Tertiary Education Strategy | 2002/07
Baseline Monitoring Report
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Raise foundation skills so that all people can participate in our knowledge society
  Foundation competencies in the New Zealand population
  Moving from school to tertiary education
  Initiatives to support the transition to tertiary study
  General provision of foundation education
  Specific programmes in foundation education
  Implementation of new policy arrangements

Develop the skills New Zealanders need for our knowledge society
  Developments in industry training
  Access to education
  Lifelong participation in learning
  Development of key competencies policy
  High-level specialist skills

Strengthen research, knowledge creation and uptake for our knowledge society
  Nature and coverage of research
  Quality of research
  Development of networks and clusters of specialisation
  Development of new researchers

Te rautaki mātauranga Māori—contribute to the achievement of Māori development aspirations
  Māori participation in tertiary education
  Completion of qualifications by Māori
  Kaupapa Māori tertiary education
  Te reo Māori and te ao Māori provision
  Māori staff in tertiary education organisations

Education for Pacific peoples’ development and success
  Pasifika participation in tertiary education
  Completion of qualifications by Pasifika students
  Developing Pasifika for Pasifika tertiary education
  Pasifika staff in tertiary education organisations

Strengthen system capability and quality
  Financial management in tertiary education organisations
  Initiatives to enhance tertiary education organisation governance and leadership
  Initiatives to enhance quality
  Collaboration
  Initiatives to support increased collaboration
  Export education

Technical and data definitions
In May 2002, the government released the *Tertiary Education Strategy 2002/07* (TES). The TES sets the direction for the tertiary education sector and is pivotal to the implementation of the tertiary education system reforms. This new approach will ensure the development of a more strategic and coherent tertiary education system, which is better aligned to New Zealand’s needs as a nation and that meets tests of excellence, relevance and access.

A key priority has been to develop a means of monitoring the progress being made by the tertiary education sector towards the outcomes defined in the TES. The information provided through monitoring will be valuable in:

- providing better information for tertiary education organisations (TEOs), so they can shape their own goals and objectives in dialogue with their stakeholders
- providing better information for the stakeholders who are involved in this strategic dialogue, so that they can better understand the connections between tertiary education and their own social and economic goals
- ensuring, as a result, that the tertiary education system is better aligned with the goals and aspirations articulated in the TES and better placed to contribute to the social and economic development of the country
- providing an evidence-base to help government agencies develop policies to further achieve the outcomes defined in the TES.

This baseline report provides a view of what we now know of the sector as it was at the start of the tertiary education reforms and the TES. It will be followed by a series of annual monitoring reports informing Ministers, the tertiary education sector, education agencies, and key stakeholders of progress being made.

This report is very much an initial report – focusing on what we know from available information. The report sets out the areas that will be monitored over the next few years as new information becomes available. An area of particular interest, in this regard, will be how well the sector is engaging with key stakeholders to ensure that the education and research it is delivering are relevant to their needs and contributing to New Zealand’s economic and social development.

This baseline report provides a picture of a tertiary education sector, at the point where the reforms began to be implemented, with both strengths and weaknesses. It reinforces the challenges and priorities articulated in the TES.

The report shows a sector that had attained greater financial stability, which will provide a sound base for further strengthening capability and quality within the system.

The period to 2002 was characterised by growth in participation in tertiary education, particularly in older age groups and for Māori. This provides an opportunity to have greater focus on issues of
quality and relevance of education and the contribution of tertiary education to social and economic development, while further improving equality of access. For Pasifika students the need to focus on improving completion of study is highlighted by the data in this report. For Māori students, progression from entry level qualifications to other qualifications will be an important area for attention.

The challenge that New Zealand faces in meeting the demands of the knowledge society and economy is clearly evident in this report. Along with other Organisation for Economic Co-operation and Development (OECD) countries, we face the challenge of improving the foundation competencies of much of the adult population, while also further developing our specialist expertise.

The important role of research within the tertiary education sector is confirmed by the evidence in this report, in particular, the contribution it makes to new knowledge creation and discovery.

Over the next few months, important new information will be available on the performance of the tertiary education system. This information will include TEO charters and profiles, quality evaluations for the Performance Based Research Fund (PBRF) and work being undertaken by the Ministry of Education and the Tertiary Education Commission (TEC) on completion, retention and progression.

In some areas, the new information may change our understanding of the performance of the tertiary education system. In the meantime, I believe it is important that the information contained in this report is made available to TEOs, stakeholders and government agencies now, so that it can inform planning and development.

I commend this report to you and encourage you to consider the issues raised as we all engage with the continued development of the tertiary education system.

Steve Maharey
Associate Minister of Education
(Tertiary Education)
I am pleased to introduce the Tertiary Education Strategy 2002/07 Baseline Monitoring Report.

If we want New Zealand to have a strong education system, I believe we must be unambiguously focused on learning, with strong alignment within and across diverse roles and a clear sense of strategic direction.

The introduction of the TES in 2002 provided a clear sense of strategic direction for the tertiary education system and how it needs to better contribute to improved student outcomes and wider social and economic outcomes. The TES contains a strong focus on achieving excellence in learning through teaching and research, developing a tertiary education system which is relevant to the country's needs and making sure that there is equitable access for all New Zealanders.

Monitoring the TES has required creating a new approach for system-level monitoring and evaluation. In the past, monitoring has focused mainly on the implementation of specific programmes. Now we are focusing on monitoring that is relevant to the tertiary education system as a whole and the difference it makes to better student and societal outcomes.

I see this project as part of a larger shift in thinking about education. It is part of a move from thinking about inputs and activities to focusing on the learning outcomes – whether these result from a programme of teaching or new research. It is also a shift from relying on anecdote to developing a comprehensive and systematic evidence base for what does and does not work in terms of the broader learning, social and economic outcomes. It also represents a move away from a focus on the provider to a focus on effectiveness of teaching and research, wherever and however it may occur.

This baseline report presents what we know currently about the tertiary education system to the end of 2002 with regard to the TES. It is necessarily based on existing information. Over the coming year, I expect new and emerging information sources to enhance and enrich our understanding about the performance of the tertiary education system and the contribution it makes to New Zealand’s development. As new information becomes available, the monitoring reports will cover more of the aspects articulated in the TES.

This report represents a significant piece of work. The development of the monitoring framework has had input from a wide range of people in government agencies and sector representative groups, iwi, Māori, and Pasifika community representatives.

I would like to thank those who have contributed to the development of the framework and the report and we look forward to your continuing engagement with this project.

Howard Fancy
Secretary for Education
The Tertiary Education Strategy (TES)

The TES sets out the government’s medium to long term strategy for tertiary education. It:

- articulates the broad goals for the tertiary education system
- provides vision and direction on how the tertiary education system can meet the needs of students, research users and wider stakeholders
- sets a framework to guide planning and funding.

The TES covers all aspects of post-school education including:

- courses provided by universities, polytechnics, colleges of education, wānanga, private training establishments and other tertiary education providers
- foundation education through to doctorates
- industry and workplace training
- employment training and second chance education
- adult and community education.

The TES is made up of six interrelated strategies:

- Raise Foundation Skills so that all People can Participate in our Knowledge Society
- Develop the Skills New Zealanders need for our Knowledge Society
- Strengthen Research, Knowledge Creation and Uptake for our Knowledge Society
- Te Rautaki Mātauranga Māori – Contribute to the Achievement of Māori Development Aspirations
- Educate for Pacific Peoples’ Development and Success
- Strengthen System Capability and Quality.

Across these strategies there are 35 objectives. While the objectives are presented as relating to one of the six strategies, many of them are interconnected and overlap with key concepts in other strategies.

In addition, there are nine change messages threaded through the objectives which relate to increasing the relevance, connectedness and quality of the tertiary education system, and provide a focus on the overall changes sought throughout the system. The change messages are:

- Greater alignment with national goals
- Stronger linkages with business and other external stakeholders
- Effective partnership arrangements with Māori communities
- Increased responsiveness to the needs of, and wider access for, learners
- More future-focused strategies
- Improved global linkages
- Greater collaboration and rationalisation within the system
- Increased quality, performance, effectiveness, efficiency and transparency
- A culture of optimism and creativity.

In general, the TES focuses on improving the ability of TEOs to manage for improved outcomes, rather than setting specific outcome targets. This is to be achieved through a mix of shifting attitudes and culture and the implementation of new funding and accountability policies.

There is an expectation that the progress of the tertiary education system with regard to the TES will be monitored and evaluated.
Monitoring the TES

A baseline monitoring report

This is a baseline monitoring report. It provides a view of what is known now about the state of the tertiary education system at the start of the period of the TES and before the implementation of the tertiary education reforms. Therefore, the main focus of the report is on the 2002 academic year. In a number of areas, supporting information on trends over earlier years is also provided to show the direction and degree of change already underway. The report also provides an update on the implementation of the key policies that support the achievement of the TES as at the end of 2003.

This baseline report provides a basis against which change and progress related to the TES will be measured over the next five years. Following on from this report will be a series of annual reports that will monitor the overall progress of the tertiary education system against the TES.

The report is structured around the six strategies. For each strategy, there is a section on the expected change for the period of the TES, which is a summary of the key changes set out in the TES and priorities indicated in the Statement of Tertiary Education Priorities (STEP). This is followed by a summary of the baseline picture for 2002 and a discussion of the areas for further development of monitoring. Each section then provides more detailed data on key areas covered by or relevant to the strategy.

The currently available data and information can only provide a partial picture in relation to the TES. There are a number of areas where there will be a high reliance on new data sources, many of which will be generated through implementation of the tertiary education system reforms. There will also be areas where there will be a need to collect new information specifically for monitoring, particularly with regard to understanding the views of key stakeholders.

The purpose of monitoring

The purpose of monitoring the TES is to provide ongoing timely information on the progress of the tertiary education system against the TES and against the baseline position set out in this report, which gives a view of the state of the sector before the reforms were implemented. Monitoring will help make sense of the extent to which the intended changes are happening, in which areas and to what degree.

There are two main audiences for this work. One is ministers and government, in terms of providing information on progress and highlighting any areas that may require further attention. The other is the tertiary education sector, associated government agencies and key stakeholders, in terms of providing information that can provide a broader context for policy development and sector planning processes.

Monitoring is focused on the tertiary education system as a whole; not on assessing the performance of individual organisations. It focuses on the overall patterns of change and response. However, it is specifically focused on the progress of the TES and is not intended to provide monitoring of all aspects of the tertiary education system. Monitoring and evaluation of specific policy and funding changes will be undertaken separately by the agencies responsible for implementation.

Monitoring will assess the progress of the system at several levels including:

- outcomes for learners, students, research users, Māori whānau, hapū and iwi, Pasifika communities, business and industry and the nation as a whole
- the degree of progress being made towards achieving the strategies, objectives and change messages and the current priorities expressed in the STEP
- the progress made in implementing specific policies and initiatives related to the TES.

Monitoring will also inform the development of the STEPs and of the next TES.

The challenge of monitoring

The TES sets a direction for the sector and has a focus on improving the ability of the sector to manage for outcomes. It does not set specific, measurable goals and targets. Much of the TES is aimed at shifting the attitudes, culture and focus of the sector. The key messages of the TES are summarised in the nine change messages. These are intrinsically difficult to measure.

A narrow focus on quantitative indicators could easily miss the real story. The system may be ‘scoring’ well but still missing the point of the TES – or the other way around.
The challenge of monitoring, therefore, will be to highlight the overall messages, not just report on indicators. This requires using a mix of quantitative data that can provide measures of change over time, balanced with qualitative information that can provide explanation of how and why change is or isn’t occurring. The monitoring will need to focus on system-wide indicators, but these are likely to be slow to respond in many areas. Therefore, there will also need to be information on examples of innovation and successful change. Some areas will require longer-term research beyond the scope of the monitoring work.

Even so, monitoring can only provide a partial and selective view of change across a system that is as complex as tertiary education.

Over the period of the TES, monitoring will shift in focus from summarising what is happening in relation to the TES, to making sense of how changes are contributing to the larger goals of the TES and the well-being of the country. It will also have a greater focus on progress against the change messages.

**Evaluation of the TES**

Monitoring will provide information and commentary on trends and changes in the system associated with areas of the TES. In addition to monitoring, an evaluation of the current TES is planned. The purpose of the evaluation will be to determine the significance, value and effectiveness of the current form of the TES. It will need to consider both the TES itself and the success with which it has been implemented. The evaluation will aim to improve understanding of areas such as:

- how well the TES has been implemented across the sector
- how effective the TES has been in focusing the sector on achieving outcomes and contributing to national goals
- the significant changes in the sector resulting from the TES.

The evaluation will help inform the development of the next TES.

**Further areas for monitoring**

In each of the strategy sections in this report there is a discussion of further areas for monitoring and ways in which new data and information will be used to fill out the picture. In general, monitoring will make the greatest possible use of existing data and new data that is being collected as part of policy and funding changes, or that is being developed for a range of purposes. Data will only be collected specifically for monitoring if it is essential to understanding progress and it would be difficult or costly to gather it through existing processes.

Significant areas of information that will be added to monitoring reports over the next one to two years include:

**Information on qualification and course retention, completion and progression**

The Ministry of Education has recently completed a longitudinal dataset of student enrolments and completions at qualification level, which provides a proper basis for calculating retention rates, completion rates and progression at qualification level. The work was completed concurrently with this report and information from it will be used in future monitoring reports. The full implementation of the National Student Index in 2003 will make it possible to analyse retention, completion and progression at both course and qualification level.

**Information from TEO charters and profiles**

The introduction of charters and profiles will, over time, provide comprehensive information on TEO plans and strategies, TEO engagement with key stakeholders, the development of collaborative initiatives and the performance of TEOs against their own targets. A key use of this material will be to assess the alignment of TEO plans to the TES and examine progress against the change messages.

This information will start to become available for analysis in 2004, with more comprehensive information becoming available in 2005, when the full system is implemented. It will take time to develop robust methods for analysing and interpreting the information against the framework of the TES.

**Perspectives of key stakeholder groups on progress of TEOs**

The information from charters and profiles will need to be compared with information from key stakeholders. This information will provide external views of TEO progress against the TES, the quality of relationships that have been developed by TEOs and perspectives on the relevance of tertiary education to student, community and industry needs.
Information from the PBRF
The PBRF provides new data on researchers and research in the tertiary education sector. It includes a census of research staff, which provides information on the characteristics of research staff overall. There is also new information on the quality of research from the peer review process.

Information from the Adult Literacy and Life Skills Survey
This survey will be conducted in 2004/05. It will not only provide new information about foundation competencies across the population, but also provide a number of insights into the relationship between foundation competencies, tertiary education and life outcomes.

Work will also be undertaken during 2004 to assess how best to develop information in a number of critical areas, including system-wide measures of various aspects of quality of education, information on graduate outcomes and improved information on the tertiary education sector workforce. In some areas, monitoring will be reliant on improvements to the quality of existing data.

Finding out more
This report presents summary indicators of progress. To find out more detailed information and statistics please refer to the following sources:

Ministry of Education
New Zealand’s Tertiary Education Sector Profile and Trends 2002

Participation in Tertiary Education 2003
Copies of these reports can be downloaded from http://www.minedu.govt.nz/goto/tertiaryanalysis

Tertiary Education Commission
Information and reports on specific education and training programmes and funding can be found on the TEC website: http://www.tec.govt.nz
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACE</td>
<td>Adult and Community Education</td>
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<tr>
<td>CoRE</td>
<td>Centre of Research Excellence</td>
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<td>CRI</td>
<td>Crown Research Institute</td>
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<td>EFTS</td>
<td>Equivalent Full-time Student</td>
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<td>ELSI</td>
<td>Economic Living Standards Index</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>ICT</td>
<td>Information and communications technologies</td>
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<tr>
<td>ITO</td>
<td>Industry Training Organisation</td>
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<td>NZQA</td>
<td>New Zealand Qualifications Authority</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>PBRF</td>
<td>Performance Based Research Fund</td>
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<td>PTE</td>
<td>Private training establishment</td>
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<td>STAR</td>
<td>Secondary Tertiary Alignment Resource</td>
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<td>STEP</td>
<td>Statement of Tertiary Education Priorities</td>
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<td>TEC</td>
<td>Tertiary Education Commission</td>
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<tr>
<td>TEI</td>
<td>Tertiary education institutions (a public provider of tertiary education)</td>
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<tr>
<td>TEO</td>
<td>Tertiary education organisation (any provider of tertiary education or an ITO)</td>
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<tr>
<td>TES</td>
<td>Tertiary Education Strategy</td>
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The Baseline Picture

The tertiary education system at the start of the strategy
The tertiary education system in 2002

In the period to 2002, there were increased numbers and proportions of the New Zealand population who held tertiary qualifications. This trend has been accompanied by strong growth in participation in tertiary education, matched by growth in the number of qualifications completed. Government spending on tertiary education as a proportion of Gross Domestic Product (GDP) had also grown. However, on international measures of tertiary educational attainment and participation, New Zealand sat at about the OECD average.

Figure 1: Participation in formal tertiary education, July 1994–2002

Much of the increase in tertiary education participation came from people in older age groups, women and Māori. The largest increases were in qualifications below degree level. The rapid growth in the wānanga was an important part of this picture, but it is only part of it. There was also strong growth in participation in other sub-sectors, including enrolments by Māori students.

Differences in participation by ethnic group were still evident, in spite of the overall growth in numbers. In 2002, Pasifika peoples had the lowest participation rates in tertiary education, although both numbers and rates of participation had been increasing. There is concern about completion rates for Pasifika students at degree and postgraduate level. While Māori participation rates exceeded those of non-Māori, the most significant growth in participation by Māori has been in lower-level qualifications. Māori and Pasifika students remain significantly under-represented at postgraduate level.

New Zealand is faced with a significant skills challenge as the world shifts to a knowledge-based economy and society. The foundation competencies of much of the adult population are lower than desirable. However, this is a similar situation to that in other OECD countries. There are low numbers of people who can speak te reo Māori, putting this unique taonga at continued risk. However, participation in industry training, foundation education and te reo Māori have increased significantly. An example of this is the increased enrolments in mixed-field courses, which are courses that focus on life, employment and study skills.

The tertiary education sector was the largest producer of published research in New Zealand in 2002. The sector made a strong contribution to pure basic and strategic research. Quality indicators show the best research produced in the New Zealand tertiary education system is of a good standard and the amount of research produced has been increasing.

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1 See Technical and Data Definitions for explanation of age-standardisation.
2 See Technical and Data Definitions for explanation of these terms.
Raise foundation skills so that all people can participate in our knowledge society

The 1996 International Adult Literacy Survey showed that raising foundation competencies of much of the adult population would be one of the significant challenges across OECD countries as they move into a knowledge economy and society. The economic development of the country is much more dependent on people having the ability to engage with information and knowledge in their work. Raising foundation skills across the population is therefore critical to New Zealand’s economic and social development.

The new policy framework for foundation learning will be implemented progressively over the next three years. The initial focus is on quality and information. An early start has been made with the adult literacy achievement framework. The medium-term focus will be on extending access for those in need of foundation education who are currently not participating.

In 2002, nearly one in five school leavers left school with no qualifications. The proportion was higher for Māori and Pasifika school leavers. These people are much more likely to have low levels of foundation skills.

At the same time, there has been a steady increase in the proportion of school leavers moving directly into tertiary education. Programmes such as the Secondary-Tertiary Alignment Resource (STAR) and Gateway, as well as local-level connections between schools and tertiary providers, have assisted this. Youth training continued to provide an option for young people who have disengaged from school to re-enter education.

While adult literacy and training opportunities continue to be key foundation education programmes, there has been a significant growth in provision of foundation learning courses through TEOs, especially in the wānanga and the polytechnics.

Develop the skills New Zealanders need for our knowledge society

Industry Training Organisations (ITOs) have begun to take a greater leadership role in their industries and develop a more strategic view of training needs. ITOs have achieved increased coverage of employers and employees. However, some gaps in coverage persist, which the TEC is working with ITOs to fill. Women, however, remain significantly under-represented in industry training, including Modern Apprenticeships.

**Figure 4: Participation in industry training, 1995–2002**

There was a high level of engagement of people over 25 in tertiary education in 2002. Industry training has been effective in engaging trainees aged over 40. Adult and community education provides learning opportunities to a significant proportion of the adult population.

