Revolutionary “experiments” in employment-based training are paying big dividends for business.

Imagine you are in a warehouse with temperatures at minus 4°C or minus 28°C. It’s a working environment few would be familiar with. Yet society as we know it would not function without people prepared to work in these freezing conditions on a daily basis.

P&O Logistics operates a cold storage facility for major supermarkets that distributes – sometimes twice a day – frozen food picked from racks eight metres high. A group of some 150 employees - some working with frosty beards - make it run like clockwork. They love their job despite the conditions. The average job tenure exceeds 10 years. What makes the difference? They all have an Australian vocational qualification which provides opportunity for career development and stronger job security.

I could tell you a similar story for Dairy Farmers, Centralkin or the local RSL Club. All work with teachers, often from a nearby TAFE college, sometimes working 24/7, bringing skill development out of the classroom and into the workplace. They establish study projects that not only upgrade skills, but reinvent processes. Imagine the pride on both sides – a true partnership.

A partnership of a different kind exists between Bakers’ Delight and the Sydney Institute of TAFE. Training 70 bakers at any one time, Bakers’ Delight wants all employees to have an Australian vocational qualification.

Then there’s Wholesale Timbersource, a company with about nine employees, who have four trainees at Levels I to III. Wholesale Timbersource won the Prime Minister’s Award for Small Business Training last year and the owners fully admit that without the commitment to skilling they wouldn’t exist. The trainees, around the kiln and in the office, wax eloquent at the opportunities opened up to them as a consequence of the training agenda.

This is the National Training Framework at work. Industry is using it to upskill its workers on the job, improve worker dignity, reinvent processes and grow revenue.

But the Framework has experienced unintended but further beneficial consequences.

At Coolum High School in Queensland, there are now about 250 students in Year 11 and 12. Seventy students are New Apprentices. They will graduate with their Year 12 certificate and an Australian Qualification Framework Certificate II or even Certificate III. Many intend to go on to university.

Nearly 200,000 school students throughout Australia are now studying for an Australian vocational qualification together with their school studies. And the number is rising by the minute. There are 400 such students in Kempsey, NSW alone!

Another experiment can be seen at Mawson Lakes in South Australia. There you will find a campus with a school, college, and university working together to achieve the very best outcome for young people. And it’s not the only example.

All of this is nothing short of a revolution. When you talk to business management, teachers, students or workers, they cannot hide their enthusiasm for this new way of doing things.

Integrated campuses are still working out what it all means. Schools are struggling to nurture adequate industry connections and not all companies follow the lead set by companies like P&O and Dairy Farmers. But we’ve made a great start.

I hope you enjoy reading this issue of B-HERT News from the Australian National Training Authority (ANTA) and more importantly, that you’ll go out into the workplace and see, like I do, the sheer pleasure on people’s faces and the business results of a quality national training program.
The charter of vocational education and training in Australia is broader than any of us imagine. The thousands of providers of education and training are positioned as a point of convergence for almost all aspects of Australian society. They grapple daily with the challenge of meeting the needs of enterprises and those of individuals, and finding ways of training that work for industry. The best of them go further than that: they work with enterprises to develop training that directly benefits the operational effectiveness and bottom-line of enterprises and opens doors for individuals that would otherwise be closed.

This charter goes well beyond old notions of education and training; whenever people talk of industry policy, of innovation, of transport and regional development, of health, of employment policy, and of community services, inevitably the conversation always turns – as it must – to the role that vocational education and training needs to play.

With the changes in the nature of work – new occupations, the rate of change in the skill needs of traditional occupations, new ways of organising work, and changing employment patterns – the time has never been more important for vocational education and training. Many people now understand that ongoing learning and skills development are essential. It is time that we treat our entire education system as the rich and intricate ‘traffic zone’ that it is. People can and should move between school and TAFE and university, throughout life, without ever entering a one-way street. Exiting university with an undergraduate degree in hand does not mean that you are “done with it”, nor does it mean that your future learning experiences must be in higher education. Ultimately, it is the usefulness of learning that determines what the majority of learners and employers seek. It is time that the onus was shifted to the providers of education from every sector, to integrate their products and services at a point before they reach the clients. Some are already doing it well.
Vocational education and training is also a place for many people: it’s a place for around one in eight of Australians of working age. Vocational education and training is a place where you can get to a campus in more than 400 Australian towns or anywhere online. Vocational education and training is a place where you can become skilled in any of 500 different occupations.

Vocational education and training in Australia has been transformed. Industry and businesses have taken the lead in defining the competencies that industry wants to meet the skill needs of the nation. Training providers have been adding their expertise to ensure these outcomes can be delivered. Altogether more than 15,000 people have so far participated in the development and ongoing improvement of national Training Packages. These packages now contain qualifications for nearly 85% of the Australian workforce, including industries which up till now have had little or no education or training available. The training packages encourage individual enterprises, in partnership with providers, to tailor the delivery to differentiate a company brand in the marketplace. Companies are realising that the organisational capability they need to achieve and maintain their differentiated brand is directly linked to their investment in vocational education and training.

While there is always a huge amount of work still to do, there is no doubt in my mind that this uniquely Australian education and training approach is coming of age. As the saying goes “no place like here, no time like the present”.

In this issue of B-HERT NEWS, we have assembled a suite of articles to give a sample of some of the current work on practical outcomes and policy challenges in this new world of vocational education. Our brief for the issue was to focus on the value that vocational education training can add to business, its likely growing significance in the future, and the importance of user-friendly pathways. The articles have been commissioned with these themes in mind.

Two articles in this issue cover current and future skill needs, and innovative ways of responding to these - including the important subject of generic and employability skills. Other articles look at the employer side of vocational education and training, and how our understanding of learning at work has changed. Some focus on the need for a seamless, fluid training market in which training providers consciously think in terms of what I call the ‘market for learning’, and where learners can articulate from one place of learning to another and across educational sectors.

As ‘the quiet revolution’ in vocational education and training gathers pace, we are constantly challenged to continue to improve and adapt within the ever changing and dynamic world in which we operate. A balancing consideration is the need to provide sufficient continuity and stability in the vocational education and training system, to allow the reforms to bed down. Some of this tension emerges as a theme through these articles. Ultimately, the balance is maintained by vocational education and training providers ensuring that what is designed and delivered actually works on the ground – for enterprises and individuals. It’s a big ask, but many are succeeding.

The following articles cover a rich array of issues and a range of possibilities for challenge and change, particularly at the cross-sectoral level. If we can develop linkages that are more effective, more creative and more realistic, so much the better for our education system and its many clients.

I look forward to working on the ‘common ground’, building an Australian education and training system that is in tune with the minds of business people, and the aspirations of all Australians.
Developing a culture of innovation need not be that difficult. Contrary to public debate, innovation is not just about cutting edge product development and expensive research. Neither is it about the solitary genius or boardroom brainstormer. It is a process that can be learned and used by everyone in the organisation to generate and develop ideas.

In fact, in an increasingly competitive and change-driven economy, organisations will need to adopt innovation in a systematic way. This means that employees will need the skills to think innovatively and managers will need the skills to foster innovation.

Education has a significant role to play in the development of the necessary skills and attitudes. The challenges vocational education and training faces with regard to innovation can be considered two-fold. First, it has the responsibility to provide a workforce with the skills needed to thrive in the workplace. Second, it increasingly needs to provide innovative services and training delivery to the workforce.

**Innovation skills**

So how do we make it happen? How do we participate effectively and efficiently in the knowledge economy?

**Innovation should not be left in the hands of a select few in the workplace. The workplace of the future demands that we all have the ability to constantly upgrade our knowledge and skills. And the skill in great demand is innovative thinking.**

Innovation @ work skills are the starting point for individuals and workplaces to understand and embrace the innovation process. They are:

- **Interpretation** - defining what is needed in terms of customer requirements, future needs and best practice;
- **Generation** - generating new and exciting ideas and selecting the best one;
- **Collaboration** - working on the idea with others, peers, supervisors or networks;
- **Reflection** - analysing the idea, thinking it over, chewing on it;
- **Representation** - developing a presentation of the idea - either a proposal, a model, a plan or a verbal explanation; and
- **Evaluation** - reviewing the idea to ensure that it meets clients' requirements, is innovative and useable.

It's a simple process that uses the skills required to repeatedly define, assess, develop and evaluate ideas which affect every part of working life. Workers from entry-level to management should be well-versed in this process.

**Nurturing workplace environment**

However, it's not enough to embrace the innovation @ work skills. A more comprehensive shift is required. The culture and environment of the workplace must also nurture the innovation process.

Harvard Business Review says that the innovators have systemised the generation and testing of new ideas “...it has everything to do with organisation and attitude and very little to do with nurturing solitary genius.”

It goes on to say that systematic innovators are found in all kinds of settings - that their markets and settings are diverse, but their approaches are not.

The most important thing is giving workers permission to use the tools and skills to innovate. For example, Shefenacker Vision Systems (an accomplished automotive innovator), finds tools
The story behind Innovation@work skills

Since 1997 the Australian National Training Authority (ANTA) has been funding research focusing on the process of design. ANTA was interested in identifying if there were common skills for design and technology.

But the research went further examining whether individuals - who do not see themselves as designers - used the same design principles and skills in certain aspects of their jobs.

This research determined that common skills were used so widely across the diverse range of industries that the term 'design' did not seem to define the true nature of the skills and was replaced by the term 'innovation'. The definition of innovation became the use of a new idea, or a new use of an old idea that adds value.

Seven guideline competency standards were developed which describe skills required for innovation at all levels of work.

