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Chapter 3: What the sector provides

Tertiary education in New Zealand provides a wide range of learning, ranging from education in foundation skills to doctoral studies. The New Zealand system embraces technical and vocational education and training, higher education, workplace training, adult and community education, and tertiary education within the senior secondary school.

While the system has evolved to meet the needs of New Zealand's society and economy, New Zealand also provides learning opportunities to a significant number of tertiary students from other countries who come to this country as international students.

The New Zealand Register of Quality Assured Qualifications provides a standard structure for naming and describing qualifications across levels and types of provision. It describes what learners can expect from a qualification and it provides for a measure of portability across the system.

In addition, the tertiary sector contributes to the national innovation system through its research activities; more than 60 percent of all New Zealand's research papers come from the tertiary education sector.

2008 year

New Zealand's second tertiary education strategy describes how tertiary education can contribute to government's themes of economic transformation – accelerating the pace of change in our economy; families – young and old – providing families with the support to maximise potential; and national identity – pride in who and what we are.

The strategy specifies three areas in which the system is expected to contribute: success for all New Zealanders through lifelong learning; creating and applying knowledge to drive innovation; and strong connections between tertiary education organisations and the communities they serve.

The strategy includes a statement of the distinctive contribution to be made by different parts of the sector and sets clear expectations for tertiary education organisations about the role they play in the system.

The new system is built around 'investing in a plan'. The strategy provides the context for a series of reforms to planning, funding and quality assurance in tertiary education that have begun to be implemented from 2008. In 2008, 110 tertiary education organisations had approved investment plans that set out the funding to be allocated to them over the next three years. The plans laid out what that organisation would deliver and how they would contribute to the tertiary education strategy. In 2008, the Tertiary Education Commission entered negotiations with tertiary education organisations on the detail of their expected contribution to the new system and to the government's priorities. The plans for these organisations are expected to take effect from 2009. These negotiations were based on the government's priority outcomes for tertiary education incorporated into the strategy for the years 2008 to 2010. (See box on next page for a list of the priority outcomes.)

Four outcomes where government expects to see shifts in the provision of education and research over the period 2008 to 2010 are included in the strategy:

- The first priority – increasing educational success for young New Zealanders – more achieving qualifications at level 4 and above by age 25 years – is focused on young people, as the benefits of a tertiary education are higher for those who start earlier. It is also concerned with achieving qualifications at level 4 and above, as these make a greater contribution to an individual's success.
- The second priority – increasing literacy, numeracy and language levels for the workforce – is focused on people in low-skilled occupations and industries, and, in particular, on Māori and Pasifika peoples in the workforce with low literacy, numeracy and language levels.
- The third priority – increasing the achievement of advanced trade, technical and professional qualifications to meet regional and national industry needs – is focused on identifying, planning for and providing for future skill needs. Tertiary education organisations need to increase the achievement of advanced trade and technical qualifications and professional qualifications linked to occupations with projected shortages (including the health, education and social services workforces).
- Priority number four – improving research connections and linkages to create economic opportunities – is focused on strengthening the linkages between tertiary education institutions, Crown research institutes and firms. These linkages are especially important in a small country like New Zealand, as many firms are too small to engage in research and development themselves. This priority is also concerned with the continued completion of research-based postgraduate qualifications and attracting and retaining high-quality researchers as an essential part of growing New Zealand's intellectual capital.

New Zealand's tertiary education provision

The government provides funding for New Zealand students undertaking formal learning. The formal learning delivered by public tertiary education institutions, and through private training establishments and other tertiary education providers, has met the required quality standards. In the recent past, the largest share of this funding has been delivered through student component funding – funding that is allocated on a per student basis, with differential rates set by subject area. It is a contribution towards the costs of education.

In most cases, the student is also charged an enrolment fee. From 2008, the student component has been replaced by a new investment system – under which the Tertiary Education Commission will make three-year funding decisions based on the quality and relevance of the provision offered. Some funding – a new student achievement component – continues to be delivered on a per student basis with some being allocated to tertiary education organisations to fund developments in their capability – the tertiary education organisation component.

While the student achievement component and the tertiary education organisation component are the largest funds administered by the Tertiary Education Commission, training programmes for some formal students are managed by the commission through other funds – such as Youth Training – which are targeted to particular types of students. Some of those funds are described in more detail later in this chapter.

Formal and informal learning

Learning opportunities within the New Zealand tertiary education system can be categorised as formal (that is, contributing towards a recognised qualification) and non-formal (that is, not contributing to a recognised qualification). Both formal and non-formal learning can be further divided into situations where students are enrolled with an education provider and situations where students are learning through a relationship with an employer or community organisation.

While most students in formal tertiary education are New Zealanders, international students also make up a significant number of formal students (8.3 percent of those in formal tertiary education in 2007, compared to 8.7 percent in 2006). New Zealand attracts international students from around the world, with 73 percent coming from Asia. International students are usually required to pay the full costs of their tuition. Australian citizens attain permanent residency status in New Zealand and are treated as domestic students and pay domestic fees. International students studying at the doctoral level are treated in the same way as domestic doctoral students as they attract funding through the student achievement component.

Industry training

This training is designed by, and delivered in conjunction with, industry, and counts towards recognised qualifications. The costs of training are met jointly by government and industry. The training is administered and supported through the 37 industry training organisations, which have been established by particular industries or groups of industries.

Table 3.1: Types of learning opportunities provided through the tertiary education system

	Formal	Non-formal
Enrolled with an education provider	<ul style="list-style-type: none"> • Student component-funded students • International students • Targeted training programmes • Tertiary education in schools • Industry training and Modern Apprenticeships (off-job training) 	<ul style="list-style-type: none"> • Adult and community education through community education providers, tertiary education institutions, schools and others
Employment and community-based learning	<ul style="list-style-type: none"> • Industry training and Modern Apprenticeships (on-job training) 	<ul style="list-style-type: none"> • Adult and community education through community organisations • Adult literacy programmes

In the industry training system, all trainees enter into a training agreement with their employers. Most of the training takes place on the job and progress is assessed by registered assessors. On-job training can take a number of forms. The learning can be self-paced, or the training can be delivered by an experienced staff member or an external trainer. In some cases, on-job training is complemented by off-job training. Industry training organisations facilitate individual training arrangements, purchase off-job training from tertiary education providers and then tailor these arrangements to the needs of learners and employers.

