400,000 or a further 7% in the medium to long-term.

Incentives

The objective of the New Apprenticeships Incentives Programme is to develop a more skilled Australian workforce that delivers long-term benefits for our nation and supports our international competitiveness. This is achieved by encouraging employers to open up genuine opportunities for skills-based training of their employees, through provision of Commonwealth financial incentives to employers who take on and train a New Apprentice.

The New Apprenticeships Incentives Programme includes standard incentives which encourage employers to commence and complete the training of New Apprentices as well as a number of additional targeted incentives that encourage employment and training in priority areas.

The targeted incentives that have been operating for a number of years include:

- rural and regional skills shortage incentive (to assist employers in rural and regional areas commence a New Apprentice in an occupation identified to be in skill shortage either nationally or in that State or Territory);
- women in non-traditional New Apprenticeships incentive (to encourage employers to offer New Apprenticeships to women in occupations not traditionally taken up by women);
- Group Training Organisation trainee incentive (to assist Group Training Organisations, who through a collaborative arrangement with host employers, are able to offer New Apprenticeships opportunities which may not otherwise exist);
- disabled support (to assist employers of apprentices with a disability through wage support and those apprentices with tutorial, mentor, interpreter and workplace modification assistance);
- sporting operations incentive (to encourage employers of sportspersons to provide a training base, both in the context of the skills of their sport and in laying the foundations for worthwhile future careers); and
- declared drought area incentive (to encourage rural employers to continue to offer training opportunities in times of exceptional circumstances like drought).

Additional targeted incentives were introduced as part of the 2002 Budget. From 1 January 2003, incentives to support school-based New Apprenticeships and innovation New Apprenticeships commenced.

The school-based commencement incentive will encourage employers to take on a school-based New Apprentice and the school-based retention incentive will assist an employer continue to train or offer ongoing employment to a school-based New Apprentice after they complete Year 12.

The innovation New Apprenticeships incentive was introduced in response to industry's increasing demand for Information Technology and related innovation skills. This incentive is intended to encourage employers to provide training opportunities in emerging industries and new areas of existing industries, thus providing skill development in areas of significant importance to Australia's economic growth. The initiative complements the work of the Information Technology and Telecommunications Skills Hub and the National Industry Skills Initiative Working Group on Emerging Technologies.

Key areas of innovation and therefore potential growth include the pharmaceutical, aircraft, engineering, electrotechnology, utilities, plastics and rubber production and information technology and telecommunications industries. Industry, unions and State and Territory Governments were consulted to ensure that the targeted qualifications were appropriate from an employment and skills needs perspective.

Review of incentives

A review of the New Apprenticeships Incentives Programme was undertaken in 2002 to simplify the programme and ensure that it is as well targeted as possible. Consultations occurred with industry bodies, unions, employers, group training organisations and State and Territory Governments.

As a precursor to the Review, the Minister for Education, Science and Training wrote to key stakeholders in January 2002 seeking views on the issues that should be included in the review. Feedback enabled the Department to release a *Key Issues and Overview* paper in June 2002, canvassing the policy, administrative and financial issues that the review would explore. To ensure wide distribution, the paper was placed on the Department's New Apprenticeships website and advertised in all major papers throughout June and July 2002.

Over 100 organisations provided written responses to the paper and over 200 organisations attended a series of consultative meetings held in all States and Territories. The Minister announced the outcomes of the Review on 26 September 2002.

From 1 July 2003, incentive payments will be consolidated and simplified. The progression incentive, currently paid when a New Apprentice progresses from Certificate II training to Certificate III or IV training will be redistributed, increasing the employers' completion payment

for Certificate III or IV New Apprenticeships from \$1650 to \$2750. This change will provide a greater incentive for employers to ensure their New Apprentices complete their training. It will also reduce paperwork and red-tape.

It will also be easier for employers to take on New Apprentices who have old or redundant VET qualifications. Those with VET qualifications more than 7 years old or whose qualification was obtained at school will be able to attract incentives for their employer. Under current arrangements, New Apprentices with VET qualifications generally do not attract incentives for their employer.

The additional Group Training Organisation incentive for trainees will be phased out over two years and replaced with a completion incentive for Certificate II New Apprenticeships. Group Training Organisations will also be eligible for the same incentives as other employers. At present, not-for-profit Group Training Organisations are not able to access the standard completion incentive.

The Disabled Apprentice Wage Support Scheme, currently only available to employers of apprentices, will be extended to include all New Apprentices with a disability. Support includes a wage subsidy, mentor and tutorial assistance and financial support for workplace modifications.

Living Away from Home Allowance for New Apprentices who need to leave home to commence or remain in a New Apprenticeship will be increased and extended to the second year of the New Apprenticeship. This, coupled with simplification of the payment arrangements for the rural and regional skills shortage incentive, will greatly assist non-metropolitan employers and New Apprentices.

A new incentive for employers of disadvantaged mature aged New Apprentices will be introduced from 1 July 2003. The Mature Aged Workers Incentive will encourage employers to commence and complete New Apprentices who are aged 45 and over and disadvantaged in the labour market; for example, individuals on particular Centrelink Benefits, those returning to the workforce after a long absence and those out of the workforce due to redundancy.

A list of the current and new incentives is provided at [Attachment B](#).

Marketing

The distinctive orange and black national New Apprenticeships marketing campaign has been very successful in recent years. Independent tracking research has confirmed the success of

the campaign, with employer awareness levels increasing from 50% to 73% between 1999 and 2002 and youth awareness levels increasing from 42% to 63% over the same period.

Additional Estimates contain commitments that reflect agreement to a further advertising campaign for New Apprenticeships to ensure that the campaign's success is continued. It is envisaged that the initial phase of the renewed communication strategy will focus on traditional trades. It is also envisaged that further phases highlighting other emerging issues within New Apprenticeships may be developed within the next 6-18 months.

COMMONWEALTH PROGRAMMES

The Department has a number of programmes to assist job seekers and employees to gain skills such as language, literacy, IT and other work-related or employability skills. Along with these programmes the Department works with industry to promote and support employers' skill development needs.

Language, Literacy and Numeracy Programme

The 1996 ABS survey of adult literacy levels in Australia²² confirmed that there is a strong correlation between poor literacy skills and labour market disadvantage, with unemployed people having significantly lower literacy skills than those of employed people. The Survey also indicated that people whose first language was not English were more than three times as likely to have poor literacy skills as those whose first language was English.

In recognition of this labour market-literacy relationship, the Commonwealth's Language, Literacy and Numeracy Programme (LLNP) provides English language, literacy and numeracy assistance to eligible job seekers, to increase their chances of securing sustainable employment or pursuing further education or training to improve their daily lives.

LLNP commenced in January 2002, replacing the Literacy and Numeracy Programme and the Advanced English for Migrants Programme. Three streams of training are provided, basic English language, advanced English language and literacy and numeracy. All participants also receive basic computer training. Assessment and training services are provided by 58 contracted organisations around Australia. The majority of the services are provided face to face, but distance education is also available throughout Australia for job seekers who have carer responsibilities or other reasons to access distance education services.

²² 1997, Australian Bureau of Statistics (ABS), *Aspects of Literacy*

Contracted providers must be RTOs and use accredited curricula or elements of endorsed National Industry Training Packages. Training is flexible and directed at meeting individual job seekers' needs. Participants receive up to 400 hours of training over a period of 6 to 12 months. Training is undertaken on a part time or full time basis (at between 6 and 20 hours a week).

Funding of \$34.4m (GST exclusive) has been provided for LLNP in 2002-03 and is expected to provide around 16,000 training places. Some 15,228 clients commenced training under the LLNP in the 12 months to 31 December 2002. Approximately 59% of clients commenced language training and around 41% commenced literacy and numeracy training. Of these participants 17% were under 21 years, 9% were 21 to 24 years, 50% were 25 to 44 years, and 24% were over 45 years.

Since 1 July 2002, as part of the *Australians Working Together*²³ initiatives, providers of Intensive Assistance under the Job Network Programme of the Department of Employment and Workplace Relations (DEWR) managed Employment Services market have been able to refer clients with language, literacy or numeracy needs to the LLNP for assistance, prior to commencing them in Intensive Assistance. Under arrangements for the third Employment Services contract, clients with language, literacy or numeracy needs will be able to be referred to LLNP for assistance at any stage. This will help ensure that clients are directed to the most appropriate type of assistance at the most beneficial point.

Workplace English language and literacy

Data from the ABS survey of adult literacy in 1996 also showed that the need for language, literacy and numeracy support in training is widespread and not confined only to groups or individuals with special needs. In the vicinity of 19% of people have considerable difficulties using printed materials in daily life and a further 28% have some difficulties. Only 17% of the population have good to very good literacy skills.

To address this broader issue of workplace language and literacy, the Commonwealth's Workplace English Language and Literacy (WELL) Programme funds enterprises or training providers to assist existing workers to obtain English language and literacy skills to help them with their current or anticipated employment and training needs. The WELL Programme particularly targets workers who are at risk of losing their jobs because of their low literacy skills.

²³ 1997, Australian Bureau of Statistics (ABS), *Aspects of Literacy*

Language and literacy training is integrated with other workplace or vocational training so that the workers acquire relevant skills.

In 2002-2003 \$12.25m (GST exclusive) is available to provide language and literacy training to approximately 18,000 workers at some 400 work sites. Of those being trained, it can be expected approximately 35% will be from a non-English speaking background, 4% will be Indigenous Australians, and 35% will be women.

New Apprenticeships Access Programme

The New Apprenticeships Access Programme (NAAP) provides job seekers, who experience barriers to skilled employment, with pre-vocational training, support and assistance to obtain and maintain a New Apprenticeship. Alternatively, a job seeker may be supported into employment, further education or training. NAAP is a programme that successfully works across Commonwealth agencies, relying on active links between Centrelink, the Job Network and this Department's Jobs Pathway Programme.

NAAP participants must meet a number of criteria including Australian residency requirements and be registered as job seekers with Centrelink. In 2002-03, funding of \$8.8m will provide for 4,250 people to undertake training.

On 1 July 2003, changes to the Employment Services contracts, which are managed by the DEWR, will allow Job Network members to refer job seekers to complementary programmes while they are participating in Job Network programmes. NAAP will be included as one of the complementary programmes.

