Tertiary Education Strategy 2007-12

A framework for monitoring

Supporting the tertiary education system

Contents

1   The second Tertiary Education Strategy

The government spends over $4 billion a year on tertiary education, including research funding. Around 700,000 New Zealanders participated in formal study in 2006, with somewhere around 250,000 taking non-formal courses. Tertiary education is a key strategic investment in the country's cultural, social and economic well-being and future.

The Tertiary Education Strategy 2007-12 sets out the government's expectations and priorities for New Zealand's tertiary education system. It provides guidance for the Tertiary Education Commission's investment decisions and acts as a reference point for the government's policy making and relationship with the sector.

This is the second strategy to be published. The first Strategy took a broad and inclusive approach to cover the diversity of tertiary education. This second Strategy continues that inclusive direction but sharpens the focus. The focus is much more explicitly on what the government expects the tertiary education system to contribute and the priority outcomes for action in the immediate future.

The Strategy accompanies the progressive introduction of a new approach to planning, funding, quality assurance and monitoring in the tertiary education system. Investment in tertiary education is now on the basis of negotiated 3-year plans. There will be increased focus on monitoring organisational performance and rewarding excellence. Quality assurance and monitoring will have a greater focus on outcomes. The new system is focussed on developing a differentiated but complementary network of provision, with better connections with communities and stakeholders.

The 2007-12 Strategy starts with the Government's three high-level goals of 'economic transformation', 'families young and old' and 'national identity'. It sets out the expected contribution of tertiary education to these goals, namely:

— Success for all New Zealanders through lifelong learning

— Creating and applying knowledge to drive innovation

— Stronger connections between tertiary education organisations and the communities they serve.

These expected contributions are underpinned by attention to 'distinctive contributions', which recognises the key strengths and differences between tertiary education organisations. This approach is intended to ensure a diversity of tertiary education provision, develop critical mass and expertise, assist decision making and minimise undesirable duplication.

The Strategy sets out four priority outcomes – which would previously have been set out in a separate Statement of Tertiary Education Priorities. These priority outcomes signal where the government believes there should be increased effort, and in some cases investment, in order to achieve a shift in the system. The priority outcomes are:

— Increased educational success for young New Zealanders – more achieving qualifications at level four and above by age 25

— Increased literacy, numeracy and language levels for the workforce

— Increasing the achievement of advanced trade, technical and professional qualifications to meet regional and national industry needs

— Improving research connections and linkages to create economic opportunities.

2 Monitoring the Strategy

This document sets out the approach and framework that will be used to monitor the second Tertiary Education Strategy. This document needs to be read alongside the Tertiary Education Strategy document itself and TEC's Investment Guidance 2008-2010, which sets out how the strategy will be implemented through the investment process.

The monitoring framework provides the overall structure for how progress against the Strategy will be assessed. It sets out the indicators that will be used, the data required to support the indicators and notes areas where further data and analysis may be required.

2.1 Purpose of monitoring

The purpose of monitoring the Strategy is to provide ongoing timely information on the progress of the tertiary education system against the Strategy. Monitoring will help make sense of the extent to which the intended changes are happening and to what degree. The monitoring information will provide a broad picture that enables understanding of:

— the contribution of tertiary education to Government goals

— the general direction and trends in tertiary education in relation to the focus areas of the Strategy

— overall progress towards the priority outcomes

— the effect of the tertiary education reforms, including investing in a plan, developing a network of provision and focus on distinctive contributions.

The results of the monitoring project will:

— inform Ministers of the overall progress being made against the Strategy

— provide system-level, contextual information to inform ongoing planning and decisions by tertiary education organisations and the Tertiary Education Commission (TEC)

— provide context for the monitoring of the Crown Entities (TEC, NZQA and Career Services)

— provide alerts to any possible need to reconsider the policy mix

— inform the next set of tertiary education priorities and future investment plans

— feed into developing the next Strategy.

2.2 Roles and relationships

The Ministry of Education will lead the work on monitoring the Strategy and be responsible for publication of reports. The project will draw on and synthesise a wide range of monitoring information that is already being collected and developed across a number of departments,

ministries and agencies. It will complement these activities by bringing together a broad overview of change and achievement.

The Ministry is working in close collaboration with the TEC and the New Zealand Qualifications Authority (NZQA) to ensure that the overall monitoring of the tertiary education system is connected and aligned, and to avoid duplication of effort.

The Ministry is working with the TEC on the definition and shaping of the performance monitoring processes and indicators that the TEC is developing during this first year of the investing in a plan process. The approach to monitoring tertiary educations organisations against performance indicators as set out in the investment plans is still developmental.

The Ministry is working with NZQA on developing quality assurance information, including self-evaluation standards for providers. The Ministry is also working with the NZQA to make better use of the data from the National Qualifications Framework. Key findings from this information will feed into the Ministry's monitoring of the Strategy.

Similarly, the Ministry will work with the Department of Labour with regard to monitoring skills and labour-market outcomes, with the Ministry of Economic Development with regard to monitoring economic transformation and with the Ministry of Research, Science and Technology with regard to monitoring knowledge development and transfer.