The Modern Apprenticeships programme is an employment-based education initiative aimed at encouraging participation in industry training by young people aged between 16 and 21. The initiative combines the mentoring aspect of the apprenticeship tradition with formal industry training that leads to recognised qualifications at levels 3 and/or 4 on the National Qualifications Framework. The Modern Apprenticeships programme is administered by the Tertiary Education Commission, which contracts the services of Modern Apprenticeships coordinators. The coordinators promote the programme, set up the training agreements, and act as mentors to the learners and their employers. They develop an individual training programme for each learner that specifies the qualification(s) and generic skills they will gain, and maps out how this learning will take place.

The government provides several targeted training funds that provide fully subsidised education and training to specific groups. For example, Youth Training is for youth up to the age of 18 who have left school with no or very low-level qualifications. The programmes funded by Youth Training provide foundation and vocational skills training at levels 1 to 3 of the qualifications register.

Training Opportunities is a labour market programme for people aged 18 and over who are considered disadvantaged in terms of employment and educational achievement. The programmes funded by Training Opportunities provide foundation and vocational skills training at levels 1 to 3 of the qualifications register.

Skill Enhancement is a vocational training programme for young Māori and Pasifika. When directed towards Māori, the programme is known as Rangatahi Māia while among Pasifika it is called Tupulaga Le Lumana'i. The programmes funded by Skill Enhancement provide a wide range of pathways that lead to qualifications at level 3 and above on the qualifications register. In 2005, Skill Enhancement was reviewed and, following this, government has refocused the programme to target young people with significant labour market disadvantages.

Learning environments

Tertiary education includes a wide range of learning environments. This includes traditional lecture-based teaching, as well as delivery through the world wide web and many other modes. Many providers are decentralising their campuses to provide access to tertiary education in more communities. Tertiary education includes a range of practical and theoretical activities. On-job education and training are becoming more common, and not just within industry training.

A notable trend over the last five years has been the growth in extramural or distance education. Provision ranges from fully distance-based learning through to courses involving on-campus block courses and local learning groups with tutoring and mentoring support. In 2007, there were 126,000 students (or 33,600 equivalent full-time students) taking courses of this kind.

The development of e-learning has also had a major impact on tertiary education in New Zealand. E-learning in tertiary education ranges from the use of technology to support teaching and learning in an on-campus course through to fully online courses that can be studied from anywhere in the world.

Adult and community education

This type of education is non-formal and provides a bridge to further learning opportunities. It fosters a culture of lifelong learning, active citizenship, critical social awareness and increased control over the future for individuals and communities. The five national priorities for adult and community education (ACE) are:

- Strengthening social cohesion
- Strengthening communities by meeting identified community learning needs
- Encouraging lifelong learning
- Raising foundation skills, and
- Targeting learners whose initial learning was not successful.

ACE is supported by, and delivered through, a range of community organisations. Funding for ACE is also available to schools and tertiary education institutions.

ACE Networks are collaborative groups of local ACE providers and practitioners who provide an opportunity to share information, knowledge and expertise and work together to meet identified community learning needs. The networks are varied in nature, reflecting local conditions and requirements.

The ACE Innovation and Development Fund has been set up to encourage responsiveness and innovation in ACE at local levels and support capability development of providers and emerging providers. It provides one-off funding for projects that utilise new and innovative approaches responding to community learning needs and aligning with the government's ACE priorities.

Community Learning Aotearoa New Zealand allocates small amounts of funding to community groups for community learning activities. Grants are usually under \$2,000, although special projects may receive up to \$5,000.

The government also funds ACE programmes in secondary schools from the wider ACE Pool. These programmes include adult foundation learning, languages, culture, art and leisure, business development, and health and fitness. There were 162,000 enrolments in 2007.

Tertiary education institutions have also been able to run ACE programmes using the student component funding. ACE programmes were provided by eight universities, 19 institutes of technology and polytechnics, and two wānanga in 2007 and attracted an estimated 88,700 learners.

From January 2006, all funding for adult and community education has come from a single, capped ACE pool covering all ACE providers including schools.

Adult literacy, language and numeracy education

A range of learning opportunities is also funded in the area of adult literacy, language and numeracy, including English for speakers of other languages.

The Workplace Literacy Fund assists employers to establish workplace literacy projects where employees can access literacy, language and numeracy tuition, linked to workplace requirements.

Industry training embedded literacy and numeracy projects support industry training organisations to build the capability necessary to effectively include literacy and numeracy.

Learners who enrol in level 1 to 3 certificate-level programmes in tertiary education providers get the opportunity to improve their literacy and numeracy levels in the course of that learning. Additional funding is being made available for certificate-level providers who embed explicit teaching and assessment of literacy and numeracy into their programmes.

Community provision reaches high-need groups who might not be able to access learning at work, such as parents, people who have more casual employment arrangements and people with very low levels of literacy and numeracy. Learning is provided in meaningful contexts such as family literacy and resettlement. This provision is funded through the Foundation Learning Pool.

Training Opportunities and Youth Training programmes also provide opportunities for particular groups of learners to build their literacy, language and numeracy skills for sustainable work.

Literacy Aotearoa provides flexible, community-based individualised learning for adults. This is often a crucial first step for an individual in building their literacy and numeracy skills.

Further information on the literacy, language and numeracy action plan can be found in chapter 7.

There is also a range of support provided for English for Speakers of Other Languages (ESOL). These include:

- the National Association of ESOL Home Tutor Schemes, which provides English language skills and resettlement support for migrants and refugees
- the Multicultural Centre for Learning and Support Services, which provides language and settlement support to migrants and refugees
- ESOL Assessment and Access Specialist Services, which assess the learning needs of new migrants and refugees, and
- the English for Migrants scheme, which provides English language tuition for migrants to New Zealand who have pre-paid their training costs.

English for Speakers of Other Languages tuition is also provided through other funded provision, including Training Opportunities and student component-funded courses.

Tertiary education within senior secondary schools

The development and introduction of the National Qualifications Framework has supported new options for accessing tertiary education within the senior secondary school.

The Gateway programme enables senior secondary school students to access workplace learning as an integrated part of their school education. Students pursue individual learning programmes, gain new skills and knowledge in a workplace or their local community and gain unit standards that can be credited towards the National Certificate of Educational Achievement or other national certificates.

The Secondary-Tertiary Alignment Resource (STAR) assists schools to meet the needs of senior secondary students by granting additional funding for schools to use in accessing a wide range of courses to provide greater opportunities for senior students. STAR funding is a capped resource available to schools with students in year 11 and above. The objectives of STAR are to enable schools to:

- facilitate transition to the workplace for students, particularly those intending to go straight into the workforce or those likely to leave school without any formal qualifications, and
- provide or purchase tertiary-type courses that will meet students' needs, motivate them to achieve, and facilitate their smooth transition to further education, training and employment.