Basic IT Enabling Skills (BITES) for Older Workers

The Basic IT Enabling Skills (BITES) for Older Workers programme was announced in the 2002-2003 Budget under the title of *IT Skills for Older Workers*, as part of the Commonwealth's commitment to life long learning. This Programme is a \$5.75m commitment per year and will assist 11,500 participants each year.

BITES provides older workers with the opportunity to undergo nationally recognised training in information technology. It is designed to help low income, mature age job seekers gain nationally recognised skills in information and communication technology, in order for them to operate personal computers effectively at a basic level in the workforce.

The Programme is available to people who are:

- 45 years and over; and
- in receipt of income support; and
- in the labour force (i.e. currently in work or looking for work); and who
- have no post-high school IT qualification.

The Commonwealth has contracted five brokers to manage delivery of the training services of this Programme. These brokers are responsible for making arrangements with RTOs who advertise the courses and provide the training at locations throughout the broker region.

Group Training New Apprenticeships Targeted Initiatives Programme

Group Training Organisations (GTOs) employ apprentices and trainees, and then place them with *'host employers'*, usually from small to medium sized enterprises. As employers, GTOs receive the usual range of employer incentives, including a special Group Training incentive, from the Commonwealth. They can also receive Group Training Joint funding through ANTA whereby a Commonwealth contribution is matched by the States and Territories.

The Group Training New Apprenticeships Targeted Initiatives Programme (TIP) is a Commonwealth administered programme to assist GTOs to provide additional New Apprenticeships opportunities in areas that have been identified as critical, challenging and under serviced. The programme is specifically designed to target areas with identified national skill needs, support priority industry development and strengthen the skill and employment base in rural and regional areas.

An annual allocation of around \$4m is available for TIP projects under the New Apprenticeships Workforce Skills Development, announced as a 2000 Commonwealth Budget initiative.

There are currently 54 projects operating nationally under TIP, with approximately half of these focusing on occupations experiencing high demand. The Department anticipates that approximately 1,500 additional New Apprenticeships outcomes will be generated by projects targeting skills shortages. These projects address skills shortages in industries such as electrotechnology, health and community services, manufacturing and agriculture. An additional 10 projects are being created in 2003 anticipating 550 New Apprenticeships outcomes in the traditional trades and manufacturing, defence support, agriculture, aquaculture, aged care and hospitality industries.

TIP also funds projects addressing nationwide skill shortages, including a project to promote New Apprenticeships in rural and regional areas, by allowing New Apprentices to undertake training across several industries.

Industry Training Strategies Programme

This Programme enables a range of industry specialists to provide support, advice and training to New Apprenticeships Centres and RTOs about the flexibilities available through national Training Packages to better meet employers' skill development needs. The Programme encourages the implementation of New Apprenticeships and the national industry Training Packages in targeted industries/sectors.

There are ten industry-expert providers operating across a wide range of industries, including four industries that have had their skill needs specifically investigated – tourism (cookery), rural, building & construction and engineering. One specialist provider works with employers of Indigenous Australians, and a range of peak industry bodies are also funded to raise awareness of New Apprenticeships and the flexibilities available through Training Packages to their organisation's members.

In the financial year 2002-2003, the Industry Training Strategies Programme has allocated \$6.1m for services provided to New Apprenticeships Centres and RTOs across Australia.

Career Counselling Programme

The Career Counselling Programme (CCP) helps unemployed people develop career management, research and decision making skills.

CCP is available to people registered as job seekers and in receipt of benefits and to young job seekers aged 15-20 years old who are not eligible for income support. Through *Australians Working Together*²⁴, a four year initiative from the May 2001 budget, additional places have been provided for people over the age of 50 and parents / carers returning to work.

The Programme is available from about 140 sites throughout Australia. CRS Australia is currently contracted to provide the service. Referrals to CCP are made through Centrelink and Green Corps, Jobs Placement, Education and Training, Work for the Dole, Job Search Training and Transition to Work providers.

Since CCP was introduced in 1998 there have been over 25,000 participants.

²⁴ 2001, Commonwealth, *Australians Working Together*

Improved inter-agency arrangements

On 1 July 2003, changes to Employment Services contracts will see Job Network members able to refer job seekers to complementary programmes while they are participating in Job Network programmes. The NAAP, LLNP and Career Counselling will all be complementary programmes. This co-operative cross-agency and cross-programme arrangement enhances the Commonwealth's capacity to provide more effective responses to skills needs across the full range of industries.

HIGHER EDUCATION

The higher education sector is a major contributor of skilled labour in the Australian workforce and is the main source of training for practice in a number of professional occupations. In 2000 there were 136,100 equivalent full-time award course completions by domestic higher education students.

Overview of Commonwealth funding and policy

The Commonwealth has primary policy and funding responsibility for the higher education sector. Forty five institutions are eligible for public funding, 43 of them through the Education, Science and Training portfolio. In 2002 there were 498,307 equivalent full-time student places provided in the sector for domestic students.

Annual funding for higher education from the Education, Science and Training portfolio is currently around \$6.4b (including HECS payments). The majority of this funding is provided as a single block operating grant to each institution for a specified number of student places within the context of an educational profile that broadly details the institution's teaching and research activities.

Responding to skills needs

Institutions have a considerable degree of autonomy within their profile to respond to student demand and skills needs. At present the decisions of institutions, made in response to student demand and other signals, are the primary mechanism whereby the sector responds to current and future skills needs. The Commonwealth monitors the capacity of the sector to undertake this role through the annual process of determining institutional profiles.

The Commonwealth provides funding to universities for a specified number of student places each year. The institutions then allocate these places to disciplines consistent with their teaching and research activities. As autonomous institutions, generally established under State

legislation, the allocation of funding to support various schools or areas of study is a matter for the universities themselves to decide. It is also up to universities to determine their own admissions policies, including entry requirements and the number of places offered in particular courses. The Commonwealth respects the autonomy of the institutions and does not intervene in these processes. The Commonwealth does expect that the agreed level of places at a university will be filled and Commonwealth funding is adjusted if this does not occur.

In the case of medical training, however, the Commonwealth portfolio of Health and Ageing has a significant interest in the supply, distribution and training of medical practitioners. Its responsibilities encompass policy on the number and distribution of medical school places. The intake levels for medical school places are determined in the light of medical workforce planning processes conducted by the Australian Medical Workforce Advisory Committee. The Committee then reports to the Australian Health Ministers' Advisory Council.

As well as its ongoing roles, the Commonwealth has made a number of strategic interventions in recent years to ensure that the sector has the capacity to meet current and future skills needs or to assess that capacity for the purpose of future policy making. The main examples are:

- *Backing Australia's Ability* – which provided additional university places in ICT, mathematics and science;
- the Review of Nursing Education;
- the Review of Teaching and Teacher Education; and
- the Review of Rural Veterinary Services.

Further details are provided in this submission in the section on 'Commonwealth initiatives addressing skills needs'.

A key higher education policy objective of the Government in recent years has been to enhance the responsiveness of the sector to varying student needs and industry requirements.

Measures to enhance responsiveness have included allowing institutions to offer full-fee paying domestic undergraduate places and providing loans for postgraduate, coursework fee paying students repayable on a deferred income contingent basis.

Accreditation and quality

Australia's 39 universities are established under legislation as self accrediting bodies. There are four other self accrediting, non-university higher education providers. Other higher education providers must have their courses accredited by the relevant State or Territory authority under the National Protocols for Higher Education Approval Processes.

Self-accrediting higher education providers have primary responsibility for matters such as admissions, academic standards and curriculum. These mechanisms often involve consultation with relevant professional bodies and industry. The Commonwealth requires self-accrediting higher education institutions in receipt of public funding to have in place internal mechanisms to assess new course proposals and accredit courses. Compliance with these requirements are monitored through the Commonwealth annual profiles process.

Professional bodies and associations play a significant role as external arbiters in the quality assurance framework, through their accreditation of professional courses, in areas such as nursing, medicine, law, accounting, engineering and architecture. In some cases this role has a statutory basis. Professional bodies also have an ongoing role in monitoring the quality of such courses in relation to matters such as curriculum and assessment.

Other elements of the quality assurance system currently in place are the Australian Universities Quality Agency, which assesses the adequacy of each institution's quality assurance processes for teaching, learning, research and management on a five-yearly cycle, and protection for the term 'university' in business name/association legislation and under Commonwealth Corporations Law.

Higher Education Review

The Minister for Education, Science and Training initiated a review of higher education in April 2002. The issue of the adequacy of the sectors' responsiveness to the expectations and needs of industry and the community were central to the review.

2.2 SCHOOLS

The Commonwealth, along with State and Territory Governments through MCEETYA, established the *National Goals for Schooling in the 21st Century* in 1999. The National Goals provide broad direction to school and education authorities to ensure all students have the knowledge, understanding, skills and values needed for a productive and rewarding life. These goals include that students should attain high standards in the foundation skills of literacy, numeracy and participation in vocational learning.

To further support attainment of the National Goals the Commonwealth committed, through legislation in 2000, to more robust reporting against agreed benchmarks of national education outcomes. The performance measures that focus, among other things on foundation skills include:

- participation, attainment and completion of vocational education and secondary school science;
- achievement in primary school science; and
- information and communications technology skills.

VET IN SCHOOLS

Since 1996, there has been unprecedented growth in the numbers of students participating in VET in schools. The number of students participating in VET in schools as part of their senior secondary certificate grew from 60,000 in 1996 (16% participation) to 169,809 in 2001 (41% participation). Also, the number of training agreements in place for School-based New Apprentices rose from 1,500 in 1998 to 5,755 in 2001.

VET in schools refers to school-based VET programmes that provide students with the opportunity to gain credit towards the senior secondary certificate while at the same time gaining a national industry recognised qualification or credit towards this qualification. VET in schools programmes are commonly based on national Training Packages and should be delivered to the standards set out in the AQTF.

There are different arrangements in each of the States and Territories in terms of how VET in schools is delivered within the AQTF, which reflect the policy emphasis and structural arrangements of each State and Territory.