There were significant differences in participation in tertiary education by ethnic group, disability status and socio-economic background. These differences highlight the need to further improve access:

- for Māori to degree-level tertiary education
- for Pasifika peoples at all levels
- for students with a disability
- from school to tertiary for students from low socio-economic backgrounds.

There has been sustained growth in postgraduate enrolments and completions. However, there is a need to ensure that there is sufficient supply of people with high-level specialist skills in areas critical to New Zealand’s economic and social development.
Strengthen research, knowledge creation and uptake for our knowledge society

About one-third of New Zealand’s research investment in 2002 was made by the tertiary education sector. The tertiary education sector was the largest producer of research output (as measured through publications). The tertiary education sector is an important contributor to basic and strategic research, with nearly 70 percent of expenditure in the tertiary education sector being in this area.

Figure 5: Types of research being undertaken by universities, 2002

Source: Statistics New Zealand, Research and Development Survey 2002

Māori research (covering research by Māori, about Māori and/or for Māori) is an emerging field within the tertiary education sector that has considerable creative potential. It has been hampered by limited capacity, as well as by the diversion of experienced researchers into other activities, including management, mentoring and advice on Māori development. The establishment of Ngā Pae o te Māramatanga (the Māori Centre of Research Excellence (CoRE)) is an important initiative to develop capacity in this area.

There are indicators that research from the New Zealand tertiary education sector is of good standard. Indexed research papers from the New Zealand tertiary education sector have received a similar level of citation as papers internationally, given the journals that they are published in. Contract research earnings have increased, both in absolute terms and as a proportion of institutional income. The establishment of the new PBRF will provide a greater focus on the quality of research work.

The evidence from publications suggests that most research collaboration in the tertiary sector has been international, with much less collaboration taking place between tertiary education organisations within New Zealand.

The recent establishment of the CoREs will help strengthen research collaboration within New Zealand. All but one involve a range of universities and, in several cases, provide links between universities and Crown Research Institutes.

Both enrolments and completions in PhDs have increased steadily over the six years to 2002. However, Māori and Pasifika students continue to be under-represented at this level.

Te rautaki mātauranga Māori—contribute to the achievement of Māori development aspirations

Māori participation in tertiary education in 2002 was high and has risen substantially since 1999. Even allowing for the age profile of the Māori population, Māori participation exceeded that of non-Māori. As at 31 July 1999, 8.0 percent of the Māori population over 15 years were studying in tertiary education. By 31 July 2002, this had risen to 14.5 percent. The corresponding figures for non-Māori were 8.4 percent in 1999 and 10.0 percent in 2002.

A large part of this participation increase has been fuelled by the expansion of the three wānanga. Enrolments at the wānanga grew by 1,462 percent (from 1,883 to 27,535) between July 1999 and July 2002, with the increase in enrolments in wānanga contributing 35 percent of all growth in the tertiary education sector over that period.

The growth in participation has been greatest for Māori women and Māori in older age groups. There is cause for continued concern about lower rates of young Māori in tertiary education and lower proportions of Māori going directly from school to tertiary study.

While Māori enrolments at degree-level and higher increased faster than for non-Māori, the most significant increase in participation was in below degree-level qualifications. The growth in enrolments below degree-level has flowed through to increased completion of qualifications by Māori at this level. However, there are concerns about Māori completion rates at higher levels.
Māori were well represented in industry training, including Modern Apprenticeships. However, their distribution across ITO areas is uneven, with larger concentrations in some industries.

**Figure 6: Māori enrolments in formal tertiary education by qualification level, July 1997–2002**

There has been significant growth in the provision of kaupapa Māori education through the three wānanga. There were also 162 registered providers identifying as Māori providers. New Zealand Qualifications Authority (NZQA) audit results indicate that these providers need support to build their capability. In 2003, NZQA was providing active support to 137 of them. Polytechnics had also increased their capacity in providing te reo Māori courses.

There were low proportions of Māori working as teaching staff in the tertiary education sector. The challenge is for TEOs to improve their recruitment of Māori staff, including encouraging Māori students at degree and postgraduate level to consider a tertiary teaching career.

**Educate for Pacific peoples’ development and success**

There has been increased participation by Pasifika domestic students over the six years to 2002, both in total numbers and as a proportion of all students. However, taking account of the age distribution in the Pasifika population, Pasifika participation rates were still lower than other ethnic groups. The targets set in the Pasifika Education Plan for Pasifika enrolments and graduations in tertiary education were not fully achieved in 2002.

In 2002, Pasifika students had a similar spread of participation across degree and sub-degree qualifications to non-Pasifika students. As with other groups, there has been substantial growth in numbers enrolling in qualifications below degree level. Pasifika students were still significantly under-represented in postgraduate studies.

While Pasifika trainees were represented in industry training at about the same level as in the overall workforce, they were more concentrated in some industries. Pasifika peoples were significantly under-represented in Modern Apprenticeships.

Completion of sub-degree level qualifications by Pasifika students has grown faster than completions of degree-level qualifications. Completion of postgraduate qualifications by Pasifika students decreased in the years 2000 to 2002. This data reinforces concerns about completion rates of Pasifika students at degree and postgraduate levels.

**Figure 7: Completion of qualifications by Pasifika students by qualification level, 2000–2002**

There is a small Pasifika private training establishment sector, with 33 registered providers identifying as Pasifika providers. NZQA audit results indicate that these providers need support to build their capability. In 2003, NZQA was providing active support to about half of them.

Pasifika peoples are significantly under-represented among teaching staff in TEOs.
Strengthen system capability and quality

The financial performance of TEOs has improved since 2000, providing a sound basis for strengthening strategic capability and quality in the sector. Fewer public tertiary institutions were operating at a deficit in 2002. Taken as a whole, the public tertiary education institutions (TEIs) met all the benchmarks for satisfactory financial performance for the first time. This improved performance has accompanied further expansion in export education, with international student numbers growing from 8,900 at 31 July 1999 to 26,900 at 31 July 2002, an increase of 257 percent.

Results for 2002 show improved but more mixed financial performance by private training establishments (PTEs).

A number of collaborative initiatives have been developed by TEOs over the last few years. These aim to contribute to a variety of outcomes relevant to the TES. Assistance is being provided to encourage further collaboration.

The establishment of the New Zealand Register of Quality Assured Qualifications is a significant step towards a more coherent system of qualifications across the tertiary education system. A project on enhancing quality will encourage a greater focus on strengthening the quality of tertiary education teaching.

There are risks to the sustainability of the growth in international students because of the high reliance on recruitment from a narrow range of countries, particularly in the North Asia region. The code of practice for the pastoral care of international students, the development of more robust quality assurance mechanisms and other policy developments seek to mitigate these risks.

Figure 8: Key financial performance indicators for TEIs, 1999–2002

Note: The original indicators have different scales. In order to compare them they have been changed to the same scale, where 100 represents the Ministry of Education’s recommended minimum level that TEOs should achieve on each indicator. See Ministry of Education, New Zealand’s Tertiary Education Sector Profile and Trends 2002, p 138, for original data and an explanation of each indicator.
Overview
Implementation of the reforms

The TES is part of a set of tertiary education system reforms aimed at creating a more focused, coherent and collaborative tertiary education system. The reforms are directed at ensuring that the system is better aligned to the nation’s goals and is actively identifying and meeting the needs of the communities it serves. They are intended to change the culture of both tertiary education agencies and the sector as a whole. As part of this push, the reforms create a number of regulatory and resourcing changes.

Key to enabling these reforms was the Education (Tertiary Reform) Amendment Act 2002, which came into effect on 1 January 2003. This Act enabled the establishment of the TEC which is responsible for the allocation of funding, and building capability and relationships in the tertiary education sector. It also provided the statutory basis for the TES, the STEP and the system of charters and profiles, and set the basis for a new integrated funding framework.

In August 2003, the first STEP to be issued under the Act was gazetted. This STEP articulates the government’s priorities and is designed to realise the TES in the short to medium term, by providing a focus on particular aspects of the TES. The key priority for the period covered by this STEP is continuing to develop the infrastructure and processes that will support the new tertiary education system.

Improving planning and accountability

A key aspect of the reforms is the introduction of charters and profiles for all TEOs that receive public funding. Charters and profiles articulate the strategic direction and activities of these organisations and show how they will contribute to developing the strategic focus and capability of the system as a whole, and how they will contribute to the achievement of the TES. Approval of a TEO’s charter and profile will be a prerequisite for access to public funding.

A charter is a high-level governance document that provides a broad description of a TEO’s mission and role in the tertiary education system and indicates the type of activities it is likely to undertake. A profile is developed annually. It reports on recent performance and sets out the plans and targets for the following three years. It also specifies the activities for which the TEO seeks TEC funding.

Charters and profiles are being implemented over the following timeframe:

- In 2002, 35 TEOs took part in a trial of the charters and profiles process.
- By 30 September 2003, all currently government-funded TEOs were required to submit a charter for assessment by the TEC, and approval by the Minister. A total of 97 organisations, receiving 85 percent of all government funding for tertiary education, were required to submit a profile.
- In 2004, all TEOs will be required to complete profiles to enable the TEC to approve their funding.

The integrated funding framework

Another key aspect of the reforms is to develop an integrated funding framework to support the development of system capability and focus in areas that are important to the future development of New Zealand and New Zealanders.

The funding framework will have three broad elements which are being implemented progressively as follows:

Funding for teaching and learning

Additional funding has been provided to expand industry training, Modern Apprenticeships and the Gateway programme. Policy work is underway to look at how a performance element can be introduced to funding for teaching and learning. The Technical Working Group has provided a report on options to Ministers.

Funding for research

The PBRF is being implemented, with the first round of assessments having been completed. There will be a gradual introduction of the new funding structure over the next five years. $32.9 million was appropriated over four years to ensure a real funding increase of $20 million from 2006.

Targeted funding for strategic development

New funds were introduced in 2002 for e-learning and polytechnic regional development. Additional strategic development funding was made available in 2003. New funding is also available for building quality and capability in Adult and Community Education (ACE).

There have also been funding changes with regard to managing enrolment growth and fee maxima to ensure that the tertiary education system remains affordable for government and students.
Cross-strategy indicators

This section provides a set of cross-strategy indicators which provide information on the overall state of tertiary education in New Zealand as at 2002.

These indicators provide baseline information on the state of the tertiary education system, against which broader changes resulting from the TES can be monitored. Changes in these indicators will also provide an alert to possible unintended consequences (positive and negative) of the changes implemented under the TES.

Educational attainment in the adult population

More people have tertiary qualifications...

The proportion of the adult population with a tertiary qualification has gradually increased, from 43 percent of the adult population in 1997, to 46 percent in 2002. This pattern reflects increased participation in tertiary education over this time.

Over this period, the number of people with degrees grew by nearly 29 percent, while the number of people whose highest qualification is a tertiary qualification below degree level grew by nine percent. (These figures are based on highest qualifications, so they do not count the number of other tertiary qualifications held in addition to degrees and, therefore, undercount the number of qualifications below degree level.)

The number of people with no qualifications decreased by 8.5 percent over the same period.

...but differences between ethnic groups persist.

The distribution of school and tertiary qualifications varied across ethnic groups. In 2001, Māori and Pasifika peoples were less likely to have a tertiary qualification than people in other ethnic groups. They were also more likely to have no qualifications. Asians were more likely to have a tertiary degree than other ethnic groups and less likely to have no qualifications.

The gender differences within ethnic groups were fairly small. Māori and Pasifika women were more likely to be tertiary qualified than their male counterparts. In the European and Asian populations, men were slightly more likely to hold a tertiary qualification.

People in younger age groups are more likely to have tertiary qualifications

Attainment of highest qualifications by age and gender shows the changing pattern of engagement in tertiary education over time. It is affected by the historical participation of men and women in tertiary education, as well as the current participation across age groups.

In 2001, people aged 25 to 55 were more likely to hold degrees than people in older age groups. For those under 30, there was a greater proportion of women than men with degrees. This was reversed in the older age groups where men were more likely to hold degrees than women.
For other tertiary qualifications, the gender differences were less marked overall. People between 30 and 55 were more likely to hold one of these qualifications as their highest qualification than those in other age groups. In those aged under 30 years, women were more likely than men to hold one of these qualifications as their highest qualification. In the older age groups there was a fairly close parity between genders.

**Figure 11: Percentage of each age group and gender by highest qualification, 2001**

Source: Statistics New Zealand, Census of Population and Dwellings 2001

Tertiary education attainment in New Zealand is close to OECD average

New Zealand is close to the OECD mean for the proportion of the population with tertiary degree qualifications. The proportion with tertiary qualifications below degree level is somewhat higher than the OECD mean.

Outcomes of tertiary education

Tertiary education achieves outcomes in a number of areas for individuals who participate and achieve qualifications. These outcome areas include progression to further education, improved labour market status and also improved social and family outcomes.

At present, the main data sources that show relationships between tertiary education and individual outcomes focus on employment, income and economic living standards.

Information on progression to further education will be available from the Ministry of Education’s longitudinal dataset of student enrolments and completions. Further work is required to look at outcomes in other areas. To a large extent progress will be reliant on research. The work that Statistics New Zealand is conducting to improve the integration of social statistics may also provide a basis for monitoring outcomes across a range of areas.

Outcomes of tertiary education can also be considered at a national level in the relationship between the outputs of tertiary education (people with qualifications and research output) and national economic and social indicators. Again, this is an area where further work is required to develop indicators that can be readily reported against.

**Tertiary education increases the chances of having a job...**

Over a ten-year period, people whose highest qualification was a tertiary qualification below degree level, had unemployment rates 1.5 to 2.5 percentage points lower than those with school qualifications only. People with degrees had unemployment rates that were 0.7 to 3.4 percentage points lower again. There was much less fluctuation in the unemployment rate for those with degrees than for those with lower-level tertiary qualifications or school qualifications only.

**Figure 12: Unemployment rates by highest qualification, 1990–2001**

Source: Statistics New Zealand, Household Labour Force Survey
Note: Average rate for each year to December.

...but employment chances vary with field of study.

In 2001, unemployment rates for people with tertiary qualifications varied greatly by the field of study of the qualification. The highest rates of unemployment were in information technology. This coincided with a slump in demand in the information technology sector. The lowest rates of unemployment were in health and education. In most areas, women had higher rates of unemployment than men.

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1 *Education at a Glance, OECD Indicators, 2003.*
It should be noted that this is a snapshot view of employment outcomes at a particular point in time. It is also not adjusted for the levels of qualifications in each field, the length of time since graduation or the age profile of graduates in different fields. All of these factors would need to be considered in developing an accurate picture of employment outcomes at the subject level. The effect of labour market conditions on decisions to participate, or not, in tertiary education also needs to be examined further.

People with tertiary education earn more on average

From 1997 to 2002, the average weekly income for those with tertiary degrees was more than double that for those with school qualifications only.

People with tertiary education have generally better living standards

In 2002, the Ministry of Social Development released a report which provides a broad description of the living standards of New Zealanders. A new social measurement tool, the Economic Living Standard Index (ELSI), was developed to consolidate large amounts of information about different aspects of economic well-being, into a single score.

The ELSI scale is made up of seven bands which describe the living standards of the New Zealand population from ‘very restricted’ to ‘very good’.

The research found that there is a broad correspondence between level of education and living standards across ethnic, age and occupational groups. In aggregate, it shows that people with tertiary qualifications are less likely to be in the lowest two categories than people with only school qualifications. Those with degrees are much less likely to be in the lowest three categories than those with school or other tertiary qualifications. At the other end of the scale, people with degrees are much more likely to be in the very top category.
The raw data from the study shows that people with school qualifications only, are more likely to have better standards of living overall than those with tertiary qualifications below degree level. This is influenced by people in older age groups having lower levels of qualifications and reasonably good living standards. When the mean scores are standardised for age, it shows a small increase in living standards for people with tertiary qualifications below degree level, compared with those with school qualifications only. The age-standardised scores confirm that holding a tertiary degree significantly improves living standards. It also shows that having no qualification significantly decreases living standards.

Table 1: Mean ELSI scores and mean ELSI scores standardised for age by highest qualification of those aged 18 years and over, 2000

<table>
<thead>
<tr>
<th>Highest educational qualification</th>
<th>Mean ELSI score</th>
<th>Mean ELSI score standardised for age</th>
</tr>
</thead>
<tbody>
<tr>
<td>No qualification</td>
<td>41.0</td>
<td>39.2</td>
</tr>
<tr>
<td>School qualification</td>
<td>43.1</td>
<td>43.0</td>
</tr>
<tr>
<td>Other tertiary qualification</td>
<td>42.8</td>
<td>43.1</td>
</tr>
<tr>
<td>Tertiary degree</td>
<td>46.7</td>
<td>47.6</td>
</tr>
</tbody>
</table>

Source: Ministry of Social Development, New Zealand Living Standards 2000

Participation in tertiary education

The main measure of participation in this report is enrolment in formal tertiary study, which covers all students studying towards a recognised qualification, irrespective of how their study is funded.

Participation in industry training is also referenced, not only because it is an important and distinct activity within the tertiary education system but also because it includes a large proportion of trainees receiving on-the-job training, who are not included in formal tertiary study.

Participation figures for specific programmes (such as Youth Training) are used where they are relevant to the topic.

Rapid growth in participation in the last four years...

There had been a substantial increase in the total number and proportion of people enrolled in formal tertiary education. From 1999 to 2002, the total number of students enrolled in formal tertiary study had increased by 29 percent. Over the same period, participation rates (ie students as a proportion of the population) had also increased by 25 percent. The growth had largely been the result of increased enrolments in public tertiary providers, particularly wānanga.

Figure 16: Participation in formal tertiary education, July 1994–2002

...but varied growth across ethnic groups.

There were substantial differences in participation rates between ethnic groups. Māori had the highest participation rate, which is continuing to grow. This was largely due to the success of the wānanga in attracting first-time students. Pasifika participation rates were lower than for other ethnic groups (when allowance is made for differences in

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4 See Technical and Data Definitions for the definition of formal tertiary education.
the age structure of each ethnic group population). Participation rates for domestic Asian students fell between 2001 and 2002.

**Figure 17: Age-standardised participation rates by ethnic group, July 2001 and 2002**

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>Pasifika</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Asian</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Pākehā/Other</td>
<td>10%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Growing participation of older students

Participation rates had been growing across age groups from 1999 to 2002, although there was a slight decrease in participation rates for students under 25 between 2001 and 2002.

Women, at all ages, were more likely to participate in tertiary education than men.

**Figure 18: Participation rates by age and gender, July 2002**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>20-24</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>25-29</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>30-34</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>35-39</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>40-44</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>45-49</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>50-54</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>55-59</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>60-64</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>65+</td>
<td>1%</td>
<td>2%</td>
</tr>
</tbody>
</table>

There was a trend towards greater participation in tertiary education at older ages. The proportion of students over 40 years had increased from 17 percent in 1999 to 20 percent in 2002. Less than half of the formal tertiary students were aged under 25 years. In 2002, only 26 percent of first-time students came directly from school.

**Increased participation below degree level**

While the number of students enrolled at the degree and postgraduate levels had been steadily increasing, the major growth to 2002 had been at the sub-degree level. Nearly 55 percent of tertiary students were enrolled for qualifications below degree level in 2002.

**Figure 19: Enrolments in formal tertiary education by qualification level, July 1997–2002**

- Sub-degree
- Degree
- Postgraduate

**Continued growth in industry training**

There has been constant growth in industry trainee numbers since the programme began in 1992. At 31 December 2002, there were 83,466 trainees registered with ITOs. This included 4,344 Modern Apprenticeships. It represented an overall increase of 26 percent from the previous year.

**Figure 20: Participation in industry training, June 1995–2002**

Source: Tertiary Education Commission, Industry Training 2002

Notes: Figures for December 2000 onwards are based on electronic returns and are not exactly comparable with previous years, which were returned through a manual reporting system. Totals include Modern Apprenticeship numbers.
In contrast to formal tertiary education, women are under-represented in industry training. In 2003, women made up only 23 percent of industry trainees. This was an improvement on 1996, when only 13 percent of industry trainees were women, but is still below their representation in the workforce (46 percent). The gender disparity is wider still for Modern Apprenticeships where only seven percent of participants in 2003 were women.