STAR courses can involve work-based learning and/or study towards credits for the National Certificate of Educational Achievement and recognised tertiary qualifications.

The New Zealand Register of Quality Assured Qualifications

The New Zealand Qualifications Authority was established in 1990 with a key function of having an overview of qualifications in the senior secondary school and tertiary education sectors. This function was initially exercised through the development of the National Qualifications Framework, comprising national certificates and diplomas and their component standards. This framework has now been expanded through the development of the New Zealand Register of Quality Assured Qualifications, Te Āhurutanga. The register includes the National Qualifications Framework as a sub-set, but also incorporates qualifications developed by universities and institutes of technology and polytechnics. The register provides a way of:

- identifying clearly all quality-assured qualifications in New Zealand
- defining common naming conventions and requirements across the various systems of qualification approvals
- ensuring that all qualifications have a purpose and relation to each other that students and the public can understand
- maintaining and enhancing learners' ability to transfer credit by the establishment of a common system of credit, and
- enhancing and building the international recognition of New Zealand qualifications.

The register establishes 10 levels of qualifications and qualification titles that can be used at each level.

For each qualification there is a statement of learning outcomes that includes what the whole qualification represents in terms of the application of knowledge, understanding, skills and attitudes, as well as the components of the qualification.

Each qualification has a specific credit value that represents the amount of learning and assessment that is typically required to achieve the qualification.

Table 3.2: Levels and qualification titles for the New Zealand Register of Quality Assured Qualifications

Level	Name sequence
10	Doctorates
9	Masters degree
8	Postgraduate diplomas and certificates, Bachelors degree with honours
7	Bachelors, graduate diplomas
6	Graduate certificates
5	Diplomas
4	Certificates
3	
2	
1	

Source: New Zealand Qualifications Authority (no date), The New Zealand Register of Quality Assured Qualifications, Te Āhurutanga.

The general qualification definitions are as follows:

Certificates may be used in a wide range of contexts across all levels up to and including level 7, and are often used to prepare candidates for both employment and further education and training.

Diplomas often prepare learners for self-directed application of skills and knowledge. These qualifications can build on prior qualifications or experience and recognise capacity for initiative and judgement in technical, professional and/or managerial roles.

Graduate certificates and graduate diplomas are designed primarily as vehicles for graduates to pursue further study at an undergraduate level, either as a bridge to further study in a new area or to broaden and deepen existing knowledge areas.

Bachelors degrees provide a systematic and coherent introduction to the knowledge, ideas, principles, concepts, chief research methods and problem-solving techniques of a recognised major subject or subjects. They involve at least one sequential study programme preparing learners for postgraduate study and supervised research. Bachelors degree programmes are taught mainly by people engaged in research and emphasise general principles and basic knowledge as the basis for self-directed work and learning.

A bachelors degree with honours may be awarded to recognise advanced or distinguished study in advance of a level 7 bachelors degree. It typically involves an additional year of study and/or research at level 8.

Postgraduate certificates and postgraduate diplomas are designed to extend and deepen a candidate's knowledge and skills by building on attainment in the principal subject(s) of the qualifying degree. They provide a systematic and coherent survey of current thinking and research in a particular body of knowledge and may include instruction in relevant research methodologies.

Masters degrees are normally designed to build on the principal subject(s) of the qualifying degree. However, the degree may build on relevant knowledge and skills derived from occupational experience, as in the Master of Business Administration (MBA). Different discipline areas have different traditions. Typically, they require students to demonstrate mastery of theoretically sophisticated subject matter; evaluate critically the findings and discussions of literature; research, analyse and argue from evidence; apply knowledge to new situations; and engage in rigorous intellectual analysis, criticism and problem-solving. A masters degree programme contains a significant element of supervised research, usually resulting in a thesis, dissertation or substantive research paper.

Doctoral degrees are research degrees at a significantly higher level than masters, undertaken under the guidance of recognised experts in the field of study. The doctorate is awarded on the basis of an original and substantial contribution to knowledge as judged by independent experts, applying contemporary international standards.

A higher doctorate is awarded for independent work of special excellence, as judged by leading international experts. A higher doctorate does not require a person to have enrolled for the degree; the research on which the awarding of the degree is based will have been completed and may have been published over many years.

Honorary doctorates are awarded in recognition of exceptional contributions over time made to the creation of knowledge in a discipline, to the institution awarding the degree, to a profession or to society at large.

Research and knowledge creation and transfer

The country's innovation system is a complex network of research organisations, educational institutions, industry associations, financial institutions and communities. That system relies on the supply of knowledge, highly skilled workers and financing to support the growth of new ideas, products, processes and organisations to create economic, social and environmental benefits.

The tertiary education system plays a key role in furthering research and innovation in New Zealand. The advancement of knowledge through education and research is a core function of the tertiary education sector. The sector also undertakes significant research focused on adapting, transferring and exploiting domestic and international knowledge and technology. It does this alongside, and sometimes in partnership with, other research organisations, industry and business, community organisations, and government. The tertiary education sector is responsible for the largest share of the country's research output.

Most importantly, the tertiary education sector is responsible for the training of the research workforce and for producing graduates with skills, knowledge and attributes that enable them to contribute to the innovation system.

The primary roles of tertiary education research activities are to:

- support degree-level teaching and ensure that degree graduates are of high quality and informed by up-to-date scholarship and developments in the knowledge base
- train New Zealand's future knowledge-creators and innovators
- contribute to improving the knowledge base through high-quality research that generates new knowledge, and
- interpret new knowledge and disseminate it as a means of influencing people in communities and business.

Universities make an important contribution to the national research effort in the area of basic research, which involves exploring and expanding the frontiers of knowledge. Whereas the Crown research institutes and many other research providers are more likely to focus on applied or strategic research, the traditional role of the universities in postgraduate training and the nature of the funding for research in the universities mean that university-based researchers have greater opportunity to work in basic research. *The Research and Development Survey* published by Statistics New Zealand in 2004 estimates that two-thirds of all research conducted in the tertiary education sector is basic research. The survey reports that, in 2004, just over half (51 percent) of the basic research in New Zealand was conducted in the universities.

As part of the tertiary education reforms, the government has developed two major new means of promoting and funding research in the sector.

The first is the centres of research excellence. The first centres were established during 2002 and 2003. The centres of research excellence have been designed to support world-class research that will contribute to New Zealand's development as a knowledge society. The centres are inter-institutional research networks with researchers working together on a commonly agreed research plan. The seven centres and the areas of study they cover are described in chapter 2, together with the name of the university hosting the centre.