2.3   Principles of monitoring

The monitoring of the Strategy is underpinned by the following principles:

— The monitoring needs to be true to the published Strategy document so as to avoid reinterpreting the Strategy through the monitoring

— The monitoring will include an awareness of change across the system, as well as change related to the Strategy, so as to pick up wider impacts and provide alerts to unintended consequences

— In reporting on change, monitoring reports will be cognisant of developments in the policy environment and the wider social and economic context, as well as providing appropriate points of international comparison

— Monitoring will make use of existing data, information and analysis as much as possible.

2.4   Approach to monitoring

Monitoring will assess the progress of the system at various levels, including:

— Outcomes being achieved or improved relating to the Strategy

— The degree of progress being made to achieve aspects of the Strategy

— Progress made in implementing specific policies and initiatives to support the Strategy

— The extent of improvement in relation to the size of investment being made by government, learners and employers.

For each section of the Strategy, the framework identifies the key indicators and measures that can be used to assess progress. These are a mix of quantitative indicators that can provide measures of change over time, balanced with qualitative information that can provide information on areas that are harder to measure meaningfully through quantitative data. There is also a mix of lead indicators, which provide information on change underway, and lag indicators, which provide information on achievements.

A narrow focus on indicators could easily miss the 'real' story. The system may be 'scoring' well on a whole range of indicators but not making the substantive shifts as indicated by the Strategy – or the other way around. The challenge of monitoring, therefore, is to highlight the overall messages, not just report on indicators.

Monitoring can only provide a partial and selective view of change across a system that is as complex and dynamic as tertiary education. Therefore, the results need to be considered alongside other information, such as research and expert advice.

The monitoring reports will provide a broad system overview, while highlighting differences by sub-sector, level of study and population groups as appropriate. Attention may also be given to regional differences, where this is relevant.

Within each section, results for Māori and Pasifika will be highlighted where data is available. In addition to this, a summary of key shifts for Māori and Pasifika will be included in the monitoring reports. These summaries will be related to Ka Hikitia – Managing for Success (the new Māori education strategy) and the revised Pasifika Education Plan. (See sections 8, page 25 and 9, page 27).

The new approach to funding is focused around 'investing in a plan'. This marks a conceptual and practical shift from funding per-student to making investment decisions with a view to a return on the investments by way of educational outcomes. This shift will be reflected in the monitoring by looking at the question of value for money. Initially, the approach will be to identify the shifts in investment by government, learners and employers alongside the progress being made towards improved outcomes. This will provide the basic information for making judgements about the value being returned on investments.

The current Strategy sets out new areas of challenge for the tertiary education system. In a number of these areas there is a lack of current, robust data to assess progress. In many cases this data will become available over the period of the Strategy as new data sets are developed and providers develop their own performance indicators to cover these areas. This means that the depth and breadth of monitoring will develop over the period of the Strategy.

2.5   Monitoring reports

As with the first Strategy, there will be annual monitoring reports. The balance of material in the reports will reflect the stages of the three-year funding cycles. The first report will be produced in 2008. It will be a baseline monitoring report, with a strong focus on the cross-system indicators and the areas of expected contribution of tertiary education. The 2009 report will have a greater focus on contribution to government goals, distinctive contributions and the priority outcomes, to feed into discussions of priorities for the next three year funding period. The 2010 report is likely to return to a focus on cross-system indicators and areas of expected contribution to provide context for the development of tertiary education organisation investment plans.

2.6   Evaluation

Towards the end of the strategy period, some evaluative work will be undertaken. This work will firstly focus on how well the strategy has worked as a means of shaping planning and priority setting. This includes the question of to what extent the sector has 'taken ownership' of the Strategy. Results from this evaluation will help further shape the next strategy. An evaluative report tracing the overall progress of the sector towards the strategy goals and priorities will also be produced after the period of the strategy.

2.7   Risks

There are some risks for this project that will be addressed on an ongoing basis.

Risk	Likelihood / Impact	Mitigation
Multiple indicators of the same outcome may be used in different contexts and/or by different agencies	M / M	The Ministry will work internally and with other agencies to develop more consistency across tertiary education indicators. Where similar indicators are used for different purposes appropriate caveats will be provided
There may be confusion regarding the different monitoring roles of the Ministry, TEC and NZQA	M / M	Ministry, TEC and NZQA need to work together to clearly communicate the complementary roles of each agency. Where possible, the monitoring work of the three agencies should be presented together.
Monitoring information may be misconstrued by readers and/or conclusions drawn that were not intended or supported by the data	M / M	Clear caveats and explanations of the nature, limits and application of the information will be provided in the monitoring reports.
There could be significant shifts in government policy making aspects of the Strategy less relevant or obsolete	L / M	It is quite likely that the Strategy would be revised to address any substantive policy shifts. Monitoring of such areas will incorporate the shifts in policy once it is implemented.
There is a lack of meaningful data and information to monitor some aspects of the Strategy	M / L	Where this is the case, it will be clearly noted that meaningful data is unavailable and the limits of existing data highlighted.

3 Cross-system indicators

As with monitoring of the first Tertiary Education Strategy, the monitoring reports will include a set of cross-system indicators[1] to provide contextual information on the state of the tertiary education system and outcomes being achieved, against which broader changes resulting from the TES can be monitored. These indicators provide enduring measures of the health of the tertiary education system. Changes in these indicators also provide an alert to possible unintended consequences (positive and negative) of the changes implemented under the Strategy.