Twenty-two cross-industry case studies were initiated to validate the competency standards. Those selected were from across Industry Training Advisory Bodies and Australian Qualifications Framework levels and included organisations such as The Regent Hotel, ALIA, Museum of Sydney, Holden and South Sydney Council.

To test that the skills could be learnt, 12 trial learning programs were conducted with six different organisations including Caltex, OPSM, Alumac Industries and Schefenacker Vision Designs.

Overwhelmingly, companies that participated in trial learning programs agreed that the materials explained and presented innovation in an accessible way and encouraged creativity. Staff and managers easily understood the skills and how they could be applied at work.

Notably, the research showed there was little purpose in developing innovation in a workforce unless complementary work was done to develop management cultures which actively support and foster innovation, ideas and knowledge sharing. Innovation generally will not happen unless the right culture exists.

Further research is underway and includes the testing of additional materials to help people develop the skills needed to be more innovative. The materials will include learners’ guides for each unit of competency including entry level workers, existing employees and managers. They will also include a ‘how-to’ guide to help organisations set up a culture of innovation.

Innovation skills are now available through ANTA.
How do we effectively participate in the knowledge economy? What basic skill set is required to be competitive and develop a strong career pathway? How are they acquired?

While these questions are being debated across most OECD countries, new terminology has emerged to describe these essential skills. These include 'digital literacy', '21st century skills', 'key skills' and 'key competencies'.

Essential generic skills

Several approaches to defining these 'essential generic skills' emerged in the early 1990s: 'key competencies' in Australia, 'key skills' in Britain and the United States' SCANS framework of 'workplace know how'.

Australian 'key competencies' and British 'key skills' are quite similar and influenced by the competency based training approach adopted in both countries. However, approaches in the United States generally involved a broader, more flexible and holistic set of generic skills. These included basic skills, personal attributes, values and ethics, learning to learn as well as competencies of the Mayer type.

Digital literacy to digital learning

The concept of 'digital literacy' has been caught up in the search for broader frameworks for generic skills development.

The European Union (EU) has taken a lead in this area, recognising that the changing nature of society and work means that vocational and professional skills are not enough. Components of digital literacy and essential generic skills must be reviewed constantly in the light of social, economic, and technological change.

Peter Kearns
Managing Director, Global Learning Services

Digital learning is a core 21st century skill that integrates technology, connectivity, content and human resources.

Employers are now looking to recruit workers who are not only qualified within their industry but possess broader, cross-industry skills.

Until recently, education has prepared people for the technical and specific skills needed for particular roles. Employers are now looking to recruit workers who are not only qualified within their industry but possess broader, cross-industry skills. They demand workers with the ability to keep learning and refreshing their skills. These skills are different and not always readily identified or defined. They have been described in several ways including 'generic skills' and 'key competencies'.

ANTA with the Department of Education Science and Training (DEST) are supporting the Business Council of Australia and Australian Chamber of Commerce and Industry to survey employers and identify employability skills valued in Australia. This report will be completed in March 2002.

To ensure these descriptions - 'generic skills' and 'key competencies' - are current and useful to the VET sector, ANTA and the National Centre for Vocational Education Research (NCVER) commissioned Global Learning Services to undertake an international literature review of generic skills.

In the following piece, Global Learning Services' Managing Director Peter Kearns summarises important findings of this review.

Andre Lewis
Director, Industry Support team, Australian National Training Authority (ANTA)
By now, educators should realise that students must graduate with skills, attributes and attitudes to learning which make them not only immediately useful and attractive as employees, but also highly adaptable in the long term within an increasingly changeable and demanding commercial world. Mastery of discipline-specific knowledge by the student is no longer sufficient. Generic business skills and attributes are receiving increased attention by those educators who are closely attuned to the needs of graduates and their future employers.

In addition to a habit of critical reflection and a perpetual dissatisfaction with the present state of your knowledge, there are many other generic skills our graduates now require. They need high standards of written and oral communication skills, a capacity for team-work and collaboration, information technology literacy, organizational and personal management skills, an international perspective and global competence.

At a more elevated level there are other attributes such as social responsibility, high social and professional ethical standards, cultural sensitivity and inclusivity and an active environmental awareness.

The relevance of these skills and attributes to business practices and industry needs is clear. The challenge for educators, however, is precisely where and how such qualities are best incorporated.

Jan Fermelis
Lecturer, Faculty of Business Law, Deakin University
In with the old
(and in with the new)

If you are running a business, it is quite likely that you think of vocational education and training mainly in terms of training your staff and providing skilled labour. Until fairly recently, the education and training system may have seen it in essentially the same way.

Staff development often meant running in-house training to share the skills needed to do a job effectively. This was the quickest and most direct way to impart job-specific skills and knowledge.

Staff development also meant ‘sending someone on a course’. This could be through a formal, long-term arrangement such as an apprenticeship or through short courses aimed at building specific work skills. The method of training was usually set by the training provider, and the content chosen from a standard menu of subjects and courses.

These models of staff development still apply. But like other service industries the vocational education and training system has been under pressure to provide a more client-oriented approach. Vocational education providers now offer demand-driven services such as in-the-workplace, on-the-job training. Some companies have even become training providers themselves. There are cutting-edge courses and ways to combine learning from different industries and even across education sectors. Most importantly, there are a broader range of ways to customise a training program that is right for you – whether you are an employer or just an individual.

Australian companies are at different stages of engagement in workforce development (see breakout box: Market intelligence on Australian companies, page 9). As their level of engagement increases, so in the main does the sophistication of their training strategies.

One way to represent the evolution of how businesses might think about education and training is shown below. The first circle – VET provides skilled workers – suggests that these employers and training providers see the physical mileposts of education and training as most significant. They would be interested in training courses and qualifications, New Apprenticeships and traineeships and in having a skilled workforce.

From “job training” to “job training + workforce development”

Many companies have already moved from seeing training as merely about their skill stocks to seeing it as contributing to their operational effectiveness. Operational effectiveness is a step beyond just being in business. For example, skilled and ‘switched on’ workers can help to reduce defects in products, provide a better service or develop better systems. In these terms,
a return on training investment is measured by improvements in productivity, quality and timing. The 'second circle' – VET builds operational effectiveness – is shown below. These employers and training providers see workforce development as a means of increasing efficiency, output and profitability. They would think about concepts like return on investment (see breakout box: Return on investment in skills, below) and benchmarking their progress, either against their competitors or towards an output/earnings goal.

The 'second circle' – VET builds operational effectiveness – is shown below. These employers and training providers see workforce development as a means of increasing efficiency, output and profitability. They would think about concepts like return on investment (see breakout box: Return on investment in skills, below) and benchmarking their progress, either against their competitors or towards an output/earnings goal.

In a bid to explore this idea, ANTA has commissioned work on the links between workforce capability and execution of a business or company strategy. (This work is being conducted by The Nous Group, a business consulting firm: www.nousgroup.com.au). Linking company strategy with workforce capability

But perhaps we can go even further than simply getting companies to think of training as a means of increasing their operational capacity.

In a bid to explore this idea, ANTA has commissioned work on the links between workforce capability and execution of a business or company strategy. (This work is being conducted by The Nous Group, a business consulting firm: www.nousgroup.com.au).

Market intelligence on Australian companies

ANTA conducted detailed research over 1999 and 2000 into the Australian business and consumer markets for education and training. This innovative and in-depth research revealed that employers fall into three broad categories:

The 'not interested' employers (who see training purely as a cost). This group of employers is in the minority, but contains many small businesses. They value training less than other employers, see training of casual and part-time staff as being less important, are concerned about the quality of training and are least likely to offer training to their employees. The 'here and now' employers (who will train on an as-needs basis). This group of employers values and delivers their training and has fewer concerns about the quality of training. Mainly large employers, they are the most likely to react positively to messages about the value of training in relation to global competitiveness and staying ahead of the competition.

The 'high valuers' (who support learning for work and in the workplace) are the group of employers who value all types of learning.

This group of employers also responds to all messages about the value of learning, education and training, but especially about the following advantages of training: improving efficiencies, cutting costs and improving product quality and delivery. 'High valuer' employers are more likely to come from medium to large companies and government organisations.

There are many 'high valuer' and 'here and now' success stories to be found. They prove that some companies have already made the connection between workforce development and high performance.

The Australian Training Awards, held each year in November, are another showcase of employers who understand and invest in the link between a skilled workforce and a successful business. The Employer of the Year 2001 is Alcoa World Alumina Australia (WA Operations). The world's biggest producer of alumina, Alcoa employs 3,700 people in Western Australia. The company has initiated partnerships with education and training institutions in the local community – and with the communities themselves – to establish a learning culture that extends beyond the organisation. The 2001 recipients are described at: http://www.anta.gov.au/project/trainingawards/default.asp.
Challenging insights
The research is at an early stage. However work with some Australian companies has identified some insights that challenge assumptions made by the education and training industry. Consider whether these insights apply in your organisation:

- Companies place a higher value on training materials and training techniques as the degree of customisation increases. That is, companies value workforce development that is specifically tailored to their business needs - and the more customised, the better.
- Companies and training providers increasingly appreciate that generic skills - like communication, teamwork, using a computer and managing a project - give people the edge. However at the same time they realise that it is not just the generic skills, but the way in which they are adapted in the enterprise to create a distinctive organisation, that is crucial.
- Human resource managers, who are usually charged with responsibility for workforce development, are not always closely involved in setting and monitoring company strategy. That is, the HR arm of a company may not be sufficiently switched on to the business or production arms.

There is also evidence that many companies have doubts about the ability of Australia's education and training systems to provide what they really need in terms of workforce capability.

