

Strengthen Research, Knowledge Creation and Uptake for our Knowledge Society

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Objectives

- Excellent research performance is encouraged and rewarded
- Stronger accountability and enhanced performance reporting for tertiary education research
- Increased global connectedness and mobility
- A more focussed tertiary research investment through world-class clusters and networks of specialisation
- Greater alignment of tertiary education research with national goals
- Improved knowledge uptake through stronger links with those that apply new knowledge or commercialisation of knowledge products
- Increased breadth of support for research students and emerging researchers, with a particular focus on the development of Māori researchers

The change required to achieve this strategy

A key aspect of this strategy is to encourage and reward excellent research in the tertiary education sector, supported by improved accountability and performance reporting. The PBRF is a key policy for achieving this.

Achieving this strategy requires TEOs involved with research to develop a more concentrated research effort based on networks of specialisation and a strong focus on quality, relevance to end-users and uptake of new knowledge.

While it is expected that there will be greater engagement with end-users and improved knowledge uptake, the continued contribution of the tertiary education sector to basic and long-term research will be essential.

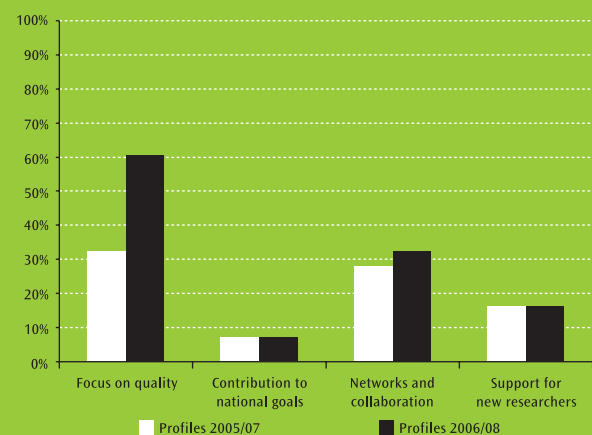
This strategy also addresses support for research students and emerging researchers, particularly Māori and Pasifika researchers.

Progress to 2005/06

The analysis of profiles found that around half of TEOs had change-focused objectives in this strategy in 2005/07 profiles, increasing to nearly two-thirds in 2006/08 profiles. The growth in focus has largely been in the ITP and wānanga sub-sectors.

In 2005/07 profiles the main focus was developing quality research programmes, as well as networks and collaboration. The increased focus in 2006/08 profiles has largely been concentrated on developing quality research programmes, in ITPs as well as universities, as they prepare for the 2006 PBRF quality evaluations.

Figure 40: Percentage of TEOs with change-focused objectives relating to 'Strengthen Research, Knowledge Creation and Uptake' in profiles 2005/07–2006/08



Universities continue to contribute heavily to new and future knowledge through basic research. However, it is harder to trace the contribution of tertiary education research to specific national goals. In general, TEOs are not specifically focused on national goals in their organisational planning.

Evidence suggests that collaboration among New Zealand TEOs in research is increasing. The Centres of Research Excellence (CoREs) have played an important role in modelling and encouraging collaboration and demonstrating the benefits of working across discipline and institutional boundaries.

There appears to be increased support for new researchers, with improved retention in doctorate degrees. The progression of Māori and Pasifika students to doctoral studies has also increased substantially. These improvements may relate to the additional funding for doctoral degree completions within the PBRF.

Key challenges for moving forward

From the analysis of progress to date, the following key challenges for moving forward to achieve this strategy are evident:

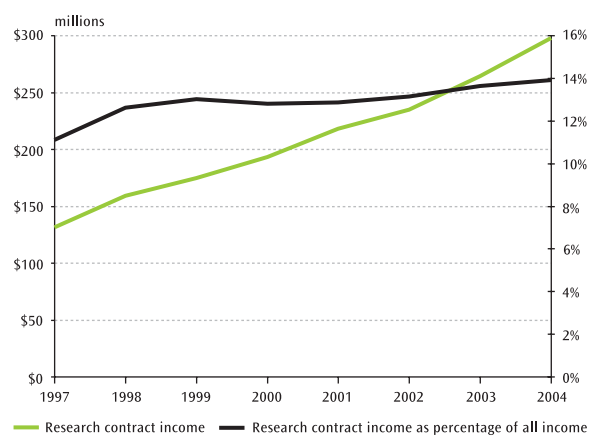
- continuing to develop and implement support for quality research programmes in TEIs
- establishing clearer connections between tertiary education research and its contribution to national goals
- continuing to support greater collaboration among institutions, particularly where benefits of new knowledge creation are possible
- continuing to support new researchers through doctoral studies, followed up with post-doctoral opportunities.

Quality of Research

Sustained quality of research output shown by high-level indicators

External research earnings provide a measure of perceived quality and confidence in university-based research. Research income has continued to increase, although it has levelled off as a proportion of total income. As noted in the cross-strategy indicators, most of the growth comes from sources other than government-sponsored research funds and hence is valued by private and public sector clients as contributing directly to their needs.

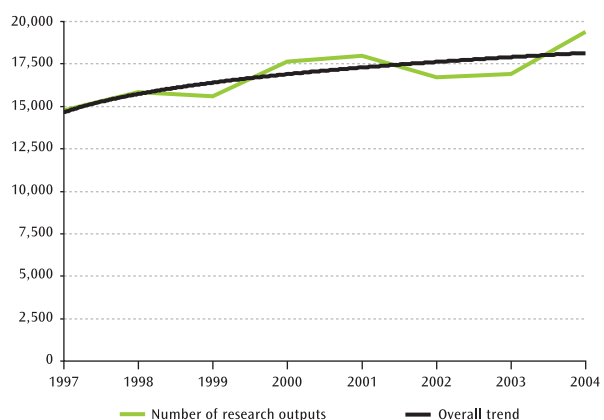
Figure 41: University research contract income 1997-2004



Source: University Annual Reports

Analysis of PBRF results has also shown that research outputs are highly correlated to research quality¹³. As with income, overall growth in outputs has continued, although it is possibly levelling off.