New Zealand tertiary education participation matches OECD average

The OECD provides international comparative data on three measures of participation in tertiary education: enrolment rates, expected years in tertiary and net entry rates. The best measure for comparing participation in New Zealand with that in other countries is enrolment rates as this measure is relatively undistorted by differing age profiles. This measure takes total enrolments as a proportion of the population in four different age bands. New Zealand tertiary enrolment rates were close to the OECD average at the core ages, but higher at the older ages, although not as high as Australia and the United Kingdom.

**Figure 21: OECD enrolment rates, 2001**

The other two measures show New Zealand to be in a more favourable position compared with the same countries. However, these measures are distorted by New Zealand’s higher levels of participation in older age groups. Discussion of these measures can be found in Ministry of Education, Participation in Tertiary Education 2003, chapter 4.

Completion of qualifications

This section provides information based on annual counts of completed qualifications.

Qualification completion counts provide indicative information on the extent to which patterns in enrolments do or do not carry through to completions. However, they need to be interpreted with caution as there are lag times of up to several years between enrolment and completion, depending on the nature of the qualification. Also, completion figures are for the full academic year, whereas the enrolment figures used in this report are snapshots as at 31 July each year.

Qualification completion counts by ethnicity, age and gender are not included in this section. It is difficult to interpret these breakdowns meaningfully as they are strongly affected by the choices of the groups in terms of level of study and length of course. Summary information on Māori and Pasifika completions is included in the relevant strategy sections.

The Ministry of Education has developed a longitudinal dataset that matches enrolments and completions. This data will be used in future monitoring reports to provide information on completion rates, retention rates and progression. This will include breakdowns by gender, ethnicity and age group.

Increased number of completed qualifications

The overall number of qualification completions has grown at a faster rate than the overall number of enrolments over the nine years to 2002. From 1994 to 2002, qualification completions grew by 44 percent, while enrolments grew by 30 percent.

**Figure 22: Comparison of qualification completions with full year enrolments, 1994–2002**

The OECD defines tertiary education to include diploma level studies and above (referred to as OECD Type A and B). Therefore, this is a narrower definition of tertiary education than used in New Zealand, where all post-school education is included. See Ministry of Education, Participation in Tertiary Education 2003, page 43 for more details.
Strong increase in number of qualifications completed below degree level

When looking at the number of completions by level of study, it becomes obvious that the growth in completion numbers has been driven by increased completions of below degree-level qualifications. This matched increased enrolments at this level. From 2000 to 2002, completions of below degree level qualifications increased by 38 percent, while degree completions increased by only four percent and postgraduate completions declined by two percent.

Figure 23: Qualification completions by level of study, 2000–2002

Research within the tertiary education sector

In addition to providing education, the tertiary education sector has an important role in creating new knowledge through research. In New Zealand, the tertiary education sector is a major part of the overall research sector.

Tertiary education is New Zealand’s largest producer of published research

The majority of research within the tertiary education sector is in universities. Universities made up the largest group of producers of published research in 2002, with 47 percent of indexed scientific papers produced by university researchers. By including all research outputs, not just indexed scientific papers, the proportion produced by the universities increases.

Two-thirds of research from the tertiary education sector is pure basic and strategic

Compared with the business and government sectors, the type of research conducted within the university sector was more directed towards pure basic and strategic research. More than two-thirds (68 percent) of university research expenditure was spent in the pure basic and strategic areas, compared with 53 percent for government and 21 percent for business.

Overall research output of the tertiary education sector is growing

The annual reports of TEIs provide information on the research activities undertaken and the research outputs produced in 2002. Information from these reports indicates a 13 percent increase in research output from 14,747 in 1997 to a total of 16,686 university publications and research outputs in 2002. However, there was a drop off in outputs from 2001 to 2002.

Figure 25: University research outputs, 1997–2002

Source: University Annual Reports

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[There are considerable definitional difficulties in determining the types of research being undertaken because funding providers and researchers often use different definitions of, and sometimes terms for, basic, applied and experimental development. To compound the issue, sometimes it is only when the research has been underway for a period that it becomes clear what type of research it is.]
Research from the New Zealand tertiary education sector has similar impact to research from other countries

The most common means of analysing the impacts of research is through measuring citation rates. Research publications produced by researchers in universities in 1997 had been cited, on average, 6.1 times by 2001. This rate is similar to international averages, given the journals in which the research papers were published.

Income to the tertiary education sector from research contracts is growing

Research in the tertiary education sector is funded through a combination of internal allocation of TEO funds, a specific funding allocation for research within student funding from Vote: Education (to be incrementally replaced by the PBRF) and external contract funding.

A substantial proportion of funding for research in the tertiary education sector comes from contracts for research. In 2002, this source of funding totalled $234 million, which is just over twice the research funding provided through Vote: Education in the same year ($115 million). The total income from research contracts has increased steadily over the six years to 2002.

Research contract income also makes up a significant proportion of universities’ total income. As a proportion of the total income of universities, contract research income has increased from 11.1 percent in 1997 to 13.1 percent in 2002.

Affordability of tertiary education

Government spending on tertiary education has increased as a proportion of GDP

Government spending on tertiary education (excluding spending on student support) represented 1.3 percent of the country’s GDP in the 1999/2000 financial year. This is estimated to have increased to 1.6 percent of GDP in 2002/03. When the capital spending on student loans is added in, government spending on tertiary education reaches 2.0 percent of GDP in 2002/03 compared with 1.7 percent in 1999/2000.

In 2002/03, the government’s total budget for tertiary education was $3,562 million. This represented an 8.1 percent increase on the 2001/02 actual spending of $3,296 million. The major items in the government’s tertiary education spending were:

- $1,718 million for tuition subsidies to fund student places at TEOs
- $952 million for student loans
- $405 million for student allowances
- $190 million for specific purposes, including funding of industry training and programmes such as Youth Training, Modern Apprenticeships, Gateway, and Skill Enhancement.

Increased costs to students have stabilised

From 1997 to 2000, average student fees in TEIs rose steadily. Average student fees stabilised in 2001 and declined slightly in 2002. Students attending universities pay the highest fees on average, followed closely by students at polytechnics. The lowest average fees were for students at wānanga. This is largely an effect of Te Wānanga o Aotearoa providing a selection of zero fee courses which have had very large take-up.

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7 Citation rates count the number of times a research paper is referenced in subsequent research papers.
Affordability to students can also be looked at in terms of the amount that students need to borrow under the Student Loan Scheme to cover the costs of their tertiary education. Average borrowings almost doubled from 1992 to 2000, partially reflecting the increase in student fees. The dip in 1999 was due to policies restricting amounts of borrowing, which were revoked the following year. From 2000 on, average borrowing has not increased as fast, reflecting more stable fees.

The government provides a range of support targeted to students who are not in a position to meet the costs of tertiary education. The main form of support is student allowances, which were provided to 68,486 students in 2002. The average annual student allowance, including accommodation benefit, was $5,830 in 2002. Allowances are targeted to students from low income families. The Ministry of Social Development provided Training Incentive Allowances (TIA) to 22,587 beneficiaries in 2001 to assist with the costs of tertiary study. The average TIA was $1,700. There is also a range of scholarships available from government, TEOs and other organisations with an interest in tertiary education.

Tertiary education organisations

Tertiary education sector is made up of a mix of providers

In 2002, there were 35 public TEIs in operation (universities, polytechnics, colleges of education and wānanga). These providers attract the majority of formal tertiary students and EFTS funding. There were also 46 ITOs.

The largest number of providers were in the private sector, of which just over half received government funding. There was around 10 percent growth in the number of PTEs between 2001 and 2002.
Table 2: Tertiary Education Organisations, 2001 and 2002

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Polytechnics</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Colleges of Education</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wānanga</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Industry Training Organisations</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Private Training Establishments (funded)</td>
<td>446</td>
<td>490</td>
</tr>
<tr>
<td>Private Training Establishments (not funded)</td>
<td>404</td>
<td>398</td>
</tr>
<tr>
<td>Other Tertiary Education Providers</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Government Training Providers</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

Seventy percent of students attend universities or polytechnics

Universities continued to attract the largest numbers of formal students, followed closely by polytechnics. However, the most rapid growth has been in wānanga and PTEs. Growth in domestic enrolments in private training establishments slowed in 2001 with a series of limits on PTE funding imposed by the government.

Figure 31: Enrolments in formal tertiary education by sub-sector, July 1997–2002

Majority of funding goes to universities and polytechnics

In 2002, the government paid $1,617 million to TEOs in the form of tuition subsidies, which represents a 14.8 percent increase from 2001. The largest proportionate growth in funding for tuition subsidies from 2001 to 2002 was in wānanga which had a rise of 196.3 percent ($84.7 million), reflecting the increased enrolments over this period.

Figure 32: Total EFTS-based tuition subsidies by sub-sector, 1994–2002

Fewer public providers in financial deficit

The short-term financial position of TEIs strengthened from the 2000 to 2002 years. In 2000, 13 of the 36 TEIs had operating deficits and only 11 met or exceeded the recommended threshold of a three percent operating surplus. By 2002 this had improved to only six of the 35 TEIs having operating deficits and 19 meeting or exceeding the recommended operating surplus.

Moderate annual turnover in private providers

In 2003, there were a total of 905 PTEs registered with the NZQA, including those that do not receive any public funding. In the year to 30 June 2003, 89 new PTEs were registered and 78 were de-registered. This represents a turnover of around nine percent. New registrations were down compared with the year to 30 June 2002, when there were 93 registrations, and de-registrations were up from 64 in the previous year.

In 2003, 43 percent of PTEs (that had been registered for more than six months) were on NZQA audit cycles of two years or more. This indicates that they have robust and stable processes and have had no concerns raised in their recent audits. Fifty-five percent were on a one-year audit cycle, indicating they are either relatively new providers or have had some audit concerns raised in the recent past. Three percent were on less than one-year cycles, which means they are currently addressing quality concerns.
The Six Strategies
What are foundation competencies and skills?
While this strategy refers to the need to raise foundation skills so that all people can participate in our knowledge society, it is not just skills that will be important, but rather knowledge, skills and dispositions that will be needed by people to be competent in a knowledge society. In this report, we use the term foundation competencies in recognition of this wider understanding of what is needed to participate in a knowledge society.

Foundation competencies are a set of skills, knowledge and dispositions in the areas of language, literacy and numeracy. These are essential to continued learning and active participation in society and family/whānau roles, as well as employment. Foundation competencies include cross-cutting skills, such as the ability to use technology. They should not be conceived of as a list of discreet and specific competencies, but rather as a bundle of commonly required, interrelated competencies. In the New Zealand context, language includes English and/or te reo Māori. Māori language is the gateway to te ao Māori and Māori culture and values. It needs not only to be preserved, but be a language of communication across communities and accessible to all New Zealanders.

Foundation competencies are developed within wider contexts linked to larger purposes. These contexts and purposes are likely to require competencies beyond language, literacy and numeracy.

The level, complexity and types of foundation competencies required are continually increasing, particularly with regard to the increased sophistication and use of technology and the greater cultural and social diversity of society. Foundation competencies are no longer just a set of knowledge and skills acquired at school as a prerequisite for entering tertiary education and/or employment. They need to be continually updated and improved throughout life, which means access to foundation education for all age groups will be increasingly important.

Higher levels of literacy are now required in most jobs. People require much more literacy to interact with their world in general. The economic development of the country is much more dependent on people having the ability to engage with information and knowledge in their work. Raising foundation competencies across the population is therefore critical to New Zealand’s economic and social development.

Objectives
• Significantly improved adult foundation skill levels, achieved through increased access to foundation education in a range of learning contexts.
• Clearer accountability for quality and outcomes within foundation education, including a greater focus on assessment.
• A common understanding of the definition of foundation skills and of best practice teaching in this area.
• Improved linkages between secondary and tertiary education, and improved staircasing for learners within tertiary education.
The expected change – 2002 to 2007

The overall goal of this strategy is to ensure that foundation learning results in real gains for learners and, over time, results in significantly improved literacy, numeracy and language levels in the population. This requires moving foundation learning from a relatively marginal position within the tertiary education system to being a core activity, underpinned by informed professional practice and improved diagnostic and teaching tools, as well as improving access for those who are not currently participating.

The education system is responsible for ensuring that all New Zealanders acquire the foundation competencies that they need to function effectively in society. The compulsory education system needs to continue to have a strong emphasis on ensuring that all students attain the needed knowledge, skills, attitudes and values before leaving school. The tertiary education sector’s responsibility is to provide foundation education for those who did not attain these competencies at school, for whatever reason, and for adults who need to update and further build on their competency levels.

A staged approach to change is being implemented. In the short term, there is a need for increased teaching capability in foundation learning, coupled with a greater focus on the quality of provision and the outcomes for learners. This needs to include developing a common language to describe foundation competencies across the tertiary education system.

There is a need to develop professional practice in foundation learning across the tertiary education system. A large amount of foundation learning is taught by volunteers. There is limited training and education available in teaching adults foundation competencies. There is little sense of identity of foundation learning as a coherent area of professional practice across programmes, provider types and modes of delivery.

Development of professional practice needs to include a stronger focus on diagnosis of learner needs, assessment of progress and reporting of attainment. It needs to be based on an understanding of how adults acquire competencies and how they can adapt competencies acquired through education to other life contexts.

It is expected that there will be improved connections and clearer pathways for learners between foundation learning and other types of education, including from school to tertiary education. This will require stronger connections between TEOs and schools, as well as between TEOs themselves.

There needs to be better understanding of how and why learners do and do not move from foundation learning to other learning.

There needs to be more emphasis on ensuring that learners have support to move into other learning. This requires a greater focus on the needs of the individual learner and greater flexibility of programme provision and funding.

Over time, there will be an emphasis on increasing the availability of foundation learning to a greater number and range of learners. There is a need to address gaps between existing provision and to identify the learners who are currently not being well served. There is currently a mix of strategies in tertiary education that includes a foundation learning aspect and a focus on particular learners (such as Adult Literacy and ESOL) or types of provision (such as Adult and Community Education). These strategies are central to achieving progress on this Strategy. However, it is known that these do not cover all learners in need of foundation learning.

The baseline picture in 2002

The 1996 International Adult Literacy Survey shows that a significant proportion of adult New Zealanders would face challenges in coping with the range of material found in everyday life and work in a knowledge economy and society. This is largely consistent with results from Australia, the United Kingdom, Canada and the United States. It reflects the legacy of education systems that had undue focus on differentiating learners between academic and vocational and an industrial system that did not require particularly high levels of literacy in the workforce.

The 2001 Health of the Māori Language Survey confirmed that te reo Māori remains in a precarious position. While 25 percent of the Māori population can speak some Māori, only 15 percent can make use of it to a reasonable degree. The knowledge of te reo Māori in the non-Māori population remains low with less than one percent able to speak it to any degree.
In the period to 2002, there was a fairly stable pattern of nearly one in five school leavers each year leaving school without any qualifications. These proportions were higher for Māori and Pasifika school leavers. These people are much more likely to have low foundation competencies and find it much more difficult to move into tertiary education later in life.

At the same time, there has been a steady increase in the proportion of school leavers moving directly into tertiary education. This has been assisted by programmes such as STAR and Gateway, as well as local level connections between schools and tertiary providers. Youth Training provides an option for students who have disengaged from school to gain entry to further education.

Programmes such as adult literacy and training opportunities were important providers of foundation education, particularly for people who have been disadvantaged in education and employment. However, there has also been a significant growth in provision of foundation education courses through TEOs in 2002. This has partly been driven by Te Wānanga o Aotearoa’s Mahi Ora programme. However, provision through polytechnics has also increased.

There has been a similar growth in the provision of te reo Māori courses, through both wānanga and polytechnics. Te Wānanga o Aotearoa’s Te Ara Reo course significantly increased the availability of te reo learning throughout the country, particularly in more isolated areas.

A new policy framework for foundation learning will be implemented progressively over the next three years. The initial focus is on improving quality and raising expectations. An early start has been made with the adult literacy achievement framework. A broadening of access and expansion of provision will take effect from 2006.

**Further development of monitoring**

Future monitoring will have a greater focus on completion of foundation learning courses and progression to other learning. It will also look at how TEOs are determining their specific contributions to foundation learning provision, including actions taken to improve the integration of foundation learning to core provision and provide support for progression to other learning. Foundation learning within industry training is a specific area that needs further attention within monitoring.

As the new policy framework for foundation learning is implemented, monitoring will have a greater focus on the quality of provision. Information should be able to be gathered from the application of achievement frameworks and assessment tools to look at learner achievement and progression through different programmes and pathways. The emphasis on professional practice in TEOs will also be monitored.

As quality provision is broadened, access to foundation education by groups who were previously not well represented will need to be measured. This will require improved information on what happens to people who leave school without qualifications and the extent to which they enter foundation education later in life.

The Adult Literacy and Life Skills Survey (to be conducted in 2004/05) will provide updated information on literacy levels in the adult population. It is also likely to provide broader measures, giving a more accurate picture of foundation competencies.

The 2006 Census will provide an update on the extent to which Māori is spoken in the population. While there are no plans currently to repeat the Health of the Māori Language Survey in the form it was undertaken in 2001, Statistics New Zealand is considering how the key questions from the survey can be incorporated into an ongoing programme of social surveys.
Foundation competencies in the New Zealand population

Half of the adult population have low functional literacy and numeracy

In 1996, New Zealand participated in the International Adult Literacy Survey (IALS). This survey assessed functional literacy (prose and document) and numeracy in English across the adult population. Functional literacy and numeracy assess the application of literacy and numeracy skills to real life situations. It involves more than just an assessment of the ability to read and manipulate numbers. It assesses the ability to get useful meaning from words and numbers to solve problems. However, this survey measures only some dimensions of foundation competencies and is narrower than the concept being addressed by this strategy.

IALS showed that around 20 percent of adult New Zealanders had very poor functional literacy skills and could be expected to experience considerable difficulties in using many of the printed materials that may be encountered in everyday life. About 30 percent more of the population would be able to use some printed material, but this would generally be relatively simple. Only half of the population had the ability to cope with a varied range of material found in everyday life and at work.

In aggregate, New Zealand’s results were consistent with results from Australia, the United Kingdom, Canada and the United States. However, there were differences in age bands. New Zealanders aged 16 to 19 years were about twice as likely to be in the lowest level of literacy compared with the same age group in Australia and Canada.

Figure 33: Percentage of each age group with adequate functional literacy, 1996

The survey found that Māori and Pasifika peoples were more likely to have low levels of functional literacy. While it found that 60 percent of Pākehā had adequate levels of functional literacy, only around 30 percent of Māori and Pasifika peoples had adequate levels of functional literacy in English. For Pasifika peoples this reflects, in part, the numbers for whom English is a second language.

The survey found a strong relationship between literacy and educational attainment. It showed that completion of secondary schooling was a significant positive influence on the level of literacy and having a tertiary education was related to higher levels of literacy. However, it also found that 20 percent of those with a tertiary education qualification had inadequate functional literacy in English. Within this group, around one-third did not have English as a first language. Of those that did have English as a first language, three-quarters had tertiary qualifications below degree level.

Te reo Māori continues to struggle for survival

The TES recognises that foundation competencies include literacy in te reo Māori. There are currently major efforts to revitalise te reo Māori and increase the number of people who use it and the situations in which it is used. Te reo Māori education through the tertiary sector plays an important role in language revitalisation, as well as maintaining and developing the variety within the language in its use in different situations.

The 2001 Census found that there were around 130,000 Māori and 30,000 non-Māori who reported they could speak some Māori. These numbers represent 25 percent and one percent of the populations respectively.

Following the Census a survey was undertaken of the Māori population aged 15 years and over, looking at the health of the Māori language. This survey included self-assessment of language proficiency in terms of speaking, listening, reading and writing.

The Survey on the Health of the Māori Language found that 15 percent of the Māori population were proficient in at least one or more of these four areas to a level where they could understand or say many things in the language (ie they could speak, write, read or listen ‘well’ or ‘very well’). The proportion of people with higher proficiency increased with age. However, higher proficiency...
was more common in the 15 to 24 year age group than in the 25 to 34 year age group. This points to a level of success in improving language proficiency in younger speakers.