The big picture
The first and second parts of the picture will continue to be the most significant to employers looking to improve performance. But there is a possible new challenge to link company strategy with human capability. This element would complement rather than replace the role of the first two circles.

If the employees of a business are actively engaged in thinking and working in terms of organisational strategy, the returns to the employer can go far beyond productivity and operational effectiveness. Part of this is about developing the ‘nous’ of your workforce - skills like teamwork, communication, facilitation, planning, prioritisation and thinking in terms of innovation and corporate goals. Human capability goes beyond work skills into ethos, culture, understanding of the corporate vision and motivation to achieve it.

The third circle (depicted below) represents employers and training providers who realize the contribution these things make to achieving market leadership - that is, performing beyond the productivity frontier. They would champion the contribution of intangibles to their overall performance and probably value learning for the whole workforce. Their overall focus would be on sustainable success, founded on the quality of their people.

This workforce edge can be developed through learning strategies that are constructed with the broader strategic context in mind as well as the specific job context. Employees will bring that strategic understanding to the way they work, and also to the way they learn. This represents a turning point for people who work for and with a company, and in turn for education and training service providers.

Return on investment in skills
Increasingly for the business world, there is a clear message about the return on investment that comes from having a skilled workforce. There is more information about this at http://www.anta.gov.au/publication.asp?qsID=255. But in simple terms, the message is:

- Skills and training lead to improved performance and productivity
- Training improves staff retention and attracts skilled workers
- Any company can analyse the returns on training investment
Learning on-the-job is the oldest and most enduring form of developing workforce capability. It has always played a significant role in the learning process but is rarely recognised or given credit.

We now see how important it is to recognise and support workplace learning. It happens quite naturally. It helps people cope with changes in work practices and is appropriate considering the increased importance of knowledge management in the new economy.

It is not only an everyday and on-going feature of jobs at all levels but a ‘productive’ process yielding considerable benefits to organisations. Yet business still views learning on-the-job as a necessary cost to bear in order to have a better-skilled workforce.

We can understand why learning is seen as a cost. Productivity gains quite often occur some time after the learning has taken place. However the changing demands of the current workplace have led many businesses to re-think the place of learning within their development activities.

While they rethink, they will need to do more than take a ‘just do it’ approach if learning is to fully realise its potential. Maximising the contribution learning can make to productivity has become an important challenge, and the core of that challenge is to be clear about how on-the-job learning is different.

The workplace learning difference
- source of learning

The activity of the learner together with current knowledge and experience is at the core of any workplace learning program. Therefore, relevant job descriptions, performance agreements, career development plans, workplace projects and performance targets become the resources contributing to the planning of the specific learning trajectories of individuals and teams.

In short, business needs to recognise learning as central to the overall mix of strategies used to achieve performance goals and raise productivity.

- site of learning

Formal courses may become part of the learning program, however the bulk of learning opportunities are provided at the work site. These opportunities come about through negotiation, selection and participation in existing or planned workplace projects, other work activities and experiences.

- learning providers

Internal support such as the formation of ‘learning networks’ are also central to the concept of learning at work. Such support needs to be planned, established and managed.

In addition, when external training providers are used to augment workplace learning, a contract between the provider and the business is arranged. This sets out the responsibilities of the provider, learner and business when integrating all of the elements of the learning mix into organisational learning plans. It also makes explicit the contribution this learning makes to the business.

- the learner’s role in the design process

Finally, the workplace learner takes responsibility by developing a learning program that includes a portfolio of capability, agreed performance outcomes, learning projects and work activities that are negotiated with line supervisors and advisers.

The challenge lies in embracing and exploiting the distinctive characteristics of learning at work and not forcing them into existing training frameworks. To allow this to happen, schools, universities and vocational education and training providers will need to work even more closely with business.

DR CLIVE CHAPPELL
Director Research Centre for Vocational Education and Training, University of Technology, Sydney
In 1999, Toyota Motor Corporation Australia called for a substantial increase in the number and quality of technicians available to its dealership network. However, it was at a time when there was a shortage of industry specific trained technicians.

There were several reasons for this. Market research showed that most Year 12 students – on successfully completing their final high school year (or equivalent) – were choosing a general career direction and curricula that was not relevant with the requirements of a technologically sophisticated modern motor vehicle industry. It also showed that the poor image of the industry (particularly the role of a ‘mechanic’), coupled with the four-year qualifying period for a technician, was reducing the number of qualified people applying for advertised positions.

Toyota’s General Manager and the National Training & Education Centre (N-TEC) worked with key suppliers and stakeholders on a project to gain the skilled workforce necessary to achieve volume goals set by Toyota. As a result, T³ was born. T to the Power of Three encompassed the needs of Toyota, Toyota dealers and TAFE NSW. It represented a true ‘win-win’ for all parties with the potential for other industry players to become involved and benefit.

In the T³ program, Year 12 students spend 3½ days a week at their normal school, ½ day a week at TAFE and one day a week at a Toyota dealership. TAFE NSW took a lead role in the structure and development of all aspects of T³.

In April 2000, the program was launched, initially involving six TAFE Institutes. The program was taken on a ‘road show’ to school principals, Toyota dealers, career advisers and other interested parties with information sessions at colleges and dealerships around NSW. Education materials, videos, CDs and brochures were produced promoting the program and encouraging students to consider the automotive industry as a career of first choice.

Toyota’s T³ initiative is producing trainees that are ‘job ready’ and high student satisfaction levels.

A specific T³ web site is under construction and includes a chat room for students, career counsellors and parents to help them make informed choices.

Induction has now commenced for the second wave of students for 2002 into NSW, Victoria and Queensland. Other local manufacturers are also using the program this year and more are scheduled to commence recruitment in 2003.

Within Toyota and the dealer network there is a great deal of satisfaction with the program’s coordination and the quality of the students recruited. A round 150 students are now part of the T³ experience.

The students appreciate the pre-selection interview, dealership network, TAFE connections and the certainty of their future.

Toyota dealers see it as delivering trainees that are ‘job ready’. And that’s what T³ is all about.
When Neil Jericho began as general manager, Taylors Wines needed to achieve its full potential. In business for 30 years, the South Australian winery had not been performing as well as it could in the wine show circuit and needed to grow and progress as it headed into the new century. Neil believed that if people were given the skills to take on new tasks they would begin doing things they never imagined possible. And so Taylors Wines embarked on a massive, untried training investment programme to improve its business outlook.

When Neil contacted the Wine Industry National Education & Training Advisory Council (WINETAC) for advice on implementing workplace training, his approach could not have been more timely. The vision for Australia’s wine industry had just been outlined with the aim of achieving $4.5 billion in annual sales (Vision 2025). To achieve this, a quality, highly-skilled workforce was needed. The aim was to develop a seamless training and education pathway from school through to VET, tertiary and post graduate studies where workers had the opportunity to continuously develop their skills and reach their full potential.

Unfortunately the old curriculum did not meet the needs of industry. The development of the Food Processing Industry Training Package was an excellent opportunity for the wine industry to take ownership of its training agenda and create a culture where ongoing training and development would be the norm.

To ensure the qualifications were flexible and relevant, WINETAC developed new competency standards for all industry tasks that took into account new technology, emerging work practices and the seasonal nature of the industry. The new units covered the range of industry tasks: wine grape growing, cellar operations, bottling and packaging, laboratory and cellar door sales and warehousing. A qualification was created which allowed units to be selected from across all streams rather than being restricted to only one i.e. wine grape growing or cellar operations.

Imports from other training packages were also possible to include hospitality and tourism units towards a wine industry qualification.

Due to his vested interest, Neil was an active member in the development of this training qualification and Taylors Wines became the ‘guinea pig’ trialing the new Package with 90 of its employees. Many were casuals with more than a decade of industry experience but with no defined career path or formal qualifications. Management also completed core training along with employees.

In 2001, permanent and long standing employees now hold Certificates in Viticulture and/or Cellar Operations and Bottling (Australian Qualifications Framework level 2 and 3). There is no denying that investing in training has turned around the business and cultural environment at Taylors Wines. The company is reaping the benefits of international gold medal winning stakes and has a ‘new’ workforce. With defined career pathways and a clear vision of Taylors Wines’ culture and positioning, these wine industry workers are now multi-skilled and motivated to ensure the ongoing success of Taylors Wines.
Having a detailed understanding of your clients' needs is vital for any business to survive and thrive. In 2002, no major organisation would make strategic decisions about products and markets without a substantial bank of current client research. Australian vocational education and training (VET) leaders and policymakers faced just such a decision in the late 1990s. They wanted to know how to become a nation where training is valued, and wanted to understand how skills and knowledge is upgraded in the learning process. There was, however, no such current, community-wide bank of information about Australian attitudes to education and training.

The research

The answers were found through a comprehensive two-year research and development project that targeted VET clients and investigated their world view. The result was rich and powerful data painting the first national social marketing 'portrait' of Australia's learning market. It was discovered that learning is a core Australian value - although not seen in the same light as education and training. For many people these words conjure up images of classrooms, examinations and fear of failure. Many Australians feel much more passionate about informal learning processes and learning outside the classroom.

This point is reinforced in Dr Clive Chappell's article Learning at Work. Australians know that learning is very important for everyone and that it is intrinsically valuable (regardless of job prospects). The value of learning to Australia as a nation is also widely accepted and assumed. Employers play a critical role in encouraging and facilitating learning and family and personal issues play critical roles in promoting learning - even for adult learners. For those in the workforce or currently unemployed, a powerful motivator is the view that learning equals increased skills, which equals a new or better job.