Figure 42: University research outputs 1997-2004

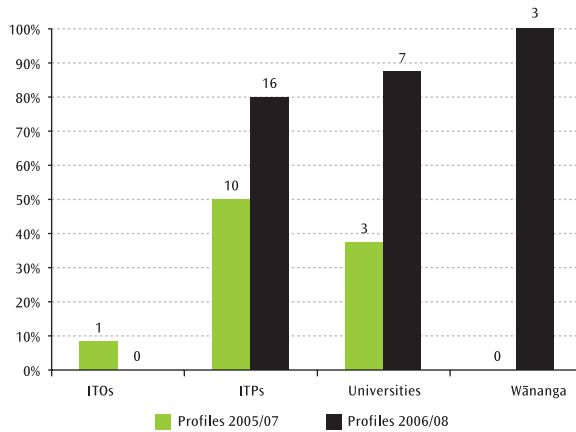


¹³ Warren Smart and Roger Smyth, *Research Measures — comparing the new with the old*, Ministry of Education, 2005.

TEO approaches to developing quality research programmes

The analysis of profiles shows increased change-focus on quality research programmes across TEIs as they prepare to participate in the 2006 PBRF quality evaluations.

Figure 43: Percentage of TEOs with change-focused objectives relating to quality research in profiles 2005/07–2006/08



In 2006/08, most ITPs had profile objectives around developing their research programmes and capability. Their focus is on applied research and research by staff in degree and postgraduate programmes. In 2005/07, universities had a focus on developing their organisational infrastructure and support. In 2006/08, the focus shifted to developing quality research programmes, as well as specific research centres. In 2006/08, all three wānanga had objectives relating to developing research programmes and capability.

Contribution of Research to National Goals

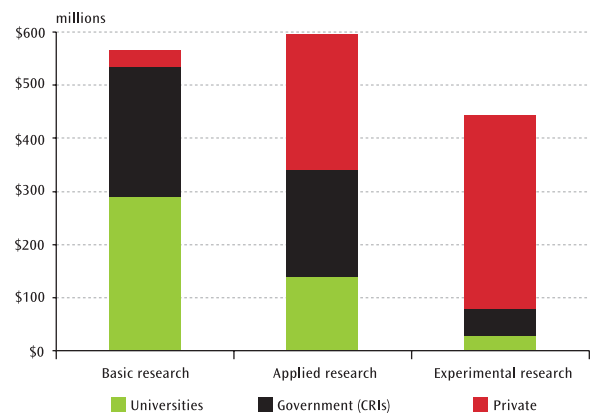
The link between research and economic and social development goals is difficult to establish, as contributions occur over a long period of time following completion of the research output and the linkages can be quite indirect. This section looks at key research output indicators to see how well positioned tertiary education research is to contribute to national goals in various ways.

Contribution to new and future knowledge

One of the long-term contributions of tertiary education research to national goals is through expanding the body of new knowledge through basic research. The 2004 Statistics New Zealand Research and Development Survey shows that around two-thirds of university-based research expenditure is in the basic research category¹⁴, compared with about half for Crown Research Institutes and only 5 percent for private research establishments.

Looking at research expenditure in terms of research types, universities contribute to about half of the country's total expenditure on basic research and a quarter of the total expenditure on applied research.

Figure 44: Expenditure on types of research by sector 2004



Source: Statistics New Zealand, Research and Development Survey 2004

Contribution to economic and social development, Māori development and environmental management

The TES identifies four critical national areas where the tertiary education sector should be contributing in terms of research and knowledge creation. These are economic development, social development, Māori development and environmental management.

Understanding the contribution of research to specific national goals requires careful analysis of individual research outputs. One such analysis for social science is referred to in the accompanying text box.

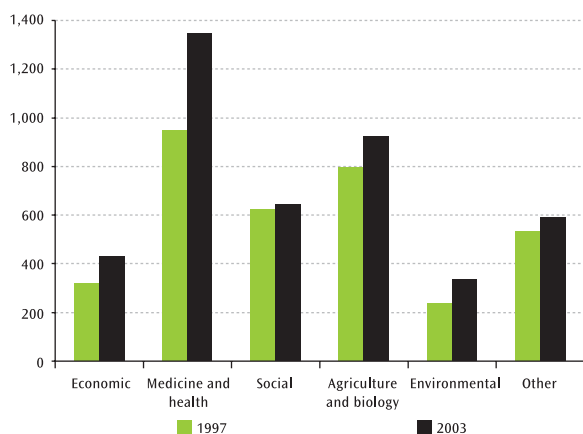
14 Category definitions are not comparable with the 2002 survey results published in the Baseline Monitoring Report (April 2004).

At a more general level, it is possible to look at the balance of published papers across broad subject domains as follows:

- Economic: engineering, economics and business and computer science
- Medicine and health: clinical medicine, psychology/psychiatry, neuroscience, pharmacology and immunology
- Social: social sciences, humanities, education and law
- Agriculture and biology: plant and animal science, biology and biochemistry, agricultural sciences, molecular biology and genetics and microbiology
- Environmental: geosciences and ecology and environment
- Other: chemistry, physics, mathematics, multidisciplinary and astrophysics.

Data from a Ministry of Research, Science and Technology study of indexed research papers¹⁵ from the tertiary sector shows that the largest growth in numbers is in the area of medicine and health. There has been steady growth in subjects classified under economic, agriculture and biology, and environmental. The number of papers in social disciplines has remained the same.

Figure 45: Published indexed research papers from the tertiary education sector by general domain 1997 and 2003



Source: Ministry of Research, Science and Technology, 2003 Bibliometric Study

Contribution of social science research to government Knowledge Theme Areas

The government has identified seven Knowledge Theme Areas of strategic interest for social policy knowledge investment. A recent paper by Charles Crothers¹⁶ maps the titles of social science research outputs evaluated for the 2003 PBRF to the Knowledge Theme Areas, amongst other things.

Crothers found that 24 percent of social science research outputs could be mapped directly to one of the Knowledge Theme Areas. The largest contribution was in the areas of work and knowledge and knowledge and skills.