Below is the list of indicators to be examined. The amount of detail in which these are reported will vary from year to year, depending on when new information is available and the extent of change over time. Other indicators may be added as new information becomes available.

1. Outcomes of tertiary education:

    a. Post-study income and employment

    b. Public and private returns on tertiary education[2]

    c. Living standards[3]

    d. Health[4]

    e. Social and cultural participation[5]

2. Research within the tertiary education sector

    a. Value and nature of research undertaken[6]

    b. Research output and impact[7]

    c. Contribution to knowledge development[8]

3. Attainment of the adult population

    a. Literacy, numeracy and language skills[9]

    b. Qualification attainment[10]

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[1] Referred to as 'cross-strategy indicators' in the monitoring reports for the first strategy.

[2] Using the OECD formula for annual tracking and informed by more in-depth research studies.

[3] Currently using the Economic Living Standards research from the Ministry of Social Development. In future, the General Social Survey proposed by Statistics New Zealand may provide more detailed information.

[4] Currently the main data available relates to mortality. The proposed General Social Survey may provide additional data in this area.

[5] Presently, no indicators are available in this area. However, new information collected by Statistics New Zealand through the 2008/09 Time Use Survey and the proposed General Social Survey may fill this gap.

[6] Largely using funding and expenditure data from PBRF, the Research and Development Survey and Ministry of Research, Science and Technology score-card to look at research within the tertiary education sector within the wider context of New Zealand research and development.

[7] Using bibliometric measures of output and impact.

[8] Summarising information presented later in this framework.

[9] Using data from the International Adult Literacy Survey (1996) and Adult Literacy and Life-skills Survey (2006), and the Surveys of the Health of the Māori Language (2001 and 2006).

4. Participation, progression, retention and completion in tertiary education[11]

5. Affordability of tertiary education

    a. to students and families[12]

    b. to government[13]

6. Tertiary education organisations:

    a. Changes in size and contribution of sub-sectors[14]

    b. Sustainability and viability.[15]

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[10] Using data from the Census and Household Labour Force Survey.

[11] Work is underway to provide comparable measures across provider-based and work-based tertiary education.

[12] Including comparison of average fees to household incomes, take-up of student allowances and average loan drawing and balances and repayment times.

[13] Total funding (nominal and real), as well as a proportion of GDP and government expenditure.

[14] Funding and student numbers, as well as summarised information from distinctive contributions, which is set out later in the framework.

[15] Including financial viability, as well as workforce and organisational sustainability indicators, where available.

4 Contribution to Government's Goals for New Zealand

The Government's goals for New Zealand provide the context for the Strategy. The Strategy sets a direction to increase the contribution made by tertiary education to these goals. The overall goal is for "a high income, knowledge-based economy, which is both innovative and creative, and provides a unique quality of life for all New Zealanders." This is supported by the three specific goals of economic transformation, families – young and old, and national identity.

Monitoring will focus on the specific contributions of tertiary education to furthering these goals. Key indicators are set out below. These indicators have been identified from the policy work programmes for each goal and focus on areas where tertiary education has a specific contribution. In most cases, the indicators will summarise more detailed information presented later in the framework, and will include substantial qualitative information.

4.1 Economic Transformation

working to progress our economic transformation to a high income, knowledge based market economy, which is both innovative and creative and provides a unique quality of life to all New Zealanders[16]

The work programme to advance economic transformation covers developing a world class infrastructure, environmental sustainability, innovative and productive workplaces, globally competitive firms and developing Auckland as an internationally competitive city[17]. Areas where the tertiary education system will contribute to this work programme include:

— Research that supports environmental sustainability and innovation in the workplace, including the development of an Auckland Innovation Centre

— Improving skills and skill utilisation in the workforce, particularly through raising levels of literacy, language and numeracy and improving the responsiveness of the tertiary education system to the skills needs of industry and business

— Improved transfer of research-based knowledge to industry and business

— Better aligning the government's investment across education and training, research, science and technology and business and market development.

Key indicators for assessing the contribution of the tertiary education system to Economic Transformation include:

— Contribution of tertiary-based research to sustainability and innovation

— Match of the supply of skills through tertiary education with the demand for skills in the workplace

— Upskilling the workforce in literacy, language and numeracy

— Alignment of research and education with priority areas for economic transformation

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[16] Department of Prime Minister and Cabinet, *Government Priorities,* April 2006.

[17] Ministry of Economic Development, *Advancing Economic Transformation,* paper to Cabinet Policy Committee, 8 November 2007.

— Relationship between tertiary education attainment and economic growth and firm performance.

4.2   Families – Young and Old

all families, young and old, have the support and choices they need to be secure and be able to reach their full potential within our knowledge based economy[18]

The Families – Young and Old work programme covers five sub-themes of strong families, healthy, confident kids, better health for all, strong and safe communities, and positive aging. These are supported by priority issues. The key priority issue for education is 'establishing foundations for life-long learning'.[19]

Key indicators for assessing the contribution of the tertiary education system to Families – Young and Old include:

— Transition from school to tertiary education and employment

— Literacy, language and numeracy in the adult population

— Contribution of research to family, social and community well-being.