Industry Coverage

Table 1 provides the percentage of school students participating in VET in schools by ANTA industry groups in each State and Territory in government and catholic schools for 2001. (Figures are not available for the Independent sector.) The pattern of student enrolments by industry area indicates that over 60% of all participating students are located in four areas:

- tourism and hospitality;
- computing;
- business and clerical; and
- general education and training (this includes job seeking skills, personal development, work-place communications, and occupational health and safety).

Table 1: Percentage of Government and Catholic School Enrolments in VET in Schools Programmes by ANTA Industry Group (Independent sector figures unavailable), 2001

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUST
CATEGORY A									
Arts, Entertainment, Sport & Recreation	2.2	19.7	3.8	7.7	4.9	7.2	13.8	9.7	6.1
Automotive	2.7	7.1	0.0	2.9	3.5	2.7	9.0	7.4	2.3
Building & Construction	8.0	3.1	3.9	2.1	3.4	1.5	5.2	1.6	3.9
Community Services, Health & Education	3.7	2.9	2.1	4.1	2.9	14.7	2.7	4.0	3.3
Finance, Banking & Insurance	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Food Processing	0.1	0.1	0.0	3.3	0.1	0.2	6.6	0.1	1.0
TCF & Furnishings	1.7	4.3	6.8	0.8	0.9	0.0	0.2	1.4	3.3
Communications	0.4	0.2	1.8	1.8	0.9	0.3	0.3	0.0	1.3
Engineering & Mining	3.6	4.5	8.4	3.9	9.8	1.1	7.5	0.9	5.8
Primary Industry	3.5	5.1	2.1	5.1	4.7	2.7	5.1	0.0	3.6
Process Manufacturing	0.0	0.0	0.5	0.1	0.1	0.0	0.0	2.9	0.3
Sales & Personal Services	9.1	1.4	0.6	4.9	0.5	3.6	1.8	1.9	3.5
Tourism & Hospitality	32.0	19.8	14.5	17.0	11.9	6.9	12.5	14.8	18.4
Transport & Storage	0.4	0.0	0.0	0.0	1.0	0.2	0.5	0.0	0.2
Utilities	1.0	8.6	0.0	0.0	0.2	0.0	1.0	0.0	0.8
CATEGORY B									
Business & Clerical	13.7	14.3	18.1	10.4	15.6	9.6	16.2	27.4	14.8
Computing	17.5	6.0	13.7	23.2	5.0	0.5	7.2	26.2	16.0
Science, Technical & Other	0.0	1.8	0.4	1.0	0.4	0.7	0.0	1.7	0.6
CATEGORY C									
General Education & Training	0.0	0.0	21.0	11.4	34.2	0.4	10.4	0.0	13.1
Not Classified	0.0	1.2	2.2	0.0	0.1	47.6	0.0	0.1	1.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Report of the MCEETYA Taskforce on Transition from Schools – July 2002

Business and industry are recognising the value of VET in schools and School-based New Apprenticeships as options to expose young people to industry skills and as a means of encouraging them to pursue careers in particular industry areas.

There is a range of reasons, at both the school and system level, for the provision of VET in schools. In some cases the programmes reflect what the school has traditionally provided or

what the particular jurisdiction has endorsed for inclusion in the school curriculum. This may be linked to the resources available to the school in terms of trainers available to deliver the programmes (either existing teaching staff or other trainers in the community that meet the AQTF standards); capital and other infrastructure facilities either on school premises or available through other organisations; access to RTOs and the capacity to enter into arrangements with RTOs; and the availability of work placements particularly where this is a requirement of the VET qualification.

In other cases, schools and systems are taking up the challenge to establish the resources and relationships needed to meet the AQTF standards in order to expand the range of VET programmes across a broader number of industry areas. The nature of these industries, particularly new and emerging industries, will determine the capacity of schools to offer VET for these industries, and in particular occupational groups within these industries. Systems and schools will need to consider the opportunity cost of moving into new industry areas against programmes currently available to students.

An additional factor that school systems and schools are required to comply with is a range of legislative and administrative arrangements, not only in relation to VET but also around the general operations of a school (for example aspects of curriculum and assessment arrangements have a legislative basis). These arrangements, while providing the safeguards that guarantee the quality of school educational offerings, will to some extent inhibit schools and school systems capacity to respond quickly to changes in the VET system and changing skill needs of business and industry.

A key driver behind what schools offer can also be attributed to student demand. Through the work that the Commonwealth is undertaking with business and industry in relation to skill shortages, it is evident that greater promotion of industry to young people is needed.

CAREERS INFORMATION AND ADVICE

Industry also has a role to play in marketing itself in order to generate the student demand needed to develop VET in schools in new and emerging industries, as well as those experiencing skill shortages, viable options for schools and other providers. For some industries this will be critical to ensure that young people have a contemporary understanding of the nature of work in particular industries and to dispel misconceptions.

Through the National Industry Skills Initiative a number of industries including engineering, electrotechnology, automotive and rural have developed interactive, multimedia materials to

highlight the changing nature of these industries, and to reflect the increasing use of technology and computerisation within their core occupations.

The Department has also funded a mapping exercise of career services throughout Australia to assist in identifying gaps, opportunities and good practice models in the provision of career services. The exercise, designed to complement the OECD review, will inform the work of the MCEETYA Transition from School Taskforce.

Relevant activities to be undertaken by the Taskforce include:

- overseeing the National Careers Information System, www.myfuture.edu.au;
- facilitating professional associations to develop nationally agreed standards for career professionals in all sectors;
- investigating performance indicators for effectiveness of career education in schools in terms of outcomes for young people; and
- developing a Blueprint of competencies for individuals to manage their careers throughout their lifetime.

In addition to its role on the Taskforce, the Department has a substantial role in shaping national policy, producing information and providing services for all Australians, including young people moving from school into further education or work.

The Commonwealth's interest extends to those who are changing jobs or occupations; moving from employment to unemployment or vice versa; re-entering the workforce after an absence; and phasing from work into retirement.

Among other things, the Department:

- manages myfuture.edu.au;
- collaborates with State, Territory and non-government education authorities to introduce *The Real Game Series (The Series)* in Australia;
- funds a network of 12 Career Information Centres;
- produces Job Guide which is distributed free of charge through schools for all Year 10 students; and
- produces a range of career information booklets, leaflets and posters.

3 OTHER COMMONWEALTH INITIATIVES ADDRESSING SKILLS NEEDS

There are a number of Commonwealth initiatives which play a special role in helping address skills needs across all three education and training sectors. These include working with industry through the National Industry Skills Initiative, the IT Skills Hub and other arrangements; *Backing Australia's Ability*; and reviews of teaching, nursing and rural veterinary services.

3.1 NATIONAL INDUSTRY SKILLS INITIATIVE

The Commonwealth recognises that industry must lead the work on identifying and addressing its own skills needs, with the assistance of governments. The National Industry Skill Initiative resulted from a meeting between the Commonwealth and industry leaders in late 1999 to discuss national industry skills and training needs. Under the Initiative, a partnership of industry and the Commonwealth initiates steps to meet skill needs in particular industries, now and into the future.

For each industry, a Working Group comprising industry and Commonwealth representatives is set up to research the issues and develop an Action Plan to address the skills needs identified. An industry-led Task Force is then established to ensure the Action Plan is implemented. The Department facilitates this work and has funded a number of specific activities identified in the Action Plans. Each industry publishes their Reports and Action Plans and these are available at www.skillsinitiative.gov.au. A National Steering Committee is responsible for the broad directions of the Initiative and monitoring the activities of each industry project.

Eleven industries have been involved to date. They are:

- Electrotechnology
- Engineering
- Retail motor
- Food (commercial cookery)
- Rural
- Building & construction
- Emerging technologies
- Road freight transport

- Aerospace
- Retail
- Marine manufacturing, sales and service

A typical example of this process is Engineering, one of the first industries involved. The Engineering Working Group, chaired by Mr Bob Herbert, Chief Executive of the Australian Industry Group investigated skills shortages in the manufacturing engineering workforce and identified skill set needs, barriers and solutions. These were translated into an Action Plan agreed by industry and Government. Through the Engineering Task Force, also chaired by Mr Herbert, a number of projects have been undertaken. These include marketing of careers in engineering; a research project into the barriers to utilising Group Training in the industry; regional studies of skills shortages; local partnerships with schools, improving data collection and addressing national consistency issues. In addition the Task Force was expanded to consider separate Action Plans to address skill requirements in the aviation and boating sectors.

A number of common strategies have been identified to overcome barriers to maintaining a skilled workforce across the industry sectors through the National Industry Skills Initiative. These include:

- attracting people, especially young people, to the respective industries;
- improving the image of the industries as valued areas of work;
- the retention of skilled workers;
- recognition of skills of existing workers; and
- addressing the perception that some industries do not appear to offer long term career opportunities.

The specific strategies to address barriers vary for the different industry groups but include:

- marketing the respective industries as an attractive career option for young people through careers information and greater involvement of the industry in schools;
- identifying and promoting new, more flexible pathways into industries for example, cross-industry New Apprenticeships qualifications which combine skills from different occupations; and
- promoting the value of, and need for employers to invest in training.

In particular, several industries have developed modern careers education materials, highlighting the real face of their industry. These materials showcase the “high tech” nature of the work that demands skill, creativity and innovation, and offers great career potential. A list of careers web sites is at Attachment C.

At the request of the National Steering Committee, NCVET and DEWR have drawn together issues arising from the initial phase of the National Industry Skills Initiative. They have provided an account of the general nature of industry skills needs and the specific experiences of a number of the Initiative’s industry projects in the paper *The Nature and Causes of Skills Shortages*²⁵.

The broad conclusions reached by NCVET and DEWR, in their analysis of the first six industries that had their skills needs investigated under the Initiative, are in three main areas:

- some industries are experiencing skills needs through most stages of their business cycles, with variation only in the degree of skills needs;
- there has been a shift in the level of reliance of the skilled trades on the original apprenticeships and an increasing use of alternative pathways; and
- there are specific implications for skill formation from rapid technology changes and the scope of the world market. In particular the need for rapid responses in the training system to changes in skills needs and recognition of the equal need of existing and new workers for contemporary skills – an example being the changing skill needs in motor vehicle maintenance in response to the use of electronics and computerisation of vehicles.