Table 1: Social science outputs assessed in the 2003 PBRF mapped to social policy Knowledge Theme Areas

Knowledge Theme Areas	Percentage of outputs
The changing nature of work	6.4%
Developing human capabilities – knowledge and skills	6.6%
Disparities between groups – how to change the picture	1.8%
Enhancing positive social outcomes – developing risk and protective factors	1.6%
Measuring and understanding social well-being	2.2%
Social connectedness	1.5%
Social and cultural identities	3.2%
Total mapped to Knowledge Theme Areas	23.6%

TEI approaches to contributing to national goals

The analysis of profiles found that the link of research to national goals is not addressed in most profiles. This is not to say that TEI research is not contributing to national goals but, rather, there is not an explicit process for linking research priorities to national goals within the institutions.

¹⁵ Using the Thomson-ISI National Citation Report.

¹⁶ Charles Crothers, *Mapping the Social Sciences: characteristics of New Zealand academic social sciences research outputs*, 2006.

Research Networks and Collaboration

TEI approaches to research networks and collaboration

The analysis of profiles found that most universities have a focus on research networks and collaboration within their profile objectives. There was increased focus in research networks and collaboration within ITP and wānanga profiles for 2006/08.

The common areas of focus for universities are business and industry and international linkages. Some are also focusing on linkages with other TEIs and research organisations and with Māori and iwi.

The main focus for the ITPs with objectives in this area is on collaboration with business and communities. In 2006/08 profiles, there was also mention of increased research contracts and developing links with researchers in other TEIs. In 2006/08, wānanga with objectives in this area had a focus on increasing research contracts and consultancy.

Centres of Research Excellence linking institutions across disciplinary boundaries

Seven CoREs were established in 2001 and 2002 to support leading-edge, international standard research that fosters excellence and contributes both to New Zealand's national goals and to knowledge transfer. The CoREs are primarily, but not exclusively, inter-institutional research networks, with researchers working together in a commonly agreed work programme.

In 2004, the TEC, in consultation with the Ministry of Education, undertook a review of the performance of each of the CoREs.

The review has found that, by and large, the establishment of the CoREs has been a success. CoREs have, among other things, encouraged the production of well-focused, excellent research, concentrated researchers on areas of excellence, and increased collaboration within institutions, with other institutions, with CRIs, and with businesses. The CoREs have contributed to the training of New Zealand's future researchers and innovators, and improved knowledge output and transfer from TEOs.

One notable finding of the review was that the different CoREs had taken different approaches to research and related activities and that this promotes different outcomes. Success in the first three years of operation depended on overcoming traditional barriers between disciplines and institutions and building new relationships with end-users and international collaborators. The advances made by

the CoREs in their first three years suggest that it is in the boundary areas between disciplines, and between stages in the development of knowledge, where real untapped opportunities exist. Collaboration among research groups and across disciplines also has the potential to avoid duplication and make best use of New Zealand's resources, tackling the problem of scale that can be a barrier to the success of New Zealand's research programmes.

New and Emerging Researchers

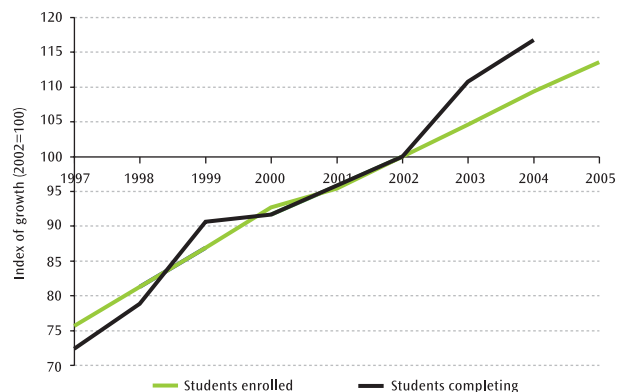
Support for research students and emerging researchers is an important emphasis of this strategy. Formal training in research is mainly carried out through postgraduate research degrees.

The PBRF provides additional funding to participating TEIs for completions of doctoral degrees, with higher amounts for completions by Māori and Pasifika students. The effect of this of new funding arrangement can be seen in the following indicators.

Increased doctoral completions

From 2002 to 2004, the number of doctoral students completing degrees grew by 17 percent, while the number of enrolments grew by 9 percent. Enrolments continued to grow in 2005.

Figure 46: Index of doctoral degree completions and enrolments for domestic students 1997–2005 (2002=100)



The proportion of women enrolled in doctoral degrees has increased from 49 percent in 2002 to 53 percent in 2005. They have also increased as a proportion of completions from 48 percent in 2002 to 51 percent in 2004.

Māori students continue to represent 6.6 percent of domestic doctoral students, as their numbers grow at a similar rate to all enrolments. Māori students have increased as a proportion of completions in recent years from 4.9 percent in 2002 to 6.4 percent in 2004.

The proportion of Pasifika students in doctoral studies has increased from 1.7 percent in 2002 to 2.3 percent in 2004, as the total number of enrolments has increased from 62 to 95. In 2004, there were eight doctoral completions by Pasifika students, the highest number in one year in the period from 1997.

Dramatic drop in first-year attrition rates

From 2002/03 to 2003/04 there has been a dramatic drop in first-year attrition rates for doctoral students. In 2002, 18 percent of doctoral students did not continue study in the following year. This figure is reasonably consistent with figures from previous years. In 2003, only 8 percent of doctoral students did not continue study in the following year.

This change has been particularly strong for women, where the rate has dropped from 17 percent in 2002/03 to 6 percent in 2003/04. It has also brought the Māori first-year attrition rate much closer to that of all students, from 24 percent in 2002/03 to 11 percent in 2003/04.

Increase in Māori and Pasifika students progressing from masters to doctoral study

The other significant shift from 2002/03 to 2003/04 has been in the proportion of Māori and Pasifika students completing masters degrees and moving directly to doctoral studies in the following year.

In 2002, 7 percent of completing Māori students moved directly on to doctoral studies in the following year, a figure consistent with previous years. In 2003, this proportion increased to 10 percent.

For Pasifika students, the 2002/03 progression figure was also 7 percent, somewhat higher than in previous years. And it increased to 12 percent in 2003/04.