4.3   National Identity

all New Zealanders to be able to take pride in who and what we are, through our arts, culture, film, sports and music, our appreciation of our natural environment, our understanding of our history and our stance on international issues[20]

Areas of policy focus under National Identity include strengthening New Zealand's presence in the world, protecting and connecting with our cultural and historical heritage, resolution of Treaty claims, promoting New Zealand culture, particularly through broadcasting, and conservation of the natural environment.[21]

Key indicators for assessing the contribution of the tertiary education system to National Identity include:

— Tertiary education connections with international stakeholders

— Contribution of research to culture, heritage, natural environment and identity

— Supporting sustainability, use and expression of te reo Māori.

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[18] Department of Prime Minister and Cabinet, *Government Priorities,* April 2006.

[19] Ministry of Social Development, *Families Young and Old – transformative social policy,* paper to Cabinet Policy Committee, 2007.

[20] Department of Prime Minister and Cabinet, *Government Priorities,* April 2006.

[21] *Budget 2007: National Identity,* http://www.beehive.govt.nz/, The Treasury, *Budget 2007, Executive Summary.*

5 Expected contribution of tertiary education

The Strategy sets out three areas of expected contribution that provide an enduring direction for the tertiary education sector. Within each area of contribution, specific areas of focus are identified.

Monitoring of each area of contribution will involve a 'basket of indicators' that provides a sense of the overall progress being made, with reference to the specific areas of focus. The level of detail of information on the areas of focus is variable, along with the measurability of some of the areas referenced. In some cases, selected highlights will be reported from detailed information. In other cases, the indicators will provide a general picture of the health of the tertiary education system in relation to the area of expected contribution.

5.1 Success for all New Zealanders through Lifelong Learning

This area of expected contribution relates to continued broad participation by New Zealanders in quality and relevant tertiary education. There are five specific areas of focus. The key indicators for each focus area are set out below.

Ensuring maximum educational opportunities for all New Zealanders

Participation and achievement in tertiary education for the following subgroups, by level, gender and age:

— Māori

— Pasifika

— People with disabilities[22]

— Migrants and refugees[23]

— Students in remote areas[24]

— Students from lower socioeconomic backgrounds[25]

— People upgrading their existing qualifications[26]

— People upskilling to reenter the workforce[27]

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[22] Disability is self-reported on enrolment – further work is required to assess the quality of this information.

[23] A proxy for this is students who are NZ permanent residents by ethnic group. This could also be informed by immigration related research, such as the Longitudinal Immigration Survey.

[24] This will require use of post-codes for student's home addresses, which will be collected from 2008. In the meantime, some information is available for students going from school to tertiary education, using the location of their last secondary school.

[25] For students who were recently at school, the decile of the school provides one proxy for socio-economic status. Post-codes may also be able to be used in conjunction with the New Zealand Deprivation Index. More detailed research, using richer data sets, can also be drawn on.

[26] Particularly focusing on adult students taking qualifications such as graduate and postgraduate certificates and diplomas and advanced trade certificates and diplomas.

[27] Particularly students aged 25 and over whose prior activity was not in employment or study.

Strong foundation skills

Adult literacy in the population

— Results from the 2006 Adult Literacy and Life-skills Survey (ALL), compared with the 1996 International Adult Literacy Survey (IALS)

— Proportion of the population with no or few qualifications as proxy for tracking change over time.[28]

Successful transitions from schooling: ensuring the 'baby blip' generation achieves is potential

Proportion of 15 to 24 year olds not in employment, education or training.

Proportion of school leavers moving into tertiary education

Proportion of young people achieving a qualification at level 4 or above by the age of 25

Building relevant skills and competencies for productivity and innovation

Participation, achievement and labour market outcomes in:

— advanced trade, technical and professional qualifications[29]

— work-based learning

— postgraduate qualifications

Match of education supply and industry demand for qualifications[30]

Building skills and competencies for social and cultural development

Participation and achievement in subjects relating to language, culture and creative arts.[31]

5.2   Creating and applying knowledge to drive innovation

This area of expected contribution relates to further developing research and scholarship to inform teaching and contribute to economic and social development. Three areas of focus are specified. The key indicators for each focus area are set out below.

Supporting links between research, scholarship and teaching

— Quality and intensity of research[32] compared with research degree enrolments and completion and main areas of teaching at degree and postgraduate levels

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[28] This will be informed by further work on the correlations of educational qualifications and literacy, using data from IALS and ALL.

[29] As defined for the priority three – refer page 22.

[30] Drawing on information currently published, and being developed, by the Department of Labour. New information sources are likely to also be developed to support the Unified Skills Strategy.

[31] This will require a broad basket of subjects, so as not to define this too narrowly. Participation and achievement can then be looked at across qualification fields of study.

[32] Using PBRF information

Focusing resources for greatest effect

⸺ Areas of specialisation and strength[33] mapped against the proposed "Areas of Focus to Support Economic Transformation"[34] and published "Areas for Transformational Research, Science and Technology"[35]

Improving research connections and linkages.