The National Industry Skills Initiative has demonstrated the benefits of an industry-Commonwealth partnership to address skill needs into the future and the importance of industry taking the lead in identifying their needs and developing strategies to address them. The Action Plans, deriving from the activities of the Working Groups established for the specific industries under the Initiative, articulate strategies that will help shape industry recruitment, skills recognition and training to redress existing and projected skills needs.

Work to address skills needs in the first industries involved in the Initiative is continuing with further activities developing, for example, to ensure existing workers skills are recognised (electrotechnology), the issues in related occupations are addressed (engineering) and the work with schools to increase awareness of the industries continues (motor retail).

²⁵ November 2002, DEST, *The Nature and Causes of Skills Shortages* (www.skillsinitiative.gov.au)

3.2 INDUSTRY LIAISON AND ADVISORY ARRANGEMENTS

The Department relies substantially on accurate, timely and appropriate information from industry in regard to their training and skills needs. Consultations have recently been undertaken with a view to ensuring that the most effective process is in place for the Minister to obtain advice from industry regarding the national VET system.

Industry Training Advisory Bodies

ANTA is also considering options for the future of industry training advisory arrangements and has issued a discussion paper on its proposed future arrangements. ANTA is keeping the Department informed of the progress of its consultations.

There are also forums that consider industry skills needs that are facilitated by other Commonwealth agencies and in which this Department participates. Close liaison is maintained, for example, with the Department of Industry, Tourism and Resources on the industry Action Agendas.

3.3 IT SKILLS HUB

The Information Technology Skills Hub was launched on 18 May 2001 with \$5m of Commonwealth seed funding, subject to matching funding from industry. The funding comes from two sources: contributions from 18 organisations who are the Hub founders and who together will contribute over \$2m directly and in-kind; and membership fees, commissions and sale of training products.

The principal functions of the Hub include gathering market intelligence, promotion of careers in information technology and telecommunications (IT&T) to young people, especially women, and other people seeking a career change, improving the interface between industry and the education sector to ensure training is relevant and timely, and enhancing training among small employers, including the commissioning of training brokers. The Hub is assisted by an Advisory Council, which is representative of the full range of stakeholder interests.

The initiatives created by the IT Skills Hub include:

- a Youth Hub, an internet portal for young people;
- the *I Can Make IT* project which coordinates a student work placement program in IT for students in Years 10 – 12, run in association with the ECEF;

- an education program, in collaboration with the Leadership Consortium (a consortium of 17 Australian public and private sector organisations), which assists in equipping senior executives with the skills necessary to lead sustainable world-class businesses catalysed by IT; and
- the launching of *Market Monitor* (in collaboration with Gottlieb Research), which will provide details of salary and skill trends for the IT&T industry.

3.4 BACKING AUSTRALIA'S ABILITY²⁶

Backing Australia's Ability is a 5 year innovation action plan, with a \$3b Commonwealth commitment, that builds on Australia's history of innovation and invention with the aim of retaining our talent and ideas and building them into jobs for Australians and growth in Australian industry.

This Commonwealth investment is focused on quality research, IT and development skills and facilities and is increasing university places in targeted areas. It fosters awareness of the value of and the need to educate young people in the enabling sciences, encourage their entrepreneurial talents and supports business decision-making focused on innovation.

University places for mathematics, science and ICT

Backing Australia's Ability has allocated 2000 additional places rising to 5,500 each year in Australian universities, with priority in the ICT, mathematics and science fields and a focus on enterprise and innovation. These places became available at the beginning of the 2003 academic year.

National Innovation Awareness Strategy

Through *Backing Australia's Ability* the Commonwealth has provided \$35 million over 5 years to implement the National Innovation Awareness Strategy (NIAS). The Department is implementing the science awareness component of the Strategy with a funding share of \$17.32m. The Department's NIAS programmes recognise and celebrate outstanding achievers in science and science teaching, through the Prime Minister's Prizes for Science, and encourage community participation in science events and hands-on activities, particularly through support for National Science Week.

²⁶ 2001, Commonwealth of Australia, *Backing Australia's Ability*

The National Science Week events have a strong element of encouraging youth interest in science. The Department also encourages youth interest in science through support for the Rio Tinto Science Olympiads, the Australian Science Teachers' Association, the Australian Science Festival Ltd and the ABC's on-line science website, "The Lab".

Fostering scientific, mathematics and ICT Skills and innovation in Government schools

The 'enabling sciences' - physics, chemistry and mathematics – underpin science and technology more broadly and are fundamental to emerging fields such as bioinformatics, genomics, and nanotechnology. Australia's future growth and prosperity are likely to depend significantly on having a highly skilled workforce many of whom have a good foundation in the enabling sciences.

This requires quality teaching of science and science related subjects throughout the education and training system - not only by the universities and vocational education and training providers, but also in the important formative years of primary and secondary education.

Recently, concerns have been expressed about the teaching of the enabling sciences in Australia and the levels of student participation. In his report *The Chance to Change*²⁷, the Chief Scientist, Dr Batterham, expressed concern at the number of children losing interest in science and mathematics, and falling enrolments in science and mathematics in the senior years at secondary school. Between 1992 and 2000, the number of students in secondary teacher education courses undertaking science subjects declined by 29%. This situation is likely to be compounded as between now and 2010, the retirement of mathematics and science teachers is expected to lead to staffing pressures.

The Commonwealth is responding to these concerns through a range of initiatives announced in its \$3b innovation statement, *Backing Australia's Ability*²⁸. These initiatives include the funding of an additional 2000 university places annually for five years, with priority given to mathematics, science and ICT; the *National Innovation Awareness Strategy*; a \$130m initiative for *Fostering Scientific, Mathematical and Technological Skills and Innovation in Government Schools*, and a commitment to review teaching and teacher education, especially in the fields of science and technology education.

²⁷ August 2000, Department of Industry, Science and Resources, *The Chance to Change*

²⁸ 2001, Commonwealth, *Backing Australia's Ability*, a whole of Government innovation action plan

3.5 REVIEW OF TEACHING AND TEACHER EDUCATION

The Review of Teaching and Teacher Education is being conducted as part of the Commonwealth's innovation statement, *Backing Australia's Ability*.

The Review aims to identify strategies which will increase the number of talented people who are attracted to teaching as a career, especially in the fields of science, technology and mathematics education, and build a culture of continuous innovation at all levels of schooling in Australia. The Terms of Reference for the Review, the *Discussion Paper on Strategies to Attract and Retain Teachers of Science, Mathematics and Technology* and submissions received in response to the discussion paper are available at www.dest.gov.au/teachingreview.

A Committee led by eminent educator Professor Kwong Lee Dow AM, Deputy Vice Chancellor of the University of Melbourne, was established in August 2002 to conduct the Review, with assistance from a broad-based Reference Group.

The Review Committee's first discussion paper, *Strategies to Attract and Retain Teachers of Science, Technology and Mathematics*, was published in September 2002, with a subsequent national call for submissions. Over 140 submissions have been received as part of the comprehensive consultation process underpinning this Review.

The Minister for Education, Science and Training, the Hon Dr Brendan Nelson MP, launched the Interim Report of the Review of Teaching and Teacher Education in February 2003. The Interim Report identifies three key goals:

- to raise the scientific literacy of Australians;
- to strengthen the foundations for world class Australian scientists and innovators to emerge; and
- to support the development of teachers of science, technology and mathematics.

The Interim Report focuses on issues central to the attraction and retention of high quality teachers of science, technology and mathematics. In the case of attraction, these include the need for effective and targeted recruitment policies and practices, attractive employment conditions, building professional standards and mobility, and ensuring quality teacher education. In the case of retention, they include the use of effective induction and support for beginning teachers, strong school-based leadership and team practices, the use of relevant curriculum and engaging pedagogy to enhance student learning, ongoing professional learning for teachers, and better career planning.

In March 2003, the Review Committee will issue a Discussion Paper on fostering innovative capacity in students and a culture of innovation in Australia's schools. The Committee will invite submissions from teachers, interested organisations and others in response to the Discussion Paper.

The final Review report, to be delivered in mid-2003, will include an innovation action plan for the school sector. A copy of the Terms of Reference for the Review is at [Attachment D](#).

3.6 REVIEW OF NURSING EDUCATION

On 30 April 2001, the former Commonwealth Ministers for Education, Training and Youth Affairs and for Health and Aged Care jointly announced the National Review of Nursing Education. The terms of reference included the requirements "to examine factors in the labour market that affect the employment of nurses and the choice of nursing as an occupation and to make recommendations on the types of skills and knowledge required to meet the changing needs of the labour force involved in nursing".

The Ministers for Education, Science and Training and for Health and Ageing released the report of the National Review of Nursing Education, *Our Duty of Care*, on 16 September 2002.

During the review, consultations were undertaken with a wide range of groups and individuals. These included State and Territory health and education departments, nursing registration boards, interested members of the public, hospital staff and key employer and nursing organisations.

Research was also conducted on various aspects of nursing relevant to the terms of reference. Some of this work is also relevant to the terms of reference of this Senate Inquiry. One of the Literature Reviews undertaken for the Review was on *Aspects of Nursing Education: the Types of Skills and Knowledge Required to Meet the Changing Needs of the Labour Force Involved in Nursing* by Aitken, Faulkner, Bucknal and Parker.

Two studies were conducted on the nursing workforce. The studies were undertaken by Dr Chandra Shah and Professor Gerald Burke (*Job growth and replacement needs in nursing occupations*), Dr Tom Karmel and Dr Jianke Li (*The nursing workforce 2010*). While using different approaches both examine the future needs of the nursing workforce.

The literature reviews, the research reports and the Review report, *Our Duty of Care*, are available on the review website at www.dest.gov.au/highered/programmes/nursing/.

3.7 REVIEW OF RURAL VETERINARY SERVICES

Following concerns expressed to the Government about the adequacy of veterinary services for Australia's livestock industries, Mr Peter Frawley was appointed as a consultant, in June 2002, to undertake a review of these services.