TEI support for new researchers

The analysis of profiles found that this is an area of focus for universities and wānanga. Surprisingly it is not seen as an areas of focus by ITPs, even though several offer postgraduate programmes and/or degree programmes leading to postgraduate qualifications.

In the universities and wānanga in 2005/07, there was a strong emphasis on support and supervision of research students. Some also had an emphasis on developing infrastructure to support new and emerging researchers. This may be in response to funding incentives for doctoral completions through the PBRF and the addition of a new category of 'new and emerging researchers' in the next PBRF quality evaluation round.

In 2006/08 profiles, universities had a much stronger focus on increasing the number of research degree completions. Wānanga had a focus on developing the research capability of their staff and development of postgraduate programmes and support.



Te Rautaki Mātauranga Māori — Contribute to the Achievement of Māori Development Aspirations

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Objectives

- Tertiary education leadership that is effectively accountable to Māori communities
- Strong and balanced Māori staff profiles within the tertiary education system
- Quality programmes that recognise Te Ao Māori perspectives and support the revitalisation of Te Reo Māori
- Robust options for kaupapa Māori tertiary education that reflect Māori aspirations
- Increased participation by Māori in both a broader range of disciplines and in programmes that lead to higher-level qualifications
- A tertiary education system that makes an active contribution to regional and national Māori/whānau/hapū/iwi development

The change required to achieve this strategy

Contributing to the achievement of Māori development aspirations requires the tertiary education sector to work in partnership with Māori, whānau, hapū and iwi to improve the success of Māori students, be more responsive to diverse Māori realities and make an active contribution to Māori, whānau, hapū and iwi development. The importance of this strategy is reinforced in the key changes, particularly developing effective partnership arrangements with Māori communities.

In 2001, the Hui Taumata Mātauranga endorsed three goals for Māori education, advanced by Professor Mason Durie:

- to live as Māori
- to actively participate as citizens of the world
- to enjoy a high standard of living and good health.

The success of this strategy needs to be assessed in terms of all three of these dimensions.

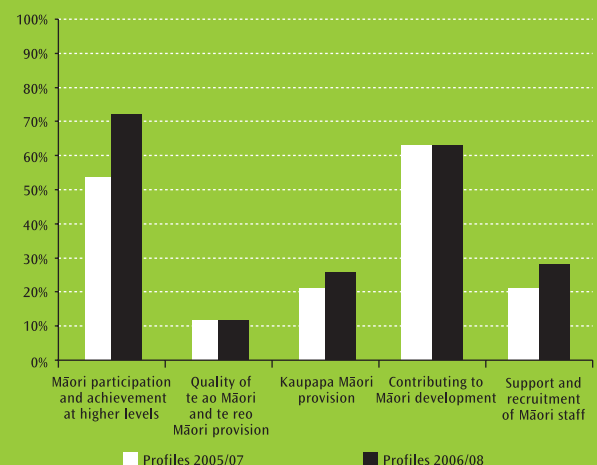
While the contribution to Māori development is specifically addressed by this strategy, it is expected other strategies in the TES will also contribute to progress towards achieving the goals of this strategy.

This strategy places particular emphasis on increased participation of Māori in a broader range of subjects and at higher levels, further development of quality provision in te ao Māori, te reo Māori and kaupapa Māori, and on building management and staff capability within TEOs.

Progress to 2005/06

Most TEOs had change-focused objectives relating to this strategy in their 2005/07 and 2006/08 profiles. This pattern was consistent across sub-sectors. The two theme areas most commonly covered in profile objectives were 'participation and achievement at higher levels' and 'contributing to Māori development'.

Figure 47: Percentage of TEOs with change-focused objectives relating to 'Te Rautaki Mātauranga Māori' in profiles 2005/07–2006/08



Māori participation at diploma and postgraduate levels continues to increase. Māori enrolments at bachelors level have declined faster than the overall decrease in enrolments at this level in 2005. Retention rates are improving for Māori students across most levels, but are still lower than those of other students. Direct progression across postgraduate degrees has also improved, particularly from masters degrees to doctorates.

Te ao Māori and te reo Māori provision has decreased, as numbers have decreased in wānanga. This may represent some clearing of the 'waiting list' of people who were prospective students for the wānanga type of provision in this area. Recent publicity about difficulties at Te Wānanga o Aotearoa will also have had an impact on the 2005 student numbers. However, there is little sign of increased numbers of students in enrolling in these kinds of courses in other sub-sectors.

There has been steady growth in enrolments for bilingual and immersion teaching in early childhood education, as the new quality requirements for early childhood education are introduced. Enrolments in school-related bilingual and immersion teaching qualifications are falling.

Overall numbers at wānanga have fallen, reflecting fewer students at Te Wānanga o Aotearoa. While certificate-level enrolments have fallen from historic highs, the number of masters students at wānanga doubled from 2004 to 2005. Wānanga continue to achieve better retention rates for Māori students below degree level than other sub-sectors.

The number of Māori students in Māori PTEs has been static, while Māori enrolments in the PTE sub-sector have increased overall.

A number of TEIs and ITOs are developing kaupapa Māori delivery within their organisations. In many cases, this involves developing qualifications with a kaupapa Māori focus. Some are also developing kaupapa Māori-based centres of learning within their organisation.

TEOs are continuing to strengthen their relationships with iwi and Māori. The analysis of profiles shows a shift from process objectives to more objectives with an outcome focus from 2005/07 to 2006/08. Māori and iwi groups view tertiary education as vital to achievement of their economic and social goals, but continue to have mixed experience of engagement with providers.

Analysis of profiles shows limited attention to support and recruitment of Māori staff within TEO objectives.

Key challenges for moving forward

From the analysis of progress to date, the following key challenges for moving forward to achieve this strategy are evident:

- increasing Māori participation, and success, at bachelors level and ensuring that there is not a 'glass ceiling' between sub-degree and degree studies
- increasing participation in te reo Māori courses at higher levels of study and increasing the supply of Māori bilingual and immersion teachers
- assisting Māori providers to move into a broader range of provision and not be so reliant on targeted training funds
- TEOs building outcome-focused engagement with iwi and Māori that explicitly contributes to development aspirations
- giving greater attention to recruitment and support of Māori staff.