⸺ External research income by source[36]

⸺ Patents, spin-offs, products services and processes created[37]

⸺ Co-authored papers[38]

⸺ Co-funding and sub-contracting[39]

⸺ Students supported by funding / internships[40]

Where possible analysis will look at who the links are formed with (industry, CRIs, other TEOs, etc), and, if possible, for what purpose and what value is added.

The indicators for this area of expected contribution are best suited to university research. Further work needs to be done to look at how best to capture the contribution of wānanga and ITPs. Wānanga, for instance, have unique approaches to integrating research and teaching at both undergraduate and post-graduate levels. Their contributions to indigenous knowledge may not be best measured through publications and citations. The types of knowledge required and valued by iwi will vary from one to another depending on their particular interests and stages of development. Similarly, ITPs contribute through direct connections with industry that involve more informal arrangements for knowledge transfer and connections with specific teaching programmes. There is also more informal knowledge transfer to local communities, Māori and iwi and Pasifika communities that may drive and influence community economic and social development.

Some of this information can be captured from investment plans and annual reports of wānanga and ITPs. Further information may be available from specific research projects on connections and knowledge transfer.

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[33] Using information from the PBRF and other sources such as bibliometrics.

[34] These have been agreed in principle by Cabinet to be pastoral systems, environmental systems, advanced food derivative / advanced biotechnology, health solutions, smart materials and digital content and tools (Ministry of Economic Development, Briefing to the Incoming Minister, 2008). Further work is underway to define the specific areas of focus.

[35] These have been identified by the Ministry of Research, Science and Technology as high-tech platforms, future foods, transformational cities and towns, environmental sensing for real-time resource management, innovative health delivery, and making renewable energy work for New Zealand. Details are published on the Ministry of Research, Science and Technology website.

[36] The main source of information will be external research income, supplied for the PBRF, net of funding from Vote: Research, Science and Technology. The Research and Development Survey also provides some information. Data collection for R&D tax incentive may also provide better information on overall private spend on R&D.

[37] Detailed information will be available for research funded through Vote: Research, Science and Technology

[38] Using bibilometric analysis – particularly looking at CRI and university/ITP co-authorship.

[39] Information is only available for Vote: Research, Science and Technology funded research.

[40] Information is only available for Vote: Research, Science and Technology funded research.

5.3   Strong connections between tertiary education organisations and the communities they serve

The Strategy notes that connections "are not really an outcome but more a way of doing things". This area of expected contribution is about organisations being able to identify and respond effectively and efficiently to the national goals and needs of their communities. Three focus areas are specified. The key indicators for each focus area are set out below. These indicators will be assessed qualitatively from a range of information sources, as indicated below. The focus will be on the overall health and quality of the relationships, rather than measuring the number of connections or engagements. Quality will be assessed with regard to the mutually agreed outcomes being achieved from relationships for providers, learners and stakeholder groups.[41]

Connections to improve quality and relevance of education and knowledge

Quality of engagement between tertiary education organisations, with research institutions, with tertiary education providers internationally and with schools.

Connections to support economic transformation

Quality of engagement with business and industry and regional development agencies.

Connections to support social, cultural and environmental outcomes

Quality of engagement with Māori, Pasifika, the broader communities and environmental groups and agencies.

Information on the quality of engagement with these groups will be obtained from

— Priority given to, and steps taken to improve the quality of engagement with, stakeholder groups in annual reports and plans

— Consultation undertaken in developing plans and evidence of how it has influenced offerings

— ITP regional statements of needs

— Further research with key stakeholder groups, building on research for the first Strategy[42]

— Possibly information from surveys such as the Skills and Training Survey run by Business New Zealand and the Industry Training Federation and the Statistics New Zealand's Business Operations Survey and Longitudinal Business Dataset, as well as information arising from the development of the Unified Skills Strategy.

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[41] See Paterson et al (2006), *Engagement of key stakeholder groups with the tertiary education providers,* pp 56-58 for a discussion 'a conceptual model for effective engagement'.

[42] This will be undertaken jointly with the TEC's stakeholder engagement team.

6 Distinctive contributions

'Distinctive contributions' sets out the government's expectations of the contributions to be made by different types of tertiary education organisations. The approach recognises the key strengths and differences between organisations, in order to ensure a diversity of provision, develop critical mass and expertise, assist decision-making and minimise undesirable duplication.

The TEC is accountable for this area and will be monitoring distinctive contributions in some detail for each provider, as well as aggregating the information up to the sub-sector level and looking at it by other dimensions, such as industry. Most of the material in this area will be summarised from TEC reports.

The monitoring of the TES will summarise distinctive contributions from a system point of view. Two approaches will be used: cross sub-sector indicators that summarise the overall shape and contribution of each sub-sector relative to the others; and information on key features of each sub-sector using more qualitative information.

6.1 Cross sub-sector indicators

A set of indicators will be used to look at relative strengths and performance across sub-sectors. The sub-sectors include universities, institutes of technology and polytechnics, wānanga, private training establishments and industry training organisations. The adult and community sub-sector will not be included as provision in this area is not comparable with other sub-sectors. With regard to industry training, work is underway which will enable better comparison across work-based and provider-based education.

