



## CHAPTER THREE

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## AN OVERVIEW

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 provision across 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 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.

## THE 2007 YEAR

New Zealand's second tertiary education strategy continues the broad and inclusive approach taken by the first strategy to cover the diversity of tertiary education. However, the Tertiary Education Strategy 2007-12 has a sharper focus on the expected contribution of the tertiary education system to government's national goals. It describes how tertiary education can contribute to 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 latest strategy includes an outline of the new tertiary education system and 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 tighter focus provided by the second strategy responds to the evaluation of the first strategy, which found that the participants in the system required more guidance to support decision-making.

Consequently, 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 for tertiary education is built around 'investing in a plan'. To allow investment in tertiary education organisations to be on the basis of a plan from 2008 onwards, the Tertiary Education Commission carried out negotiations in 2007 with stakeholders and tertiary education organisations on the detail of their expected contribution to the new system. These negotiations were also based on the government's priority outcomes for tertiary education incorporated into the strategy for the years 2008 to 2010.

Four outcomes where government expects to see shifts in the provision of education and research are included in the Statement of Tertiary Education Priorities 2008-10. 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 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 bulk of formal learning delivered by public tertiary education institutions, and through private training establishments and other tertiary education providers, has met the required quality standards and demonstrated the relevance of the provision to the Tertiary Education Commission. The government provides funding for New Zealand students undertaking formal learning. 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 will be replaced by a new investment system – under which the Tertiary Education Commission will make three-year funding decisions based on criteria that focus on how the organisation will meet government priorities and the needs of stakeholders. These in turn reflect quality and relevance of the provision offered. Some funding – a new student achievement component – will continue 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 component is the largest fund that is 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 (8.7 percent of those in formal tertiary education in 2006,

compared to 9.4 percent in 2005). New Zealand attracts international students from around the world, with 70 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.

Industry training provides training, designed by, and delivered in conjunction with, industry, that counts towards recognised qualifications. The costs of training are jointly met by government and industry. The training is administered and supported through the 40 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
<b>Enrolled with an education provider</b>	<ul style="list-style-type: none"> <li>• Student component-funded students</li> <li>• International students</li> <li>• Targeted training programmes</li> <li>• Tertiary education in schools</li> <li>• Industry training and Modern Apprenticeships (off-job training)</li> </ul>	<ul style="list-style-type: none"> <li>• Adult and community education through community education providers, tertiary education institutions, schools and others</li> </ul>
<b>Employment and community-based learning</b>	<ul style="list-style-type: none"> <li>• Industry training and Modern Apprenticeships (on-job training)</li> </ul>	<ul style="list-style-type: none"> <li>• Adult and community education through community organisations</li> <li>• Adult literacy programmes</li> </ul>

In the industry training system, all trainees enter into a training agreement with their employers. Most of the training takes place on-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.

### 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

### 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. Large providers are increasingly 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 2006, there were 128,000 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.

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 collaboratively 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 which respond to community learning needs and align with the government's ACE priorities.

The ACE New Provider Fund was established in May 2004 to support previously unfunded ACE providers whose programmes and activities align well with the government's ACE priorities. The fund was allocated for the first time in July 2005. The final round will be in 2007.

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 149,000 enrolments in 2006. Funding for schools was transferred from the Ministry of Education to the Tertiary Education Commission at the start of 2004.

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, two colleges of education and two wānanga in 2006 and attracted an estimated 110,000 learners.

From January 2006, all funding for adult and community education comes from a single, capped ACE pool covering all ACE providers including schools. Funding for all providers continued in 2006 at the same rate as in previous years except for tertiary education institutions that had their funding reduced in 2006.

In 2006, the Tertiary Education Commission worked with the tertiary education institutions to determine how the reduction of ACE funding for 2007 could be managed. ACE funding for universities remained the same in 2006 and is expected to be allocated at approximately the same volume for 2007.

## Adult literacy and foundation education

A range of non-formal learning opportunities is also funded in the area of adult literacy and foundation education including numeracy and English for speakers of other languages. The Adult Literacy Innovations Pool provides funding for quality literacy learning opportunities. It provides funding for:

- new approaches
- reaching learners not currently accessing foundation learning
- strengthening foundations in existing provision, and
- learning with a focus on family and community links, new pathways and special groups.

In 2005, this fund became part of the overall Foundation Learning Pool.

The Workplace Literacy Fund supports improved literacy in the workplace. Workbase, the New Zealand Centre for Workforce Literacy Development, administered funding for basic skills until 2005, as well as promoting workplace literacy and supporting the development of literacy resources. The funding is now directly administered by the Tertiary Education Commission.

There is 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.

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.

## COMPETENCIES AND QUALIFICATIONS

The results of learning through tertiary education can be viewed in terms of improving competencies and attainment, or progress towards attainment, of recognised qualifications.

### Key competencies in tertiary education

New Zealand's second tertiary education strategy, like its predecessor, places a strong focus on the role of tertiary education to contribute to the success for all New Zealanders through lifelong learning, including:

- ensuring maximum educational opportunity for all New Zealanders
- strong foundations in literacy, numeracy and language
- successful transitions from school to tertiary education and work
- building relevant skills and competencies for productivity and innovation, and
- building skills and competencies for social and cultural development.

These strategies stem from a vision for New Zealand in which most adults have the required mix of generic and specific skills and the adaptability to contribute to national economic and social wellbeing.

Recent international research advocates a shift in emphasis from precisely defined 'skills' to the broader term 'competency'. A competency includes all the skills, knowledge, attitudes and values needed to do something.