Māori Participation and Achievement at Higher Levels and across Disciplines

Māori participation growing in diplomas, falling in degrees, while retention improving in both

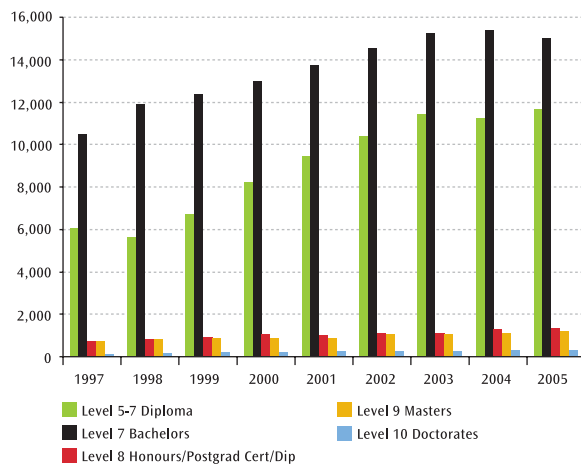
Māori enrolments in diplomas continue to increase. Māori enrolments in bachelors degrees fell from 2004 to 2005 by 2.2 percent, twice the relative decrease for all students of 0.9 percent over the same period. Māori participation rates in bachelors degrees continue to lag behind those of all students, while Māori continue to be over-represented in diplomas.

From 2001/02 to 2003/04, Māori first-year attrition rates in diplomas and bachelors degrees have reduced. At diploma level, the rate has reduced from 52 percent to 45 percent, and is very close to the rate for all students. At bachelors level, it has reduced from 42 percent to 32 percent, but is still higher than that of all students (25 percent).

Over the same period, the rate of progression directly to higher qualifications has remained fairly similar. In 2003, 23 percent of Māori students completing a diploma went on to higher-level study in 2004, compared with 16 percent of all students. For bachelors, the rate for Māori students was 14 percent, compared with 15 percent for all students.



Figure 48: Māori formal students at diploma level and above by qualification level 1997–2005



Longer degree completion times for Māori and Pasifika students confirmed by research

Recent research by the Ministry of Education shows that, after adjusting for other measurable factors, Māori and Pasifika students take 1.3 times longer to complete degrees than their European counterparts¹⁷.

This finding is consistent across all sub-groups analysed. For example, even after controlling for school qualifications, Māori and Pasifika students still showed lower completion rates than their European counterparts. Māori students who had a prior activity of house person or retired had the smallest chance of completing their degree, compared with European students. Māori students who had previously been in tertiary study had the best relative performance compared with European students.

The report comments that much of the international research literature on retention and completion of tertiary qualification hints at the value of belonging and integration, and these factors are likely to be particularly relevant for students who are not part of the majority culture of the student body.

Increased numbers enrolling and achieving in postgraduate qualifications

There has been a continued increase in the number of Māori students enrolled in postgraduate qualifications. From 2004 to 2005, numbers increased by 4 percent for honours degrees, 6 percent for masters and 6 percent for doctorates. However, Māori participation rates in these qualifications continue to be below that of all students.

From 2001/02 to 2003/04, Māori first-year attrition rates for masters and doctorates have reduced. For masters, the rate for Māori students has reduced from 39 percent to 32 percent and for doctorates from 25 percent to 11 percent. However, in both cases, the rate is still higher than that of all students. Counter to this trend, the attrition rate at honours level has remained the same for Māori (38 percent), while the rate for all students has reduced to 33 percent.

Over the same period, the rate of progression directly to higher qualifications has improved for Māori. From 2003 to 2004, 22 percent of Māori honours students and 10 percent of Māori masters students went on to study at a higher level. This compares with 20 percent and 8 percent, respectively, for Māori students in the period 2001 to 2002. The 2003/04 progression rates for Māori are higher than the rates for all students.

Māori participation growing faster in some areas of under-representation

The following indicators look at the spread and growth of Māori participation by field of study at diploma level and above, using EFTS consumed and course subjects.

Relative growth is the percentage point difference between the growth rate in Māori student EFTS and the growth rate of total EFTS in each subject area¹⁸. It provides an indicator of subject area growth where Māori student growth rates exceed total growth rates (positive number) or lag behind total growth rates (negative number).

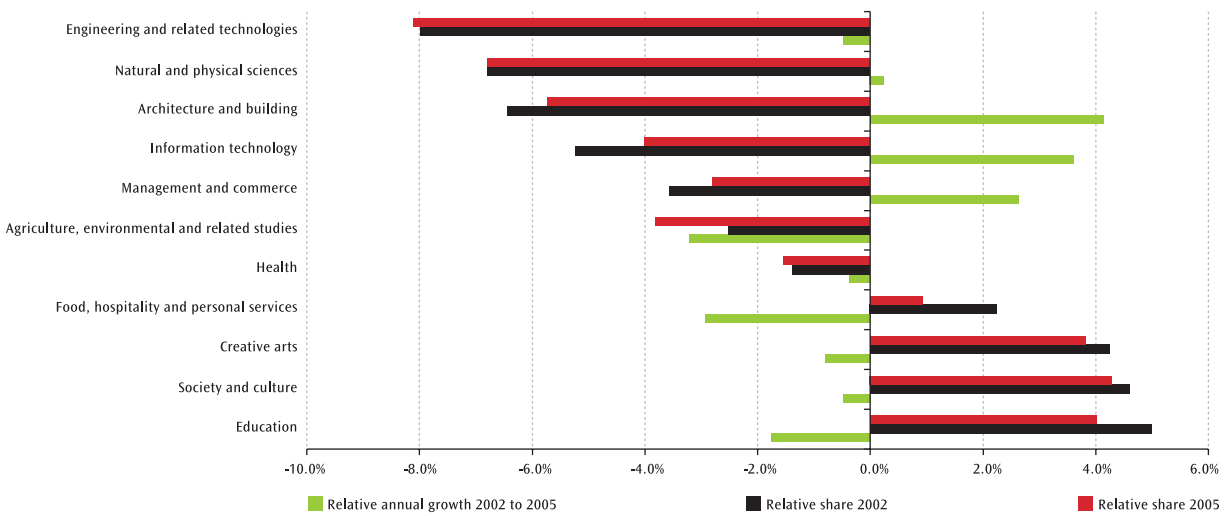
Relative share is the percentage point difference between the proportion of Māori student EFTS in the subject area and the proportion of Māori EFTS across all subjects¹⁹. It provides an indicator of relative over-representation (positive number) or under-representation (negative number).