The indicators will cover:

— Participation and achievement, with a focus on:

  o Level 4 to 7 certificates and diplomas

  o Bachelors degrees

  o Postgraduate qualifications

— Progression to higher levels of study, including across sub-sectors, with a focus on progression to:

  o Level 4 to 7 certificates and diplomas

  o Bachelors degrees

  o Postgraduate qualifications

— Research performance, using PBRF and bibliometric measures

— Engagement with stakeholders regarding education and research.

6.2   Sub-sector specific indicators

Information for sub-sector specific indicators will largely come from KPIs in annual reports and investment plans. TEC's investment guidance required KPIs in these areas to be included in investment plans. It is likely that the public institutions will report these KPIs in their subsequent annual reports. However, it is uncertain as to how consistent the information will be across institutions. The TEC will derive aggregated information on these KPIs from plans. The monitoring of the TES will summarise that analysis.

Commentary on the overall status of each sub-sector regarding capacity, financial performance and risks may also be included.

Universities

— Collaboration with other universities to build critical mass in teaching and research, particularly at post-graduate level[43]

— Contribution to economic growth through teaching and research

— Developing quality and performance in teaching and research.

Institutes of technology and polytechnics

— Shifts in the mix of provision across the network, within regions and within institutions and industry sectors

— Identifying and addressing of regional needs and priorities

— Collaboration with other TEOs to develop capability and rationalise provision

— Links with industry focusing on applied technological development.

Wānanga

— Developing quality education and research in accordance with kaupapa Māori philosophies, principles and approaches

— Collaboration with other TEOs to advance mātauranga Māori and provide sector-wide leadership

— Re-engaging learners with low or no school qualifications

— Collaboration and consolidation to improve pathways between wānanga and with other parts of the sector and visa versa

Industry training organisations

— Developing leadership role with industry and employers

— Development of industry qualifications and take-up by other TEOs

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[43] This can be supplemented with bibliometric analysis on co-authorship across universities.

— Collaboration with ITPs and other TEOs.

Private training establishments

— Stakeholder engagement in areas of niche contribution.

Adult and community education providers

— Contribution to national adult and community education priorities.

Other tertiary education providers

— Contribution in area of national significance.

7 Priority outcomes for Tertiary Education

The priority outcomes signal where the government believes there should be increased effort and in some cases investment, in order to achieve a shift in the system.

This is a core area of TEC monitoring and accountability. The monitoring of the TES will provide a system overview of change and progress, drawing on information from TEC on the progress of providers and sub-sectors.

The Strategy document includes success measures for each priority. These were written to guide tertiary education organisations in their thinking about measuring success and the development of key performance indicators. These measures will be used in monitoring of the TES, with an emphasis on the progress towards the desired outcome for the priority area.

7.1 Increasing educational success of young New Zealanders – more achieving qualifications at level four and above by age 25

This priority focuses tertiary education organisations on the 'baby blip' generation coming through from secondary school to tertiary education. It puts emphasis on increased rates of participation, progression, retention and achievement.

Outcome indicators

— Proportion of population aged 25 to 39 with tertiary qualifications at level 4 and above[44]

— Labour-market outcomes for 25 to 39 year olds with tertiary qualifications at level 4 and above[45]

Success measures

— Participation rate of students aged 18 to 25 in qualifications at level four and above

— Retention and completion rates of students aged under 25 in qualifications at level four and above[46]

— Progression of students aged under 20 from school and tertiary qualifications at level one to three to qualifications at level four and above[47]

These indicators will be monitored for the population as a whole and for Māori and Pasifika.

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[44] Census data will be used to provide detailed attainment rates by level. The Household Labour Force Survey will provide annual monitoring of attainment at bachelors level and above. It doesn't provide accurate differentiation of below-degree-level qualifications. Commentary on the spread of levels and fields achieved will be included.

[45] This indicator will cover employment and income and use same data sources as previous indicator. It provides context on the changing value of tertiary qualifications.

[46] Reporting will be at both course and qualification level.

[47] This will include a measure of students who progress from lower levels without completing the lower-level qualification, as well as those who complete a lower-level qualification and then progress to a higher-level qualification.

7.2   Increasing literacy, numeracy and language levels for the workforce

The focus of this priority is to increase the number and proportion of adults with sufficient literacy, language and numeracy skills to participate effectively in the workforce. Sufficient skills is defined as attaining level 3 or above on the Adult Literacy and Life Skills Survey scale, which is considered to be the level of skill needed to participate effectively in a knowledge-based society. The workforce includes people in employment and people who are unemployed and looking for work. The policy focus also extends to those who are preparing to (re)enter the workforce, including students, sole parents and prisoners.

Outcome indicators

⎯   Proportion of workforce with low literacy and numeracy[48]

⎯   Proportion of workforce with low or no educational qualifications[49]

⎯   Information on the links between improving literacy, language and numeracy in the workforce and improved productivity and employability[50]

Success measures

Assessing the following measures will require drawing on a range of data from different sources. In a number of areas, work is underway to develop the data sources as new or extended funding is implemented.

At this stage, there is a range of approaches to assessing learner gains. A national literacy assessment tool is scheduled for implementation in 2010. In the meantime, a range of programme specific measures will need to be considered to gain an overall understanding of learner success, where these are available. These measures may include assessments of skills gain, provider reports of satisfactory programme completion and attainment of unit standards and qualifications.