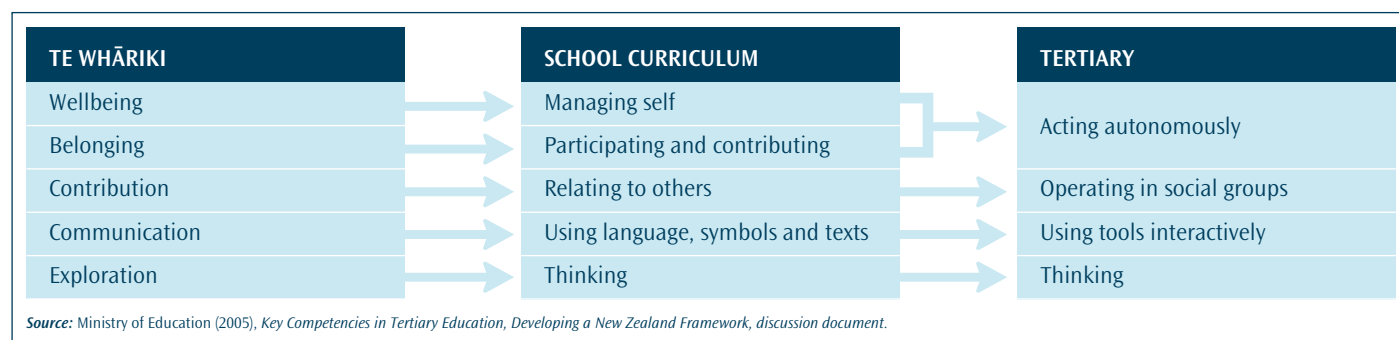
Competency does not exist as something that can be learnt in isolation. It is demonstrated in the performance of a task. Competence is developed most effectively in contexts that have meaning and purpose. It also exists on a continuum from novice to expert.

### Towards a New Zealand framework

In 2005, the Ministry of Education released a discussion document offering a New Zealand framework for key competencies for the tertiary education sector. The framework proposes three key shifts:

- building a shared understanding of desired outcomes in relation to key competencies within and between the education and employment sectors

Table 3.2 // Alignment of key competency frameworks across sectors



- developing higher levels of competence for effective participation in the knowledge society, and
- enhancing the teaching and learning of key competencies in tertiary programmes.

The tertiary education framework has four groups of key competencies:

- operating in social groups, including relating to others, managing and resolving conflict and motivating groups to achieve a particular outcome
- acting autonomously, including identifying and taking action regarding one's interests, limits and needs and acting within the big picture/larger context
- using tools interactively, which means the ability to understand, use and take meaning from language, literacy and numeracy, symbols, knowledge and technology, and
- thinking, including creative thinking, critical thinking, reflection and judgement.

International work is also being used in redefining the essential skills of the New Zealand school curriculum. This will lead to a consistent framework for key competencies across the wider education system. The figure below shows how the proposed key competencies framework for tertiary education compares with the New Zealand curriculum key competency groups and aligns with the early childhood education curriculum, Te Whāriki.

Existing mechanisms such as the National Qualifications Framework, the New Zealand Register of Quality Assured Qualifications and tertiary education organisation profiles will be used to enable the framework to be embedded into practice.

### Learning for Living – a focus on foundation competencies

Raising foundation skills so all people can participate in our knowledge society is a key element of the tertiary education strategy. The goal of the government's Learning for Living programme is to build adults' fluency, independence and range in language, literacy and numeracy so that they can use these competencies to participate effectively in all aspects of their lives.

Learning for Living is about making a range of shifts in understanding, thinking, practice and outcomes at all levels of the tertiary education sector in order to ensure that programmes deliver the competent individuals that New Zealand needs. In order to build literacy, language and learning in New Zealand adults, these shifts will need to include:

- moving towards a shared understanding across education providers and employers of the literacy, language and numeracy competencies that all adults need
- clearer articulation of literacy, language and numeracy competencies in a broad range of existing tertiary courses and qualifications (including courses that focus on specific knowledge and skills), and
- capability development to increase the effectiveness of literacy, language and numeracy teaching.

The first phase of the strategy is the development of a set of aligned initiatives that will improve quality and build capability. These initiatives comprise:

- the development of descriptive standards that define competence in reading, writing, speaking, listening and numeracy

- learning progressions to provide snapshots of what adults know and can do as they build their competency from novice to expert
- teaching and learning materials, including assessment tools
- professional development and educator qualifications, and
- tailored quality assurance arrangements, unit standards and course statements.

This phase is supported by a number of research and development projects across a range of foundation learning that will develop knowledge about:

- access and participation
- funding and targeting
- effective integration of foundation learning into broader learning programmes
- development of expertise
- quality assurance arrangements, and
- professional development.

## 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 3.3 // Levels and qualification titles for the New Zealand Register of Quality Assured Qualifications**

LEVEL	NAMING SEQUENCE
10	Doctorates
9	Masters Degrees
8	Postgraduate Diplomas and Certificates, Bachelors Degrees 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 often 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 made 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.

In June 2007, a new centre of research excellence was established – The Riddet Centre, which covers research into foods and biologicals. The government also agreed to extend funding of the existing six centres.

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.<sup>1</sup> 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) *New Zealand's tertiary education sector: Profile & Trends 2002*, pp 108-110, and in Tertiary Education Commission (2007) *Performance-Based Research Fund: evaluating research excellence – the 2006 assessment*.