Demographic information about participation in education and training by Australians has long been available. What made this research so significant compared to other data collected in the national VET sector is that it went beyond the demographics and mapped the motivations, feelings, opinions and lifestyles of Australians in relation to learning. This had not been done before on such a scale.

A comprehensive report - A national marketing strategy for VET: meeting client needs - was delivered to Commonwealth, State and Territory Ministers in June 2000. It was the culmination of national and international qualitative and quantitative client-focused research into the attitudes, values, and behaviours.
of Australian employers and individuals towards developing skills and engaging in lifelong learning.

The market segments
The report groups the general community into eight market segments based on their common characteristics and attitudes to learning. The report also produced three employer segments (more information about these, see the Training for Business article on page 8 of this issue).

**General community segments**
The community segments and the percentage of the market they represent are as follows.

- **The Passionate learner** (21 percent) is often a young professional, tertiary-educated woman in the city. She wants real growth from learning experiences and products to extend her personal and professional skills. If you can give her the full package - good facilities, great teachers, classy promotion and good value for money - she'll be back for more.

- **The Learn to earn** (17 percent) is young, hungry and in a hurry. Often children of non-English-speaking migrants, they want products that deliver qualifications that lead to better jobs or rapid advancement. Single, they watch Friends, listen to Triple J and will need to keep getting results to stick with learning.

- **The Almost there** (6 percent) knows there is a danger of getting left behind and wants to get back into learning, but it's tough. With kids still at home, the almost there is a battler who needs easy access, low prices and help to get over fear of technology and failure.

- **The Might give it away** (7 percent) is a teenager or 20-something on the verge of dropping out of learning, probably for a long time. A young pessimist, the might give it away wants proven products that lead to jobs or work benefits and that also attract government support.

- **The Learning on hold** (11 percent) is a paraprofessional, university-educated older man or woman with dependent children. Past learning experiences have got them where they are now. That's fine with them as it's just too hard to do more. They might think about it if it were cheaper, easier and made low demands on time and family.

- **The Done with it** (14 percent) is the 40-plus man who hasn't studied since he left school and can't see the point. A plant and machine operator, a driver, a labourer - he'll need a lot of convincing and needs to see what's relevant about learning for him.

- **The Forget it** (8 percent) is a middle-aged man in regional Australia, happy with his lot and needing a lot of persuasion. He finished school, got a job, had a family and might be attracted to really flexible products that accommodate work and family demands.

**The communication campaigns**
Two national campaigns have been developed based on the results of this research.

- The **It Pays to Stay** campaign for the might give it away segment will continue for another three years. Based on a web site with practical tips designed to get through difficult periods such as exams, the campaign has used radio advertising and popular 'heroes' such as Channel Nine's Backyard Blitz team to convince the target group to stick with their current learning. The article Quietly transforming high school learning experiences shows another way the might give it aways are being encouraged to stick with learning.

- The **Training Pays** campaign focused on one of the employer segments. The employer campaign ran in late 2000 and targeted the here and nows. Using the names, faces and high profiles of business and industry leaders, the campaign focused on the bottom-line benefits of a skilled workforce.

This important body of research can and should be used by everyone in the learning world — schools, VET, universities and workplaces. It is critical that all learning sectors collaborate on a strategic level. This is the only way that we can deliver what clients want and need through building a strong learning culture in Australia.

Invaluable to the commercial world, ANTA has made the research, segmentation and strategies available for free on its web site. Visit www.anta.gov.au.
A transformation is occurring in Australian schools, with 153,000 young people taking an alternative pathway to a career goal. Schools that actively develop community partnerships provide the key to opening doors for young people in today’s job market. Young people usually have a bumpy ride when trying to navigate a career pathway for themselves. Deciding which road to take has been like hitch-hiking through education and employment opportunities – most school leavers chopping and changing their minds, trying to find the best destination.

In recent years, sweeping changes have been occurring in Australian high schools to develop long-term work outcomes for students. Over 80 percent of Australia’s high schools now offer vocational education and training (VET) to senior students with practical work skills and nationally recognised VET qualifications part of their school education. This is nothing short of a revolution. With only 30 percent of Year 12 students going straight to university, schools are seeing the benefit of being part of the vocational education and training system. Students are given clear outcomes.

“1 knew it was what I (wanted) to do in the future and it gave me a good head start.”

In 2000, over 153,000 school students completed programs with pathways to Certificate I, II or III qualifications as well as their senior secondary certificate.

“It was the best option for me to become a chef.”

There is an increasing trend for schools to form strategic partnerships with other key players in the vocational educational and training sector. Developing relationships with employers and training providers - so students can participate in workplace learning - is now routine for many schools.
Other arrangements are even more extensive and can include a whole range of intermediaries such as group training companies, New Apprenticeship Centres and other local agencies specialising in youth career pathways. Almost 6,000 school students undertook part-time New Apprenticeships in 2000.

This means that while studying for their senior secondary certificate they were also trainees and employees. The students themselves have outlined the advantages. They acknowledge the benefits of on- and off-the-job training and the link to employment and career aspirations while still at school.

“...being able to complete my first year apprenticeship in Year 11 and 12 is good because I can still have a school life, and then after school (I can) finish my apprenticeship quicker.”

Employers are just as positive. They are impressed because the:

- programs are part of an industry recognised qualification;
- programs are developed by industry; and
- students have had workplace experience.

In fact, 80 per cent of employers recruit VET in Schools graduates following a work placement and 38 per cent said this occurred through contact with a school. This indicates an undeniable link between the VET in Schools program, work placement and subsequent employment.

While there is a need for further research on longer-term student outcomes, to date the outcomes for students indicate several positive opportunities. An example from Victoria illustrates diverse student destinations and positive student outcomes as a result of participating in VET in Schools programs. The VET in Schools students completing Year 12 in 1999 achieved the following destinations:

- Enrolled VET (mainly TAFE) 29%
- Enrolled university 21%
- Apprenticeship or traineeship 17%
- Dropout or completing 6%
- Part-time Full-time employment 10%
- Unemployed or traineeship 3%
- Repeating or completing 6%
- Enrolled university 21%

Destinations of Year 12 VET in School Students

Comparing these figures with national trends of school leavers generally (ABS data) the following differences are revealed:

- there are nearly twice as many VET in Schools students proportionally entering TAFE;
- about half as many VET in Schools students proportionally entering university;
- more VET in Schools students proportionally entering the labour force; and
- fewer VET in Schools students proportionally unemployed.

While these are positive outcomes, there are some unresolved issues, including concerns about whether the quality of VET in Schools programs match those in the mainstream VET sector. Barriers to tertiary entrance for VET in Schools’ students are still apparent, and work on this is continuing (see the Expanding Opportunities for Youth article in this issue). There are issues around the source and level of funding for VET in Schools programs, and there remains a lack of confidence and involvement by some employers in these programs.

Nevertheless, there are increasing signals that vocational education and training in schools provides significant student outcomes, encourages local strategic partnerships and recognises the importance of workplace learning in the increasingly difficult school to work transition.

In recent years, sweeping changes have been occurring in Australian high schools to develop long-term work outcomes for students.

**Suggested further reading:**

- Transitions from the VET in Schools Program, Department of Education, Employment and Training, Victoria, April 2001
- Bright Futures for Young Australians, ASTF, December, 1999
- The Employer Perspective, Educational Outcomes Research Unit, the University of Melbourne, September 1999
- Erica Smith, Learning and Training in School-based New Apprenticeships, draft report January 2002 (forthcoming)
- ABS Transition from Education to Work Survey, 2000
New project aims to open up more avenues for universities to recognize vocational course outcomes.

Changes in the economy, work and student preferences have driven reforms in the curriculum provided to high school students. At the same time - and for similar reasons - university course work has changed and vocational institutions broadened their offerings.

The challenge now is to better align these sectors to enhance course offerings so young Australians may access exciting curricula and know that early choices will not close off future options.

University entrance requirements - which tend to reward traditional academic courses - have exerted a powerful influence on the nature of and participation in high school courses. But students increasingly may need courses that offer a wider range of understanding, skills and 'real world' experiences to meet modern economic requirements. And they may need more stimulating and challenging ways of learning to keep them in school longer.

These new imperatives are reforming the traditional focus of education across all three major sectors: schools, vocational education and training (VET) and universities.

Traditional academic institutions are introducing more vocational courses, and vocational settings now integrate more theoretical knowledge.

For example, looking at universities in 1993 one would have found seven campuses offering tourism and hospitality courses compared to 63 campuses in 2001. National data shows that in 2000 the broad field of Business, Administration & Economics attracted the largest number of students. And most university admissions centres report heavy demand for courses where job potential is the greatest.

In the school sector, high quality, rigorous courses that provide a range of education, training and employment opportunities now are available across Australia. These courses are very popular. Participation has almost trebled in five years and soon nearly half of all senior high school students will take a VET course.

**NUMBER OF STUDENTS PARTICIPATING IN VET IN SCHOOLS PROGRAMS IN AUSTRALIA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Government</th>
<th>Catholic</th>
<th>Independent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>76,858</td>
<td>12,165</td>
<td>5,043</td>
<td>94,066</td>
</tr>
<tr>
<td>1997</td>
<td>90,866</td>
<td>17,783</td>
<td>8,757</td>
<td>117,406</td>
</tr>
<tr>
<td>1998</td>
<td>104,698</td>
<td>20,274</td>
<td>11,738</td>
<td>136,710</td>
</tr>
<tr>
<td>1999</td>
<td>113,586</td>
<td>25,778</td>
<td>14,252</td>
<td>153,616</td>
</tr>
<tr>
<td>2000</td>
<td>123,000</td>
<td>28,300</td>
<td>18,400</td>
<td>169,700</td>
</tr>
<tr>
<td>2001 projected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GROWTH**
- Projected % of students undertaking VET in their senior secondary certificate: 42%
- Total growth: 57%
- Growth of 57%
- Growth of 25%
- Growth of 18%
- Growth of 12%
- Growth of 10%

Source: Report of the MCEETYA Taskforce on Vocational Education and Training (VET) in Schools, July 2001
TAFE

Purpose: This course is for people who would like to be employed as a manager in the tourism industry.