Figure 34: Percentage of Māori population proficient in te reo Māori by age, 2001

Source: Statistics New Zealand, Survey on the Health of the Māori Language, 2001

Moving from school to tertiary education

Each year, one in five school leavers leaves with no qualifications

The qualifications that a student gains at school play a significant role in the extent and ease with which they gain further education through the tertiary sector. Those who leave school without qualifications will generally require further foundation education before they can progress into higher levels of study in tertiary education. Those who do gain qualifications have a much wider choice of tertiary study that they can gain entry to.

In 2002, 18 percent of all school leavers left school without any qualifications. Thirty-five percent of Māori school leavers and 26 percent of Pasifika school leavers left school in 2002 without any qualifications.

In terms of successfully gaining a moderate level of qualifications at school, 63 percent of all school leavers in 2002 had attained Sixth Form Certificate in at least one subject, or higher. However, only 39 percent of Māori school leavers and 54 percent of Pasifika school leavers attained at least this level of qualification.

These proportions have been fairly stable for all groups, with and without qualifications, over the previous four years.

More school leavers are going straight on to tertiary study

The proportion of school leavers progressing directly to tertiary education increased between 1999 and 2002. Nearly half of the students who left school in 2001 went directly on to tertiary study in 2002. However, the proportions were lower for Māori and Pasifika leavers (37 percent and 35 percent respectively).

The large majority of those school leavers who proceeded directly to tertiary education enrolled in full-time study, and around half chose to study for a degree. However, the growth in immediate post-school enrolment in tertiary institutions has come mainly from students choosing to study at a lower level, for a certificate qualification. Māori and Pasifika school leavers were more likely to enter tertiary study at this level.

Initiatives to support the transition to tertiary study

Building connections between TEOs and schools

The connections between tertiary providers and schools are significant to encouraging students on to tertiary education. These connections need to be not just with Year 12 and 13 students, but right through from Year 8, when students start to make decisions about their subject selection, potential careers and tertiary options. In some areas, schools and tertiary providers are working at the local level to improve pathways and access to tertiary education. These initiatives involve aligning school curricula with tertiary programmes and building relationships between tertiary providers and local schools.

Improved career education

The implementation of the National Certificate of Educational Achievement (NCEA), the growth of vocational education and training in schools, expanding tertiary pathways, and a dynamic labour market are presenting young people with increasingly complex choices. Ongoing access to quality individualised careers information, advice and guidance is vital to enable individuals to make informed educational, training and occupational choices and plan their transition from school to career throughout their lives.

Career education in schools lays the foundation for successful transitions to tertiary education.

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9 Proficient is defined as able to speak, write, read or listen well or very well.
Career Services provides a range of services to both students and influencers from Year 7 to Year 13. In 2002, Career Services launched the Informed Tertiary Education Decision Making initiative, which aims to enhance the ability of potential tertiary students to make appropriate tertiary education related decisions.

Secondary-Tertiary Alignment Resource (STAR) scheme

The STAR scheme has been available to secondary schools since 1996, enabling them to purchase tertiary courses not conventionally available from schools. It is intended to help schools provide a smooth transition from school to employment and study, as well as improve retention in senior secondary schooling.

Over 130,000 students participated in STAR programmes in 2002. A review of the STAR funding in 2002 found that:

- there was some tension between the two aims of the programme – facilitating transition from school to employment or further study and improving retention at school

- schools were offering a range of courses, including industry-related, generic skills and courses to meet academic needs of students. The mix of course types varied between schools

- there were high levels of participation by Year 11 to 13 students in STAR-funded courses.

Gateway

The Gateway programme was launched in January 2001 to broaden educational options for senior secondary school students by offering them workplace learning opportunities integrated into general educational provision. It is available to decile one to five schools only.

In 2002, 1,162 students participated in Gateway and were placed across 50 industries. The six most popular industries were hospitality, automotive, retail, tourism, engineering and building. Students on the programme not only made greater educational gains, but also had improved attitude, behaviour and career development outcomes and were more likely to stay on at school. It provided them with opportunities to explore industry and careers interests, as well as gain qualifications. Twenty-two percent of 2002 participants moved on to full-time employment, including Modern Apprenticeships, and 65 percent carried on to further education and training. The latter figure is considerably higher than the overall proportion of school leavers going directly on to further education and training (48 percent of students who left school in 2001). One of the positive effects of Gateway has been the development of stronger relationships between schools and employers. Employers have benefited from exposure to potential employees and have also developed skills in training. Schools have benefited from greater interaction with employers and the workplace.

Youth training

Youth Training provides an option for young people to the age of 18, who have disengaged from school, to gain the foundation competencies required for further education and employment. Training includes a focus on literacy and numeracy, as well as work-related skills.

A total of 12,530 individuals participated in Youth Training during 2002. This was similar to the previous year. Forty-five percent of participants were Māori and 10 percent Pasifika. In 2002, 47 percent of participants moved into employment within two months of completing the programme and 24 percent into further education or training outside the programme.

General provision of foundation education

The majority of foundation education is provided through the general provision of TEOs and largely funded as part of general student funding.

Significant increase in foundation learning courses

While it is difficult to specify and identify exactly which courses cover foundation education, there is a group of courses focused on foundation competencies. These courses are categorised as ‘mixed-field programmes’ and cover general education, social skills and employment skills programmes. The following analysis uses data on these courses as an indicator for provision of foundation competency courses at all levels of tertiary education.

It should be noted that this analysis focuses on courses specifically designed to teach foundation competencies and doesn’t cover teaching of foundation competencies within subject-based courses. Therefore, it only captures part of the provision of foundation learning within tertiary education.

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Between 2000 and 2002, the provision of mixed-field courses has increased substantially. In 2002, there were 81,000 people enrolled in one or more of these courses. This is a 230 percent increase over the 24,500 students studying in 2000.15

In 2002, the majority of these students (88 percent) were enrolled as either domestic or international fee-paying students. Five percent were funded through Training Opportunities, Youth Training or Industry Training and four percent through Prison Education. These proportions were fairly similar in previous years.

Within mixed-field courses, the areas that have grown the most from 2000 to 2002 have been general courses, particularly literacy and numeracy, and social skills courses. Just under half of the overall growth in mixed-field courses has been through the wānanga, with the rest of the growth spread across PTEs, polytechnics and universities.

People studying for qualifications below degree level in 2002 were most likely to take courses in general education and social skills. There were somewhat lower numbers in employment skills courses. People studying for degrees and postgraduate qualifications were most likely to take courses categorised as learning skills.

Forty-two percent of all students enrolled in mixed-field courses were Māori, 35 percent were Pākehā and six percent were Pasifika. The majority (64 percent) were women. The overall gender distribution is influenced by the high numbers of Māori women enrolled in these types of courses through the wānanga. Half of all students were aged under 30 years. However, 17 percent were aged 45 years and over.

The largest single programme of study in this area was Te Wānanga o Aotearoa’s Mahi Ora programme. This is a 12-month distance education programme, which leads to the National Certificate in Employment Skills. It covers many aspects of life and work, including educational choices, health, finance, housing and business development within a Māori context. Over 14,000 students were enrolled in 2002. Half of these were undertaking tertiary education for the first time.

In 2002, 97 percent of all people taking mixed-field courses were enrolled in qualifications below degree level. The largest sub-sector providing these courses in 2002 was the wānanga (35 percent of enrolled students), followed by polytechnics (29 percent of students). Seventy-one percent of total enrolled students took formal courses (ie assessed for credit to a qualification). Most of the rest were enrolled in informal courses, either through community education or as unassessed components of Training Opportunities and Youth Training programmes.

15 Some of the increase between 2000 and 2001 may be due to improved subject coding of courses. From 2001 on virtually all courses were subject coded.
Significant increase in te reo Māori courses

Te reo Māori courses are provided through both formal tertiary study and community education. Nearly all of the students in 2002 were enrolled as either domestic or international fee-paying students. In 2002, the majority of tertiary provision of te reo Māori courses was through the wānanga (65 percent of course enrolments). The polytechnics also played a significant role. Nearly all the provision was below degree level. Nearly a quarter of the people enrolled for these courses were non-Māori. Secondary school community education also provided some te reo Māori courses for adults. The majority of students in these courses are non-Māori.

The significant development behind these figures has been Te Wānanga o Aotearoa’s te reo Māori programmes. This wānanga enrolled nearly 11,000 of the 23,000 students engaged in te reo Māori courses in 2002. Their Te Ara Reo Māori courses provided entry-level accelerated learning in te reo Māori, using a range of language learning techniques. The courses were provided around the country and could be easily delivered in remote locations. The courses lead into Te Tohu Mātāura i Te Reo Māori, which provides more in-depth learning about language and tikanga.

More coherent approach to bridging education

Bridging programmes provide support for students who are under-prepared to meet the entry standards required of a course of study and to develop the competencies necessary for success in tertiary education. Most TEIs offer bridging programmes, as do many PTEs.

Since 2000 there has been a concerted effort to develop cohesion and identity across bridging programmes through the New Zealand Association of Bridging Educators. The impact of bridging education has been the focus of small-scale outcome studies and while this work identifies the success bridging education has had in making tertiary study accessible, there is also much work to be done to reduce the cost to students16. A survey of bridging programmes in six tertiary providers found a high representation of Māori and Pasifika students (18 percent and 27 percent respectively)17.

Specific programmes in foundation education

There are a number of programmes specifically funded to provide foundation education. The two major ones are described here.

Adult literacy in English

The Adult Literacy Innovation Pool was set up in 2002 to support provision of adult literacy education by TEIs, PTEs and communities working in partnership with adult literacy providers. It created new opportunities for family literacy projects for Māori and Pasifika peoples and refugee communities. Thirty-six programmes in 10 regions have been funded, reaching over a thousand new learners.

A number of successful workplace literacy pilots and programmes were run in 2002 through Workbase, the National Centre for Literacy and Learning. Workplace literacy programmes were delivered to more than 40 businesses. The TEC worked with five ITOs on workplace literacy projects. Funding was also made available for specific workplace literacy programmes for Māori and Pasifika learners.

Literacy education was also provided to over 7,000 learners through Literacy Aotearoa’s 51 member organisations in 2002. A further 7,400 learners received ESOL tuition and resettlement support through migrant literacy programmes.

Training opportunities

Training Opportunities is a key government programme for people who are significantly disadvantaged in employment and education to assist them to move into employment or further education and training. Places are targeted to Ministry of Social Development and Workbridge clients. Training is full time and fully funded and covers generic and life skills, as well as pre-employment skills.

A total of 19,198 people participated in 2002. This was down on previous years, due to funding and purchasing decisions made by the Ministry of Social Development. Forty-two percent of the participants were Māori and 10 percent Pasifika. In 2002, 51 percent of participants moved into employment within two months of completing the programme and 15 percent into further education or training outside the programme.

Implementation of new policy arrangements

New policy framework for foundation learning

Work is underway to implement an improved policy framework for foundation learning. Foundation education has, to a large degree, been fragmented and marginalised and lacks consistent support.

The first stage of the new policy framework will be to focus on quality and information. It will include measures to improve the quality of provision, including improvements to the quality assurance of foundation education programmes, new qualifications and professional development resources. The information aspect will focus on developing a common language about foundation learning through measures such as new descriptive standards for achievement and information on how adults progress. One of the aims of this first stage is to get a greater focus on foundation education, and its quality, across all of tertiary education at the certificate and introductory level, and move it from a marginalised position to a core activity.

The second stage will look at broadening access and expanding provision. The second stage will begin to take effect from 2006.

Development of an achievement framework for adult literacy

In 2002, the Ministry of Education started to develop a framework of six achievement profiles to enable tracking of literacy gains for adult learners in reading and writing. The framework provides a common language around literacy gains for learners, tutors and providers and forms the basis for significant professional development for tutors. Trials and associated professional development are currently taking place.

This work leads the way for similar activities in other aspects of foundation learning.
The expected change – 2002 to 2007

New Zealand’s continued prosperity and social well-being will rely on the skills and knowledge of its people and how successfully their skills and knowledge are applied to generate economic growth and improve social outcomes.

There is a wide range of skills and knowledge required for individuals to participate in a knowledge society. Some skills and knowledge are specific to employment contexts while others are generic and underpin effective participation in a range of life contexts. Tertiary education has a key role to play in helping develop both generic and specialist skills and knowledge.

Achieving this strategy requires greater engagement between the tertiary education system and employers, regional development organisations and communities to identify the current and future skills and knowledge graduates will require in employment and wider society. This is more than just trying to match graduate supply with labour market demand. It is ensuring that graduates have the skills and knowledge needed to participate effectively in a changing labour market and society, and to contribute to higher levels of innovation and productivity, thereby contributing to New Zealand’s development.

There needs to be a greater ownership by employers, communities and individuals of the need to foster and develop skills. It cannot be seen solely as the responsibility of the education system.

ITOs are now expected to take a much stronger leadership role in this area, connecting their industries with the tertiary education system. Their role will be to develop strategic training plans to assist industries to meet current and future skill needs and promote training for employers and employees.

It is vital that all groups in society have equity of access and opportunity to participate and succeed in education at all levels. In particular, there is a need to improve access for Pasifika peoples, people from low socio-economic backgrounds, people with disabilities and those living in remote areas. Access for Māori to degree-level tertiary education also needs to be improved.

Objectives

- Accurate and timely skills forecasting capability.
- Industries are supported in meeting their self-identified skill needs.
- Equity of access and opportunity for all learners.
- Learners are equipped to make informed choices about career and learning options.
- Broader development of skills for active citizenship and the maintenance of New Zealand’s cultural identity.
- Improved provision of, and better systems of recognition for, high-level generic skills.
- Promotion of specialist skills that contribute to New Zealand’s development.

Develop the skills New Zealanders need for our knowledge society
The tertiary education system needs to provide opportunities for people to continue to engage in learning throughout their lives. This needs to include a range of options that meet the needs of adult learners, such as on-the-job learning, courses focused on updating skills and knowledge and community-based learning.

A critical part of developing the skills New Zealanders need for our knowledge society is improving the information and support for learners to make well-informed decisions about education and career options. This involves development of good decision-making skills, as well as wider access to accurate and impartial advice on learning and careers.

This strategy includes an emphasis on the development of generic skills, which complement the development of specialist skills. As with foundation skills, there has been a shift in thinking towards a broader framework of ‘key competencies’. Competencies cover the knowledge, skills and dispositions that are needed by people to participate in a knowledge society. Key competencies are those that are important across a range of areas of life and contribute to overall success in life and a well functioning society. Key competencies are acquired and further developed at all levels of learning.

It is expected that there will be greater explicit recognition of key competencies in programmes and qualifications throughout the tertiary education system. A shared language for talking about and understanding key competencies will be critical if they are to be systematically improved throughout tertiary education programmes.

In addition to better communication about key competencies, effective teaching and assessment will include:

- the systematic articulation of key competency learning outcomes already implicit in programmes and qualifications
- teaching and assessing key competencies in partnership with specialist skills which provide a meaningful learning context
- inference of proficiency based on professional judgement through observation of performance in authentic contexts.

There needs to be a sharper focus on the development of specialist skills through postgraduate education. Specialist skills include technical, research, entrepreneurial and managerial skills. These skills add value to the economy through enhancing innovation, speeding up the adoption of new technologies and improving productive capacity. These skills add value to society by focusing innovation and attention on matters key to cultural and social development and enhanced well-being.

It is expected that postgraduate students will engage in a wide range of fields of study, including the areas government has identified as critical to continued economic development, such as biotechnology, information and communications technologies (ICT) and the creative disciplines. There needs to be more attention to the quality of provision at this level and the match to social and economic development requirements.

Opportunities for postgraduate students to gain international experience through their studies also need to be enhanced.

The baseline picture in 2002

There has been good progress in implementing the recommendations of the 2001 Industry Training Review. This will enable ITOs to take a greater leadership role in their industries and develop a more strategic view of training needs.

ITOs have achieved increased coverage of employers and employees. However, some gaps in coverage persist, which TEC is working with ITOs to fill. Women remain significantly under-represented in industry training, including Modern Apprenticeships.

Differences in participation of various groups provides an indicator of relative access to tertiary education. In 2002, there were significant differences in participation by ethnic group, disability status and socio-economic background. Some of these are easier to quantify than others. This shows up a need to have greater focus on improving access:

- for Māori to higher-level qualifications
- overall for Pasifika peoples and students with disabilities
- from school to tertiary study for students in low decile schools.

New Zealand had good engagement of people over 25 in tertiary education. This has been an area of growing participation from 1999 to 2002.
Industry training has been effective in engaging trainees aged over 40. Adult and community education provides learning opportunities to a significant proportion of the adult population.

Research and policy work is proceeding on developing a better understanding of generic skills within tertiary education. This is leading up to publication of a discussion document in 2004 to stimulate debate about key competencies, a possible shared framework and best practice in teaching and assessment.

There has been sustained growth in postgraduate enrolments and completions, including growth in PhD completions. However, in 2002, completions of qualifications which are specialised in the areas of particular attention for the government’s growth and innovation strategy, namely ICT, biotechnology and the creative arts, made up five percent of postgraduate qualification completions.

**Further development of monitoring**

Future monitoring of this strategy will have a greater focus on the engagement of TEOs with business, industry and their communities to ensure that the education they are delivering is relevant to the future needs of their students and stakeholders. Key source information for this area will come from TEO profiles and charters. This will be supplemented with information from stakeholder groups.

The development and implementation of ITO strategic plans will also have greater focus in future monitoring – particularly in terms of the value being added for learners and industries through industry training and the improved connections facilitated between the tertiary education system and industry. This will include analysis of completion rates for both on-the-job and off-the-job training, to the extent that this is possible.

The monitoring will also need to look at measures of employer investment in workforce training and skill development. This needs to include shifts in employer attitudes towards the value of training and returns for employers on their investment in training, as well as the amount of money invested.

The availability and quality of careers information and advice and decision-making support to learners will also be covered in future monitoring. This will be underpinned by research on student decision-making.

Analysis of the above areas on a regional basis will be an important aspect of future monitoring.

Moves to recognise and assess key competencies more explicitly in tertiary qualifications will also be included. TEO profiles will provide information on the focus of TEOs on key competency provision within planning. Analysis of qualification specifications will provide information on how well key competencies are being explicitly structured into learning outcomes.

Broader information on people with high-level specialist qualifications within the population and workforce will also be included within future monitoring. There will also be a focus on the improvements being made by TEOs to the quality and relevance of postgraduate education, including enhanced opportunities for postgraduate students to gain international experience.
Developments in industry training

Implementation of the Industry Training Review

In 2001, the government announced a number of new policy initiatives for industry training as a result of the Industry Training Review. These initiatives are intended to improve outcomes and strengthen the existing industry training system. In summary the changes are:

- requirements for ITOs to provide leadership to their industries on skill and training matters
- collective employee representation in the governance of ITOs
- provision to enable employers to have their training managed by an alternative ITO in certain limited circumstances
- provision for training levies
- the mandate for the TEC to facilitate and encourage co-operative arrangements and mergers among ITOs
- the mandate for the TEC to facilitate the expansion of industry training to cover a greater portion of the workforce
- the Small Business Fund for initiatives to facilitate access to industry training for small and medium-sized businesses
- the Technology Fund to encourage ITOs to develop technology-based solutions for training delivery.

Considerable progress has been made with the implementation of these initiatives as follows:

- Guidelines have been developed to assist ITOs to implement the Strategic Leadership Role. ITOs are committing to implementing this role in their charters and will include plans, objectives and key performance indicators in their 2005 profiles.
- The TEC has developed and promulgated operational policies for both the collective representation of employees in the governance of ITOs and the criteria for assessing applications from employers for their training to be managed by an alternative ITO.
- A joint ventures and mergers fund has been established to assist ITOs to undertake co-operative arrangements and mergers where appropriate.
- The TEC has identified gaps in ITO coverage and is in a position to discuss with ITOs and industry groups how these gaps might be filled.
- Various projects have been funded from the Small Business Fund which have identified and explored barriers to small business engagement with industry training.
- Various projects were funded from the Technology Fund which raised awareness among ITOs of the issues relating to e-learning, particularly in a work-based environment, and improved access to industry training for particular trainees.