The Department of Labour's and TEC's monitoring and evaluation of the supply side of the Language, Literacy and Numeracy Strategy will be an important source on information for this priority, particularly with regard to the success of various initiatives.

⎯   Successful participation by people in the workforce with low literacy, language and numeracy skills in quality training focussed on lifting literacy, language and/or numeracy

     o   Participation, retention and achievement in literacy, language and numeracy programmes funded by the TEC, including workplace literacy, upskilling partnerships and the foundation learning pool

     o   Participation and course and qualification completion by people in level 1 to 3 courses with language, literacy and numeracy content, which are funded through the student achievement component[51], industry training and targeted training.[52]

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[48] The ALL survey will provide baseline data on this measure.

[49] This will provide a proxy for tracking outcomes over time. It will be informed by analysis of correlations between low literacy and numeracy and educational attainment from the ALL survey.

[50] The Language, Literacy and Numeracy Strategy research, monitoring and evaluation programme will provide some of the evidence here – as well as other research on the links between literacy, language and numeracy and factors contributing to improved productivity.

[51] Currently a narrow set of courses which receive a language, literacy and numeracy top-up can be identified. TEC is currently assessing other options for identifying these courses, which will then be discussed with providers.

[52] Further work is required to develop ways of identifying language, literacy and numeracy provision within industry training and targeted training in a systematic way.

Particular focus will be on students who have no or low school qualifications and limited previous engagement in tertiary education.

- o Increased number of providers who meet the Foundation Learning Quality Assurance Requirements as a measure of the availability of quality training

- o Key performance indicators relating to the ITP's distinctive contribution of "supporting progression to higher levels of learning or work through foundation education"; and the wānanga's distinctive contribution of "re-engaging learners into education".

— Completion of literacy, language and numeracy educator qualifications

- o Participation, retention and completion in the NZQA approved certificates for foundation educators[53]

- o Take up of TEC study grants for educator qualifications

- o Development of pathways and higher-level educator qualifications

- o Participation, retention and completion in other adult educator qualifications.[54]

— Participation by tutors and providers in professional development programmes supporting effective teaching practice for lifting literacy, language and numeracy skills.

- o Participation in TEC professional development initiatives

- o Tertiary education organisation approaches professional development in language, literacy and numeracy teaching practice[55]

These indicators will be monitored for the population as a whole and for Māori and Pasifika. There will also be a focus on provision for ESOL students. Looking at the contribution of employers will be part of assessing value for money for this priority.

7.3 Increasing the achievement of advanced trade, technical and professional qualifications to meet regional and national industry needs

This priority focuses on increasing the number of people with advanced trade, technical and professional qualifications.

Outcome indicators

— Proportion of workforce in trade, technical and professional occupations with advanced-level qualifications[56]

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[53] Two certificates have been approved. One is aimed at vocational tutors and the other at specialist LLN tutors.

[54] This will provide a point of comparison for uptake of the new qualifications – as well as coverage of other qualifications which may contain some emphasis on teaching literacy, language and numeracy.

[55] As signalled in plans and reported in annual reports.

[56] Census data will be used to provide detailed attainment rates by occupation and level. The Household Labour Force Survey will provide annual monitoring of attainment at bachelors level and above by occupation. It doesn't provide accurate differentiation of below-degree-level qualifications.

— Persistent skill shortages in trade, technical and professional occupations[57]

— Changes in occupational income premiums by qualification level over time[58]

Success measures

— Using a set of advanced trade, technical and professional qualifications that can be monitored consistently and relate to areas of ongoing skill need:

    o Participation, retention and completion[59]

    o Progression of students from lower levels to advanced levels

— Increased take up of national and industry qualifications, rather than local certificates

— Evidence of employer engagement in qualification design[60]

These indicators will be monitored for the population as a whole and for Māori and Pasifika.

Work is underway to identify a set of advanced trade, technical and professional qualifications to monitor progress on this priority at a system level. The work involves identifying occupations with high, unmet demand for advanced level qualifications using Department of Labour and census data and then matching these occupations to qualifications required.

7.4 Improved research connections and linkages to create economic opportunities

This priority focuses on the development of linkages and connections between research producers and research users and how these create economic opportunities.

Outcome indicators

— External research income by source, particularly from industry[61]

— Patents, spin-offs, products, services and processes created[62]

— Co-authored papers[63]

Success measures

— Co-funding and sub-contracting[64]

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[57] Using the Survey of Employers who have Recently Advertised and other information collected, and being developed, by the Department of Labour on skill supply and demand. New information may also be developed to support the Unified Skills Strategy.

[58] Census data will be used to provide detailed information by occupation and level. The New Zealand Income Survey will provide annual monitoring by occupation for bachelors level and above compared with lower level tertiary and school qualifications only by occupation.

[59] The Ministry will also explore obtaining and using data from relevant professional registration boards to measure the number of people attaining registration, in addition to qualification completion.

[60] Using information from investment plans and annual reports.

[61] The main source of information will be external research income, supplied for the PBRF, net of funding from Vote: Research, Science and Technology. The Research and Development Survey also provides some information. Data collection for R&D tax incentive may also provide better information on overall private spend on R&D.

[62] Detailed information will be available for research funded through Vote: Research, Science and Technology

[63] Using bibilometric analysis – particularly looking at CRI and university/ITP co-authorship.