Study Mode: Full-time or part-time study options

Content includes:
- Management Fundamentals
- Marketing Fundamentals
- Managing Tourism budgets
- Tourism Industry Accounting
- Research Tourism Data
- Tourism Law

Source: 2000 Handbooks of TAFE NSW and UTS

UNIVERSITY

Purpose: This course provides students with a strong understanding of the tourism industry, the knowledge and skills to manage effectively.

Study Mode: Full-time study only

Content includes:
- Management and Organisation
- Marketing Principles
- Accounting A
- Accounting B
- Research methods
- Law for Leisure, Sport and Tourism

Source: 2000 Handbooks of TAFE NSW and UTS

Not only have new courses been introduced, the content of these courses has changed to incorporate both conceptual and applied components - again, across all three sectors.

Take a look at how similar these two tourism course descriptions are: (Refer to illustration above).

Universities are diversifying to reflect the need and demand for more 'vocational' content by also:
- Offering new degrees requiring work placement for on-the-job practical experience before graduation;
- Adding specific vocational elements, even to Arts degrees;
- Using business experts from local or national firms as part-time teachers; and
- Receiving major industry awards for courses offering industry experience and simulated real life work scenarios.

As universities are realising the desirability of integrating workplace knowledge applications into their courses, the VET sector has worked to ensure that the knowledge underpinning or embedding performance in today's workplace is spelled out and taught. Just having technical skills no longer is enough for many employers. Broader sets of competencies are increasingly central to all qualifications.

VET in Schools

High school level vocational courses can enhance prospects for young students and offer exciting opportunities for a new style of learning. Around the world, schooling authorities are recognising that passive classroom learning may not be the best way to teach complex concepts. Most of us grasp and retain more through application than through rote learning.

In the US, President Bill Clinton aimed America's first national school-to-work system towards two key goals:
1) offering young people a smoother transition to good jobs; and
2) helping reform education.

In Australia, vocational education and training courses within senior secondary credentials potentially give all students access to high quality, industry-valued, vocational knowledge and skills. At the same time, these courses can maximise students' options across the full range of post-school education, training and employment opportunities.

Both VET in Schools and universities have agreed that vocational courses in senior schooling should be formally recognised within the Australian Qualifications Framework and contribute to a VET qualification defined by the Australian Qualifications Framework. This gives VET courses their own status and integrity alongside other subjects and courses within the senior secondary curriculum.

But VET in Schools today also involves students in more complex forms of learning than conventional education that emphasises knowing facts and understanding procedures, rules and ideas.

These additional forms of knowledge may explain why students completing VET courses do well after school.

Research tracking the 1997 VET in Schools cohort in Victoria shows high progression rates through tertiary courses, successful transitions from study to work and a marked increase in full-time employment. Of those going to university, the vast majority is still at the same institution in the same course. Other research has shown that employers overwhelmingly feel that VET in Schools programs make school-leavers more employable compared with graduates from the traditional curriculum.

The power of university recognition

University recognition remains a powerful determinant of student participation. In NSW, Industry Curriculum Framework courses are provided in seven key industry areas as part of the new HSC. For the first time, universities have agreed to recognise achievement in the optional, examined component of these courses though they have limited recognition to one course.

Counter to some predictions, NSW students have leapt at the chance to take an exam if it means they can take more vocational courses (and later in their high school career), count those courses toward university admission and get a national qualification valued by employers. In 2001, Year 11 enrolments in these courses increased more than 20% and over 70% of Year 12 students chose to sit for the exam. These students clearly want to keep their post-school options open and - it would appear - come from all backgrounds and abilities. That should suit universities - and employers.

But despite their popularity, potential benefits and the growing vocational nature of universities, there remain disadvantages associated with deciding to take vocational courses at school particularly due to the messages from, and perceptions of, university entrance criteria for school leavers. When universities
Developing new ways of assessing achievement

Universities typically rely on a single index to determine their entrance ranks for school leavers. The national industry-backed vocational framework relies on competency. Both are important. Both are widely accepted in their respective spheres.

But for young school students, the two ways of assessing achievement can act as a block to opening up options for their future. When industry relies on a competency-based measure and universities require graded assessment, it raises fundamental questions about how to better mesh education sectors themselves and their interaction with work.

Fortunately, the national project has identified a rigorous and verifiable assessment tool, among other approaches to graded assessment, that can retain the integrity of the industry approach yet give universities a basis for calculating marks or grades. Some States are trialling the new assessment right now and, if successful, these approaches could overcome one of the most significant barriers to increased integration of vocational and academic learning.

Remaining Flexible to Build Achievement

This project is hardly the first to seek better and broader choices for youth. Project participants have worked hard to incorporate prior accomplishments and recognise that all elements - schools, VET, universities and employers - have much to offer. Diversity is acknowledged and the focus is on enhancing progress rather than handing down a uniform policy that can’t accommodate local or sectoral adjustments.

A remarkable consensus has been achieved as a result.

• All State and Territory and Commonwealth Ministers for education and training have endorsed national guiding principles to encourage better recognition of vocational courses.

• Twenty of Australia’s 38 universities, representing about half of all available student places, have joined the effort to provide greater recognition in their entrance procedures. Major industry bodies also have provided support.

• New assessment and reporting tools, in line with world best practice standards, have been designed to integrate competency and ranking in ways that meet the needs of both industry and universities.

• Four key national industries - Information Technology and Telecommunications, Business Services, Tourism and Hospitality and Metals and Engineering - are testing the application of this new assessment to their training regimes and qualifications frameworks in 2002.

• Nearly all state and territory education authorities and curriculum bodies are actively participating and are seeking to pilot new assessment approaches enabling students to get the best of vocational and academic learning.

• New model course guides are being developed spelling out how high schools, VET and higher education can better align and recognise each other’s courses.

• Publications and articles have promoted and informed the wider community of the benefits and value of recognised vocational education and training courses for all senior secondary students.

• An interactive website will be available to better inform and assist parents, students, employers, career advisors and education bodies.

Certainly there have been vigorous debates as these reforms have progressed. But there’s always been an overriding principle that has unified the effort and encouraged flexibility. In the end, we all want the best for Australia’s youth.
Vocational education and training is being used by more and more university graduates to make themselves 'work-ready'.

As with many areas of research, we tend to study what policy and convention expect us to find. For this reason, the study of movement from university to TAFE was well off the education and training research radar in the early 1990s. I stumbled across it in 1993 while studying movement from TAFE to university.

Two-directional movement became the topic for my PhD because it was almost totally unknown and unanticipated and the circumstances behind such significant 'reverse transfer' clearly needed some new thinking about inter-sectoral policies, relativities and relationships.

TAFE until the mid 1990s was poorly understood and underrated by universities. Few university-based educators had studied in a TAFE context. The dominant paradigm in schools was that those who could should go straight to university, and those who could not, should at least get into TAFE.

Pressured by governments in the early 1990s, there was a growing recognition by universities – in the interests of system efficiency – that some successful TAFE students should be allowed to 'articulate' and be granted standard credit on transfer to university. Credit transfer relationships in a small number of fields of study (such as business, engineering and computing) anticipated that some 'poor cousins' from TAFE might do well enough to step up to university.

By the end of the 1990's there was irrefutable evidence from my research that many more former university-educated adults in Australia (around three times as many) were apparently moving the other way; from university to TAFE. Around half were university graduates.

But is this surprising? In this brief article, based on evidence from my PhD and subsequent research, I argue that given all the changes during the 1990s, it should not be surprising that TAFE has become a legitimate and important vocational and lifelong learning destination, even for some poor postgraduate students from university.

I will start by teasing out some changes that occurred in the 1990s to focus attention on vocational attributes that affected movement between sectors. Then I look at similarities and differences between TAFE and university to identify why and in what circumstance individuals might have 'changed sectors'.

Some changes associated with movement in the 1990s

Universities have long prided themselves as the places of learning for learning's sake and as towers of research, ultimate truth and knowledge. It is a noble goal but one not fully consistent with postmodernist theories of multiple truths and knowledge or with federal education and training policies.

For some students, a rapidly changing workplace, an increasing need to learn over a lifetime and a greater choice over where adults were able to learn, made TAFE more important and vocationally useful than university.

The sudden onset of recession in 1991 was a turning point for many students nearing completion of their university degrees in Australia. In that year, the bottom fell out of the tertiary graduate employment market and a wave of new, generic university graduates flooded into TAFE.

It became a wake-up call to university complacency and its aspiring graduates. Universities had tended to operate in a rapidly growing and apparently captive initial education market, deliberately oblivious to the vocational aspirations already apparent in its increasingly diverse student body.

In the 1990s, the workplace and nature of enterprise also changed with the onset of economic rationalism and globalisation. Specialised, permanent 'jobs-for-life' tended to become jobs on contract, outsourced, part-time or tenuous.