Increased coverage of industry training

At 31 December 2002 there were:

- 24,576 employers participating in Industry Training, an increase of 12 percent from 2001. Data collected from Industry Training applications shows that around 85 percent of the workforce are covered by ITOs.
- 83,456 trainees registered with ITOs, an increase of 26 percent from 2001. During 2002, 9,761 National Certificates were completed by trainees.
- 4,344 Modern Apprentices participating in 27 industries in which Modern Apprenticeships were available. The three largest industries by participation rates were Building and Construction (16 percent), Engineering (15 percent) and Motor (14 percent).

However, as noted earlier in the cross-strategy indicators section, women were under-represented in industry training and particularly in Modern Apprenticeships. In 2003, the ITOs with the largest number of women industry trainees were Community Support Services (2,671), Hospitality Standards (1,989) and Sport, Fitness and Recreation (1,574). Thirty-one percent of all women trainees were within these three ITOs, compared with 11 percent of all trainees. Within Modern Apprenticeships, 13 of the 28 participating industries had either none or only one woman participant in 2003.
Access to education

The main measure of access to education currently available is participation. This is an indirect measure, that does not take account of the range of reasons for higher or lower participation. However, it can be assumed that access, or lack of it, is a significant factor driving participation.

Access to higher level qualifications is a key issue for Māori

Māori participation in tertiary education increased between 1999 and 2002, with the Māori participation rate in 2002 (14.5 percent) exceeding non-Māori (10.0 percent). This has in part been due to the growth of wānanga. However in 2002, participation rates of Māori in tertiary providers other than the wānanga, exceeded those of non-Māori.

Much of the growth in participation has been in low level qualifications. The key access issue for Māori is ensuring progression from entry level qualifications to higher level qualifications.

Support for completion of qualifications is a key issue for Pasifika students

In 2002, Pasifika peoples continued to have lower participation rates (7.5 percent) than other ethnic groups. Their participation rate has been increasing at a rate similar to that of Pākehā and other ethnic groups, but much less than the increase in the Māori participation rate.

Pasifika peoples were under-represented at degree level and above, although there has been moderate growth in enrolments at this level.

A key issue for Pasifika students at higher levels is to ensure that they have sufficient support to continue in their studies and complete their qualifications.

Access for students with disabilities is improving

Reported participation by students with disabilities has grown since 1999. In 1999, just over three percent of all students reported having a disability. This increased to nearly five percent in 2001. Overall reported numbers have more than doubled in this period. Reporting of disability status is a fairly new requirement. So the increase is likely to be a combination of increased actual participation by people with disabilities and increased reporting of disabilities by students at time of enrolment.

However, participation of students with disabilities compared with the total population of people with disabilities appears to be quite low in comparison with those without disabilities. Participation rate estimates based on the 2001 Disability Survey show a participation rate in 2001 of around two percent for people with disabilities, compared with nearly 17 percent for those without.
Table 3: Estimated participation rates by disability status and age group, 2001

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Students</th>
<th>Population</th>
<th>Participation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Disabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–44</td>
<td>12,120</td>
<td>202,600</td>
<td>6.0%</td>
</tr>
<tr>
<td>45–64</td>
<td>2,870</td>
<td>210,600</td>
<td>1.4%</td>
</tr>
<tr>
<td>65 and over</td>
<td>179</td>
<td>240,600</td>
<td>0.1%</td>
</tr>
<tr>
<td>Total 15+</td>
<td>15,160</td>
<td>653,800</td>
<td>2.3%</td>
</tr>
<tr>
<td>Without Disabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–44</td>
<td>332,910</td>
<td>1,364,900</td>
<td>23.7%</td>
</tr>
<tr>
<td>45–64</td>
<td>41,590</td>
<td>629,400</td>
<td>6.6%</td>
</tr>
<tr>
<td>65 and over</td>
<td>1,510</td>
<td>205,400</td>
<td>0.7%</td>
</tr>
<tr>
<td>Total 15+</td>
<td>367,000</td>
<td>2,199,700</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

Sources: Ministry of Education (student information) and Statistics New Zealand, 2001 Disability Survey (population information).

Students with disabilities are relatively under-represented in universities and colleges of education, while wānanga have proven very successful in attracting students with disabilities. This has resulted in a high proportion of students with disabilities being Māori.

Less than one percent of Asian students reported a disability and around four percent of Pasifika students. This indicates that barriers to participation by students with disabilities in these groups may be higher than for other ethnic groups. It may also reflect differing cultural attitudes to disabilities, which could have an impact on self-reporting.

Students with disabilities were more likely to be studying for qualifications below degree level and in programmes that have an emphasis on foundation, employment and life skills.

Attainment of school qualifications is a key issue for students from lower socio-economic backgrounds

There is very limited information on the socio-economic backgrounds of tertiary students. The best available information is the decile level of the school that they last attended. This information is most meaningful for students who access tertiary education shortly after leaving school.

Students from low decile schools were significantly under-represented in degree courses in 2002. This reflects the lower levels of student achievement, on average, of students from low decile secondary schools. However, a student from a low decile school who achieves an A or B Bursary was as likely as a student from a higher decile school to go on to study towards a degree.

Students from high decile schools were more likely to proceed directly to tertiary education and enrol in a degree-level course.

This data suggests that a major access barrier for students from lower socio-economic communities is the completion of a school or equivalent level qualification, in order to be able to participate in higher levels of tertiary education.

Lifelong participation in learning

Participation in a knowledge society includes the continued participation of people in learning and education over their lifetime. With rapid changes in society, economy and technology, skills can quickly become outdated. It is important that people can continue to access education after they have completed their initial education. It is equally important that these decisions to access education are made in conjunction with impartial career information, advice and guidance.

Increased participation by older age groups

Formal tertiary education provides an important avenue for lifelong participation in education. Participation by older age groups in formal tertiary education, particularly those aged 40 years and over, has been growing more rapidly than for other age groups.
One-third of industry trainees are over 40

Industry training provides opportunities for ongoing development and updating of skills. There has been significant participation in industry training in all age groups, with 31 percent of trainees being over 40 years of age. This demonstrates industry training is providing an important option for people in mid to late career to improve or update their work-related skills.

Development of key competencies policy

In 2003, extensive research and conceptual work was undertaken by the Ministry of Education in association with other agencies and the OECD to better understand the nature of generic skills. This work resulted in the shift in thinking from generic skills to the broader framework of key competencies, which includes knowledge and dispositions, as well as skills. The purpose of this work is to develop a common language and understanding of key competencies to assist communication within and between the education and employment sectors, and to support their explicit incorporation in all teaching programmes and qualifications.

In addition, significant work has focused on professional practice in teaching and assessing key competencies, including avoiding the trap of long checklists and burdensome assessment requirements. It is intended to publish a discussion document in mid-2004 to stimulate debate about key competencies, a possible shared framework and professional practice in teaching and assessment.
High-level specialist skills

The TES includes an emphasis on developing high-level specialist skills through engagement in postgraduate study. Specialist skills include technical, research, entrepreneurial and managerial skills. It is expected that postgraduate students will engage across a wide range of fields of study, including the areas government has identified as critical to continued economic development, such as biotechnology, ICT and the creative disciplines.

Increased postgraduate qualification completions

In the period from 1997 to 2002, there has been an overall increase in the number of postgraduate qualifications completed each year. Over this period, the number of PhDs completed annually rose by 42 percent and the number of other postgraduate degrees completed (masters and postgraduate diplomas and certificates) rose by 32 percent.

Figure 41: Completion of postgraduate qualifications, 1997–2002

Most completions are in society and culture and management and commerce

The largest field of study for postgraduate completions is society and culture, followed closely by management and commerce. Both of these areas had over 2,000 postgraduate completions in 2002. Health and the sciences had between 1,000 and 1,500 graduates in 2002. Other fields had under 1,000 graduates in 2002 at postgraduate level.

Qualifications coded as ‘mixed-field’ have been recoded, where possible, to a subject field, using the main subject codes.

The government has identified three sectors that have high growth potential and can enable growth in other sectors of the economy, namely information and communications technology, biotechnology and the creative industries. The number of postgraduate qualifications completed in these areas in 2002 made up five percent of total postgraduate qualification completions.

Table 4: Postgraduate qualification completions in priority areas, 2002

<table>
<thead>
<tr>
<th>Priority area</th>
<th>Postgraduate qualifications completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information technology</td>
<td>133</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>69</td>
</tr>
<tr>
<td>Creative arts</td>
<td>307</td>
</tr>
</tbody>
</table>

Figure 42: Completion of postgraduate qualifications by field of study, 2002

Note: Qualifications coded as ‘mixed-field’ have been recoded, where possible, to a subject field, using the main subject codes.
The role and purpose of research in the tertiary education system

Research undertaken in the tertiary education system has a significant contribution to make to New Zealand’s knowledge development and innovation. New Zealand’s international competitive advantage is linked to the speed of uptake of new knowledge generated from research. New Zealand’s social development is just as dependent on development of new knowledge about New Zealand’s people and society, which can inform debate about the social direction of the country. Both situations require continual improvement in research quality, improved international linkages and collaboration, greater focus on areas of national importance, improved research training and opportunities, and stronger networks with end users.

Research in the tertiary education system serves several different purposes:

Training of new researchers
through incorporation of research into degree programmes, and through research training in postgraduate qualifications.

Expansion of knowledge
particularly basic and some strategic research, where the main focus is on developing knowledge for its own sake rather than solving specific problems. While this type of research is a source of innovation over the long term, it is not possible to predict exactly what innovation will arise from it at the start. It can also be difficult to associate innovation with specific basic research in retrospect.

Application of knowledge
research which applies knowledge to the solution of specific problems and/or creates new and innovative approaches.

Transfer and commercialisation of knowledge
the process of taking new knowledge and, from that, creating information that can be communicated to industry or practitioners, and the process of developing a commercialisable package from research findings.

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 focused 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.

Strengthen research, knowledge creation and uptake for our knowledge society
**The expected change – 2002 to 2007**

It is expected that TEOs involved with research will develop a more focused research effort based on networks of specialisation and a strong focus on quality and relevance to end users. Decisions about where to specialise will be critical to obtaining greatest value from the limited resources available for research in New Zealand.

It is expected that there will be stronger linkages between TEOs and end users to enable faster uptake of new knowledge and the application of knowledge to create value.

Tertiary education research will have a particular contribution to make to Māori development and advancement, and to cultural and social development. It will provide an evidence base for development and policy initiatives in these areas.

Tertiary education research staff are expected to develop stronger networks nationally and internationally. These networks should bring together expertise within the country from across various organisations. This should be happening within the context of greater research collaboration between all research agencies, including within the tertiary education sector, and with Crown Research Institutes (CRIs) and independent research associations.

It is expected that TEOs provide increased support for research students and emerging researchers, with a particular focus on the development of Māori and Pasifika researchers. It is essential that new researchers are trained to meet future research needs, as well as being grounded in the disciplines and knowledge of their research areas.

While it is expected that there will be greater engagement with end users and a focus on knowledge uptake, it is expected that research in the tertiary education sector will continue to address all four purposes referred to above. The continued contribution of the tertiary education sector to basic, and long-term research will be essential. Increases in the amount of applied research undertaken within the tertiary education sector should be in addition to, rather than at the expense of, the current level of engagement in pure basic and strategic research.

**The baseline picture in 2002**

About one-third of New Zealand’s research investment in 2002 was undertaken by the tertiary education sector. The tertiary education sector was the largest producer of research output (as measured through publications).

The tertiary education sector was an important contributor to pure basic and strategic research, with nearly 70 percent of the expenditure in the tertiary education sector being in this area.

Māori research (covering research by Māori, about Māori and/or for Māori) is an emerging field within the tertiary education sector that has considerable creative potential. It has been hampered by limited capacity, as well as by the diversion of experienced researchers into other activities, including management, mentoring and advice on Māori development. The establishment of Ngā Pae o te Māramatanga (the Māori CoRE) is an important initiative to build capacity in this area.

There are indicators that research from the New Zealand tertiary education sector is of good standard. Research papers from the New Zealand tertiary education sector received a similar level of citation to research papers internationally, given the journals that they are published in. Contract research earnings have increased, both in absolute terms and as a proportion of institutional income. Contract research is often won through competitive bidding and can be subject to rigorous peer review. The establishment of the new PBRF will provide a greater focus on the quality of research work.

The evidence from publications suggests that most research collaboration in the tertiary education sector is international, with much less collaboration taking place between tertiary education organisations within New Zealand.

The recent establishment of the CoREs will help strengthen research collaboration within New Zealand. All but one involve a range of universities and, in several cases, provide links between universities and CRIs.

Both enrolments and completions in PhDs have increased steadily over the last six years. However, Māori and Pasifika students continue to be under-represented at this level.

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20 See Technical and Data Definitions for further explanation of these terms.
Further development of monitoring

Future monitoring will focus on the strategic directions being taken by TEOs involved in research production. This will cover issues such as development of specialised research foci, improved networks and collaboration with end users and focus on quality and relevance.

Some information for this will come from charters and profiles. Data from the PBRF process will also provide quantitative measures of research spread, expertise and quality. The evaluations of the PBRF will provide information on the impacts of the new funding arrangements on research activity and quality, and are likely to provide insights on how research is organised within TEOs.

TEO support for research students will also be an area of focus in future monitoring, particularly in terms of increased participation of Māori and Pasifika students in research-based postgraduate degrees and also in terms of the support for research students to take up careers in research.

Nature and coverage of research

Universities are significant producers of research in New Zealand

The majority of research in the tertiary education sector takes place within universities. In 2002, universities were significant producers of research in New Zealand. According to the 2002 Statistics New Zealand Research and Development Survey, universities carried out $435 million of research and development in 2002. This represented 31 percent of the total New Zealand investment in research and development.

Information from the annual reports of the universities showed that in 2002 a total of 16,686 university publications and other research outputs were reported, an increase of 13 percent from 1997. The Ministry of Research, Science and Technology, National Bibliometric Report 1997 to 2001, notes that the tertiary education sector is responsible for the largest share of the total research output of the country. The report states that in 2001, 47 percent of indexed scientific papers produced in New Zealand were produced by university researchers. This is consistent with the figure for 1997 (51 percent). By including all research outputs, not just scientific papers, the proportion of output from universities increases.

Two-thirds of university research expenditure is on pure basic and strategic research

The type of research conducted within the university sector is more directed towards pure basic and strategic research. In 2002, more than two-thirds of university research expenditure was spent in the pure basic and strategic areas, compared with 53 percent for government and 21 percent for business.

The 2002 Statistics New Zealand Research and Development Survey noted that, in terms of research expenditure, around half of the pure basic research and about 40 percent of the strategic research in New Zealand in 2002 was undertaken by universities21.

![Figure 43: Types of research being undertaken by universities, 2002](source: Statistics New Zealand, Research and Development Survey 2002)

Māori research is an emerging area

Māori research is a unique area of research in New Zealand. Māori research includes research undertaken by Māori, research about Māori knowledge and tradition and research for the purposes of advancing Māori social and economic development. While some very significant research has been undertaken in this area, the development of Māori research has been hampered by the diversion of experienced researchers to a range of other activities, such as management, mentoring and advice to government.

The potential for growth in Māori research is signalled by the establishment of such initiatives as the National Institute of Research Excellence for Māori Development and Advancement – Ngā Pae o te Māramatanga. The establishment of the Institute, along with other initiatives, should help to develop critical capacity in Māori research.

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21 See Technical and Data Definitions for further explanation of these terms.
Quality of research

There are a number of ways of assessing the overall quality of research from the tertiary education sector.

Tertiary education sector research papers cited at international levels

One aspect of quality is the impact of research on a body of knowledge. A common measure for this is citation rates – ie the number of times a research paper has been cited or referred to in subsequent research publications.

The National Bibliometric Report 1997 to 2001 reports on citation rates for recent New Zealand research publications. It found that tertiary education sector research publications that appeared in 1997 were cited during the period 1997 to 2001 on average 6.1 times. This is consistent with international citation rates, given the fields of research concerned and the journals used.

Increased patenting by New Zealand universities

Another aspect of quality is conversion of research knowledge into a commercialisable application. One measure of this is patents. Ministry of Research, Science and Technology data shows that the amount of patenting by New Zealand universities has increased, although their share of domestic patenting has been stable since 1992 at around two to three percent per annum. Between 1993 and 1997, Auckland Uniservices Ltd (a subsidiary of the University of Auckland that manages the university’s research contracts) ranked second in the list of New Zealand’s top patenting organisations. Most university patents were in biotechnology and scientific instruments.

External research contracts increasing

Research contract funding also provides a good proxy measure of research quality as contracts are often won through competitive bidding and can be subject to rigorous peer review. Research contract income has grown substantially from 1997 to 2002, both in absolute terms and as a proportion of institutional income.

In 2002, research contracts in universities constituted $235 million, compared with $218 million in 2001 and $193 million in 2000. This constituted a one-year rise of 7.6 percent. The figure for 1997 was $131 million, meaning that, over the previous six years, research contract income grew by 78.5 percent. Research contract income accounted for 13.1 percent of all university revenue in 2002, compared with 12.9 percent in 2001, 12.8 percent in 2000 and 11.1 percent in 1997.

Figure 44: University research contract income, 1997–2002

Greater focus on quality through new funding policy

The new PBRF has been established to provide a greater focus on the quality of research in the tertiary education sector. The purpose of the PBRF, which is being phased in over 2003 to 2007, is to encourage TEOs to improve research performance at all levels in the system. By aligning the allocation of the funding for research with research performance, the PBRF aims to:

- increase the average quality of the research conducted in the sector
- ensure that research continues to inform and shape the teaching and learning of degree and postgraduate students
- ensure funding is provided to support postgraduate research students and new researchers in the sector
- underpin the existing strengths in tertiary education research.

The PBRF will create a pool of funding to be allocated to providers on the basis of their performance in:

- the quality of the research outputs produced
- the number of research degree completions
- the amount of external research income they can generate.
The government expects that, in aligning research funding to research performance and in separating it from tuition funding, it will create a climate that rewards innovation and excellence in research and hence it will foster and enhance the sector’s research capability and, consequently, its performance.

In making this reform, the government has committed some new funding to the PBRF. However, most of the funding for the PBRF will come from the progressive transfer to the fund of the research component of the tuition subsidy.

An evaluation of the implementation of the PBRF is currently underway.

Development of networks and clusters of specialisation

This strategy includes an emphasis on developing research networks and clusters of specialisation. This recognises the need to make good use of the limited resources available for research in New Zealand and the need to build critical mass around strategic research programmes.

High levels of international collaboration but low levels of inter-institutional collaboration

The National Bibliometric Report 1997 to 2001 shows that papers produced in the tertiary education sector were more likely to have involved collaboration than those produced in most other parts of the national research system. The report states that in 2001, 52 percent of university publications were the result of collaborations, compared with the 59 percent reported for publications in 1996 and 32 percent in 1986.

While there was extensive joint publication between researchers in New Zealand universities and their colleagues overseas, there was relatively low propensity for joint publication between the New Zealand universities in research.

More than 70 percent of these collaborative publications were with overseas bodies, compared with 67 percent in 1996. International collaborations in papers produced by universities were more likely than in papers produced in other parts of the research system. For instance, around 60 percent of CRI papers that involved collaboration and about 50 percent of collaboratively produced health research papers involved collaboration overseas. Nearly 10 percent of collaborations on university papers were with CRIs. Only five percent were with other New Zealand universities, compared with eight percent in 1996.

Centres of Research Excellence to support collaboration and networks

The CoREs have been set up to encourage higher levels of domestic collaboration, both between the universities and between the universities and CRIs. All of the CoREs are hosted by universities; five out of the seven involve formal partner institutions, including universities and research organisations, while one other involves a cluster of multidisciplinary research teams across one institution.

The role of the seven CoREs is to support leading-edge, international standard innovative research that fosters excellence and contributes both to New Zealand’s national goals, and to knowledge transfer. The CoREs are:

- **Allan Wilson Centre for Molecular Ecology and Evolution**
  - Host Institution: Massey University
  - Partners: University of Canterbury, University of Auckland, University of Otago, and Victoria University of Wellington

- **Centre for Molecular Biodiscovery**
  - Host Institution: University of Auckland

- **The MacDiarmid Institute for Advanced Materials and Nanotechnology**
  - Host Institution: Victoria University of Wellington
  - Partners: University of Canterbury, Industrial Research Limited, and Institute of Geological and Nuclear Sciences

- **National Centre for Advanced Bio-Protection Technologies**
  - Host Institution: Lincoln University
  - Partners: Massey University, New Zealand Crop and Food Research Ltd and AgResearch Ltd

- **New Zealand Institute of Mathematics and its Applications**
  - Host Institution: University of Auckland
  - Partner: New Zealand Mathematics Research Institute
Development of new researchers

Another emphasis in this strategy is on the support for research students and emerging researchers.