— Students supported by funding / internships[65]

— Industry seeing TEOs as a source of advice, leading to increased cooperation[66]

— Increased placement of research students in industry and business[67]

— ITOs partnering with TEOs on industry relevant research

— Other KPIs in investment plans relating to this priority, particularly for wānanga and ITPs.

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[64] Information is only available for Vote: Research, Science and Technology funded research.

[65] Information is only available for Vote: Research, Science and Technology funded research.

[66] As previously measured in the MoRST innovation survey, now part of the Business Operations Survey.

[67] As reported through investment plan KPIs.

8   Focus on Māori

Throughout the monitoring framework, indicators will be reported for Māori, where possible. However, reporting will give a stronger focus to the areas highlighted for Māori in the strategy document and the links with Ka Hikitia – Managing for Success – the Māori Education Strategy 2008-2012. The following indicators will be used to provide an overview of progress for Māori. These indicators will be reported by gender. Broader information, for example from Te Puni Kōkiri, will also be drawn on to provide context.

8.1   Highlighted areas for Māori

Success for all New Zealanders through lifelong learning

1. Increasing levels of Māori language literacy, information literacy, literacy, numeracy and other foundation skills:

    1. Adult literacy in the population (on page 14)

    2. Increasing literacy, numeracy and language levels in the workforce (on page 21)

2. Increasing participation and achievement – especially at bachelors level and above

    1. Educational attainment, participation, and achievement (on page 13)

3. Increasing participation in tertiary education from a younger age

    1. Increasing educational success for young New Zealanders – more achieving qualifications at level four and above by 25 (on page 20)

4. Strengthening the provision of kaupapa Māori tertiary education options

    1. Provision of courses and qualifications with a focus on te reo Māori, tikanga Māori and kaupapa Māori approaches across all sub-sectors.

    2. Distinctive contribution of wānanga (on page 18)

Creating and applying knowledge to drive innovation

5. Capacity of tertiary education sector to research in the area of Māori knowledge and development[68]

6. Development of new Māori researchers[69]

7. Distinctive contribution of wānanga in developing quality research in accordance with kaupapa Māori philosophies, principles and approaches (on page 18)

8. Research and knowledge transfer partnerships with Māori and iwi – including transfer of Māori knowledge to tertiary research[70]

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[68] PBRF information on research submitted to the Māori knowledge and development panel and development of Māori research staff across disciplines.

[69] Using information on postgraduate research degree completions

Strong connections between tertiary education organisations and the communities they serve

9. Connections with iwi and Māori to:

   1. Ensure provision of programmes and innovative approaches that support the aspirations of Māori communities

   2. Deliver tangible outcomes that support Māori social, cultural and economic development (on page 16).

8.2   Links to Ka Hikitia

Ka Hikitia focuses on improving teaching and learning of Māori students at secondary school in order to raise their educational achievement and to better prepare them for tertiary education and employment. The measures of progress in the tertiary sector include:

1. Increasing the entry of Māori school leavers to tertiary education at level 4 and above

2. Increasing Māori participation in Modern Apprenticeships

3. Increasing first-year retention for 18-19 year old Māori students in diplomas and bachelors degrees

These measures all relate quite closely to the priority outcomes of "increasing educational success of young New Zealanders" (on page 20).

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[70] From investment plans and annual reports.

9   Focus on Pasifika

Throughout the monitoring framework, indicators will be reported for Pasifika, where possible. A summary of overall progress for Pasifika will also be provided, using the updated Pasifika Education Plan tertiary goals as a framework.[71] These indicators will be reported by gender. Broader information, for example from the Ministry of Pacific Island Affairs, will also be drawn on to provide context.

Increasing educational success for young Pasifika people – more achieving qualifications at level four and above by age 25

1. Increased participation rates by Pasifika people aged under 25 in qualifications at level four and above

2. Increased retention and completion rates of Pasifika students aged under 25 in qualifications at level four and above

3. Increased progression rates for Pasifika students aged under 20 from school and tertiary education qualifications at levels one to three to qualifications at level four and above (on page 20)

Increasing literacy, numeracy and language levels for the workforce

1. Increased participation of Pasifika people in the workforce with foundation learning needs in quality training focused on lifting literacy, language and numeracy skills (on page 21)

Increasing the achievement of advanced trade, technical and professional qualifications by Pasifika people to meet regional and national industry needs

1. Increase the participation of Pasifika people in Modern Apprenticeships

2. Increased participation in advanced level trade, technical and professional qualifications

3. Increased completion of advanced level trade, technical and professional qualifications

4. Increased progression of students at levels one to four to advanced level trade, technical and professional qualifications (on page 22)

Ensure that the needs and aspirations of Pasifika communities are addressed by building strong connections between Tertiary Education Organisations and the communities they serve

— The quality of evidence produced by TEOs to illustrate the type and depth of TEO relationships/connections with Pasifika communities and TEO responsiveness to the tertiary education needs and aspirations identified by, and for, Pasifika stakeholders

— Regional statements (developed through the regional facilitation process) fully capture the needs of Pasifika stakeholders (on page 16).

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[71] The goals presented below are currently in draft and being considered by Ministers. Some of them will have specific targets to be achieved.