Mr Frawley's report to the Commonwealth on Rural Veterinary Services was released on 4 February 2003. Overall, the Review concluded that there is no current crisis in the availability of veterinarians. However, rural veterinarians have to contend with rising costs, a reluctance of producers to utilise their services, long hours, limited social and schooling opportunities for the veterinarians' families. These factors all impact on the willingness of veterinarians to live in rural areas.

With respect to a potential shortage of veterinary specialists, the review recommends that governments take a strategic approach to the utilisation of diagnostic laboratory facilities to provide, among other things, training opportunities and career pathways for veterinary diagnostic specialists; and, as part of the application of National Performance Standards in animal health, regular assessments be made of specialist numbers and any measures necessary to correct identified deficiencies.

The Review also recommends that the Australasian Veterinary Boards Council initiate a review of veterinary science education and registration requirements to ensure that the full range of Australia's needs in the provision of animal health services are being met, particularly with respect to the findings concerning shortcomings in veterinary training.

4. RESEARCH INTO SKILLS NEEDS

4.1 DEST RESEARCH UNDERPINNING SPECIFIC ISSUES

The Australian workforce has undergone a significant transformation over the past twenty years, from a situation where more than half the working age population had not even completed school to a situation where more than 15 per cent hold a degree and less than one-third have not completed school or a post-school qualification. These proportions will continue to improve as older, less well qualified workers are replaced by younger, more educated workers. Recent initiatives will assist in further strengthening the education and training system.

Nonetheless, while Australia has an education and training system that is flexible and responsive to industry needs, skill shortages can develop from time to time in particular occupations.

Demand for skills comprises two main elements:

- Demand arising from industry growth. The converse here is that as the pattern of demand changes over time, for example as a result of ageing of the Australian population, demand for some industries products and hence related skills may decline.
- Demand for skills to replace those leaving the workforce through retirement, death, illness etc. In the next decade replacement demand will be significant in many occupations. Data from the 2001 Australian Bureau of Statistics *Census of Population and Housing* indicated that at the time of the census 18.7% of Australian employees were aged over 50 years. Hence there is potential for high levels of retirement in the next decade, although the extent of retirements will vary from occupation to occupation.

One area where future skill needs exist that are difficult to quantify but are likely to be significant are those that arise from the necessity to upgrade skills within existing occupations. In the absence of skills upgrading, for example to better use new and emerging technologies, there may be mismatches between employer demand for skills and skilled labour to meet requirements which can result in skill shortages in some occupations.

Current skill needs

This Department retains a close interest in contemporary information in regard to skill needs. Using a combination of the Monash University Impact Project that forecasts the economic outlook from their Centre of Policy Studies along with DEWR's *National and State Skills*

Shortages Lists Australia and *Job Outlook*, the Department analyses the likely effects on employment by industry, occupation, qualification and by field of work.

There are strong links between employment growth, any resulting anticipated need for workers in specific occupations, the qualifications they usually have or need and their more general ‘field of work’.

While at the present time the Australian labour market is broadly in balance, following several years of strong economic and employment growth, skill needs have emerged in some occupations, see [Attachment A](#). The emerging industry skills needs are confirmed by a number of the National Industry Skills Initiative projects that were discussed in some detail earlier in this submission.

Projections of growth in employment by industry

The pattern of growth in *new* demand for skills is closely linked to growth in employment by industry. Figure 1 (following) shows projections of employment growth by industry prepared by the Centre of Policy Studies at Monash University, for the period 2000-01 to 2008-09. The data indicate that for this period the most rapidly growing industries are likely to include Business services, cultural and recreation services, hotels etc, education, health and community services and communications. Growth in these industries in turn allows us to project demand for skills considered by occupation (in the major and minor categories) and in fields of work. The relationship between growth in employment and projections of occupational growth also allows assessment of the most likely qualifications that will be required to fulfil projected skills needs.

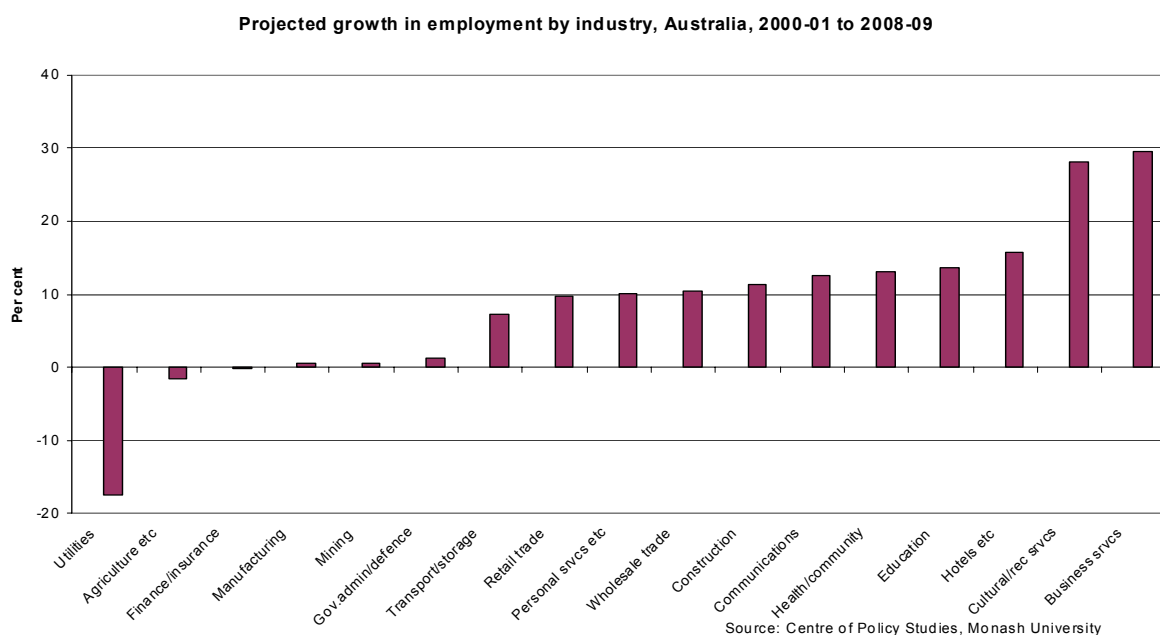


Figure 1: Demand for Skills Considered by Occupation

The projections for growth in employment by occupation group (under the Australian Standard Classification of Occupations (ASCO)) for 2000-01 to 2008-09 are reflected in Table 2 (following) and indicate that the most rapidly growing occupations over this period will be professionals, intermediate clerical, sales and service, associate professionals and managers and administrators. This pattern of employment growth by occupation tends to reflect employment growth in identified industries. For example, projected strong growth in demand in the business services industry is reflected in projected growth in employment of professionals, intermediate clerical, sales and service, and associate professionals.

Projected growth in employment by major occupation, Australia, 2000-01 to 2008-09	
	%
Professionals	20.3
Interm. Clerical/Sales/Srvce	15.3
Associate Professionals	14.1
Managers and Administrators	10.9
Interm. Production/Transport	6.2
Labourers etc	5.7
Elemen. Clerical/Sales/Srvce	5
Tradespersons etc	3.5
Advanced Clerical/Service	-1.3

Source: Centre of Policy Studies,
Monash University

Table 2:

Table 3 (following) goes to a more detailed level and again indicates that occupational growth reflecting the likelihood of strong growth in those occupations' main industries. For example, growth in employment of computing professionals is projected alongside growth in employment in the business services industry.

**Projected employment growth by occupation, Australia,
2000-01 to 2008-09 (ASCO) sub major group**

Occupation	(%)
Business/Information Prof	37.4
Intermediate Sales etc	25.0
Bus/Admin Ass.Professional	22.7
Specialist Managers	22.2
Intermediate Service	21.6
Social/Arts etc Professional	19.2
Science/Bldng/Eng Profess	14.4
Intermediate Plant Ops	12.6
Other Ass.Professional	12.6
Managing Supervisor SIs/Srv	11.6
Skilled Ag/Horticultural	11.4
Other Interm. Prod/Trans	10.5
Education Professionals	9.9
Intermediate Clerical	9.8
Health Professionals	9.6
Generalist Managers	8.5
Factory Labourers	7.8
Other Adv. Clerical/Service	7.7
Elementary Service Workers	6.6
Other Labourers etc	6.6
Elementary Sales Workers	6.2
Elec. Trades	5.8
Food Trades	5.2
Health Ass.Professional	5.2
Mech/Fab Engineering Trades	4.9
Science etc Ass.Professional	4.4
Road and Rail Drivers	3.8
Other Trades etc	3.6
Construction Trades	3.3
Cleaners	1.6
Farmers and Farm Managers	-3.6
Automotive Trades	-6.7
Elementary Clerks	-10.1
Secretaries	-10.5
Intermediate Machine Ops	-11.5

Source: Centre of Policy Studies

Table 3: Monash University

In turn, growth in particular occupations and industries is likely to be reflected in the type and level of demand for skills. For example the Australian Bureau of Statistics Classification of Qualification (ABSCQ) fields listed in Table 4 (following) highlight the potential strong growth in employment of people with qualifications in Science, Society and Culture and Business Administration. This in turn can be linked to projected rapid growth in employment in professional occupations in Science, Social Arts and Business Administration.

**Projected employment growth by ABSCQ field
Australia, 2000-01 to 2008-09**

Field	%
Science	34.1
Society/culture	31.2
Business/admin	29.0
Agriculture	26.3
Miscellaneous	18.7
Education	16.8
Health	14.5
Engineering	5.3
Building	5.0

Source: Centre of Policy Studies
Monash University

Table 4:

Similarly, strong growth in employment of professionals can be linked to projected strong growth in employment of people with degrees or higher qualifications, that can be seen in the ABSCQ data in Table 5 (following) as projected to grow strongly to 2008-09.

**Projected growth in employment by
ABS CQ, Australia, 2000-01 to 2008-09**

	%
Higher degree	30.4
Ass.diploma	30.2
Bachelor	28.6
Post-graduate	27.4
Basic vocational	21.1
UG diploma	17.5
Skilled vocational	3.2
No post-school qual.	2.2

Source: Centre of Policy Studies,
Monash University

Table 5:

Replacement demand

As noted earlier, demand for skill formation reflects both employment growth and the need to replace those people who leave the workforce to retire or for other reasons. A number of studies of the extent of replacement demand are currently underway in Australia, including work by the Centre of Policy Studies, Monash University. Ageing of the workforce may lead to growth in replacement demand in the period ahead. Hence an industry like manufacturing, despite having limited projected growth in employment to 2008-09, can have significant demand for skill formation.