17 David Scott and Warren Smart, *What Factors Make a Difference to Getting a Degree in New Zealand?*, Ministry of Education, 2005.

18 (Percentage increase in Māori student EFTS in field) — (Percentage increase in total student EFTS in field).

19 (Percentage of Māori in the field) — (Percentage of Māori in total).

Figure 49: Relative growth and relative share indicators for Māori formal students by field of study at diploma level and above 2002 and 2005



These indicators show a mixed picture. The areas of highest relative growth at diploma level and above have been in architecture and building, information technology, and management and commerce. In all of these areas, Māori tend to be under-represented. However, in other areas, such as science and engineering, where Māori are significantly under-represented, Māori participation growth remains similar to that of all students.

Retargeting the Māori Special Supplementary Grant

The Māori Special Supplementary Grant provides funding to TEIs to provide support for retention and achievement of Māori students. From 2006, funding will be provided only for students at diploma level and above, with higher funding for postgraduate students. The aim is to provide incentives for TEIs to promote greater participation at higher levels of study. From 2008, TEIs will determine their own appropriate target groups on the basis of socio-economic disadvantage.

TEO approaches to Māori participation and achievement

The analysis of profiles found that from 2005/07 to 2006/08 an increased number of TEOs had a change-focus on Māori participation and achievement. The most commonly expressed approach in profile objectives was monitoring Māori participation, retention and achievement, including setting targets. However, only a few TEOs had a specific focus on higher levels of study.

In general, the focus in 2005/07 was to achieve improvements in participation and achievement for Māori through student support services. In the 2006/08 profiles, there were more TEOs looking at how they could develop and improve their programmes to meet the learning needs of Māori students.

Supporting te ao Māori and te reo Māori

One of the aspects of this strategy is developing quality programmes that recognise te ao Māori perspectives and support the revitalisation of te reo Māori. This section looks at the provision of all te ao Māori and higher-level te reo Māori courses. The provision of foundation-level te reo Māori courses is reported in the foundation skills chapter.

The analysis of profiles found that few TEOs, other than wānanga, had an organisational focus on this area of provision.

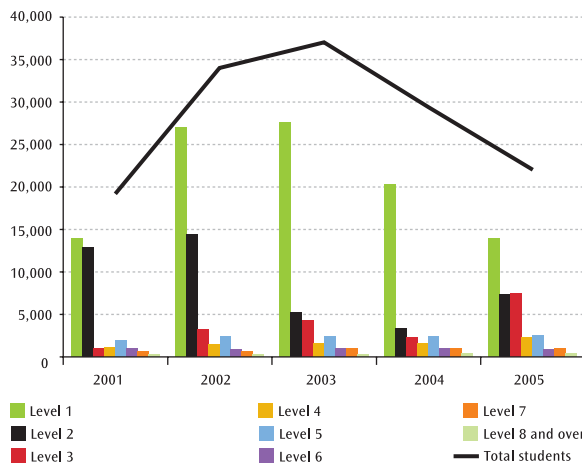
Numbers in te ao Māori courses decreasing

This indicator covers courses which fit in a subject code descriptor with an explicit te ao Māori aspect. It does not include all courses taught from, or including, te ao Māori perspectives. However, it does give some indication of the strength of provision in this area.

The number of students enrolled in this area grew rapidly from 2001 to 2003 and has since decreased. From 2003 to 2005, the main decrease has been in level 1 courses, while the numbers in level 2 to 5 courses grew from 2004 to 2005.



Figure 50: Formal domestic students in Student Component-funded te ao Māori courses by course level 2001–2005



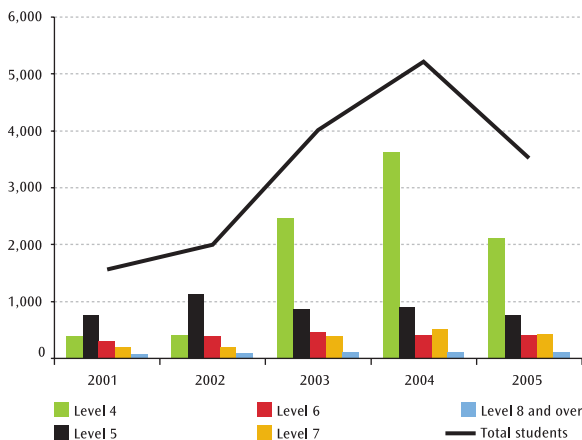
In 2005, three-quarters of the students in te ao Māori courses were Māori. Around three-quarters of the students (73 percent) enrolled in these courses were enrolled in wānanga, 13 percent were enrolled in universities and 11 percent in ITPs. The overall decline from 2003 to 2005 reflects the decreased enrolments in wānanga in that period.

Numbers in te reo Māori courses decreasing

The following indicator looks at students taking more than 0.3 EFTS in a year in te reo Māori courses at level 4 and above. This provides a measure that is consistent with participation at foundation level te reo Māori courses, reported earlier in this report.

In 2005, around 40 percent of students in higher-level te reo Māori courses were taking more than 0.3 EFTS. The number of students taking more than 0.3 EFTS in higher-level te reo Māori courses peaked in 2004 and declined in 2005, similar to the numbers enrolled in 2003. While the biggest drop in numbers were in level 4 courses, there was a decline at all other levels from 2003 to 2004.

Figure 51: Formal domestic students in Student Component-funded higher-level te reo Māori courses undertaking more than 0.3 EFTS by course level 2000–2005



In 2005, 86 percent of the students in these courses were Māori. Four out of five students (81 percent) in these courses were studying at wānanga, 11 percent at universities and 8 percent at ITPs.