The second is the Performance-Based Research Fund, which was phased in over the period 2004 to 2007. This fund has shifted the basis of research funding from a system based on student enrolments to one where funding is allocated on the basis of research performance.¹ One consequence of the shift to the Performance-Based Research Fund is that much more information is now collected on research in tertiary education, for example the quality of the research, the people conducting research in tertiary education organisations and the relative research performance in different research fields and organisations.

A considerable amount of tertiary education research is also funded through research contracts. Some of these come from government-managed research funds, such as those administered by the Foundation for Research, Science and Technology. However, many of them come from the private sector. In some areas, universities and some polytechnics have entered into more formalised knowledge creation and transfer programmes with the private sector, involving joint research programmes, commercialisation of research outputs and development of research and technology parks.

1. Detailed information on the operation of the Performance-Based Research Fund can be found in Ministry of Education (2003) *Profile & Trends 2002: New Zealand's tertiary education sector* pp 108–110, and in Tertiary Education Commission (2007) *Performance-Based Research Fund: evaluating research excellence – the 2006 assessment*.

OECD thematic review: Tertiary education for the knowledge society

Over the period 2004 to 2007, the Organisation for Economic Co-operation and Development (OECD) conducted an investigation of tertiary education policy and practice among its member nations. The review findings have been summarised in a report, *Tertiary education for the knowledge society*, that covers the following themes in tertiary education: governance, funding – including student support, quality assurance, equity, research and innovation, the staffing of institutions, links between the tertiary education sector and the labour market, and internationalisation.

This article assesses the significance of the report and summarises its main points, while focusing in more depth on the key theme of 'strengthening ties with the labour market'.

The OECD has 30 member countries that work together on the economic, social and environmental challenges of globalisation. The OECD's position is to understand and help governments respond to new policy concerns. These currently include corporate governance, the information economy and the challenges of an ageing population. The OECD aims to provide a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to coordinate domestic and international policies.

The purpose of the OECD thematic review of tertiary education was to:

- undertake an international comparative analysis of tertiary education policies
- draw attention to effective policy initiatives in the countries that participated in the review
- suggest a comprehensive framework to guide tertiary education policy development
- identify priorities for follow-up work, and
- propose tertiary education policy directions.

The review is significant because this is the first time an international organisation of the standing of the OECD has published a comprehensive account of tertiary education policy and practice. Historically, information on the tertiary education policies of the OECD member countries has been difficult to source: education policy researchers have usually depended on publicly available government discussion papers as well as academic research that usually is confined to single policy issues. Also, 'grey papers' (or government policy papers), research and programme evaluations are generally not publicly available and unable to be collated into coherent international thematic reviews. To help overcome these difficulties, the OECD adopted a research approach, with participating countries preparing background reports and teams of experts producing a set of country reviews. These were complemented by analytical reviews of literature and data and by commissioned papers. The report *Tertiary education for the knowledge society* synthesises the findings of the analyses of the 22 participating countries' systems.

Full reviews were conducted for 14 countries, involving external teams who carried out an extensive case-study visit to each country. These countries were: China, Croatia, the Czech Republic, Estonia, Finland, Iceland, Japan, Korea, Mexico, the Netherlands, New Zealand, Norway and Poland. These countries, along with Australia, Belgium (Flemish community), Chile, France, Greece, Portugal, the Russian Federation, Sweden, Switzerland and the United Kingdom, also took part in the analytical-review component of the project.

The main rationale for conducting the review was the OECD's concern that tertiary education policy has become increasingly important on national agendas. Tertiary education is now widely recognised as a major driver of economic competitiveness, in an increasingly knowledge-driven global economy. High-quality tertiary education is more important than ever before and there is an imperative for countries to raise employment skills; to sustain a globally competitive research base; and to improve knowledge dissemination to the benefit of society.

Research to inform New Zealand's country background report² was conducted during 2005, and the report was published in early 2006. It gives a comprehensive account of the New Zealand tertiary education system, the strategies and policies underpinning it and its recent history. It also includes much information on the system's performance in the themes selected for review. This report provided the basis for the review conducted by the expert panel led by Leo Goedegebuure of the University of New England, Armidale, New South Wales and including four other experts on aspects of tertiary education from other countries. The expert panel report was released in early 2007.

The OECD synthesis report, *Tertiary education for the knowledge society*, asserts that tertiary education contributes to social and economic development through four major areas:

1. the formation of human capital (primarily through teaching)
2. the building of knowledge bases (primarily through research and knowledge development)
3. the dissemination and use of knowledge (primarily through interactions with knowledge users), and
4. the maintenance of knowledge (inter-generational storage and transmission of knowledge).

2. This report and the expert panel report are both available on the Education Counts website (www.educationcounts.govt.nz) and on the OECD site (www.oecd.org).

While not all countries are in the same position, the review found some commonalities between countries in terms of the main trends affecting tertiary education. These were:

- the expansion of tertiary education systems – globally 132 million students enrolled in tertiary education in 2004, up from 68 million in 1991. Worldwide, the average annual growth in tertiary enrolment over the period from 1991 to 2004 was around 5 percent
- the diversification of provision – new institution types have emerged, educational offerings within institutions have multiplied, private provision has expanded, and new modes of delivery have been introduced
- changes in the composition of the student bodies in higher education, with a worldwide rise in female participation and the growing participation of more mature students. The average age of student bodies has risen and they are now more heterogeneous in terms of socio-economic background, ethnicity and prior education
- the diversification of funding sources and the greater targeting of resources through performance-based funding and other competitive procedures. A number of countries are also expanding their student support systems
- the increased focus on accountability and performance by tertiary education organisations through the development of formal quality assurance systems. The increased focus on ‘quality’ first became evident in the early 1980s. The massive expansion of tertiary education has raised important questions about the amount and direction of public expenditure for tertiary education. Increased market pressures have also fostered the growing focus on accountability in tertiary education
- the evolution of new forms of institutional governance and the emergence of new perspectives on academic leadership and the decision-making structures of tertiary education institutions. Academic leaders are increasingly being seen as managers, coalition builders or entrepreneurs, and
- the increased internationalisation of tertiary education, involving global networking, mobility and collaboration among scholars, students, and other key actors, such as industry. International collaborative research has been strengthened by the denser networking among institutions and the cross-border funding of research activities.

These significant changes have thrown up considerable policy challenges, including the responsibility of tertiary education organisations to use public resources efficiently in their role as the guardians of the public interest. There is also now an expectation that tertiary education organisations contribute to the economic and social goals of countries. This involves a mixture of new requirements including those relating to the quality of teaching and learning; greater relevance to learner and labour market needs; research and development feeding into business and community development; and contributing to internationalisation and international competitiveness.