4.2 CROSS-PORTFOLIO

Co-operative arrangements exist between this Department and DEWR, particularly in regard to the research and targeting of areas of skills needs. Research under the National Industry Skills Initiative is available to DEWR.

National Centre for Vocational Education Research

The National Centre for Vocational Education Research (NCVER) has responsibility for vocational education and training research. *A National Research and Evaluation Strategy for VET in Australia*, covering the period 2001 to 2003 was developed in 2000, following extensive consultations with a wide range of interest groups. The Strategy aims to assist and improve the decision-making processes in relation to vocational education and training. Some of the priority areas identified as the focus of this national research effort are on the changing skills of the Australian workforce and the development of the VET sector to respond to future industry skills needs. The Strategy recognises that economic and social change is resulting in ongoing major structural change in Australia's economy and that the VET system faces considerable challenges in keeping up with these changes. Issues being considered in this context are monitoring labour market changes and the resulting skill requirements and identifying skills needs of emerging industries and their anticipated impact on the delivery of VET. Some of the specific research projects, full details on which are available at www.ncver.edu.au/voced.htm, include:

- *Models of labour market supply and demand and their use in projecting VET requirements;*
- *Demand and Supply of Skills in Australia; and*
- *Meeting the Demand: the needs of VET clients and Resourcing of VET in Australia: Meeting needs?*

5. CONCLUSION

This has been a very short summary of the programmes and initiatives currently operating within the Department which are designed to support and/or initiate participation in vocational education and training, particularly through New Apprenticeships and which build the skills base of Australian Industry. Further details of all Departmental policies and programmes are available on our website, www.dest.gov.au.

6. ATTACHMENTS

A. National and State Skills Shortage Lists – Australia 2003

B. New Apprenticeships Incentives

C. National Industry Skills Initiative websites

D. Review of Teaching and Teacher Education Terms of Reference

National and State Skill Shortage Lists – 2003

The National and State Skill Shortage Lists are based on labour market intelligence undertaken by DEWR. Methodological information is provided in Attachment A and B. The Skill Shortage Lists cover Trades, Professionals and Information and Communication Technology (ICT) skills. Shortages are described as being state wide (S), regional (R) or metropolitan (M). The lists also identify recruitment difficulties (D) in situations where 'skill shortages' are not evident, but where some employers have experienced recruitment problems.

The Skill Shortage lists incorporate information on specialisations in shortage in particular States.

PROFESSIONALS (February 2003)

- Child Care Coordinator
- Child Care Worker
- Registered Nurse
 - Accident/Emergency
 - Aged Care
 - Cardiothoracic
 - Community
 - Critical/Intensive Care
 - Indigenous Health
 - Neonatal Intensive Care
 - Neurology
 - Oncology
 - Operating Theatre
 - Paediatric
 - Palliative Care
 - Perioperative
 - Renal/Dialysis
 - Registered Midwife
 - Mental Health Nurse
 - Enrolled Nurse
- Dentist
- Pharmacist (Hospital/Retail)
- Occupational Therapist
- Physiotherapist
- Diagnostic Radiographer
- Radiation Therapist
- Sonographer
- Nuclear Medicine Technologist
- Secondary Teacher (specialisations only)
 - Manual Arts/Tech Studies
 - Maths
 - Physics/Chemistry
 - General Science

ICT SKILLS – SPECIALISATIONS ONLY (October 2002)

- Progress
- Java Security and Electronic Commerce
- Peoplesoft
- Siebel
- CISSP

TRADES (December 2002)

- Metal Fitter
- Metal Machinist
- Toolmaker
- Metal Fabricator
- Welder
- Sheetmetal Worker
- Motor Mechanic
- Auto Electrician
- Panel Beater
- Vehicle Painter
- Electrician
- Refrigeration and Air Conditioning Mechanic
- Bricklayer
- Plumber
- Chef
- Cook
- Pastrycook
- Cabinetmaker
- Hairdresser
- Furniture Upholsterer

Skill Shortage List - Professionals February 2003

ASCO	Occupation ¹	AUST	NSW	VIC	QLD	SA	WA	TAS	NT
CHILD CARE									
1295-11	Child Care Coordinator*	N	S*	S	S	D	S*	S	S
6312-11sp	Child Care Worker*	N	S*	S	S	S	S*	S	RD
ENGINEERS¹									
2124	Civil Engineer*	N	S*	S		S	S*		S
2125-11	Electrical Engineer*			S*		D	D*	D	
2125-12	Electronics Engineer*		MD*			D			
2129-17	Chemical Engineer						S		
ACCOUNTANTS*									
			RD	S*	S	D	M*R	S	RD
REGISTERED AND ENROLLED NURSES									
2323-11	Registered Nurse	N	S	S	S	S	S	S	S
	Operating Theatre	N	S	S	S	S	S	S	S
	Accident/Emergency	N	S	S	S	S	S	S	S
	Cardiothoracic	N	S	S	S	S	S	S	S
	Neurological	N	S	S	S	S	S	S	
	NeoNatal Intensive Care	N	S	S	S	S	S	S	S
	Paediatric	N	S	S	S	S	S	S	S
	Critical/Intensive Care	N	S	S	S	S	S	S	S
	Renal	N	S	S	S	S	S	S	S
	Aged Care	N	S	S	S	S	S	S	S
	Oncology	N	S	S	S	S	S	S	
	Palliative Care	N	S		S	S	S	S	
	Perioperative	N	S	S	S	S	S	S	S
	Indigenous Health	N	S		S	S	S		S
	Community Nursing	N	S		S	S	S	S	S
2324-11	Registered Midwife	N	S	S	S	S	S	S	S
2325-11	Mental Health Nurse	N	S	S	S	S	S	S	S
3411	Enrolled Nurse	N	S	S	S	S	S	S	S
HEALTH SPECIALISTS									
2381	Dentist ¹	N			S	S	S*	S	
2382-11,15	Pharmacist* (Hospital/Retail)	N	S*	S	S*	S	S	S	S
2383-11	Occupational Therapist*	N	S*	S	S	S	S*	S	S
2385-11	Physiotherapist*	N	S	S*	S	S	S*	S	S
2386-11	Speech Pathologist ¹	N	S	S	S		RD	S	
2391-11	Diagnostic Radiographer*	N	S*		S	S	R	S	
2391-13	Radiation Therapist ¹	N	S	S	S	S	S	S	
2391-15	Nuclear Medicine Technologist	N	S	D	S		S	S	RD
2391-17	Sonographer*	N	S*		S	S	S	S	
2399-11	Audiologist ^{1*}				R*	S	S*		
6391	Dental Assistant ¹				S	D			S

ASCO	Occupation ¹	AUST	NSW	VIC	QLD	SA	WA	TAS	NT
SECONDARY TEACHERS									
2413-11	Secondary Teacher*	*		*	S*	*		R*	S
	Manual Arts/Tech Studies	N	S	S*	S	S			
	Maths	N	S	S	S	S		R	S
	Physics/Chemistry	N	S		S	S		R	S
	General Science		S	S	S			R	
	Music			S					
	LOTE*			S*	S	S			
	Home Economics					S			
	Information Technology			S	S				
	Senior English							R	
	Special Needs				S				
	Agricultural Science				S				
	Physical Education			S					
2511	Social Worker ¹			RD		D		RD	S
2521	Lawyers*		S*	D*	S	D	D*	R*	

¹ = Not all occupations assessed in all States

* = See comments on specialisations

N = National shortage

S = State-wide shortage

M = Shortage in metropolitan areas

R = Shortage in regional areas

D = Recruitment difficulties

RD = Recruitment difficulties in regional areas

Child Care Worker: NSW: Shortages are greatest in the western suburbs of Sydney and for long day care. WA: Shortage is greatest in some regional and outer metropolitan areas.

Child Care Coordinator: NSW: Shortages are greatest in the western suburbs of Sydney and for long day care. WA: Shortage is greatest in some regional and outer metropolitan areas.

Civil Engineer: NSW: Current shortages especially for Civil Engineers in design, general project management, water supply, drainage and sewerage and local government. WA: Shortage particularly for those with oil and gas and/or design experience.

Electrical Engineer: VIC: Shortage restricted to Electrical Engineers experienced in working with high voltage. WA: Recruitment difficulties for Electrical Engineers with oil and gas experience.

Electronics Engineer: NSW: Recruitment difficulties for senior Engineers in Sydney with specialised experience in areas such as avionics, defence technology and firmware.

Accountant: VIC: Shortages of Chartered Accountants and taxation specialists. WA: In metropolitan areas, shortage is restricted to experienced tax and insolvency (chartered or certified practising) accountants. More general shortages are apparent in regional areas.

Lawyer: NSW: Shortages particularly for Lawyers with experience in financial services, banking, property, fund management, commercial litigation and general corporate and commercial work. VIC: Recruitment difficulties for lawyers experienced in taxation. WA: Recruitment difficulties for Lawyers experienced in commercial and corporate law, and in regional and remote areas for Lawyers experienced in family law. TAS: Shortages are particularly evident in northern Tasmania and the north-west coast, and for lawyers experienced in family and criminal law.

Dentist: WA: Shortage is greatest in rural and remote areas and in public health.

Pharmacist: NSW: Shortages most severe for hospital pharmacists. QLD: Shortages of Retail Pharmacists are more acute in regional areas.

Occupational Therapist: NSW: Shortages in most specialisations, especially mental health.

WA: Shortage is greatest in aged care facilities and rural areas.

Physiotherapist: VIC: Shortages in paediatrics and geriatrics, and more general regional shortages. WA: Shortage is greatest for paediatric physiotherapists and for physiotherapists in rural areas.

Diagnostic Radiographer: NSW: Shortages especially in theatre, mammography and CT.

Sonographer: NSW: Shortages for generalists and in most specialisations, including vascular and echo-cardiology.