As with te ao Māori courses, the decline from 2004 to 2005 reflects decreased enrolments in wānanga. It suggests that students who might have enrolled in these courses in wānanga are not seeking out courses in other sub-sectors. There may also have been a 'waiting list' effect, where the wānanga have taken a large intake of prospective students who had been wanting this kind of provision for some time. Now that the 'waiting list' is clearing, the numbers enrolling each year might be expected to settle down. Recent publicity about difficulties at Te Wānanga o Aotearoa will also have had an impact on the 2005 student numbers.

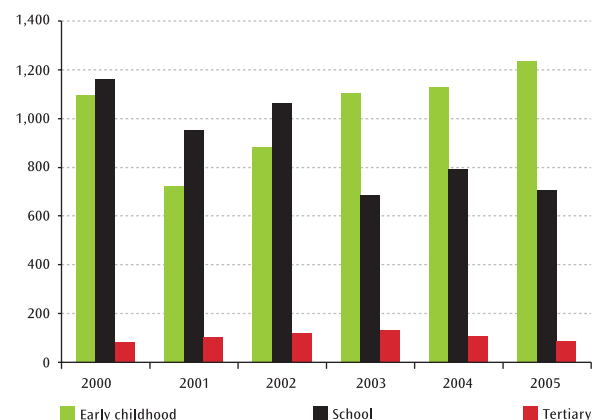
Māori bilingual and immersion teacher education increasing for early childhood and decreasing for schools

One of the critical areas where the tertiary education system contributes to the revitalisation of the Māori language is through the training of teachers for bilingual and immersion education.

The following indicator looks at people enrolled in specialist qualifications in Māori bilingual and immersion teaching. These numbers do not include students undertaking a general teaching qualification with a specialisation in bilingual and immersion teaching.

There was a steady increase in the number of students enrolled in early childhood qualifications in this area, reflecting the new quality requirements for early childhood education providers. The numbers enrolled in school bilingual and immersion teaching qualifications have fluctuated and show an overall decline. There is a small but steady number of students taking a qualification in bilingual and immersion tertiary teaching.

Figure 52: Domestic students in Māori immersion and bilingual teaching qualifications by educational sector of the qualification 2000–2005



Provision of Kaupapa Māori Tertiary Education

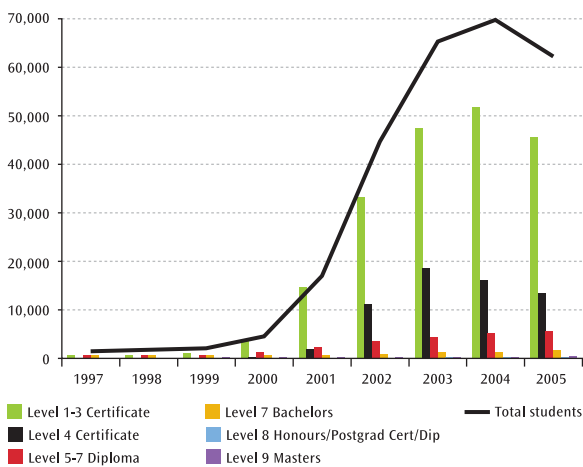
This strategy includes an emphasis on developing robust options for kaupapa Māori tertiary education. There are two major groups of providers in this area: the three wānanga (established as TEIs) and Māori providers (established as PTEs). There is also some provision within other TEOs.

Overall wānanga numbers at peak in 2004

The total number of students at wānanga declined by 11 percent from 2004 to 2005, decreasing from 69,700 to 62,200. Most of the decline was in level 1 to 4 certificates. There was continued growth at diploma, bachelors and masters levels, with masters enrolments doubling from 2004 to 2005, to reach 231 students.

Te Wānanga o Aotearoa continues to account for the vast majority of wānanga students (93 percent in 2005). Student numbers at Aotearoa declined from 2004 to 2005, while numbers at Te Wānanga o Raukawa remained steady and numbers at Te Whare Wānanga o Awanuiārangi grew by 70 percent. The growth in masters students was at both Raukawa and Awanuiārangi.

Figure 53: Formal domestic students enrolled in wānanga by qualification level 1997–2005



First-year attrition rates for Māori students studying below degree level at wānanga were lower than those of Māori students across all TEIs for 2003/04. However, first-year attrition rates for Māori students studying at degree level and above at wānanga were higher than those of Māori students across all TEIs.

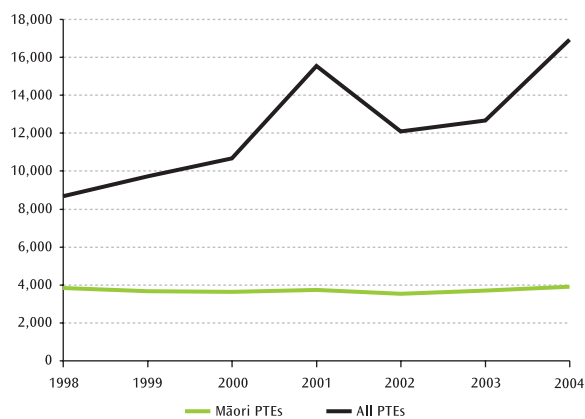
In 2003/04, Māori students at wānanga had similar rates of direct progression to higher levels of study as Māori students across all TEIs.

Māori PTE enrolments remain steady

In 2004, there were 115 PTEs that self-identified as Māori providers and provided data returns to the Ministry of Education²⁰. At 31 July 2004, there were 5,755 domestic students enrolled with these providers, of which 3,880 were Māori.

The total enrolment numbers in Māori PTEs have been stable over the last seven years, while the number of students in other PTEs has started to increase again. In 2004, just under one in four Māori students (23 percent) enrolled in a PTE was enrolled with a Māori PTE.

Figure 54: Māori formal students in PTEs by type of provider 1998–2004



NZQA audit cycle data shows continuing improvement in management capability for Māori PTEs. The proportion of Māori PTEs on two- or three- year audit cycles has increased from 9 percent in the year to June 2001 to 42 percent in the year to December 2004. Placement on these longer-term cycles indicates NZQA's significant satisfaction with management systems and processes of the provider.