Policy challenges

The OECD review suggests that there is often a tension between the pursuit of knowledge generation as a self-determined institutional objective and the statement of national priority as defined in the aims and goals of the tertiary system. The objective, from a governance point of view, is to reconcile the priorities of the individual institution and the broader social and economic objectives of each country. This entails determining how far individual institutions contribute to national goals as well as clarifying the links to each institution’s own objectives.

Each policy domain requires governments and institutions to overcome a number of challenges. Steering the tertiary education system requires the unambiguous articulation of the nation’s expectations of the tertiary education system. The priorities of individual institutions then have to be aligned with the nation’s economic and social goals. A coherent balance between governmental steering and institutional autonomy must be found and tertiary education organisations need to develop institutional governance that has the capacity to respond to external expectations.

Funding tertiary education involves ensuring the long-term financial sustainability of tertiary education organisations, while devising funding systems that are consistent with national goals and use public funds effectively and efficiently.

Ensuring the quality of tertiary education requires that the mechanisms for accountability and improvement are well developed. A culture of transparency and quality is needed that is adaptable to the diversity of offerings.

Ensuring equity of tertiary education often requires ensuring equality of opportunities; devising cost-sharing arrangements that do not harm equity of access; and improving participation of the least represented groups.

The OECD review found that a particular set of policy challenges lies around the role of tertiary education in research and innovation. Countries need to foster research excellence, and its relevance, in order to remain competitive. It is also important to build links among tertiary education research organisations, and with the private sector and industry, and to find ways to improve the dissemination of the knowledge created.

The review suggests that the 'academic career' be nurtured to ensure an adequate supply of academics, and that this may be achieved by increased flexibility in the management of human resources in institutions and by helping academics to deal with new demands.

The internationalisation of tertiary education also requires the design of relevant and comprehensive management strategies to ensure quality across countries, and to enhance the international comparability of tertiary education organisations.

Finally, the review suggests that links must be made with the labour market through the inclusion of labour market perspectives and actors in tertiary education policy; ensuring responsiveness of institutions to graduate labour market outcomes; and providing opportunities for flexible, work-oriented study.

The review also notes that international comparisons must be made with care, since tertiary systems can be highly differentiated across countries according to, for example, their histories, cultural traditions and the different roles played by social partners.

Strengthening ties with the labour market

The report *Tertiary education for the knowledge society* suggests that it is best policy practice to ensure that tertiary education systems are integrated into, and hence responsive to, the needs of labour markets. Tertiary education has now become the principal means by which young adults equip themselves with the skills required for working life, and by which working adults refresh their skills.

It is now commonly thought that widening access to higher education can assist in developing a highly skilled workforce that can increase the knowledge intensity of traditional industries; expand the capacity of innovative economic centres of activity and, by this means, increase the potential for economic growth. In the review, the OECD asserts that this belief, held widely by governments and learners alike, has led to the expansion of tertiary education. *Ipsa facto*, the evidence of the cause of expansion should be tested, giving rise to many questions, principally about the suitability of linkages between tertiary education and labour markets. In a knowledge economy, how can governments be sure that their policy framework appropriately links the developmental capacities of their tertiary education system to the demands of their labour market? For example:

- given the expansion of tertiary education, is there an over supply of graduates relative to labour market demands?
- are the skills and capabilities acquired in tertiary education appropriate to the demands of working life?
- are students studying the right types of subjects or is there a mismatch between the courses they choose and the needs of the country?

The report addresses these questions by providing an overview of the labour market outcomes of tertiary graduates; investigating whether the skills and abilities obtained by tertiary graduates match labour market demands; and examining the institutions and policies used to link labour markets to tertiary education. It concludes with policy options that countries may wish to consider.

The labour market outcomes of tertiary graduates

The review gives several reasons for the relatively better outcomes of the tertiary educated:

- Highly educated workers can, in principle, perform different types of jobs, having the ability to compete for both high- and low-skilled jobs in periods of depressed labour demand, while those with lower-level education are only able to compete for low-skilled jobs.
- Higher levels of educational achievement may be associated with better labour market information and more effective job-search techniques, reducing the likelihood and duration of unemployment.
- Potential earnings from labour market activities are greater in the case of highly educated people, increasing their incentives to participate in the labour market, compared with people staying on income-replacing benefits or staying at home.

Tertiary-educated individuals are also more likely to work full-time, are less likely to work part-time, and experience higher job satisfaction than those with lower educational attainment. Individuals in tertiary education may take up part-time work for financial reasons and, while the experience gained through part-time work may help them later to find a job, it may have little effect on their longer-term labour market outcomes except where the work engaged in is directly relevant to their vocation.

The tertiary educated have higher employment and lower unemployment rates

The report finds that the continued growth in tertiary education is partly rooted in the desire of students to reap the private economic benefits associated with tertiary education. Their motivation is the belief that tertiary graduates experience, on average, lower rates of unemployment and higher wages than those with only secondary school education. Governments' willingness to accommodate these aspirations through publicly organised and financed tertiary education, and indirectly through authorising and regulating private institutions, as well as by providing student support systems, has allowed this growth to occur.

The survey data confirms that in the countries under review, tertiary-educated people have, on average, higher employment rates and a lower risk of unemployment. In 2005, Iceland and Switzerland had the highest rates of employment for tertiary graduates – above 90 percent – while in Japan, Korea and Turkey the rates were the lowest – below 80 percent.

Across all OECD member countries, the employment gap between tertiary-educated people and those with only secondary education fell during the last decade from 12 percent, on average, to 9 percent. Differentials below 5 percent exist in New Zealand, Australia and Iceland, while above average differentials are evident in Estonia, Ireland, Switzerland, Austria, the Czech Republic, Germany, Greece, Hungary, Luxembourg, the Slovak Republic, Turkey, Mexico and Poland (the highest at over 20 percent).

Comparing tertiary-educated women with women who have only secondary school education showed that the difference in the employment rate among females is larger than for males. In 2005, the OECD average differential was 13 percentage points for females and only 6 percentage points for males. A significant gap between employment rates of tertiary-educated males and females also existed. The employment rate was 5 percentage points higher for tertiary-educated males than for females in Sweden, Norway, Portugal, Finland and the United Kingdom, and over 15 percentage points higher in Mexico, Turkey, Japan and Korea. In general, the gender gap in labour market participation was smaller among the tertiary educated than among those with lower levels of education.