Increased participation and completion of doctoral degrees

Formal training in research is mainly carried out through postgraduate research degrees, particularly at doctoral level. Between 1997 and 2002, enrolments in doctoral studies at tertiary education providers increased by 31 percent. Over the same period, completions of PhDs have increased by 41 percent.

Figure 45: Enrolments in, and completions of, PhD qualifications, 1997–2002

Women, Māori and Pasifika remain under-represented in research degrees

Women were under-represented in enrolments in research degrees in 2002, but the trends are positive. In 2002, while women represented 57 percent of all formal enrolments in tertiary education and 58 percent of all postgraduate enrolments, they constituted only 48 percent of doctoral enrolments. The corresponding figure for 1997 was 43 percent. Enrolments by women in doctoral degrees have grown by more than 48 percent over the last six years while doctoral enrolments as a whole grew by 31 percent.

In 2002, Māori made up six percent of doctoral enrolments, whereas Māori constituted 20 percent of all enrolments in tertiary education and eight percent of all postgraduate enrolments. The rate of participation of Māori in postgraduate study in 2002 was little more than half the rate of non-Māori – 0.5 percent of the population over the age of 15, compared with 0.9 percent for non-Māori. While these statistics show that Māori are still not engaging in postgraduate study to the same extent as the whole population, Māori enrolments in postgraduate qualifications have grown faster than for the whole population. Māori doctoral enrolments have grown by 96 percent over the last six years, from 103 to 201. This is around three times the rate of growth in doctoral enrolments as a whole.

The trend is more mixed for Pasifika peoples. Pasifika students constitute only one percent of doctoral enrolments but 5.5 percent of all tertiary enrolments. At the doctoral level, Pasifika enrolments rose by 37 percent, over the period 1997 to 2002, while for the whole population doctoral enrolments grew by 31 percent. The rate of participation by Pasifika peoples in postgraduate study was low; only 0.4 percent of the Pasifika population aged 15 or over was enrolled in postgraduate study on 31 July 2002. The rate for the population as a whole was twice that – 0.8 percent.

The new research funding formula, under the PBRF, will provide additional funding for TEOs on the basis of the number of Māori and Pasifika research-based postgraduate degree completions.
Te rautaki mātauranga Māori – contribute to the achievement of Māori development aspirations

**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 expected change – 2002 to 2007**

Contributing to the achievement of Māori development aspirations requires that the tertiary education sector works 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 change messages, particularly developing effective partnership arrangements with Māori communities.

In 2001, the Hui Taumata Mātauranga endorsed three goals for Māori educational advancement:

- 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 that this will also be incorporated in the work resulting from the other strategies.

It is expected that TEOs will strengthen their relationships with and accountability to Māori communities and take greater responsibility for the success of Māori students. There must be opportunities for Māori communities to exercise greater authority and responsibility within the tertiary education system. The tertiary education system must become a more active contributor to regional and national Māori/whānau/hapū/iwi development.

The system is expected to incorporate te ao Māori perspectives and address diverse Māori realities. It has a critical role in supporting the development of mātauranga Māori, while respecting Māori ownership of intellectual property, both traditional and contemporary.

It is expected that there will be a stronger emphasis on increasing Māori participation in higher-level qualifications and across the range of disciplines.

The system should be making growing contributions to the overall health and standard of living of Māori. It should be developing Māori learners in a holistic way that acknowledges a broad understanding of ‘being Māori’ in a global society.
The baseline picture in 2002
There was rapid growth in Māori participation in tertiary education in the five years to 2002. By 2002, Māori participation rates (i.e. Māori students as a proportion of the Māori population) exceeded those of non-Māori. A large amount of this growth was due to the growth in enrolments at wānanga. However, even if wānanga enrolments are taken out of the figures, Māori participation rates still exceeded those of non-Māori.

Forty-four percent of Māori enrolled in 2002 were Māori women aged 25 years and over. There is cause for continued concern about lower rates of participation of Māori in the traditional age group of 18 to 25, particularly young Māori men. While the proportion of Māori students going directly from school to tertiary study grew from 2000 to 2002, it still lagged behind non-Māori.

Māori were much more likely to be enrolled for qualifications below degree level than non-Māori. This is consistent with the relatively new entry of the majority of Māori students to tertiary education with fewer school-level qualifications than non-Māori. At the same time, Māori enrolments at degree level and higher have increased at a faster rate than those of non-Māori.

Māori were well represented in industry training, including Modern Apprenticeships. However, involvement tends to be concentrated in some industries more than others. This is particularly true for Modern Apprenticeships, with quite high representation within forestry.

The growth in enrolments below degree level has clearly flowed through to increased completion of qualifications by Māori at this level. However, the same flow-through from the growth in degree and above enrolments is not evident in the data, raising concerns about Māori completion rates at this level.

There has been significant growth in the provision of kaupapa Māori education through the three wānanga, and particularly through Te Wānanga o Aotearoa. This has supported increased availability of, and enrolments in, te reo Māori and te ao Māori courses. Polytechnics have also increased their capacity in providing te reo Māori courses.

There are also 162 registered providers identifying as Māori providers. NZQA audit results indicate that these providers need support to build their capability. NZQA is currently providing active support to 137 of them.

Data from the Census provides a picture of low proportions of Māori engaged as teaching staff in the tertiary education sector. The growth in Māori students has not been matched by a significant growth in Māori staff. Māori staff often report significantly higher workloads, because they deal with the general support and mentoring of students as well as teaching and research. The challenge is for TEOs to improve their recruitment of Māori staff, including encouraging Māori students at degree and postgraduate level to consider a tertiary teaching career, and also to actively address workload issues for existing staff.

Further development of monitoring
Future monitoring of this strategy will have a greater focus on the engagement of TEOs with Māori whānau, hapū and iwi and their development aspirations. In particular, future monitoring will look at the degree of Māori authority and leadership within partnership arrangements, evidence of TEOs taking greater responsibility for the success of Māori learners and the development of new approaches to meeting the diverse needs of Māori learners.

One source of information for this area will be charters and profiles. These will need to be compared with the perspectives of Māori whānau, hapū and iwi on the level of engagement of TEOs with their communities and their development aspirations. The views of Māori students will be a particularly important measure of success.

Future monitoring will have a greater emphasis on completion, retention and progression. A key issue will be the extent to which Māori who have entered tertiary education through short, certificate-level courses continue on to other studies. Patterns of Māori engagement with tertiary education over a lifetime will also be examined in more detail.

Richer information will also be included on kaupapa Māori, te reo Māori and te ao Māori provision. This will include a fuller picture of provision through Māori PTEs, the development of kaupapa Māori education provision within ‘mainstream’ providers, completion and progression in te ao Māori and te reo Māori courses and more extensive information on Māori research activities.
There is a need to develop systematic information on Māori staff in TEOs, particularly those in teaching roles. Monitoring of TEO plans to recruit and support Māori staff will also need to be included. This will need to be supplemented with information from Māori staff themselves, about issues such as workload, expectations and professional development.

As the monitoring progresses it will develop a greater focus on the contribution of tertiary education to the three goals set out at the start of this section. This will require linking tertiary education to outcomes for Māori across a range of life, health, well-being and cultural areas.

Māori participation in tertiary education

Rapid increase in overall participation by Māori

Participation by Māori in formal tertiary education has been growing rapidly. Since 1999, Māori participation rates (ie Māori students as a proportion of the Māori population) have been exceeding non-Māori rates. This is in part due to the substantial growth of wānanga. However, even after excluding all wānanga students, Māori participation rates were still higher than non-Māori in 2002.

Figure 46: Age-standardised participation rates in formal tertiary education, July 1994–2002

High levels of participation by Māori women aged 25 and over

There was considerable variation in participation rates by both age and gender. In 2002, both Māori men and women aged under 25 years had lower rates of participation in tertiary education than non-Māori. The difference in participation rates was much greater between Māori and non-Māori men than between Māori and non-Māori women.

However, for Māori aged 25 and over, both male and female participation rates were much higher than for non-Māori. Māori women had significantly higher participation rates than Māori men and all non-Māori. The higher level of participation for Māori women carries right through to the 65 years and over age group.

22 See Technical and Data Definitions for explanation of age-standardisation.
Most growth in participation is below degree level

Most of the growth in Māori participation in formal tertiary education has been at below degree level, with growth in degree and postgraduate numbers being more stable. Over the last six years, Māori enrolments below degree level have more than doubled. Over the same period, degree and above enrolments have grown by 34 percent. In both cases, enrolment growth has significantly exceeded that of non-Māori.

In 2002, 77 percent of Māori students were enrolled in courses below degree level, compared with only 49 percent of non-Māori. At the top end, just over three percent of Māori students were enrolled in postgraduate studies, compared with nine percent of non-Māori students.

Participation varies by field of study

In 2002, 22 percent of Māori students were enrolled in qualifications categorised as ‘mixed field’, compared with only 7.3 percent of non-Māori. Mixed-field qualifications are generic qualifications, mostly employment and life skills. This reflects the large number of Māori students who are re-entering education as adults and undertaking foundation level courses.
Looking at the other fields of study in 2002, the most popular area of study for Māori was society and culture, which includes tikanga Māori and te reo Māori. Whereas the management and commerce field was most popular for non-Māori, Māori tended to be over-represented in fields related to the service sector, with the exception of health. Māori were under-represented in fields related to science and business, with the exception of information technology and agriculture and environment.

The overall picture was similar when comparing Māori men with non-Māori men and Māori women with non-Māori women. There are a few notable differences. Māori women were more likely to be studying information technology qualifications than non-Māori women. Māori men were more likely to be studying agricultural qualifications and less likely to be studying for information technology qualifications than non-Māori men. To fully understand the underlying picture, a more sophisticated analysis is required that takes account of the level of study and age, as well as gender. This is beyond the scope of this current report.

Māori are well represented in industry training but are more concentrated in some industries

In 2003, Māori made up 10 percent of the workforce and 17 percent of industry trainees. Seventy percent of Māori trainees were undertaking programmes at level three or higher.

Across the ITOs, Forestry had the largest number of Māori industry trainees in 2003 (3,722), followed by Engineering, Food and Manufacturing (1,255), the New Zealand Industry Training Organisation, which covers meat and dairy (1,126), and Agriculture (1,030). Forty-nine percent of all Māori trainees were covered by these four ITOs, compared with 39 percent of all trainees.

Māori made up 14.3 percent of Modern Apprenticeships in 2003. In 2003, 23 percent of Māori Modern Apprenticeships were within the Forestry ITO, compared to seven percent of all Modern Apprenticeships. A further 44 percent of Māori Modern Apprenticeships were spread across the Agriculture, Building and Construction, Electricity Supply, Engineering, and Motor ITOs.

Completion of qualifications by Māori

As explained in the overview, qualifications completion data provides counts of the number of people completing qualifications each year. It does not provide meaningful information on completion rates, as the length of time it takes to complete qualifications may vary.

Rapid increase in qualification completions below degree level

Māori qualification completions increased by 101 percent overall from 2000 to 2002. This was almost entirely the result of a 136 percent increase in completions of qualifications below degree level, which reflects the increased enrolments at this level. Degree and postgraduate completions increased by one and two percent respectively.

Figure 50: Completions of qualifications by Māori students by qualification level, 2000–2002

Qualification completions vary by field of study

The largest proportion of Māori qualification completions are in the society and culture field of study, which is in line with the proportion of enrolments. Interestingly, health qualifications make up a larger proportion of Māori completions than of Māori enrolments, while the pattern is reversed for management and commerce qualifications. This may reflect differing completion rates in these areas or it may reflect changes in participation by qualification level over the last three years.
Assistance provided to support Māori students

Funding has been provided to TEIs, through the Special Supplementary Grants, to provide support services for Māori students. A review of the Special Supplementary Grants for Māori students was undertaken by the Ministry of Education in 2003. It found that:

- the funding made a significant difference within TEIs for Māori students, despite the limited amount of money involved
- the targeting of a specific pool of money aimed at increasing the success of Māori students in TEIs was seen as one of the major benefits of the funding.

Kaupapa Māori tertiary education

A unique aspect of the New Zealand tertiary education system is the provision of kaupapa Māori tertiary education. This is education delivered by Māori for Māori, that reflects a Māori view of the world. It has a critical role to play in contributing to Māori social and economic development. The TES includes a focus on ensuring the availability of robust options for kaupapa Māori tertiary education.

Strong growth of wānanga

There are three wānanga which are established as public tertiary education institutions: Te Wānanga o Aotearoa, Te Wānanga o Raukawa, and Te Whare Wānanga o Awanuiārangi. The wānanga provide a Māori-based tertiary education across a range of areas.

Student enrolments in the wānanga grew exponentially from 1999 to 2002, with the largest growth in numbers being in Te Wānanga o Aotearoa. As at 31 July 2002, the wānanga had nine percent of all formal tertiary enrolments and 35 percent of Māori enrolments.
Capability of Māori private training establishments developed

As at October 2003, there were 162 registered and National Qualifications Framework accredited private training establishments that self-identified as being Māori providers. This was a net increase of eight since 1 January 2000. During this period there has been moderate turnover in Māori providers through openings and closures. In the twelve months to October 2003, there were three new registrations and 16 de-registrations.

As at October 2003, there were six applications under consideration. The proportion of new registrations was considerably lower than for all PTEs in the same period, while the proportion of de-registrations was slightly higher.

Eight percent of Māori PTEs (that have been registered for more than six months) are on audit cycles of less than one year, for reasons of quality concerns. This is more than twice the proportion for all PTEs. Twenty-five percent of Māori PTEs were on audit cycles of two or more years, indicating robust and stable processes, compared with 43 percent of all PTEs.

The NZQA has established a unit which provides support to build the capacity of Māori providers by establishing relationships with the providers at a local level and working co-operatively to raise levels of quality in education management delivery. In 2003, the NZQA was assisting 137 Māori providers, helping them to prepare for quality audits and to implement the recommendations that result from the audits.
Kaupapa Māori research strengthened

The establishment of Ngā Pae o te Māramatanga – the National Institute of Research Excellence for Māori Development, through the CoRE funding, will provide a major centre of focus and strength for Māori research in the areas of education, health and science. The Institute will bring together Māori and western intellectual traditions and experience to generate new knowledge and technologies. Planned areas of research include:

- new building materials for cheaper, warmer housing
- young people’s views of schooling and society
- fundamental studies of the processes underlying diseases such as asthma and diabetes to which Māori are genetically disposed.

The Institute is hosted by the University of Auckland and involves partnerships with Te Whare Wānanga o Awanuiārangī, Te Wānanga o Aotearoa, Victoria University of Wellington, the University of Otago, the University of Waikato and Landcare Research.

The research programme of the National Centre for Advanced Bio-Protection Technologies (also funded through the CoRE funding) includes a focus on the area of Mātauranga Māori bio-protection, where researchers will develop agricultural technologies that value and sustain mātauranga and tikanga Māori.

Te reo Māori and te ao Māori provision

Tertiary education has a key role to play in supporting knowledge and understanding of te ao Māori and revitalisation of te reo Māori. These are critical areas enabling Māori to live as Māori and to participate fully in Māori society and culture.

Tertiary education provision in this area can be looked at in terms of three broad types of courses: te reo Māori courses, education of teachers to teach in te reo Māori and courses about te ao Māori.

This report provides information on participation in these areas by level and type of provider. Participation is reported here at course level and across the full year.

The general pattern shown across these three areas is one of high participation by women, compared with men. In the areas of te reo Māori and te ao Māori, the majority of students were women. Most of the provision in these areas was through wānanga and below degree level.

There is a larger proportion of non-Māori enrolled in bilingual and immersion teaching courses and these courses were more evenly spread across sub-sectors, with colleges of education having the largest numbers of students.

Increased participation in te reo Māori courses

From 2000 to 2002 there was significant growth in enrolments in te reo Māori courses. Over the full year of 2002, around 23,000 people enrolled in te reo Māori courses through tertiary education providers. Most of these people were enrolled in formal courses (78 percent). The rest were enrolled through community education.

Of the total people enrolled through tertiary providers in 2002, 65 percent were enrolled with wānanga, 21 percent with polytechnics, 10 percent with universities and the rest with PTEs. Eighty-seven percent were taking courses that were part of below degree-level qualifications and nearly all the rest were part of degree qualifications. Less than one percent were at postgraduate level.

Sixty-six percent of the people studying the courses were women. Seventy-seven percent of the total were Māori.

A further 3,000 students were enrolled in te reo Māori courses through community education provided by secondary schools. Two-thirds of these students were non-Māori.
Stable growth in Māori bilingual and immersion teacher education

Over the full year of 2002, around 3,400 people were enrolled in courses related to bilingual and immersion teaching in te reo Māori. These numbers included people taking bilingual and immersion papers within a general teaching qualification, as well as those doing specialist teaching qualifications in bilingual and immersion education. This was an increase of 11 percent on 2000 enrolments and represented 11.8 percent of total enrolments in 2002 in qualifications in the field of education.

Forty percent were enrolled with colleges of education, 22 percent with universities, 17 percent with wānanga, 11 percent with polytechnics and 10 percent with PTEs. Ninety-six percent were formal students. Fifty-eight percent were studying towards degree-level qualifications, two percent towards postgraduate qualifications and the rest were studying for diplomas. Eighty percent of the students were women and 54 percent were Māori.

Increased participation in te ao Māori courses

From 2000 to 2002 there was significant growth in enrolments in te ao Māori courses. Over the full year of 2002, around 40,000 people were enrolled in courses related to aspects of te ao Māori (excluding te reo Māori courses). These courses covered the areas of tikanga Māori, Māori creative arts and hauora (Māori health). The majority were classified as tikanga Māori, but these are quite wide ranging in course content. Most of the people were enrolled in formal courses (89 percent) with the rest being enrolled through community education.

Eighty-one percent of the students were enrolled in wānanga, eight percent in polytechnics and eight percent in universities. Only two percent were enrolled in PTEs. Nearly all the courses were below degree level (90 percent), with just under one percent at postgraduate level. Seventy-four percent of the students were women and 80 percent were Māori.

Māori staff in tertiary education organisations

This strategy 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 staff and decision-making positions.

Currently, the only available information on staffing by ethnicity relates to teaching staff. This information comes from the New Zealand Census. No information on ethnicity of staff is collected systematically within the tertiary education system.

Low proportion of tertiary teaching workforce are Māori

It would appear that Māori teaching staff are under-represented compared with the proportion of Māori students. There has also been little growth in the proportion of Māori tertiary teachers from 1996 to 2001, in a period where there was rapid growth in Māori student proportions.

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26 This number may include some students who are studying bilingual and immersion education in other languages and courses on the general principles of bilingual and immersion education. However, students studying for Pasifika qualifications in immersion and bilingual education have been excluded.
The 2001 Census showed that within the Tertiary Teaching Professional occupational category, 8.4 percent of tertiary teachers in 1996 were Māori. This rose slightly to 8.6 percent in 2001. This compares with 11.6 percent and 18.5 percent of students in respective years.

Māori staff often report high workloads. They are expected to fulfill a number of roles, including support and mentoring of Māori students, cultural advice and support for their organisation, as well as teaching and/or research. The work they do is often not officially recognised by their organisation in terms of hours and pay.

**Potential for increased recruitment**

Māori completions at degree and postgraduate level provide an indication of the emerging pool of qualified Māori who may be able to teach in tertiary education. From 1997 to 1999, there was a steady increase in Māori degree completions, but this has levelled off from 1999 onwards. Postgraduate completions for Māori rose steadily from 1997 to 2000 and then levelled off, with a slight fall in 2002.

![Figure 58: Postgraduate and degree qualification completions by Māori students, 2002](image)

However, there were still around 2,700 Māori who completed degree and postgraduate qualifications in 2002. This is more than double the total number of Māori tertiary teaching professionals recorded in the 2001 Census.