Audiologist: QLD: Shortage is evident in regional areas outside south east Queensland. WA: Shortage is greatest in rural areas.

Secondary Teacher: specialist shortages only as listed. QLD: Specialist shortages as listed are State-wide, but more general shortages are apparent in all areas except south-east Queensland. SA: Shortages restricted to specialist subject areas as listed. TAS: Shortages restricted to specialist subjects as listed in regional areas.

Manual Arts/Technology: VIC: Shortages especially for auto, wood and metal.

LOTE Teachers: VIC: Shortages especially Indonesian, Japanese, German, Italian and French.

Skill Shortage List - Trades

December 2002

ASCO	Occupation	AUST	NSW	VIC	QLD	SA	WA	TAS	NT
ENGINEERING TRADES									
4112-11	Metal Fitter*	N	D	S*		S	S*		S
4112-13	Metal Machinist*	N	R*	S*	S	S	S		S
4113-11	Toolmaker*	N	S*	S*	S	S	D		
4122-11	Metal Fabricator*	N	S*	S		D	S		R
4122-15	Welder	N	S	S		S	S		R
4124-11	Sheetmetal Worker*	N	S*	S*	S	S		S	S
VEHICLE TRADES									
4211-11	Motor Mechanic*	N	S*	S	S	S	R*		S
4212-11	Auto Electrician	N	S	S	S	S	S	S	S
4213-11	Panel Beater	N	S	S	S	S		S	S
4214-11	Vehicle Painter	N	S	S	S	D		S	R
ELECTRICAL/ELECTRONICS									
4311-11,13	Electrician*	N	S*	R	S*	S*		R-D	S
	Refrigeration and								
4312-11	Airconditioning Mechanic*	N	S*	S	S	D		S	S
4314, 4316	Electronic Instrument Trades*		R*					R-D	
4315-11	Electronic Equipment Trades*		S	D*				R-D	
CONSTRUCTION TRADES¹									
4411-11	Carpenter and Joiner			R-D	S	S			R-D
4413-11	Roof Slater and Tiler			S					
4414-11	Bricklayer	N	M	S	S	M	S	S	S
44115-11	Solid Plasterer			S					
4421-11	Painter and Decorator				S				
4431-11	Plumbers*	N	M*	D*		S	S*	S	S
FOOD TRADES									
3322	Chef*	N	S	S	S*		S*	S*	S
4513-11	Cook	N	S	S	R				S
4512-13	Pastrycook*	N	S	S	S*		S		S
PRINTING TRADES									
	Graphic Pre-press								
4911-11	Tradesperson				R				
4912	Printing Machinist		M	R	R	S			
4913-11	Binder and Finisher			S	R				
WOOD TRADES									
4921-11	Wood Machinist		S						
4922-11	Cabinetmaker*	N	S*	S	S	S	S	S	R
OTHER TRADES									
4931-11	Hairdresser	N	S	S	S	S	S	S	R
4942-11	Furniture Upholsterer*	N	S*	S	S	S		S	

¹ = Not all occupations assessed in all States

* = See comments on specialisations

N = National shortage

M = Shortage in metropolitan areas

D = Recruitment difficulties

S = State-wide shortage

R = Shortage in regional areas

R-D = Recruitment difficulties in regional areas

Metal Fitter: VIC: shortage especially for cnc/cad/cam; pneumatics; hydraulics; grinding; centre lathe turning; continuous process; TIG, MIG, OXY welding; sheetmetal machining; and reading drawings. WA: shortages are particularly for diesel and mobile plant mechanics.

Metal Machinist: NSW: shortage for specialisations in lathe and milling, grinding, boring and honing. VIC: shortage especially for cnc/cad/cam, reading drawings and working to fine tolerances, as well as sound experience in machining, milling, grinding and toolmaking.

Toolmaker: NSW: shortage especially for skills in machine setting, CAD, CNC milling and press tools. VIC: shortage especially for cnc/cad/cam. QLD: shortage of cnc/nc skills.

Metal Fabricator: NSW: shortages especially for tube and pipe welding and ability to work off plans.

Sheetmetal Worker: NSW: shortage especially for stainless steel specialisation. VIC: shortage especially for skills in stainless steel, aluminium, air-conditioning duct work, ship building and marking out.

Motor Mechanic: NSW: shortages especially for skills in heavy vehicle, reconditioning engines, LPG conversion. WA: shortage particularly evident for truck mechanics.

Electrician: NSW: shortage for lift mechanics only. QLD: shortage of electrical appliance serviceperson and industrial electrician. SA: recruitment difficulties for programmable logic control (PLC) skills and special class electricians.

Refrigeration and Airconditioning Mechanic: NSW: shortage especially for airconditioning commissioning technicians.

Electronic Instrument Trades: NSW: recruitment difficulties for General Communication Tradesperson.

Electronic Equipment Trades: VIC: recruitment difficulties for radio and television repairer. TAS: shortages especially for PLC skills.

Plumber: NSW: shortage especially in residential sector. VIC: recruitment difficulties for maintenance and gas appliance specialists statewide, and more general recruitment difficulties in regional areas, especially roof plumbers. WA: shortages for roof plumber only.

Chef: QLD: metropolitan shortages are restricted to top level international chefs. WA: shortages exist in some ethnic cuisines, notably Japanese, Indian, Thai and traditional Italian. TAS: shortages for head chefs.

Pastrycook: QLD: shortages most acute in regional tourist centres such as the Gold Coast and Cairns.

Cabinetmaker: NSW: shortages are especially severe for CNC and Cabinetmakers specialising in kitchens.

Furniture Upholsterer: NSW: shortage in manufacturing, repair and restoration of custom furniture.

National and State ICT Skill Shortages (surveyed October 2002, released February 2003)

ICT Employment Trends and Skill Shortage Survey 2002

SKILL SHORTAGES* by ICT

SPECIALISATION	AUST	NSW	VIC	QLD	SA	WA	TAS	ACT	NT
DATABASE									
DB2		D		D				D	
Oracle				D	D	D	D	D	D
MS Access									
Microsoft SQL Server				D	D	D			D
Sybase SQL Server		D		D	S			D	
GENERAL APPLICATION DEVELOPMENT/SOFTWARE ENGINEERING									
PowerBuilder				D	S				
Java				D	D			D	D
Java Script								D	
C++				D	D				
Delphi		D		D	D			D	
Visual Basic									
Lotus Notes					D	D			S
Progress		D		D	S				
Powerhouse		D		D	D				
INTERNET, NETWORKING/LAN/WAN									
Novell Netware									
TCP/IP									D
IPX									
SNA		D		D					D
Microsoft NT Server									D
Ethernet									D
Advanced Web Design		D		D	D			D	D
HTML									D
ASP					D				D
Xml		D			D	D		D	D
Firewall/Internet security		D	D	D	S	D		D	D
Java Security (mainly J2EE) and electronic commerce	S	S		S	S	D		D	D
MULTIMEDIA									
Graphics									
Multimedia									

**SKILL SHORTAGES* by ICT
SPECIALISATION**

	AUST	NSW	VIC	QLD	SA	WA	TAS	ACT	NT
OFFICE/E-MAIL/GROUPWARE									
Groupwise				D	D				D
Lotus Notes				D	D	D			D
Microsoft Exchange					D	D			
CC:Mail				D					D
Netscape									D
Eudora									D
CLIENT/SERVER APPLICATIONS									
COBOL								S	
SAP	S	S		D	S	S		D	S
PeopleSoft	S	D	D	S	S	D		D	S
Siebel		D	D	S	S	D		D	
SYSTEM SOFTWARE SUPPORT									
Help Desk									D
Data Warehousing		D	D	D	D	D		D	D
OPERATING SYSTEMS									
Unix		D		D	D	D		D	D
Windows									D
Windows NT									D
Solaris		D		D	D	D		D	S
Linux		D		D	D				D
HP-UX		D		D	D				S
VMS		D		D	D	D			D
COMMUNICATIONS									
Radio		S	D		S				D
SDH		D			S				
WDM		D		D	D				
GSM		S	D		D				
CDMA		S			D				
Broadband CDMA		S	D	D	D				
Satellite design		S	D	D	D				S
TDMA		S		D	S				
VSAT		D		D	S				
Photonics		S		D	S				
PROCESS & SYSTEMS MANAGEMENT									
Project Management									D
Systems analysis					D	D			D
Broad commercial business understanding						D			S

**SKILL SHORTAGES* by ICT
SPECIALISATION**

	AUST	NSW	VIC	QLD	SA	WA	TAS	ACT	NT
E-COMMERCE (EG BUSINESS/FINANCIAL MANAGEMENT/ANALYSIS/CUSTOMER SERVICE)									
E-commerce security (non programming)		D	D	D	S	D		D	S
SECURITY									
Network Security		D		D	D	D		D	D
Risk Management		D	D	D	D	D			D
CISSP*	S	S	D	D	S			D	S
PKI		S	D	D	S			D	D
OTHER SPECIALISATIONS NOT LISTED ABOVE									
GIS, Mapinfo		S		D	D	D			
IDMS					D				
ADA in Defence					D				
C#				D					
Cisco Certified Internetwork Expert (CCIE)				S					
Crystal Reporting								D	
M204 Programming/Analysis								S	
Visual C++					D				
Hi Level Cool-Gen								S	
GIS (eg Mapinfo)				D	D	D			
.Net technologies				S		S 1		S	
TELON								S	
Pro IV						S 1			
SMS						S 1			

* S = Shortage D = Recruitment Difficulty

1 = Based on only one response

National and State Skill Shortage Lists – Explanatory Notes

The Department of Employment and Workplace Relations (DEWR) is the Australian Government agency with prime portfolio responsibility for monitoring skill shortages. DEWR assesses skill shortages by a number of means including contact with employers, industry, employer and employee organisations and education and training providers. The prime focus of DEWR's agency approach is surveying employers who have recently advertised vacancies for selected skilled occupations. In assessing skill shortages, this industry and employer intelligence is considered in conjunction with statistical information on demand and supply trends for the selected occupations. Skill shortage assessments cover Trades, Professionals and Information and Communication Technology (ICT) skills.