Provision within other TEOs

Kaupapa Māori provision is also developing within universities and ITPs, as well as the delivery funded through ITOs. Many of the universities and ITPs are developing Māori-focused qualifications across a number of subject areas, including business, environment and creative arts. Some ITOs are developing Māori-focused qualifications where their industry has a strong area of Māori service delivery, such as in the public service, social services and tourism and travel.

²⁰ This is less than the total number of registered PTEs that self-identified to NZQA as Māori providers. This analysis only covers those that had formal students enrolled as at 31 July 2004.

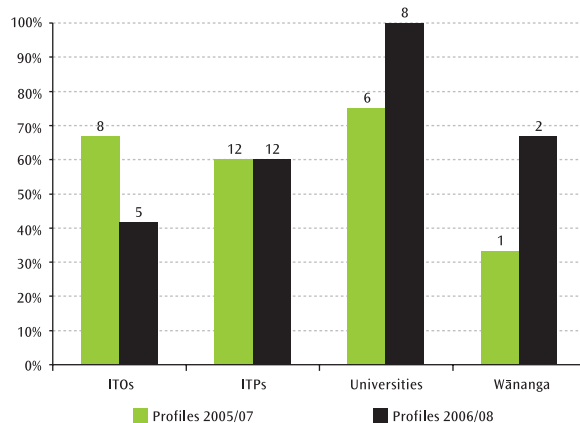
The analysis of profiles found that around one in four TEOs examined had objectives relating to this area. In ITOs, the focus was on the development of kaupapa Māori qualifications. Several ITPs are developing a kaupapa Māori approach to learning within their institution, including specific learning centres. Some universities are looking at specific kaupapa Māori qualifications and Māori-specific curriculum content.

Contributing to Māori and Iwi Development

TEO approaches to contributing to Māori and iwi development

The analysis of profiles found that most ITOs, ITPs and universities had change-focused objectives relating to Māori development in 2005/07. There was a similar pattern in 2006/08, with all universities having change-focused objectives in this area.

Figure 55: Percentage of TEOs with change-focused objectives relating to contributing to Māori and iwi development in profiles 2005/07–2006/08



In both years, ITOs were mostly focused on consultation and engagement with Māori as a means of increasing Māori participation and meeting the needs of Māori trainees. A few were looking at partnerships with Māori providers and communities.

In 2005/07 TEI profiles, the objectives were generally expressed in broad terms with little clarity of what would be achieved. Some did include specific, but limited, actions, such as research and involvement in course design and development. The objectives were often more focused on the processes of engagement, with many developing relationships and partnerships with Māori and iwi organisations and/or involving Māori in consultation and advisory processes.

The 2006/08 TEI profiles also talked about developing relationships and partnerships with iwi and Māori. ITPs had a focus on improving teaching and learning that contribute to Māori development. Universities had a stronger focus on research projects.

In the case of wānanga, contributing to Māori development is an underlying theme for the organisations. Where they had explicit objectives, these focused on developing relationships with whānau, hapū, iwi and Māori communities.

The research on stakeholder engagement found that wānanga had the greatest frequency of mention of active engagement with Māori in their profiles, followed by universities and ITPs. Universities had a particular engagement around research, while ITPs were focused more on skill development. Of all stakeholder groups included in the research, Māori were the ones that providers appeared to have most engagement with. Tertiary providers were generally satisfied with their levels of engagement with Māori organisations and most thought they were making moderate contributions to Māori social and economic goals.

Māori views on provider engagement

The research on stakeholder engagement found that Māori stakeholders reported considerable engagement with providers. In the case of an ITP, it was more student and programme driven. With universities the engagement was student and research driven, while with wānanga it was more iwi driven and focused. The quality of engagement was mixed. Some reported difficulties successfully articulating their views and aspirations through engagement at governance level. There seemed to be somewhat better engagement at programme level.

Māori stakeholders reported that successful engagement relied on the quality of individual connections and relationships, a mutual understanding of kaupapa, principles and values and the relevance of the education being delivered or planned. Barriers to engagement included narrowly defined contractual arrangements between Māori organisations and providers, frustration over providers' inability to meet the needs of Māori students and changing personnel within providers.

The Māori stakeholders see tertiary education making a strong and vital contribution to Māori achievement of economic and social goals. Their engagement with the tertiary education sector is driven by their aspirations, research and planning. It is clear that Māori stakeholders have a large stake, and commitment to, education, particularly at the tertiary level and this drives their engagement with providers.

Māori Staff in Tertiary Education

The TES includes a focus on developing a strong and balanced Māori staff profile within the tertiary education system. This means Māori being well represented in TEO staffing, particularly in teaching, research and decision-making positions.

The analysis of 2005/07 and 2006/08 TEO profiles shows that recruitment and support of Māori staff is only picked up in some TEI profiles. As ITOs employ relatively few staff and rely on contracted providers and assessors, their lack of focus on this area is understandable.

In 2005/07 profiles, the most common type of objective related to monitoring the proportion and/or number of Māori staff in the institution. Some TEIs talked about developing support networks and one talked about flexible employment arrangements. There was also a focus in some on developing Māori staff for management and leadership positions. Only two talked about developing a recruitment and retention strategy.

In 2006/08 profiles, more TEIs, particularly universities, were focused on developing strategies and initiatives to improve recruitment and retention of Māori staff. Others mentioned staff development and monitoring of recruitment and staff data.

Māori research staff held in greater peer esteem and make greater contribution to the research environment

A recent report from the Ministry of Education examines the relationship between staff characteristics and their assessed research performance in the 2003 PBRF Quality Evaluation²¹. The research used the various component and overall quality scores as a measure of research performance.

Using the research output score, the research found that Māori female staff received a lower score than European female staff, after taking other factors into account. No difference was found for Māori males.

On the peer esteem score, the research showed that male Māori staff received a peer esteem score 0.42 points higher than their European counterparts, while there was no statistical difference between scores achieved by female Māori and European staff.

Analysis of the contribution to research environment score found that Māori professors received higher scores than their European peers on average.

Once these scores were combined into the overall weighted measure of quality, no significant difference by ethnicity could be found, that is, the differences in the component scores evened out.



21 Warren Smart, *What Determines the Research Performance of Staff in New Zealand's Tertiary Education Sector?*, Ministry of Education, 2005.