This suggests that the challenge is for TEOs to attract and retain an increased number of Māori graduates as teaching staff, as well as providing better support and recognition for existing Māori staff.
Education for Pacific peoples’ development and success

The expected change – 2002 to 2007
Pasifika peoples are a significant part of the New Zealand population and New Zealand is also a significant part of the South Pacific region. New Zealand tertiary education has an important role to play in Pacific development and success, both in New Zealand and internationally.

The government’s Pasifika Education Plan aims to increase Pasifika achievement in all areas of education. The focus in tertiary education is on increasing participation and achievement, improving retention and encouraging higher levels of study. The plan sets out the following goals:

• significantly increasing Pasifika students’ participation in tertiary education at all levels
• significantly improving Pasifika students’ achievement in tertiary education – closing the gaps with non-Pasifika students completely in 20 years
• significantly increasing opportunities for Pasifika adults to access adult education and community learning, and specific adult literacy programmes over the next five years.

Short-term targets were also set to measure progress in achieving those goals:

• Pasifika peoples making up 5.3 percent of TEI students by 2002, 6.0 percent of TEI students by 2004, and 6.6 percent of TEI students by 2006
• the number of Pasifika peoples graduating at diploma level and above increasing every year, resulting in 5.0 percent of total graduates being Pasifika peoples by 2002, 5.6 percent by 2004 and 6.2 percent by 2006.

This strategy builds on the Pasifika Education Plan and provides a broader focus on education for Pacific development.

It is expected that the tertiary education system will have a much greater focus on the skills that Pasifika peoples need for their development, both in New Zealand and the wider Pacific. This requires a better understanding of the current and future skills and knowledge requirements, as well as specific plans as to how these can be met.

Pasifika learners need to be much better informed about study and career options and how they can acquire the skills and knowledge that will be of benefit to the development of their communities, as well as for their own success.

Objectives

• Pacific learners are encouraged and assisted to develop skills that are important to the development of both the Pacific and New Zealand.
• A tertiary education system that is accountable for improved Pacific learning outcomes and connected to Pacific economic aspirations.
• Pasifika for Pasifika education services are assisted to grow their capability and enhance Pasifika peoples’ learning opportunities.
• An increased proportion of Pacific staff at all levels of decision-making in the tertiary education system.
It is expected that the tertiary education sector will become more connected with, and accountable to, Pasifika communities. Pasifika communities will take a greater role in supporting the delivery of tertiary education and have a greater say in how tertiary education can contribute to their development aspirations. TEOs need to take a much more active role in contributing to the development aspirations of Pasifika communities, in New Zealand and the Pacific. This contribution will be through research, as well as education.

There is a need to improve the capability and capacity of Pasifika for Pasifika education services. These include Pasifika PTEs, community education services and services within ‘mainstream’ organisations. These services have a particular role to play in supporting Pasifika education and retaining and developing Pasifika knowledge. These services also provide a means of staircasing Pasifika learners into higher studies, particularly for adult learners and those who left school with little or no qualifications.

It is expected that there will be an increased proportion of Pasifika staff at all levels of decision-making in the tertiary education system. This includes teaching, as well as administrative and management positions. It is particularly important that there is Pasifika representation at the higher levels of decision-making within TEOs to ensure that the needs of Pasifika students and communities are taken into account. There is a need to increase the proportion of Pasifika teaching staff and provide them with appropriate support and development.

The baseline picture in 2002

There has been increased participation by Pasifika domestic students over the last six years, both in total numbers and as a proportion of all students. However, taking account of the age distribution in the Pasifika population, Pasifika participation rates are still the lowest of any ethnic group. Pasifika participation rates are particularly low in the under 25 age group.

The Pasifika Education Plan targets for Pasifika participation and graduation were not fully met in 2002. Pasifika students made up 4.0 percent of enrolments in TEs, short of the target of 5.3 percent. While Pasifika graduations at diploma level and above have increased each year, Pasifika students made up 4.0 percent of all tertiary graduates, short of the target of 5.0 percent.

Pasifika students had a similar spread of participation across degree and sub-degree qualifications to non-Pasifika students in 2002. As with other groups, there has been substantial growth in numbers enrolling in qualifications below degree level. Pasifika students were still significantly under-represented in postgraduate studies.

Pasifika trainees were represented in industry training at a similar level to their representation in the workforce. However, they were more concentrated in some industries. Pasifika people were significantly under-represented in Modern Apprenticeships.

In 2002, there were just over 1,300 Pasifika international students studying at tertiary level in New Zealand. The largest numbers were from Fiji, Tonga and Samoa. Most were aged under 30 years and about half were studying at degree level and above.

Completion of below degree-level qualifications by Pasifika students has grown faster than completions of degree-level qualifications. Completion of postgraduate qualifications decreased from 2000 to 2002. This data reinforces concerns about completion rates of Pasifika students at degree and postgraduate levels.

There was a small Pasifika PTE sector, with 33 registered providers identifying as Pasifika providers. NZQA audit results indicated that these providers needed support to build their capability. In 2003, the NZQA was providing active support to around half of them.

Pasifika people are significantly under-represented among teaching staff in TEOs. The 2001 Census data indicates that about 1.5 percent of tertiary teaching staff are Pasifika. Pasifika staff report significant workload issues, as they are required to provide support and mentoring for students and maintain connections with Pasifika communities, as well as teaching and/or research. TEOs often do not recognise all the requirements put on Pasifika staff. There is a need for TEOs to provide greater support for their existing Pasifika staff, as well as improve recruitment, retention and promotion.

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27 These figures exclude international students and used the prioritisation approach to ethnicity, which was the standard at the time the Plan was agreed.
Further development of monitoring

An immediate priority for the next stage of monitoring is to develop information on the completion rates of courses and qualifications.

Future monitoring will have a greater focus on the actions taken by TEOs to contribute to Pacific development. This includes identifying skill and knowledge requirements, collaboration with Pasifika communities and specific contributions to Pacific development in New Zealand and internationally.

One source of information for this area will be charters and profiles. It will need to be triangulated with perspectives from Pasifika communities on the level and appropriateness of TEO engagement.

Monitoring will also need to look at the information and support provided to Pasifika students and, in particular, the accuracy, relevance and quality of information and support for decision-making about study and careers.

More information will need to be developed on Pasifika for Pasifika education services, particularly in community education and within ‘mainstream’ organisations. This information will need to focus on what is being provided by these services, as well as on issues of capacity and capability.

TEO actions to support existing Pasifika staff and improve recruitment, retention and promotion will also be part of future monitoring. This will need to be supplemented with information from Pasifika staff themselves about issues such as workload, expectations and professional development.

As monitoring progresses, it will develop a greater focus on the contribution of tertiary education to Pacific development in New Zealand and internationally. This will include looking at the links being developed between New Zealand TEOs and Pacific nations and tertiary providers. It will also mean taking a more international perspective of Pasifika participation in tertiary education.

Pasifika participation in tertiary education

In 2002, there were a total of 17,579 formal students who identified as Pasifika enrolled in tertiary education. Of these, 1,311 or 7.5 percent were international students. The rest were domestic students. Students from the Cook Islands, Niue and Tokelau are entitled to enrol as domestic students in New Zealand TEOs. They are included in the domestic student figures. Domestic and international Pasifika students have been separated out in the following analysis.

Overall increase in Pasifika participation

Age-standardised participation rates\(^28\) for domestic Pasifika students are only available for 2001 and 2002 (based on the 2001 Census). These show that Pasifika participation rates increased from 6.8 percent of the Pasifika population in 2001 to 7.5 percent in 2002.

The best historical measure of Pasifika participation is Pasifika students as a proportion of all students. The proportion of Pasifika students in formal tertiary education grew from 4.2 percent in 1997 to 4.9 percent in 2002\(^29\).

These proportions of Pasifika students have been affected by the increased proportion of Māori students in tertiary education. If Pasifika students are looked at as a proportion of non-Māori students, then a stronger increase in participation is apparent (from 4.9 percent to 6.3 percent).

Figure 59: Percentage of students in formal tertiary education who are Pasifika, 1997–2002

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28 See Technical and Data Definitions for explanation of age-standardisation.

29 These figures are calculated on a different basis from the Pasifika Education Plan targets. Ethnicity has been based on total response, rather than on a prioritised response, which categorises students with Māori and Pacific ethnicity as Māori, rather than as both. These figures include all providers, not just public providers.
Lower participation rates for Pasifika students under 35 years

In 2002, Pasifika domestic students participated at lower rates than other groups in age groups under 35. In the older age groups they had similar rates of participation to non-Māori students in general. The participation rates for all students in the older age groups were increased by the very high participation rates of Māori women in these age groups.

Figure 60: Participation rates in formal tertiary education by age group, July 2002

Steady growth in participation at all levels

From 1997 to 2002 there was steady growth in the numbers of Pasifika domestic students participating at all levels of education (around 30 percent growth over six years at each level).

Figure 61: Pasifika enrolments in formal tertiary education by qualification level, July 1997–2002

As at 31 July 2002, 52 percent of Pasifika domestic students were enrolled in qualifications below degree level, compared with 49 percent of non-Pasifika domestic students. At the top end, three percent of Pasifika students were enrolled in postgraduate studies, compared with seven percent of non-Pasifika students.

There is a challenge for the tertiary education sector to continue to support Pasifika students to progress to tertiary education at higher levels.

Participation by field of study varies

As at 31 July 2002, 13.0 percent of Pasifika students were enrolled in qualifications categorised as ‘mixed-field’, compared with 12.4 percent of non-Pasifika students. Mixed-field programmes are generic programmes, mostly covering employment and life skills.

Looking at other fields of study, the most popular field of study for Pasifika students in 2002 was management and commerce, closely followed by society and culture. Pasifika students were over-represented in management and commerce, education and information technology. They were under-represented in health, sciences and agriculture and environment.

The overall picture is similar when comparing Pasifika men with non-Pasifika men and Pasifika women with non-Pasifika women. There were a few notable differences for Pasifika men. Pasifika men were more likely to be studying for agricultural qualifications and less likely to be studying for management and commerce qualifications than non-Pasifika men. To fully understand the underlying picture, a more sophisticated analysis is required that takes account of level of study and age, as well as gender. This is beyond the scope of this report.
Increasing participation in industry training

Pasifika participation in industry training has increased. In 2003, five percent of all industry trainees were Pasifika, compared with five percent of the total workforce. The proportion of Pasifika trainees has increased significantly from only two percent in 1996.

Across the ITOs, Engineering, Food and Manufacturing had the largest number of Pasifika industry trainees in 2003 (976), followed by Forestry (441) and Electrotechnology (411). Thirty-nine percent of all Pasifika trainees were covered by these three ITOs, compared with 31 percent of all trainees.
Significant under-representation in Modern Apprenticeships

However, Pasifika peoples have been very much under-represented in Modern Apprenticeships. In 2003, only 1.9 percent of Modern Apprentices were Pasifika. This represents a total of 110 Pasifika trainees. In 2003, 23 percent of Pasifika Modern Apprentices were within the Engineering ITO, compared with 15 percent of all Modern Apprentices. A further 35 percent of Pasifika Modern Apprentices were spread across the Building and Construction, Electricity Supply and Public Sector ITOs.

Pasifika international students

The largest group of Pasifika international students in New Zealand tertiary education in 2002 was from Fiji, followed by Sāmoa and Tonga. Students from these three countries made up 62 percent of Pasifika international students in New Zealand.

Eighty percent of Pasifika international students were aged under 30. Forty-five percent were studying for qualifications below degree level, 49 percent for degree qualifications and six percent for postgraduate qualifications.

Completion of qualifications by Pasifika students

As explained in the overview, qualifications completion data provides counts of the number of people completing qualifications each year. It does not provide meaningful information on completion rates, as the length of time it takes to complete qualifications may vary.

Growth in qualification completions is mostly below degree level

Pasifika qualification completions increased by 38 percent overall from 2000 to 2002. This is mostly due to the 48 percent increase in completion of qualifications below degree level. This is reflective of increased Pasifika enrolments at this level. Degree completions increased by 11 percent over the same period, while postgraduate completions fell by three percent.

Qualification completions varied by field of study

The largest proportion of Pasifika qualification completions in 2002 were in the management and commerce and society and culture fields of study. This is consistent with enrolment patterns. Interestingly, health qualifications made up a larger proportion of Pasifika completions than of Pasifika enrolments, while the pattern is reversed for science qualifications. This may reflect differing completion rates in these areas (probably...
for the subject as a whole in the case of health) or it may reflect changes in participation by level over the last three years.

Assistance provided to support Pasifika students
Funding has been provided to TEIs, through the Special Supplementary Grants, to provide support services for Pasifika students. A review of the Pasifika Special Supplementary Grants funding was undertaken by the Ministry of Education in 2002. It found that:

- the funding has had a positive impact in raising the profile of the needs of Pasifika students. This impact is often disproportionate to the amount of money provided
- more certainty about funding levels would allow planning that is more strategic and that incorporates an evaluation dimension.

Developing Pasifika for Pasifika tertiary education
As at October 2003, there were 33 registered PTEs that self-identified as Pasifika providers. There had been limited turnover in the number of Pasifika providers, with no new registrations in the previous 12 months, two de-registrations and one application currently under consideration. This was a much lower rate of turnover than for all PTEs.

Nine percent of Pasifika PTEs (that have been registered for more than six months) were on audit cycles of less than one year, for reasons of quality concerns. This is three times the proportion of all PTEs. Twenty-seven percent of Pasifika PTEs were on audit cycles of two or more years, indicating robust and stable processes, compared with 43 percent of all PTEs.

The NZQA has established a unit which provides support for Pasifika provider development. In 2003, NZQA was working with 15 Pasifika providers to develop their quality assurance systems. There are also a number of community based Pasifika for Pasifika providers. Recent work in the adult literacy area has included a pilot project for community based learning involving around 200 Pasifika adult learners.

Pasifika staff in tertiary education organisations
This strategy includes a focus on increasing the proportion of Pasifika staff at all levels of decision-making in the tertiary education system. This includes a focus on management and governance as well as teaching staff.

At this stage, the only available information on staffing by ethnicity relates to teaching staff. This information comes from the New Zealand Census. No information on ethnicity of staff is collected systematically within the tertiary education system.

Low proportion of tertiary teaching workforce are Pasifika
It would appear that Pasifika teaching staff are significantly under-represented compared with the proportion of Pasifika students. There appears to have been an increase in the proportion of Pasifika staff from 1996 to 2002, but it still lags behind the proportion of Pasifika students.

The Census shows that within the Tertiary Teaching Professional occupational category, 1.0 percent of tertiary teachers in 1996 were Pasifika. This rose to 1.5 percent in 2001. This compares with 3.6 percent and 5.5 percent of students in respective years.

Pasifika staff report significant workload issues, as they are required to provide support and mentoring for students and maintain connections with Pasifika communities, as well as teaching and/or research.

Potential for increased recruitment
Pasifika completions at degree and postgraduate level (both domestic and international) provide an indication of the future pool of qualified Pasifika graduates who may be able to teach in tertiary education. From 1997 to 2001, there was a steady increase in completion of degrees by all Pasifika students, but this levelled off in 2002. Completion of PhDs by all Pasifika students in the same period has fluctuated, with an overall growth in numbers over the period. From 2001 to 2002, the number of Pasifika students completing PhDs fell.
In 2002, there were 1,100 Pasifika students who graduated with a degree or postgraduate qualification. This is more than five times the number of Pasifika Tertiary Teaching Professionals recorded in the 2001 Census. This suggests that the challenge is for TEOs to attract and retain an increased number of Pasifika graduates as teaching staff.
Strengthen system capability and quality

Objectives

- Improved strategic capacity and leadership at both governance and management levels.
- Increased differentiation and specialisation across the system.
- Greater collaboration with the research sector, the creative sectors, industry, iwi and communities.
- Sustainable growth of export education capability centred on a reputation for quality teaching and pastoral care.
- A stronger system focus on teaching capability and learning environments, to meet diverse learner needs.
- Learners and the wider public have confidence in high levels of quality throughout the system.
- A coherent and reliable system of qualifications, learning recognition and credit transfer.

The expected change – 2002 to 2007

This strategy is a critical area for early development during the life of the TES. Without improvements in overall system capability and strategic capacity, it will be difficult to make progress on the other strategies and objectives in the TES. Improvements in these areas are critical to realising the changes set out in the change messages.

Strengthening system capability and quality requires improved strategic capacity and leadership at both management and governance levels. TEOs should have a greater focus on student success rather than on simply increasing student numbers. They should be developing robust, long-range planning, based on the needs of their communities, regions and the nation. It is expected that TEOs will have an increased focus on their distinctive contribution to tertiary education, and there will be increased differentiation of provision.

This strategy requires that TEOs work much more collaboratively with each other and with key stakeholders. Improved collaboration needs to result in better use of the limited resources available for tertiary education in New Zealand, improved networks of professional practice across TEOs and other institutions, and more integrated course and qualification offerings for learners that draw on the distinctive strengths of different organisations.

A stronger emphasis on quality and innovation in tertiary education teaching and learning is also required, through improving teaching capability and learning environments and developing a more coherent and reliable system of qualifications, learning recognition and credit transfer. One of the main challenges for the sector will be to develop a better common understanding of what constitutes quality teaching and good professional practice.

Included within this strategy is a focus on sustainable growth of export education capability, centred on a reputation for quality teaching and pastoral care. This has been a growth area for the tertiary education sector since 2000. Success in this area is critical to New Zealand's international image and connections with major trading partners, as well as bringing a range of educational, economic and social benefits to New Zealand. It is also an important source of additional revenue for TEOs. However, there are a number of risks in this area that need to be actively managed by the sector.
The success of this strategy will be evidenced through a tertiary education system that is more robust and is responsive to the needs of learners, research users and key stakeholders. It will be strongly networked within itself and with key stakeholders. There will be much more coherent options and pathways available for learners across the system. The improved confidence of students, employers and the public in the system will also be evidence of success.

The baseline picture in 2002

In aggregate, the financial health of TEOs has improved from 2000 to 2002, with fewer TEOs running operating deficits. This places TEOs in a stronger financial position to take on the changes required in the TES.

There have been a number of new initiatives focused on governance and management capability in TEOs, including the TEI Governance Review and introduction of charters and profiles.

A number of policies are being implemented which are directed at enhancing the focus on quality, including the New Zealand Register of Quality Assured Qualifications and a project on enhancing quality in teaching.

A number of collaborative initiatives have been developed by TEOs over the last few years. These aim to contribute to a variety of outcomes relevant to the TES. Assistance is being provided to encourage further collaboration.

Export education has been an area of rapid growth for the sector. The high reliance on North Asia as a source for international students poses risks in terms of long term sustainability and the possibility of short term disruptions. The recent introduction of a Code of Practice for pastoral care of international students and enhancement of quality assurance mechanisms should reduce risks arising from poor practice in this area.

Further development of monitoring

Development of strategic capability and leadership in TEOs is a critical priority for future monitoring. TEIs will be encouraged to report on and self-assess their management and governance capability. A more systematic basis for ongoing assessment of TEOs’ collaborations is also a critical priority. Assessing the value created by these collaborations will be a key challenge.

Key source information for these areas will come from TEO profiles and charters. The work of the Collaborating for Efficiency review groups will also provide valuable benchmark data on existing collaborations. The perspectives of key stakeholders will be vital to the analysis.

The improvement in TEO financial status may in part be the result of TEOs optimising for current funding arrangements. As funding policies change, it will be important to continue to monitor impacts on TEO financial performance and position.

The development of better information on quality and innovation in tertiary education is also a priority. This will require the development of a range of measures that provide a rich picture of educational delivery and success. It is not possible to assess quality purely on the basis of a single measure. Measures need to be considered across a range of areas, including:

• student achievement (e.g. completion rates, retention rates and progression onto further study)
• student outcomes, in terms of employment and the ability to apply the skills and knowledge gained from tertiary education to work and life in general
• teacher workforce experience and qualifications
• TEO focus on teaching practice, innovation and student achievement
• the confidence of students, employers and the general public in the quality of the tertiary education system.

Information on compliance with the International Student Code of Practice will also be included in future monitoring.
Financial management in tertiary education organisations

Current information on sector capability focuses on the financial health of TEOs. The financial health of an organisation, while limited in scope, does provide a reasonable indication of effectiveness of management control and the ability of the organisation to manage change and risk.