The unemployment rate of those who are tertiary educated was 4 percent, on average, for OECD countries in 2005 – two points lower than for those with only upper-secondary education and seven points lower than for those with only lower-secondary education or less. In the Czech Republic, Estonia, Germany, Poland and the Slovak Republic the tertiary educated experienced the smallest risk of unemployment compared with their counterparts who had less education. In contrast, in Italy and Mexico, the unemployment rate of the tertiary educated was likely to be higher than for those with only upper-secondary education.

Higher-educated individuals earn more, on average, than people with lower-level education. Again, the earnings gap among higher- and lower-educated women was greater than that among men. The earnings differences between the tertiary educated and those with only upper-secondary education were generally more pronounced than the differences between people with only upper-secondary education and those with only lower-secondary education or less. Gender disparity in earnings remained significant in all countries and for all levels of educational attainment but it was lowest among individuals who attained a tertiary education. The earnings of females varied between being less than 60 percent of the earnings of comparable males (in Austria and Italy) to approximately 80 percent of the earnings of comparable males (in Belgium, Luxembourg and Turkey).

No evidence of crowding-out of lower-qualified workers

An important question is whether or not labour markets are generating enough jobs requiring high-level skills to absorb the expanded supply of tertiary graduates or whether they end up in jobs not requiring their qualifications (where they crowd out lower-qualified workers). It has also been suggested that the increase in the number of tertiary-educated students entering the labour market would cause an over supply, leading to a deterioration of their own labour market outcomes. The review found no compelling evidence of the crowding-out effect, or of the deterioration hypothesis. Evidence from the surveyed countries suggests that, where rapid growth of the tertiary education system occurred, the relative unemployment rate of those with only secondary school qualifications had not increased substantially, contrary to the crowding-out or displacement hypothesis.

The review also did not find evidence of deterioration in the wage premium for tertiary-educated people as a result of the expansion of tertiary education. This suggested that there has not been an over supply of tertiary-educated workers in the labour market.

While the report states that the causes for the increase in demand for tertiary graduates in the labour market varied, it suggests that the increase is probably due to a skill-based technology change. The introduction of new technologies in the workplace has required a steady increase in tertiary-educated workers, commensurate with the supply of more skilled workers. Employers are willing to pay more to workers who have the skills to operate new technologies. There is good evidence supporting the technology hypothesis, while competing explanations, such as globalisation driving change, are less well supported by evidence.

Some OECD countries report disappointment among tertiary graduates on entering the labour market, suggesting that there is evidence that supply is outstripping demand, as well as educational inefficiency. A high proportion of graduates in China, Mexico and Estonia are unable to find employment matching the level of education received. The empirical evidence to back this up is controversial, however, due to the difficulty of tracking skill requirements for occupations over time. Some studies have found important variations across countries in the extent of over-education among the young. In Poland, the Slovak Republic and the United Kingdom 30 percent of 15 to 28 year-olds were found to be over-educated, compared to less than 10 percent in Iceland and Portugal.

Is the supply of tertiary-educated workers outstripping demand? The review cites research that suggests that between 1995 and 2006 the supply of tertiary qualifications expanded at a greater pace than the demand for tertiary qualifications. In 2006, the size of the tertiary-educated population in Europe exceeded the volume of jobs requiring tertiary education by, on average, 6 percent. However, there are important cross-country differences in the probability of being over-educated, the lowest being in Italy and the highest in the United Kingdom. The cross-country differences may arise because of the design and efficiency of the different education systems in providing the required skills; the interplay of institutions; the educational choices of individuals; and the functioning of the labour market in matching the supply of and demand for skills. The report recommends more research be conducted to explain the cross-country variation in over-education and in skills mismatching.

Matching skills and capabilities to the demands of working life

Do the skills that people acquire from tertiary education correspond to those required in the labour market? Different skills are required in different sectors and occupations. We have already seen that employers regard skills attainment as important, given the higher employment likelihood and wage premiums for tertiary-educated people. How well matched tertiary-educated people's skills are to the skills they require in the labour force is a difficult question to answer as little research has been done detailing occupational skills requirements. While some studies assert that there has been a change towards occupations with higher skill requirements, the review suggests that the expansionary phase of the early 2000s was, in fact, accompanied by greater labour demand for both skilled and unskilled labour, with some evidence of a bias in favour of 'knowledge-intensive' employment.

Since the late 1990s, worker shortages in different sectors and occupations were identified as the main factor hampering economic growth in many countries, and this was especially acute among both highly skilled and unskilled workers. Population ageing was also identified as a factor causing shortages of workers in key occupations due to retirees not being replaced by young workers.

This was particularly the case in health and education. In some countries, the tertiary education system was perceived as producing too few science and engineering graduates. While labour market indicators generally do not provide evidence of a shortage of these graduates (based on vacancies, unemployment rates, wages, labour market participation and weekly working hours), the number of 'difficult to fill' science and technology vacancies continued to grow between 2003 and 2006. It has been claimed that the potential shortage has not been accompanied by rising salaries of science and engineering professionals mainly because higher-educated science and engineering personnel are less sensitive to pay levels than other professionals because their job market is more international.

Some skills, such as information and communications technology, 'soft skills' (defined as communication, and inter-personal skills) and entrepreneurial skills, appear to be in greater demand these days. New skills and competency requirements have arisen from the growing internationalisation and globalisation due to technological change, the increasing emphasis on education and training, and the increasing volatility of labour markets.

Some analysts argue that information and communications technology has made performing some jobs less demanding, while others argue that the skills requirements are now much greater than in the past. The expansion of information and communications technology and the internet has led to increased demand for individuals with these skills. There is a general consensus that information and communications technology literacy has become almost as important as general literacy and numeracy for most jobs. 'Soft skills' have also been growing in demand in recent years. They are regarded as complementary to the traditional skills associated with substantive areas of knowledge.

Educators and employers pressure governments to provide education with emphases on producing either generic or more specialised skill sets. Some commentators suggest that a more general education provides greater value to an economy, based on the argument that returns to academic qualifications are generally found to be higher than returns to vocational qualifications. A 'too specific' education could be an important limitation in times of rapid structural change. While it is argued that 'employability' and 'relevant and up-to-date skills' should feature prominently in vocationally oriented education at all levels, there is an equally strong case to be made for universities focusing on ensuring adaptability and employability over entire careers. In the context of globalisation and rapid labour market changes, workers face an increasing need to ensure their skills are adaptable and relevant to many different settings, for which a more generic education is required.