Professions and careers with degrees as entry-level qualifications started to give way to work which demanded experience, personal and vocational attributes over (or at least in combination with), formal qualifications. Initiative, client-focus, vocational skills, entrepreneurship and an ability to change became marketable. New workers were increasingly required to have all the vocational skills required (and more) on day one. They needed to be versatile, flexible,
Many people actually moving between sectors are mobility from TAFE to university) as going backwards. To TAFE (from the conventional paradigm of upward

Contemporaries see both groups moving from university graduates. (However non-graduates have more to lose if they discontinue the second time around since they

have limited evidence of post-school success.) Graduates have the advantage of formal education, including in school or university. The opportunities to learn post-university, including on-the-job, paradoxically became more limited as this need to become lifelong learners became more criti-
cal. Workers had to prepare and develop themselves to work and change over a lifetime.

By the end of the decade, university commencers were as likely to come from backgrounds other than straight from school, and TAFE commencers were becoming older and more diverse.

Universities were becoming more differentiated and relatively easy to enter from a range of backgrounds other than from immediate school completion. University students with prior qualifications or post-school study experiences have become less usual as people chopped and changed courses and sectors to fit their changing work requirements.

"Graduating" to TAFE

Consistent with the changing nature of work and vocational learning over a lifetime, movement from university to TAFE tends to be neither direct nor linear. Much movement is lateral, delayed and between fields of study. The opportunities for credit transfer are therefore limited, even if there were simple ways of benchmarking and comparing TAFE and university learning (which there are not). By contrast, those moving from TAFE to university are more likely to be moving directly and attempting to 'upgrade' a TAFE qualification in a similar or related field. TAFE became attractive relative to university in the 1990s for two main groups.

On one hand, university graduates - typically from common, generalist degree backgrounds (eg business, arts, science) and some working in less than optimal employment circumstances - were seeking something other than more university (and more HECS debt) to sharpen, broaden or radically change their vocational utility. For many, the preference was for something short, sharp, cheap, flexible and vocationally specific. A combination of these attributes was more likely to be found in an Australian TAFE Institute.

On the other hand, there was a significant pool of young people who aspired to university and who - for a wide range of reasons - did not finish the university course or achieve the vocational outcome they anticipated. Many found that work commenced part-time and parallel to university study led to full-time work that was more desirable in the short term than persisting with a generalist degree with no clear or immediate vocational advantage. After some time in marginal employment, such people came to TAFE for similar reasons as university graduates. However non-graduates have more to lose if they discontinue the second time around since they have limited evidence of post-school success.

Contemporaries see both groups moving from university to TAFE (from the conventional paradigm of upward mobility from TAFE to university) as going backwards. Many people actually moving between sectors are struck by the diminution of their own status at TAFE but most are satisfied with what they came for and go away with. Most are positive about TAFE teaching though some have difficulty adapting to ungraded or competency-based assessments. The strongest criticism is in terms of the limited on-campus TAFE facilities.

Clive, 60, bachelor of mechanical engineering to certificate in computing: "Excellent instruction at low cost for one of my chosen retirement activities."

On reflection, people with experience of university and TAFE sectors (moving in either direction) are critical of the comparatively large and impersonal nature of university teaching, lack of practical or vocational connection and expense and inflexibility of the typical three-year university degree. Movement between the two sectors in either direction fluctuates with opportunities in the employment market and relative ease of entry to both sectors. Accurate measurement, already difficult across the sectors and all States, has been made more difficult with the growth of VET in schools, a broadening of VET and the development of multi-sectoral tertiary institutions.

While the proportion of VET students with previous university experience is quite small (8% in the year 2000) this amounts to almost 100,000 students. While news of this movement has been significant enough to hit lead item, front page in the national press, it is the relative movements in favour of TAFE and the positive motivation underpinning the movement that has sounded a timely and positive reveille for TAFE.

TAFE has become recognised as a significant and legitimate post-graduate destination. Jacqui, 23, bachelor of arts (honours) to associate diploma visual arts: "It seems that to get a foothold in practical arts these days you can't get anything without a TAFE arts course, because it gives you such a solid, practical grounding."

In summary

While there remains a clear and widely recognised difference in status associated with a university degree compared to a TAFE qualification, research in the 1990's confirms similarities between the vocational function of universities and TAFE not previously recognised.

Both sectors play important and complementary roles in vocational preparation. University and TAFE are particularly valuable in combination:

A defence of universities in light of this phenomenon is to suggest that TAFE is too vocational and - by virtue of its foundation in industry competencies - not adequately preparing self-directed learners.

In contradiction to this contention, research on vocational intention confirms that university
commencees are as vocationally motivated as TAFE learners. Recently published learning preference research also suggests that TAFE students may be closer to adopting a form of self-directed learning than university students. In summary, it is wiser to judge a tertiary book by the profile of its changing readers than by the superficiality of its cover.

Kieran, 20, part bachelor of economics to trade certificate in optical fitting: “I would not have considered TAFE as an option apart from the fact that it is a necessary part of my apprenticeship. I have learnt more, enjoyed it and recommend it as an excellent option to uni.”

These are actual quotations but pseudonyms have been used to ensure confidentiality.

VET enhancing the value of a university education - a new approach to graduate entry

PETER SALWAY
Commissioner for Public Employment, Victoria

The Victorian Public Sector is using the Public Services Training Package in the professional development of university graduates.

In a new move by the Victorian Public Sector, the Public Services Training Package is being used to appraise and further develop the competency standards of graduates entering the public service. Barry Golding’s article ‘Graduating to TAFE’ reminds us that vocational education and training already provides skills for almost 100,000 university graduates. This example shows the Victorian Public Sector embracing a VET sector training package to help evaluate the performance of graduates.

In the words of Peter Salway, Commissioner for Public Employment:

“The Graduate Recruitment Learning Program (the induction program for entry to the Victorian Public Service) has been developed using a set of guiding competencies adopted from the Public Services Training Package.”

This ensures a consistent set of competencies to evaluate graduates’ work performance on a level playing field. It allows us to align each graduate’s work performance ensuring:

- consistent role clarity, expectations and opportunities for feedback;
- feedback on performance as demonstrated through the portfolio of evidence;
- empowerment of the graduates to negotiate a work program; and
- the establishment of benchmarks for supervision and performance management.

“The new graduate program is further evidence of the potential to combine higher education and VET qualifications to provide a more rounded work ready graduate.”

Under the training package, supervisors develop a work plan providing opportunity for graduates to learn and demonstrate competence in the local work environment. The graduates’ performance is measured and assessed on the basis of the portfolio of evidence collected over the Learning Program year.

The Victorian Public Sector has made a conscious business decision - based on input from recent graduates - to adopt this competency based program. This gives all graduates the same opportunity for challenging work experience during the induction year. One hundred graduates will be involved in 2002.

“... this program is a great example of the VET sector complementing a university education to provide a more valuable approach to graduate entry” Peter Salway said.

1. From 2002, School of Education, University of Ballarat (b.golding@ballarat.edu.au)
2. Some of the relationships this research has on policy are explored in Golding, B 1999, ‘When the backwash dwarfs the wave: a case study of the relationship between research, policy and practice concerning two-way inter-sectoral movement in Australia’, in Ed. C. Selby-Smith (Ed.) The impact of R&D on VET, NCVER, Adelaide.
4. In 2000 there were 1,749,400 students in publicly-funded VET. The previous education level attained was known for 1,214,100. A total of 97,400 (8%) of these students indicated that they held a higher education qualification.
Results of the 2001 Awards

for Outstanding Achievement in Collaborative R&D and awards for Outstanding Achievement in Collaboration in Education and Training

Applications were sought earlier in the year and were judged by an experienced panel of judges under the chairmanship of Professor Leon Mann, Pratt Family Chair in Leadership and Decision Making, University of Melbourne and President of the Australian Academy of the Social Sciences, comprising:

Dr Bob Frater AO
Vice-President for Innovation
ResMed Ltd

Ms Lesley Johnson
Director of Strategic Initiatives
Australian National Training Authority

Mr Peter Laver
Chairman
Ceramic Fuel Cells Limited

Dr Jane Munro AM
Principal & Chief Executive Officer
Firbank Grammar School

Dr Peter Scaife
Director, Centre for Sustainable Technology, The University of Newcastle

The criteria for evaluation included:
1. Innovativeness
2. Strength of the relationship between collaborating partners
3. Outreach inclusion (e.g. overseas - to other groups, companies)
4. National benefits
5. Cultural impact on the partner/organisation.

To be eligible at least one of the participants in the project or program had to be a member of B-HERT.

B-HERT wishes to acknowledge the generous support of the following organisations:

MAJOR SPONSOR

AusIndustry

The Industry Research and Development Board is an independent statutory body whose purpose is to administer specific Federal Government programs in support of industry-based innovation, and to provide advice to government on national industry-based R&D strategies and priorities. By these means, the IR&D Board has as its broad mission to increase the level and commercial success of industry-based R&D in Australia. In line with industry assistance programs, the IR&D Board utilises the services of AusIndustry (within the Dept of Industry, Tourism and Resources) as a single point of contact for businesses wishing to access the innovation programs.

AusIndustry, the Federal Government’s program delivery agency, is involved in a range of measures designed to encourage industry innovation. Specifically, it aims to encourage research and development and innovation within Australia. Programs administered through AusIndustry include the R&D Tax Concession and a range of programs which provide targeted support for basic R&D through to commercialisation and technology diffusion.