DEWR, through its Economic and Labour Market Analysis Branch and Labour Economics Offices (LEOs) in each State capital and Darwin, monitors and assesses skill shortages. Although skill shortages are monitored closely, there are may be localised or specialist shortages which are not reflected in these lists. The reasons for shortages are complex and varied, and may result from economic or demographic change, cyclical fluctuations in labour demand, emerging demands of new technology, lack of flexibility in wages and regional mismatches.

The specific occupations and skills to be included in the annual skill shortage assessment program (six monthly, in the case of ICT skills) are determined through consultations with peak industry bodies, other key stakeholders and DEWR State Offices. The program is conducted through Labour Economics Offices (LEOs) in DEWR State Offices. There is considerable ambiguity about the term 'skill shortages' in industry and media discussions, and in developing guidelines for training, migration, labour market programs and regional skills analysis. The term 'skill shortages' is often a surrogate for more general recruitment difficulties, or skill gaps (deficiencies in the skills of existing workers). DEWR skill shortage monitoring and assessment focuses mainly on skill shortages as defined below.

Skill shortages

Skill shortages exist when employers are unable to fill or have considerable difficulty in filling vacancies for an occupation, or specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and reasonably accessible location. Shortages are typically for specialised and experienced workers, and can coexist with relatively high unemployment overall or in the occupation. An occupation may be assessed as in shortage even though not all specialisations are in shortage. Occupations may be in shortage in particular geographical areas and not in others. Although skill shortages are monitored closely,

there may be localised or specialised shortages that are not reflected in these lists. For each State, skill shortages are rated as evident in the capital city only (M – metropolitan), in regional areas (R – other than the capital city) or statewide (S). If there are shortages in the three largest States, or in a majority of States, then the occupation is rated as being in national shortage (N). Skill shortages involve skills that require a significant period of training and/or experience to acquire.

As a result of consultation with industry, particularly peak industry bodies, DEWR has increased the focus on specialisations in shortage as well as the employability skills and personal attributes of most concern to employers. Where these skills/attributes impact upon skill shortages, details are provided in explanatory notes at the end of the relevant skill shortage list.

In the National and State skill shortage lists, especially ICT skills, the term 'recruitment difficulties' is used as a way of signalling a degree of skill shortage - shown as "D" in the skill shortage lists. This provides an option for recognising skills where employers are experiencing some difficulty in finding suitable workers even though a broader skill shortage is not evident.

The reasons for skill shortages are complex and varied and may result from economic or demographic change, those not completing training and qualified workers (not working in the occupation for which they are qualified and/or experienced), cyclical fluctuations in labour demand, emerging demands of new technology, lack of flexibility in wages and regional mismatches.

Recruitment difficulties

Recruitment difficulties occur when employers have some difficulty in filling vacancies for an occupation. There may be an adequate supply of skilled workers, but employers are still unable to attract and recruit sufficient suitable employees. The recruitment difficulties may be due to characteristics of the industry, occupation or employer, such as: relatively low remuneration, poor working conditions, poor image of the industry, unsatisfactory working hours, location hard to commute to, ineffective recruitment advertising and processes or organisation-specific and highly-specialised skill needs.

Skill shortages may exist outside those included in the skill shortage lists. For example, an occupation or skill, particularly where the number employed is very small, may not be identified in consultations with industry bodies and other key stakeholders, and pockets of shortage may exist in isolated locations. In addition, variations in national or regional industry activity may cause shortages not apparent at the time when skill shortage lists are being prepared. The lists do not include skill shortages involving skills that require only a very limited period of training and/or experience to acquire.

Overview of Incentive arrangements

Commonwealth New Apprenticeships Incentives (amounts inclusive of GST)

To be eligible to receive Commonwealth New Apprenticeships Incentives, both the employer and the New Apprentice must satisfy the relevant eligibility criteria as set out in the Commonwealth New Apprenticeships Incentives Guidelines.

<i>Incentive</i>	Current arrangements until 30 June 2003		New arrangements from 1 July 2003	
	<i>Certificate II</i>	<i>Certificate III or IV</i>	<i>Certificate II</i>	<i>Certificate III or IV</i>
	\$	\$	\$	\$
Commencement	1,375	1,375	1,375	1,650
Recommencement for employers who recommence an out-of-trade Certificate III or IV New Apprentice, except for 'not for profit' Group Training Companies	nil	825	nil	825
Recommencement for 'not for profit' Group Training Companies	nil	550		
Progression for employers who progress a New Apprentice from Certificate II training to Certificate III or IV training	nil	1,375	(paid equally to all employers including 'not for profit' Group Training Organisations)	
Rural and Regional progression <small>(for New Apprentices commencing/recommencing before 1 January 03)</small>	nil	1,100	(discontinued, but reallocated to commencement and completion on a 20:80 split)	
Rural and Regional commencement for all employers of a Certificate III or IV New Apprenticeship in an occupation or trade identified as a skill shortage in a non-metropolitan area <small>(As part of the Government's new drought assistance package, this arrangement was brought forward to 1 January 2003)</small>	nil	1,100	nil	1,100*
Completion for employers except for 'not for profit' Group Training Companies	nil	1,650	nil	2,750
Completion for all employers including 'not for profit' Group Training Organisations who recommence an out of trade Certificate III or IV New Apprentice	nil	1,650		
Group Training Organisations	1,100	1,100	(paid to all employers including 'not for profit' Group Training Organisations)	
			to be phased out by 2005-06	

Incentive	Current arrangements until 30 June 2003		New arrangements from 1 July 2003	
	Certificate II	Certificate III or IV	Certificate II	Certificate III or IV
	\$	\$	\$	\$
additional incentive for traineeship commencement			1,100 - 03/04 550 - 04/05 0 - 05/06	1,100 - 03/04 550 - 04/05 0 - 05/06
Group Training Organisations additional incentive for mentoring Certificate II New Apprentices paid on completion		N/a	1,100 from 04/05	nil
Additional incentive for women in a non-traditional traineeship or apprenticeship	1,100	1,100	1,100	1,100
Additional incentive for Sporting Operations Traineeship:				
- commencement	1,650	nil	1,650	nil
- completion	1,650	nil	1,650	nil
Additional incentive for Exceptional Circumstances "declared drought area" certificate:				
- commencement	1,650	nil	1,650	nil
- completion	1,650	nil	1,650	nil
Additional incentive for Mature Aged Workers (over 45) who have been welfare dependent, those returning to the workforce or those made redundant:		N/a		
- commencement			825	825
- completion			825	825
Disabled Assistance	The Commonwealth provides assistance to employers of disabled Apprentices . Assistance includes Disabled Apprentice Wage Support (DAWS), Tutorial Assistance and Mentor/Interpreter Assistance. Workplace Modifications is also available to Trainees.		Commonwealth assistance extended to all New Apprentices (Certificate level II to IV), including Trainees .	
Living Away From Home Allowance (LAFHA)	New Apprentices may be eligible for LAFHA of \$72.80 per week for the first 12 months of the New Apprenticeship if he/she had to move away from their parental/guardian home to commence or remain in a New Apprenticeship or are homeless.		LAFHA increased and extended to the second year, payable at \$77.17 per week for the first 12 months and \$38.59 for the second 12 months of the New Apprenticeship if they had to move away from their parental/guardian home to commence or remain in a New Apprenticeship or are homeless.	

New Incentives introduced 1 January 2003 (amounts inclusive of GST)

<i>Incentive</i>	Incentive arrangements from 1 January 2003 until 30 June 2003		New arrangements from 1 July 2003	
	<i>Certificate II</i>	<i>Certificate III or IV</i>	<i>Certificate II</i>	<i>Certificate III or IV</i>
	\$	\$	\$	\$
Additional commencement incentive for school based New Apprenticeships	825	825	825	825
Additional retention incentive for school based New Apprenticeships	825	825	825	825
Additional Innovation New Apprenticeships incentive	nil	1,210	nil	1,210

National Industry Skills Initiative websites

National Industry Skills Initiative	www.skillsinitiative.gov.au
Commercial Cookery	www.chef.org.au
Electrotechnology	www.electrotecfutures.com.au
Retail motor	www.autocareers.com.au
Engineering / manufacturing	www.zoom.aigroup.asn.au
Rural	www.ruralskills.com.au/Ontrack/menu.htm

Review of Teaching and Teacher Education Terms of Reference

The Prime Minister in launching the Government's Innovation Statement [Backing Australia's Ability](#) in January 2001 announced a range of measures to pursue excellence in research, science and technology and to build an even more highly skilled workforce. In this statement the Prime Minister announced a number of initiatives for immediate implementation and a number of strategies for longer-term implementation. One of the major long-term strategies announced was to

".....ensure that talented people are attracted to teaching as a career, especially in the fields of science and technology education, teaching and teacher education will be reviewed, in consultation with State and Territory Governments" (BAA p 23).

To implement this strategy, a Review Committee will be established to conduct a review of teaching and teacher education. Particular emphasis will be placed on the fields of science, technology and mathematics. The review will focus on teacher work force needs in these areas in the short term and skills teachers need to build a culture of continuous innovation in Australia's Schools in the longer term (2012).

The review will:

1. Build upon comprehensive work that analysed teacher supply and demand undertaken by the then Commonwealth Department of Education Training and Youth Affairs (DETYA) under the auspices of MCEETYA;
2. Draw upon recent literature and initiatives to describe the teaching skills needed to develop a culture of lifelong learning and innovation in Australia's school students;
3. Explore the impact of innovative pre-service and in-service education programmes on the development of teachers' pedagogic practices to enhance their students' appreciation and capacity for learning, creativity and innovation, with particular emphasis on the fields of science, technology and mathematics;
4. Map current skills and propose strategies for equipping teachers with the knowledge and skills to create an innovative learning culture amongst their students;
5. Examine leadership practices that attract and retain teachers, especially in the areas of science, technology and mathematics;
6. Produce an interim report, by end 2002, on strategies to attract and retain science, technology and mathematics teachers in Australia's schools; and

7. Produce an innovation action plan for the school sector, by mid 2003. This action plan will encapsulate a shared understanding of the school exit outcomes necessary to equip school graduates for the knowledge economy and society. The action plan will consider the current situation and future scenarios.