The success of technological and organisational innovation depends to a large extent on the ability of individuals to absorb change and adapt to it, which often requires further on-the-job training. As shown in a recent survey, tertiary graduates are increasingly expected to be competent in different domains ranging from professional expertise, functional flexibility, innovation and knowledge management to managing people effectively and having an international orientation. According to the survey, the main determinant of labour market success of tertiary graduates seems to be their specific professional expertise, followed by a capacity to manage people and resources effectively. The role of flexibility as a core labour market competence seems less clear, but it may play a role in protecting graduates when they are confronted with changes at work.

A common finding was that employers might not make full use of the human capital available to them. In a recent survey, 25 percent of surveyed graduates indicated that knowledge and skills acquired in tertiary education were not fully used in their work. So just what are the key competencies required for work? If definitively known, educators could tailor their programmes more effectively to occupations.

International surveys found differences between countries in this respect. 'Problem-solving' (acquired by the end of graduates' studies and made good use of in work) is thought to be a key competency requirement by western graduates, while it is seen as less important by graduates from Japanese universities.

It is now generally recognised that tertiary education should endow graduates with entrepreneurial skills. However, most surveyed graduates feel that their education does not provide them with adequate entrepreneurial skills. In the thematic review, the OECD reports that there is growing consensus that tertiary education courses should further encompass entrepreneurship with special attention devoted to matching this training with scientific and technological studies in order to encourage spin-off and innovative start-ups.

There is a growing concern over skill mismatches, typified by graduates being employed in positions that do not fully utilise their skills. This is evident through displacement in some OECD member countries where the perception exists that a proportion of tertiary-educated graduates fill jobs previously designed for college graduates. In turn, college graduates fill jobs previously filled by leavers from secondary and vocational school. This apparent displacement process and the pressure to gain higher-level and more academically oriented qualifications may have led to shortages of trade workers, for example, electricians, plumbers and mechanics.

The review asserts that improving the matching between labour market needs and the supply of tertiary-educated people is likely to be instrumental to a well-functioning economy. In some OECD countries there is already good alignment. Matching the demand and supply of skilled workers is not an easy task. It involves the anticipation of labour market shortages and bottlenecks as well as the accurate identification of skills needed. The level of policy intervention is also an issue as labour markets are volatile and future labour market demands are fairly difficult to predict. Especially in a knowledge economy, today's 'cutting-edge' skills and capacities are likely to be quickly outdated.

Some trends can be predicted. For example, it has been widely anticipated that, as the workforce ages, the demand for certain occupations, such as health and social care workers, is likely to increase, while other occupations are likely to experience shortages due to labour force shrinkage.

Different countries have different systems to align tertiary education provision with labour market demand

In some systems, it is the tertiary students themselves that chiefly align tertiary education provision with labour market demand. In these 'demand-led' systems, prospective students choose whether to study at the tertiary level, and what to study, based on their assessment of the utility of the programme of study to enable them to reach their goals. Public authorities and tertiary education organisations play their part by ensuring that study places are available to match the changing student demand.

In other countries, the alignment of tertiary education to labour markets is a central concern of officials in ministries, intermediary bodies, or regional governments. The officials endeavour to steer the country's system of tertiary education towards closer engagement with the needs of the labour market. They may do this either by shaping the environment of student and institutional choice, or by directly rationing how many study places are provided, and of what kinds. Still others combine elements of both demand-led and centrally steered systems.

Where mixed systems have arisen, it has sometimes been in recognition that either purely demand-led or centrally controlled systems have, by themselves, led to sub-optimal alignment. It is often claimed that, as demand-led systems rely on the choices of students, they are only as good as the prospective students' ability to predict labour market need. Students are sometimes poorly informed about the expected returns to education by study field. Also, in some countries, secondary school students have little understanding of tertiary education costs and benefits. Other aspects such as their preferences and their socio-economic situation, as well as the changing opportunities in the labour market and the admissions policies and practices of tertiary education organisations, also affect their study choice.

If student demand is to align tertiary provision to the needs of labour markets, students must be well informed about labour market outcomes in order to be responsive to them in their study choices. There is a case for supporting such systems by enhancing the availability of information about key aspects of career choice, such as wages, likelihood of completion (of course of study), employment prospects at graduation and the likely terms and conditions of future employment.

Even if students are well informed about likely prospects on graduation, delays such as the time it takes to qualify may herald a change in labour market conditions from the start to the end of the study. There are many examples (the OECD review uses nursing in the US) where long qualifying lags have closed gaps in demand and supply. Throughout the last half century, there have been many periods of nursing shortages followed quickly by periods of equilibrium or even surplus. Similar patterns have been identified in engineering, teaching and other professions, the graduates of which typically take between three and seven years to complete their tertiary education.

Often, rich information on the labour market outcomes of graduates is not available. Tertiary education organisations may also not be well placed to be able to advise students on the requirements of the labour market, depending on how well developed their links with employers are, and other factors, such as the quality of the provider. However, there are now several methods of ensuring students make the right choices about their career, their tertiary education provider and their course of study, including the use of graduate destination surveys and national student surveys. In many countries, information on labour market outcomes or the quality of instruction is less developed and tertiary education organisations do not typically have a good sense of labour market destinations of their graduates. In those countries, little attention is devoted to the analysis of graduate labour market outcomes.

Career guidance is considered a useful tool in the review to improve labour market supply, as well as a way to prevent student failure and to improve the quality of education received. There is some evidence of a positive link between career guidance provision in higher education and student retention in Finland and Ireland, but otherwise empirical evidence on the impact of career information and guidance in secondary and tertiary education is weak. There is little regular and systematic evaluation of the quality of career guidance information provided in most countries.

Developing closer ties between tertiary education organisations and labour markets

Tertiary education organisations are key in linking students' demand for programmes to labour market demand for graduates, through their responsiveness to labour market needs and students' preferences. The review suggests that some privately financed institutions are better placed to align tertiary education with labour market needs than publicly funded tertiary education organisations. For example, for-profit providers in Japan, when compared with public or private universities, have greater autonomy from public authorities, and stronger management, enabling them to act with comparatively greater responsiveness to market forces. Some countries have accordingly strengthened the labour market orientation of their tertiary system by authorising the entry of new private education and training providers.

The review also asserts that public institutions can be made to be more responsive to labour market needs where public authorities establish policy frameworks. These frameworks can include admission policies and institutional funding methodologies that are strongly oriented towards meeting student enrolment demands. In some countries, for example, institutions may not restrict enrolment, and student numbers are the prominent basis for institutional funding. In contrast, Spain was given as an example of a system that does not seem to take student demand into account in decisions on the number of entry places for most university courses. Consequently, large imbalances exist, according to the review, between study places and student demand across a number of subject areas.