SPONSORS

Australian National University  Central Queensland University
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The University of Sydney  Queensland University of Technology
Shell Australia Limited

The Chairman of the National Australia Bank, Mr Charles Allen AO, presented the Awards at a gala dinner at the ANA Hotel in Sydney on Thursday, 15 November 2001.
The winning entries for:

OUTSTANDING ACHIEVEMENT IN COLLABORATIVE R&D

Small-Medium sized Companies and Project/Program 18 months to 5 years in train:

Sponsor: The Australian National University
Winner: University of Technology, Sydney and MicroMedical Industries Limited
Title: VentAssist Implantable Rotary Blood Pump
In 1997, MicroMedical and UTS commenced collaboration to develop an electric rotary blood pump for implantation to save the lives of people with congestive heart failure. The goal was to integrate the motor into the impeller of the pump and somehow levitate it without contact. This was achieved by putting the motor magnets into thick impeller blades and tapering them, so that once spinning, the impeller glides on blood fluid bearings. This novel design is the foundation of two US patents. The pump is small enough for all patients, including children, and with no wear on the one moving part, the impeller, it promises to be long lasting and reliable. It has performed very well in animal trials - a sheep unknowingly pregnant on implantation gave birth to a healthy lamb. Human trials are planned for 2002.

Honourable Mention:
University of Tasmania and Australian Hop Marketers Pty Ltd
Title: Epidemiology and Management of Diseases of Hop in Australia
The Hop Pathology program focuses on the epidemiology and aetiology of important plant pathogens of hop and the design of economical, effective management plans for their control. This program has undergone considerable expansion since its development and has attracted collaborators from all over the world. This successful collaboration has resulted in Australian hops being free from major fungal diseases and pests thereby providing a distinct international market advantage.

Small-Medium sized Companies and Project/Program more than 5 years in train:

Sponsor: Central Queensland University
Winner: University of Adelaide and FCT Combustion
Title: Joint Development of the Gyro-Therm Burner
The collaboration between the partners began informally in 1991 with the joint development of the Gyro-Therm burner. The collaboration was formalised in 1993 and has grown into an ongoing partnership in which the University of Adelaide provides expertise and facilities in testing and development while FCT provides project management, engineering and commercial skills. These complementary skills, and shared skills in industrial combustion, have allowed the partnership to provide specialised services to industries throughout the world. The Gyro-Therm technology typically provides both a 50% reduction in Nox emissions and an increase in output and/or fuel efficiency by 5% in gas-fired rotary kilns worth typically $1m p.a. The value of Gyro-Therm sales to date is about $3m. For the Sydney 2000 Olympic Games the partners jointly designed and commissioned both the combustion systems for the torch and community cauldrons used in the torch relay before the Games, and also the main cauldron flame at Stadium Australia which presided over the Games.
Financial markets have largely ignored social responsibility and environmental management as differentiating factors, hence companies have had limited incentive to improve their practices in these areas other than as required by regulation. The absence of appropriate investment vehicles that address both social/environmental performance and financial performance objectives while meeting acceptance levels of risk has been a major stumbling block.

The project has entailed: 1) The development of new metrics to assess publicly listed companies on non-financial criteria, namely environmental management and social responsibility. 2) Development of rigorous evaluation techniques to enable the development of reliable, comparative performance assessments by industry type. 3) Development of new portfolio construction methods to meet stringent fiduciary requirements in the superannuation industry. 4) Implementation of these products in Australian investment markets. 5) Constructive engagement with Australian industry to communicate SRI benchmarks and performance expectations.

The primary goal of the project is to secure a role for Australia in the design and manufacture control surfaces (ailerons, rudders, elevators, spoilers) for any of several large commercial aircraft programmes currently being proposed around the world. A $1.0 million Collaborative R&D START grant was awarded to develop innovative design and manufacturing technologies, which would ensure Hawker de Havilland's continued participation in this niche market. The project involves the collaboration of four major organisations who are all active participants in the aerospace industry. Outcomes to date suggest the primary goal will be achieved through an export order for a major Airbus programme. This contract is worth several hundred million dollars. A half-span model of the spoiler was displayed at the recent Paris Airshow attracting considerable attention. The methodologies developed are being used in a number of new programmes.
The winning entries for:

OUTSTANDING ACHIEVEMENT IN COLLABORATION IN EDUCATION AND TRAINING

Medium-Small sized Companies and Project/Program 18 months to 5 years in train:

Sponsor: Shell Australia Limited/P&O Australia Limited
Winner: Monash University, Greenspeed and Nylex Rotomould
Title: The Multi-Disciplinary Industrial Project

To be globally competitive, more companies are using multi-disciplinary teams for increasing productivity and reducing the time for new development. Despite pressure for universities to better prepare students for this environment, few educators have seriously addressed development of generic skills. In 1996, Monash University teaching staff from accounting, marketing engineering and industrial design developed a Multi-Disciplinary Industrial Project where student teams work with manufacturing companies. Greenspeed and Nylex Rotomould, typify the 13 small and medium enterprises with which 29 diverse projects have been and are being undertaken. Student teams have reported on changing the organisational structure of businesses, the design of new manufacturing and warehousing facilities, improvements in productivity, design of new products, and business plans to exploit new markets.

Honourable Mention:
The University of Melbourne (The Mackinnon Project), Australian Wool Innovation Pty Ltd, The Vizard Foundation, BestWool 2010 (Victorian Farmers Federation and DNRE), FarmBiz (Rural Finance Corporation) and 80 individual farmer subscribers to the South Roxby Project.

Title: University of Melbourne
The South Roxby Project

The South Roxby Project represents a new way of identifying and conducting research for wool producers. It is farmer-driven, with a dual emphasis on developing the skills of the participating wool producers, and involving them in the identification of future research priorities. The focus of activities is a portfolio of research activities based on South Roxby, a 650 Ha fine wool farm near Geelong. The use of this property has been donated to the University of Melbourne for research and educational purposes by the Vizard Foundation. Roxby Park, a neighbouring 525 hectare wool producing farm is used to demonstrate and monitor specific technologies incorporated into a best practice farming system.

Defining research to significantly improve profitability above the current industry benchmark, and creating a solution that is readily accepted and adopted by farmers is the key to this project.
FOR OUTSTANDING ACHIEVEMENT IN
COLLABORATION IN EDUCATION AND TRAINING

Small-Medium sized Companies and Project/Program more than
5 years in train:

Sponsor: Griffith University
Winner: The University of Newcastle and the Royal Institute for
Deaf and Blind Children
Title: Renwick College: Professional Training and Research in
the Education of Children with Sensory Disabilities

Renwick College is a centre for professional training and research in
the education of children with sensory disabilities (i.e. hearing or
vision impairments). Established in 1992 through a memorandum
of agreement between the University of Newcastle and the Royal
Institute for Deaf and Blind Children, the centre serves three related
functions: (a) professional training of teachers and related professionals
through postgraduate award courses, (b) continuing education for
this same professional group, and (c) the conduct of applied research
and development of resources in this field. The collaboration has
created the largest and most comprehensive centre for professional
training in sensory disability in Australia and the only such centre
in NSW. Nationally, the development of this collaboration has
reversed a trend of diminishing provision of research and professional
training in this small but highly specialised field and has created a
centre with a growing international reputation.

Large Companies and Project/Program 18 months to 5 years in train:

Sponsor: Queensland University of Technology
Winner: Thiess Pty Ltd and the University of Queensland
Title: The Thiess - University of Queensland Strategic Learning
Partnership

The Strategic Learning Partnership is about developing commercially
focussed education and research programs, using the facilities and
expertise of both organisations. Two facets of the partnership aimed
at the staff of Thiess are Recognition and Learning Pathways (tailored
and work-based short courses and for credit programs) and Flexible
and Remote Learning (learner centred and technology enabled).
Students at the University gain valuable workplace knowledge and
skills through the Undergraduate Site Learning Program in which they
simultaneously work and study.

The joint Technology and Process Improvement program aims to
support innovation at Thiess at the point of need by drawing on
the breadth of expertise at the University. Projects in this area include
the use of VR technology, design management methods, intelligent
traffic systems, renewable energy technologies and mining and mineral
processing technologies. The aim is to leverage off external grants
where possible.

Note your diary – applications for this year’s Awards will be called
in May 2002.
Purpose
To recognise the importance of education in the process of developing and nurturing entrepreneurs; and to showcase best practice in entrepreneurial education.

Criteria for Assessment
1. Effective involvement of industry in the design, implementation and evaluation of entrepreneurial educational activities.
2. Encouragement of students in the practice of entrepreneurship.
3. Is the educator's work a model for others?
4. Demonstrable outcomes of the educator's work - development by students of new products, processes or services.
5. Has the educator's work made a difference to the attitudes, self esteem, behaviour, life chances, values and employment outcomes of their students?

F
ounder of Australia’s first Masters Degree in Entrepreneurship and Innovation. Though he retired in late ’97, he has remained actively involved in the teaching of the MEI program in both Australia and Israel, and is still doing so. He also continues to supervise PhD candidates in entrepreneurship.

Murray’s pioneering spirit and educational achievements were also recognised by Swinburne University in awarding him the status of Professor Emeritus. Other universities overseas have recognised his very significant contributions. His work in helping to establish the MEI program in Israel led to the School being given an export award.

Murray’s unique contribution to entrepreneurship education goes well beyond adding an elective or concentration to an MBA program. He and his team have demonstrated convincingly that a totally focussed program produces much better results. The MEI graduates now succeeding in the establishment and development of new growth ventures are the proof.