The financial situation of TEIs is improving

There has been concern about the short term financial position of TEIs. In 2000, 13 out of the 36 TEIs had operating deficits and only 11 met or exceeded the recommended threshold of a three percent operating surplus. This situation improved by 2002, with only six TEIs being in deficit and 19 meeting or exceeding the recommended operating surplus.

In 2002, the overall sector operating surplus exceeded the three percent threshold for the first time in several years and rose to 4.2 percent. This reflects the strong financial performance of wānanga, as well as the improved financial performance of other TEIs.

TEIs have exceeded the recommended thresholds on indicators of medium-term viability over the last four years and continue to strengthen their performance on all of these indicators.

Figure 67: Key financial performance indicators for TEIs, 1999–2002

Overall financial situation of PTEs is similar to public institutions

Financial information gathered by the Ministry of Education from PTEs which received student component funding through EFTS-based tuition subsidies in 2002 shows that the average financial performance of PTEs on key indicators is reasonable in comparison with TEIs and reflects logical and obvious differences in financial and asset structures. There is, however, greater variance in key performance indicators in PTEs than is the case with TEIs.

Key findings from the analysis of PTE financial information included:

• There appear to be some economies of scale for PTEs, with larger PTEs performing better than smaller ones.
• Smaller PTEs are more reliant on shareholder funds and shareholder loans to maintain viability.
• PTEs that have made improvements in education and business processes have also had improvements in financial viability.
• A number of PTEs are part of a larger group of companies or trusts and are very strong financially when the finances of the whole group are taken into account.

Initiatives to enhance tertiary education organisation governance and leadership

Since the launch of the TES, there have been a number of initiatives put in place to provide support for enhanced TEO leadership and governance.

Independent review of TEI governance conducted

An independent review of New Zealand Tertiary Education Institution Governance was recently completed by Professor Meredith Edwards of the University of Canberra. The review’s aim was to examine the governance of the TEIs and establish good practice, identify options for new and changed governance structures and advise on optimal ways of developing overall governance capability.
The report recommends a new framework to achieve good governance practice. It found that while governance is not seriously flawed, there is room for improvement. It found a need for a fresh focus on lifting governance performance with a view to improving strategic positioning, engaging with a wider range of stakeholders and aligning with the government’s tertiary education priorities.

The package of measures recommended includes a National Protocol on TEI Governance which sets out principles for good governance. Once the protocol is agreed, TEIs will be required to report against it in their annual reports. Along with the Protocol it is recommended that Institutional Codes of Governance Practice be developed to reflect the special features, values and approaches of each institution. Both of these would be overseen by an Association of Chancellors and Chairs with representation from across TEIs. A number of legislative changes are also recommended.

Some of the recommendations are already being implemented through governance and management workshops for council members and senior management staff being delivered by the Ministry of Education. Others are being adopted by institutions and sub-sectors. The Ministry of Education has also recently commissioned preliminary work on issues of Māori governance in the sector. Ministers have yet to make decisions with regard to legislative change.

**Charters and profiles bring greater focus on strategic direction**

The introduction of charters and profiles for TEOs heralds a greater focus on TEO strategic direction. Charters require TEOs to articulate their mission and role within the tertiary education system and their alignment with the TES. Profiles will provide a more systematic annual review of TEO achievement against educational as well as financial targets. They will support good business practice and complement other organisational planning tools. They will be a basis for both internal and external monitoring and accountability with a range of stakeholders, including government.

Charters and profiles will be fully implemented across the sector by the end of 2004.

**Other developments**

The Innovation and Development Fund aims to foster new and innovative ideas, and to develop TEOs’ capability to improve the operation of the tertiary education system. It is also designed to help TEOs align with and deliver on the TES and national goals. The fund will make available $40 million over four years from July 2003, with $20 million available for projects to be undertaken from 1 January 2004 to 30 June 2005.

One hundred and thirty-three applications, totalling $134 million, were received for the 2003 funding round. Nine projects have been approved, covering Māori development, foundation education curriculum alignment between schools and polytechnics, industrial design and research and industry training.

The Industry Training Amendment Act 2002 included a new requirement for ITOs to provide leadership to their industries on skill and training matters. Guidelines have been developed, in consultation with ITOs, to provide the framework for implementing this new role. ITOs are required to reflect this in their charters and develop objectives, performance indicators and a reporting framework in their profiles for 2005.

ACE collaborative networks have been set up to better connect ACE to the rest of the tertiary system and effect a more strategic approach to ACE provision. Innovation and development funding has been made available for ACE providers.

**Initiatives to enhance quality**

Since the launch of the TES, a number of initiatives have been put in place to improve the focus on the quality of tertiary education and research at a system level.

**Greater emphasis on quality within the Integrated Funding Framework**

One of the aims of the new PBRF is to encourage greater attention to the quality of research within the tertiary education sector. The funding allocation process includes research quality assessments of all research staff in participating TEOs. Information on the quality assessments has been reported publicly.
In the future, a small proportion of the student component of the integrated funding framework will be allocated on a performance basis. This will signal the importance placed on TEOs having a focus on quality and achievement, as well as participation and access. A technical working group has been convened to develop measures and indicators for the allocation of the performance element. Their report on options has been provided to Ministers.

**Project to focus on enhancing quality**

The Ministry of Education will be leading a project in 2004 focusing on Enhancing Quality. The project will focus on how to support a culture of quality and how quality assurance arrangements can be better used to enhance quality teaching and learning in tertiary education. The project will be in two stages. The first will be a scoping exercise involving the tertiary education sector, key government agencies and stakeholders. The second will involve a working group considering what can be done to enhance the quality of teaching and learning in tertiary education.

**Strategic review and plan for tertiary education workforce**

The government has agreed to establish a strategic review and plan for the tertiary education workforce in 2003/04. This review is proposed to ensure that the workforce meets the future needs of the reformed tertiary education system and will contribute to ensuring that New Zealand’s tertiary education system meets the requirements of New Zealand’s knowledge society.

**Single register of quality assured qualifications implemented**

In March 2001, agreement was reached to develop a register of all tertiary qualifications in New Zealand. Previously, each quality assurance body had maintained its own register of qualifications, resulting in fragmentation of the qualifications system across provider types.

The key purposes of the New Zealand Register of Quality Assured Qualifications are to:

- clearly identify all quality assured qualifications in New Zealand
- ensure that all qualifications have a purpose and relation to each other that students and the public can understand
- maintain and enhance learners’ ability to transfer credit by the establishment of a common system of credit
- enhance and build on the international recognition of New Zealand qualifications.

The Register sets criteria for qualifications to be included. All existing qualifications have been included. They are currently being updated to ensure they meet the criteria for the Register. This process will be completed by August 2006.

The Register was made available to the public in July 2003 through the KiwiQuals website (http://www.kiwiquals.govt.nz). This site allows people to search for information on all quality assured qualifications in New Zealand.

The next step of implementation is to improve credit recognition and transfer. The NZQA have developed a Credit Recognition and Transfer Policy. As part of this, providers have agreed to have credit recognition and credit transfer processes in place from January 2004. These processes will be checked by the quality assurance bodies.

**Collaboration**

An important aspect of the TES is to encourage greater collaboration between TEOs and between TEOs and key stakeholders. This theme is reinforced in the change messages and the objectives.

It is intended that greater collaboration will help achieve a range of outcomes including:

- greater contribution to Māori development aspirations
- greater contribution to Pasifika development aspirations
- improved pathways from school to tertiary education and within tertiary education, particularly from foundation education
- improved employment outcomes for graduates
- meeting emerging and future skill needs
- improved contribution of research to national social and economic development
- improved development of professional practice in teaching and research.
Increased collaboration will contribute to these outcomes through:

- greater engagement of the tertiary education system with stakeholder needs and requirements
- enhanced linkages in provision across providers
- improving the mix of available courses to better meet current and future needs
- developing joint ventures for education provision and research
- achieving critical mass in areas of regional and national importance
- making the best use of limited resources by reducing duplication of provision, increased specialisation, greater differentiation and resource concentration
- better international linkages.

Collaboration will involve development and extension of initiatives with:

- Māori iwi, hapū and whānau
- Pasifika communities
- business and industry, where ITOs will play a key role
- other TEOs, including PTEs as well as public providers
- schools
- tertiary providers internationally
- CRIs and research associations.

A number of collaborative initiatives have been developed by TEOs over the last few years. Some examples relating to each of the outcomes mentioned above are set out below to illustrate the range of initiatives currently in place. More systematic data on TEO collaborations will be developed as part of future monitoring.

**Greater contribution to Māori development**

Te Tapua e Rehua is a joint venture company between Ngāi Tahu Development Corporation, Christchurch Polytechnic, Lincoln University, the Christchurch College of Education, Canterbury University and the University of Otago. The focus of the company is to put in place high quality Māori curricula and increase Māori participation in tertiary education. Te Tapua e Rehua facilitates the provision of high quality education opportunities to encourage scholarship, personal development and leadership by drawing on the collective skills and resources of the partnership. It aims to establish a reputation for excellence in the fields of Mātauranga Māori, te reo, Māori education and in the professional and technical fields of industry to meet the needs of iwi, the region and the nation.

**Greater contribution to Pasifika development**

The Manukau Institute of Technology is working with churches in the local area and their Pasifika congregations in a community education outreach programme, entitled the Otara Future Learning Village. The initiative focuses on subjects that contain foundation skills. Classes are located initially at churches, moving to the Institute campus when extra facilities are needed. A key to the success of the venture is community ownership. The Institute first worked with church ministers and then took every opportunity to talk directly with the congregations and local Pasifika community groups about their learning needs.

**Improved pathways from school to tertiary education and within tertiary education**

Auckland University of Technology has formed a community partnership with 22 decile 1 to 4 schools with high Māori and Pasifika student bodies to assist Māori and Pasifika students to make the transition to tertiary education.

A group of Invercargill businesses formed the Southland Joint Funders Committee to help the Southern Institute of Technology establish its zero fees programme. The provision of zero fees for programmes has encouraged non-traditional users of tertiary education to participate. The benefits from this initiative include an increased proportion of students from lower socio-economic backgrounds. There has also been an increase in the number of female and Māori students.

The Tertiary Alliance between Bay of Plenty, Northland, Tairawhiti, Taranaki and Waikariki Polytechnics, and the University of Waikato aims to facilitate a range of access to tertiary education in the region that is as wide as possible by providing clear academic pathways through agreed articulation, credit and contractual teaching arrangements. Together, the institutions have developed programmes...
that reflect their co-operative approach to education. The Unitech certificate, for instance, allows students to study for a qualification offered jointly by a polytechnic and the University of Waikato. Another benefit is the agreed recognition of each other’s qualifications, providing students with much greater flexibility within their tertiary education.

**Improved employment outcomes for graduates**

Pukapuka Training Academy has established a partnership with Rakon Ltd for students in its electronics course. The programme covers generic skills and production-specific training. Practical experience is delivered at Rakon Ltd’s premises. The programme has been particularly successful in attracting Pasifika trainees, with 80 percent of those completing the programme going into employment in electronics.

**Meeting emerging and future skill needs**

Lincoln University and the Nelson Marlborough Institute of Technology (NMIT) are working with the Marlborough District Council, the Marlborough Research Centre, and the Marlborough wine industry to launch a Centre of Excellence in Wine Education based on the Marlborough campus of NMIT. As part of the collaboration, an articulation has been created between the NMIT Diploma in Viticulture and Wine Production and the Lincoln University Bachelor of Viticulture and Oenology that will enable students to take the degree in Marlborough.

The School of Engineering at the University of Auckland and the School of Forestry and Technology at Waiairiki Institute of Technology have entered into a partnership to create a centre to meet the needs of the forestry industry. Forestry is moving from a production strategy dominated by commodity products to a value-added production and marketing strategy. The courses developed target both full-time undergraduate students and staff already working in the industry.

**Improved contribution of research to national social and economic development**

Researchers at the University of Auckland have been actively collaborating with dairy scientists at Fonterra Research Centre to identify dairy active compounds that could provide improved ingredients and nutraceuticals.

Lincoln University and Massey University are working with Wool Pro to maximise technology development and uptake in the sheep industry. Wool Pro staff work closely with university staff on research and development, technology transfer, education and training. The initiative aims to keep the New Zealand sheep industry in its position as a world leader.

**Improved development of professional practice in teaching and research**

Toi Whakaari, the New Zealand Drama School, has implemented partnership and exchange relationships with the California Institute of the Arts, the University of Wisconsin and a number of other institutions with professional theatre programmes in the United States, the United Kingdom and Australia. These partnerships represent a shared commitment to performance research. The School's relationship with the University of the Incarnate Word, Texas, is focused on creative and research work with ethnic minorities. Links are in development with La Mancha International School of Image and Gesture, Santiago, Chile, which shares an interest in the physical language of the actor. Through the international programme, Toi Whakaari students are able to undertake secondments throughout the world.

**Initiatives to support increased collaboration**

A number of projects have been established to support increased collaboration.

**Collaborating for Efficiency**

The Collaborating for Efficiency project was devised to assist TEIs to make the transition to a new operating environment based on co-operation and collaboration. Supported by the TEC and the Ministry of Education, five reviews were conducted, covering use of capital assets, entrepreneurial opportunities, staffing, library services and collaboration with Māori whānau hapū and iwi. A key outcome of the project has been the identification and analysis of good practice that is already occurring and encouraging these practices to be emulated where appropriate.

**Partnerships for Excellence**

The Partnerships for Excellence Framework is aimed at increasing private sector investment in tertiary education, and thus producing positive outcomes through fostering better linkages between TEIs, industry and business.
Funding is provided from government for large scale investment projects if it is matched by private sector investment. In 2003, 11 applications for funding were received from eight TEOs. The proposals are being assessed by the TEC and decisions will be announced during the second quarter of 2004. Two proposals have already been approved: the development of a ‘Leading Thinkers’ advancement programme by the University of Otago and the establishment of a new business school at the University of Auckland.

**Polytechnic Regional Development Fund**

The Polytechnic Regional Development Fund is designed to strengthen partnerships between polytechnics, local companies, regional development organisations, industry training organisations and iwi, and to encourage skills development initiatives that meet the needs of local employers. To qualify for an award, a proposal from the polytechnic and its local partners must demonstrate consistency with the economic development strategy being developed by their region and with the TES and the STEP.

Three funding rounds have been held since 2002, providing $3.1 million to 24 projects. The projects cover meeting training needs of local industries, developing new provision, addressing specific skill shortages, research and development, industry and business development and resource management.

**E-Learning Collaborative Development Fund**

The E-Learning Collaborative Development Fund is designed to improve the tertiary education system’s capability to deliver e-learning that improves education access and/or quality for learners, and to help achieve co-operative and strategic implementation of e-learning in TEOs. The fund will make available $28 million over four years from July 2003, with $14 million available for projects to be undertaken from 1 January 2004 to 30 June 2005.

One hundred and five applications were received for the 2003 funding round, totalling $93 million. Fifteen of these were approved for funding. Approved projects cover areas such as building capability to deliver e-learning, resources and support for tertiary staff, infrastructure and software development and improving use of e-learning by Māori and in the workplace.

**Export education**

This strategy includes a focus on sustainable growth in export education capability centred on a reputation for quality teaching and pastoral care.

From 1999 to 2002, there was rapid growth in the number of international students studying in formal tertiary education in New Zealand. The total number of international students studying in the TEOs which received government funding increased from 8,922 in July 1999 to 26,979 in July 2002. Numbers enrolled in English language schools were around 42,000 for the year to 31 March 2002. (A small proportion of the language school students may also be counted in the formal students.)

Key areas of concern have been the increased reliance on students from North Asia and issues relating to pastoral care of international students. These concerns have been highlighted in the private language school area where the sudden closure of two large providers had significant impacts on students and other providers.

**Greater proportion of international students from North Asia**

A key criterion for sustainability of export education is that there is a diversity of international students in terms of country and region of origin. This limits the impact of sudden changes in demand from particular countries, and for particular programmes and fields of study, and spreads the impact and benefits of international students more widely across the tertiary education sector and more evenly throughout individual TEOs.

From 1997 to 2002, there has been a consistent pattern of around 70 to 80 percent of international students coming from Asia. In 2002, 63 percent of international students were from North Asia (China, South Korea and Japan).

In terms of proportional growth, the fastest growth has been from China. In 1997, there were only 103 Chinese students studying in New Zealand. In 2002, there were 13,734 in formal programmes at TEs and publicly funded PTEs. The next highest areas of growth have been India, the Middle East region and South Korea. Over the same time period there has been a significant decline in the number of students from Malaysia.
From 1997 to 2002, universities maintained a share of just over half of the international students studying in publicly funded tertiary providers in New Zealand. While the numbers studying in polytechnics grew, their share of the total numbers declined, with PTEs taking an increasing share from 2000 on. Numbers of formal international students at colleges of education remained minimal. However, the colleges do provide education to international students through contracts with other education jurisdictions. These are not counted as formal students.

Wānanga had almost no international students.

The Code requires all education providers enrolling international students to offer services for international students that are tailored to meet their needs. Support services for international students must include a dedicated resource for enquiries about pastoral care, an orientation programme, and assistance to students facing difficulties adapting to the new cultural environment. In addition, education providers must offer information and advice on: accommodation; courses; driving and driver licensing laws and road traffic safety; welfare facilities; sexual and reproductive health services; relevant New Zealand laws; and harassment and discrimination.

The Code was strengthened in 2003 to include greater follow-up requirements on education providers with international students ‘in trouble’. The Code now requires education providers to offer assistance or appropriate referral for students with additional needs and if they are not considered to be living in an appropriate accommodation situation.

Education providers are expected to review their own performance under the Code at least annually and, since the strengthening of the Code in the middle of 2003, have also been required to make the outcomes of these reviews available to the Code Administrator (Ministry of Education). The Administrator has agreements with quality assurance bodies for ongoing monitoring of compliance with the requirements of the Code.
Technical and data definitions

Age-standardised participation
An age-standardised participation rate is one where all subgroups being compared are artificially given the same age distribution. As participation is highest in the 18 to 24 age group, standardising for age removes any differences due to one group having a younger or older population than other groups. As such, it is an artificial measure, but it does provide an estimate of how groups might more fairly compare if they had the same age distribution.

Ethnic groups
All ethnic data is presented on the basis of total response ethnic groups. Collection of ethnicity data in the Census and tertiary education sector allows for respondents to provide more than one response. Total response counts the total number of responses for each ethnic group. Using this approach means that all people who relate to each group are counted. However, it also means that the total across the ethnic groups will be greater than the total number of people represented, due to multiple responses.

Field of study
Field of study is reported according to the New Zealand Standard Classification of Education. In the sections on qualification completions, postgraduate qualifications that were coded to Mixed Field Programmes have been recoded where possible to a subject-based field using the main subject codes for the student provided by the TEQ. This corrects the problem that the majority of research-based postgraduate qualifications are classified as mixed-field, irrespective of the subject-base of the research.

Formal tertiary education
Formal tertiary education covers all students who are studying towards a recognised qualification in the tertiary education sector, irrespective of the type of funding received. It includes Training Opportunities, Youth Training, Skill Enhancement and industry training courses undertaken through a tertiary education provider. International students are included, unless otherwise stated. On-the-job industry training and Modern Apprenticeships are not included, nor are STAR and Gateway students. It also excludes non-formal study, including most adult and community education.

July 31 and full-year counts
This report uses counts of participation in tertiary education as at 31 July each year for qualifications level data. This data provides a snapshot count of students enrolled for qualifications at that date. Full-year data is used for analysis of course participation. This data counts everyone who participated during the academic year.

Participation rate
Actual participation rates represent the number of students divided by the corresponding population. For example, the number of Māori students divided by the total Māori population. (See also Age-standardised participation.)

Research types
The Statistics New Zealand Survey of Research and Development divides research into:

Pure basic research – research carried out for the advancement of knowledge, without seeking long-term economic or social benefits or making any effort to apply the results to sectors responsible for their application.

Strategic research – research carried out with the expectation that it will produce a broad base of knowledge likely to form the basis of the solution to recognised or expected, current or future problems or possibilities.

Applied research – research and investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a practical aim or objective. For the purposes of the Research and Development Survey, applied research also encompasses experimental development. Experimental development is systematic work, drawing on knowledge gained from research and practical experience, that is directed at producing new materials, products and devices; installing new processes, systems and services; or improving substantially those already produced or installed.