Through the review report, the OECD recommends that flexibility in both course programme design and conditions of study can be beneficial because students who are able to study part-time while working in their chosen field can transfer easily between fields of study. This means that learners are not unduly disadvantaged when they realise they have chosen the wrong field of study. However, the report laments that there are few country examples where flexibility and ease of transfer are the norm.

Public authorities can aim to align tertiary institutions with labour markets by shaping student and institutional choices. This is referred to as 'steering'. Students can be encouraged to select high-demand fields by providing them with information about labour market outcomes of graduates. Targeted funding can be used to increase (or decrease) funding of certain disciplines, to encourage their provision by institutions, while preferential pricing systems can be used to entice students into certain fields, for example, by selectively lowering tuition prices relative to other fields, or by providing preferential terms of financing (such as loan concession or forgiveness).

Supply-driven rationing of study places by public authorities does meet with some difficulties. They may lack the administrative information and management controls over study places necessary to engage in rationing and the accurate and detailed data about graduate labour market conditions required to effectively allocate resources to labour market need. The allocation of places using labour market demand forecasts, in place of student demand, may result in mismatches of student preferences to the supply of study places, leading to inefficiencies and to serious distortions in behaviour. There is also no guarantee that public authorities will be better at forecasting labour market demand than the students themselves. In addition, attempts to steer enrolments towards fields of 'national need' that contradict wage signals often end in failure such as an over supply of graduates, leading them to seek employment in other countries or in fields other than those in which they were trained.

Some countries have responded to a lack of labour market focus in their tertiary education systems by creating vocationally oriented institutions that aim to develop closer ties with labour markets. Where they have been established, they typically operate in a legal or regulatory setting that enforces a strict division of labour between them and universities. They are assigned a mission, governance structure, funding system, and degree-awarding authority different from that of universities. In many countries, 'polytechnic' institutions are in operation, providing professional and vocational education through short to moderate duration programmes. Typically, they offer courses that are less theoretical and more practice oriented, often incorporating a work placement. They often undertake applied rather than abstract research and may operate with an element of local financing, incorporating employer or regional input into their governance.

Professional bodies to help align tertiary education systems with labour markets

Professional bodies can play a leading role in defining and controlling access to regulated or licensed professions, such as engineering, architecture, medicine, law, pharmacy and accountancy. Professionals may be trained as apprentices, or in a work-based setting, and be examined and licensed by the profession itself. Alternatively, training and examination may be embedded in the tertiary education provision, at either the undergraduate or postgraduate level. Professional bodies may have extensive influence over the content of curriculum, pedagogy, staff numbers and qualifications, and training facilities through their role in the accreditation of professional programmes and the recognition of a graduate's right to practise in a profession. They may be charged with playing a prominent public role in ensuring that tertiary education systems are responding to the needs of each profession, in respect to both the supply of graduates and the training and skills they possess.

The extent of professional influence over tertiary-based education and training appears to vary widely across countries. Broadly speaking, where countries have labour markets that are chiefly firm based such as in Asia, the influence of professional bodies appears to be comparatively modest, while the opposite is true in economies where labour markets are principally occupational. Emerging economies, or those transitioning from planned economies to open economies, appear to be shifting from firm-based to occupationally based economies.

Partnerships between tertiary education organisations and professional bodies are evident in some countries, having been facilitated in some cases by the public authorities through the use of targeted funds. The review cites New Zealand's Partnerships for Excellence initiative as an example that aims to increase private-sector investment in tertiary education while fostering better linkages between tertiary education providers, industry and business. The review also notes that some countries have emulated the well-known German system of apprenticeships and workplace-based learning, but have faced difficulties such as lack of motivation from firms or the absence of a tradition in tripartite planning that is necessary in order to create high-quality internships. Also, some educational cultures were hostile to corporate participation. In some countries, traditional university values are not always compatible with entrepreneurial activities, while academics have few incentives to be involved in partnerships, and large corporations, which have their own research facilities, do not always feel the need to cooperate with tertiary education organisations. Synergies can be created between tertiary education organisations and business, for example, through joint degree programmes between universities and corporations. These have involved academics and students spending time at industry research institutes.

How national qualifications frameworks connect tertiary education to labour market needs

Developing national qualifications frameworks and credentials systems is another recognised way to connect labour market needs and the tertiary education supply. A national qualifications system facilitates the articulation of the demands of employers, the expectations of students and the offerings of tertiary education organisations. It has the potential to bring together the skill needs of employers, the design of tertiary programmes to prepare students with these skills, and the information about competencies needed for certain occupations. National qualifications frameworks have emerged through recent transformations of labour markets; the expansion and diversification of post-compulsory education; and the moves towards more demand-driven education and to make the increasingly complex provision of qualifications more transparent.

The report contends that, although there is not much empirical evidence on the impacts of national qualifications systems in tertiary education, their performance may be assessed along dimensions such as accessibility, efficiency, flexibility, responsiveness and transparency. Many countries now have national qualifications frameworks in place, although their use and effectiveness vary across countries. Some countries have had practical difficulties with integrating employers' perspectives into qualifications design due to factors such as the complexity of the system as well as the large numbers of bodies involved.

Summary

The link between the labour market and skills acquisition is complex and can be difficult to measure, achieve and manage. Tertiary education generally proceeds on assumptions made by students and governments about its economic utility. There are both supply and demand causes of tertiary education 'massification', with students embarking on tertiary education because it offers them better job security and wage premium, while governments invest in tertiary education because of its link to economic growth through meeting an otherwise unmet labour demand.

It is not clear whether there is currently enough information to make a determination as to whether the 'right' mix of learning is occurring in countries. Indicators show supply reasonably matching demand in some countries, while in others they show mismatches and inefficiencies occurring.

The OECD report *Tertiary education for the knowledge society* offers an array of 'pointers' for future policy development in integrating tertiary education with the labour market such as:

- coordinating labour market and education policies
- improving data and analysis about graduate labour market outcomes
- strengthening career services at secondary and tertiary education levels, and
- reinforcing the capacity of institutions to respond to the labour demand.

The report suggests that best practice for countries wishing to align their tertiary education system with their labour market includes enhancing their tertiary education provision with a labour market orientation; encompassing labour market perspectives and actors in policy development and institutional governance; encouraging tertiary education institutions to play a greater role in lifelong learning; and exploring the potential of national qualifications frameworks.

References:

OECD (2008) *Tertiary education for the knowledge society*, Paris: Organisation for Economic Co-operation and Development.