Murray’s contribution has been of great importance to Australia. During a career spanning 40 years he worked in the fields of defence science and technology as an Engineer, Research Scientist and as Defence Research Attaché in Washington, USA; and in education as Dean of Engineering, Professor of Innovation and Entrepreneurship and Pro Vice-Chancellor (Industry/Academic Liaison) at Swinburne University of Technology. He has special interests in wealth creation from engineering and innovation (is Past President of the Institution of Engineers, Australia) and
work integrated learning (is Past-President of the World Association for Co-operative Education). He founded the School for Innovation and Entrepreneurship within the Faculty of Engineering at Swinburne and developed innovation programs from Graduate Certificate through Masters level to PhD which are taught in Australia and overseas. He initiated the development of the Institute for Innovation and Entrepreneurship into a viable commercial enterprise and joint venture between Swinburne University of Technology and Ernst & Young. He is particularly interested in practical research, has authored and co-authored books, chapters and professional papers and currently supervises 7 PhD students. In 1994 Murray was elected a Fellow of the Academy of Technological Sciences and Engineering. On Australia Day 1997, he was awarded an AM (Member of the Order of Australia) for his work in engineering, innovation and ongoing professional education. In September 1997 Murray was conferred with an Honorary Doctor of Pedagogy from the North Eastern University, Boston for his work in developing innovation and entrepreneurship teaching programs. He is the Visitor to the Co-operative Research Centre for Advanced Composite Structure. In December 1998 he was elected Professor Emeritus by Swinburne University of Technology and in 1999-2000 was a Visiting Professor in the Centre for Enterprise Development and Entrepreneurship at Murdoch University. He was awarded the Edwin Appel prize for contributions to Entrepreneurial Education by Babson College, Boston, USA in March 2000.

Honourable Mention:  
Professor Evan Douglas  
Head of School, Brisbane Graduate School of Business  
Queensland University of Technology  
Professor Douglas has an outstanding track record that extends over more than ten years which has brought national and international recognition. As Australia’s leading advocate of entrepreneurship education he has instilled an entrepreneurial culture within Queensland University of Technology’s Master of Business Administration (MBA) and Executive MBA. The most compelling evidence however, of his command of his subject matter, is the confidence shown in him by his peers and his capacity to engage his many hundreds of students in stimulating and innovative ways to understand the challenges of entrepreneurship and the critical importance of investor readiness for new business ventures.
As a unique group of leaders in Australian business, higher education and research organisations, the Business/Higher Education Round Table (B-HERT) sees as part of its responsibility the need to articulate its views on matters of importance germane to its Mission. In recent times it has issued Policy Statements and Papers – copies of which are available from the B-HERT Secretariat at a cost of $7.70 (GST incl.) per copy.

**Position Paper No. 7 (January 2002) – Greater Involvement and Interaction between Industry and Higher Education**
This paper looks at the need for a more enhanced partnership between the business community and higher education.

**Position Paper No. 6 (August 2001) – Sharing Administrative Functions at Lower Costs**
This paper highlights an innovative approach to achieving savings in administrative activities.

**Position Paper No. 5 (June 2001) – What is Needed to Make Australia a Knowledge-Driven and Learning-Driven Society?**
This paper aims to identify major public policy challenges that stem from a proper understanding of the nature of knowledge and learning.

**Position Paper No. 4 (February 2001) – The Critical Importance of Lifelong Learning**
This paper aims to identify major public policy challenges that stem from a proper understanding of the nature of knowledge and learning.

**Position Paper No. 3 (April 1999) – The Case for Additional Investment in Basic Research in Australia**
Australia needs to ensure that additional funding is provided within a broader policy framework. Such a framework should ensure maximum returns from this investment through diffusion of knowledge in industry and community, improving the skills level of the workforce, encouraging organisational culture change and collaboration, and promoting competition.

**Discussion Papers:**
- How Should Diversity in the Higher Education System be Encouraged?
- The Role of Universities in the Regions

(Refer B-HERT website: www.bhert.com)
One of the most exciting initiatives B-HERT is involved in is the unique Leadership in Innovation program. The program is an intensive three-module live-in training course for prospective R&D managers developed by the CSIRO and the Business and Higher Education Round Table (a forum of business leaders and university vice-chancellors) with significant input into the program from BHP, F H Faulding, and the University of Melbourne. The Achievement Through Teams – Leadership in Innovation program involves three residential periods of five days duration (commencing on a Sunday afternoon and finishing Friday lunch time). Module 1 is about Self-Management: Module 2, Team Building and Module 3, Organisation Culture and the Future of R&D.

The residential courses are held at small, quality conference centres close to capital cities. The course design is specific to the needs of R&D technical project leaders; brings together participants from across organisations and functions; encourages integration of professional behaviour with personal goals; and encourages leadership through trust, respect for others and generating enthusiasm for a project. The program is highly responsive to individual and group needs and provides an environment where participants form a strong learning community and ongoing networks.

The cost of the course is $12,000, which includes accommodation and meals, all training, course materials and coaching between modules.

Information: Margaret Redford, Ph: 02 6276 6265 or email: Margaret.Redford@lctd.csiro.au

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Please note the following dates for B-HERT meetings for 2002:

**Wednesday, 29 May 2002 - Sydney**

4pm-7pm followed by dinner.

**Wednesday, 20 November 2002 - Melbourne**

2.30pm-5pm (inclusive of Annual General Meeting), followed by Awards dinner, at which the Hon Brendan Nelson MP, Minister for Education, Science and Training, will deliver the after-dinner address and present the 2002 B-HERT Awards.
STUDENTS SET FREE ENTERPRISE AGENDA

by John Thornton
Executive Director
SIFE Australia Ltd

In October last year, a team of University of SA staff and students helped to set the agenda for the development of the Students in Free Enterprise (SIFE) program nationally at a seminar held in Sydney.

The foundations of this team were laid when the University of SA agreed to make John Thornton, a member of academic staff, available to fill the part-time position of Executive Director for SIFE Australia. In addition, a member of the university’s ‘Learning Connection’ staff, Stephen Jeisman, took over as the SIFE Australia Fellow for UniSA.

Only five Australian universities, including UniSA, had become involved in the SIFE program since it began in February 2000. Responding to the need to spread the word and with the generous support of a $20,000 sponsorship from Dick Smith Foods and the use of extensive “in kind” support from Qantas, students and staff from all Australian universities were invited to apply for places at an intensive indoctrination workshop.

The workshop brought together 44 students and 16 staff from 19 universities, representing all eight states and territories, to the foyer of the Hilton Hotel in Sydney for an unforgettable 40 hours learning about SIFE and the possibilities it offers to students to make a difference in their own lives and the lives of others.

The Dick Smith SIFE Australia Entrepreneurship Seminar was, according to students and staff “awesome”. They also had the chance to rub shoulders with senior executives and CEO’s such Roger Corbett, CEO of Woolworths and Jack Shewmaker, former President of Wal*Mart, and as a crowning moment they received their prizes and certificates of participation from the hands of Dick Smith, AO, himself.

These enterprising students will soon be breaking new ground by taking a lead in helping other students to learn about the challenges and rewards to be gained through inventing new futures for themselves and others. They will be helping to set the SIFE agenda for all Australian universities in future.

At the SIFE Australia National Competition on Saturday 13 July, a champion team from one Australian university will be chosen to represent Australia at the SIFE World Cup in Amsterdam in September. Senior corporate executives are needed to form the judging panels to assess the efforts of these outstanding young people.

For further information about SIFE Australia, visit www.sifeaustralia.org.au and, to see the ‘big picture’ of SIFE Global, point to www.sife.org. Direct email enquiries to john.thornton@sifeaustralia.org.au.
The purpose of the Business/Higher Education Round Table (B-HERT) is to pursue initiatives that will advance the goals and improve the performance of both business and higher education for the benefit of Australian society.

It is a forum where leaders of Australia's business, research and academic communities can examine important issues of mutual interest, to improve the interaction between Australian business and higher education institutions, and to guide the future directions of higher education.

In pursuing this mission B-HERT aims to influence public opinion and both government and non-government policy on selected issues of importance.

B-HERT believes that a prerequisite for a more prosperous and equitable society in Australia is a more highly-educated community. In material terms it fosters economic growth and improved living standards - through improved productivity and competitiveness with other countries. In terms of equity, individual Australians should have the opportunity to realise their full social, cultural, political and economic potential.

The membership of B-HERT comprises, by invitation, the chief executives of major Australian corporations and research organisations, and the vice-chancellors of Australian universities.

B-HERT pursues a number of activities through its Working Groups, State Chapters and active alliances with relevant organisations both domestically and internationally. It publishes a regular newsletter (B-HERT NEWS), reporting on its activities and current issues of concern relevant to its Mission.
This study, by the Institute for Research into International Competitiveness at Curtin University of Technology in Perth, commissioned by the Business/Higher Education Round Table (B-HERT), quantifies for the first time the enormous contribution made by the university sector to the national economy.

The study measures the economic impact of the university sector in three ways –
1. The income and employment generated by teaching and research;
2. The enhancement of the nation’s human capital through its education of university graduates; and
3. The creation of wealth through the spillover effects of its R&D activities.

The Report quantifies each of these impacts separately. It shows that the government gets a positive payback in a number of ways.

It is interesting to note that less than half the total economic impact of the university sector comes from the direct expenditure of universities. Of more significance is the estimate that the total impact is some $22 billion per year.

The Report provides a unique insight into the information and methodologies utilised in the study. It underlines the importance of higher education as an “economic good.”

In his Foreword to the Report Dr. David Kemp, Minister for Education, Training and Youth Affairs says:
“...it provides a foundation from which to consider the crucial issues of public and private funding of higher education.”
And further “…note(s) how valuable the information it contains will be for everyone interested in higher education issues.”

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