



**Tertiary Education Commission**  
**Te Amorangi Mātauranga Matua**

Performance-Based Research Fund

**Annual Report**  
2010

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## Introduction and contents

### Content of this report

The Performance-Based Research Fund (PBRF) 2010 Annual Report provides information about how each participating tertiary education organisation (TEO) performed against the three PBRF measures in the 2010 calendar year.

It sets out the final funding allocations for 2010 and the indicative funding allocations for 2011. Juxtaposing these figures with financial data from the previous year enables further comparative analysis to be drawn.

This report also supplies results for the research degree completions (RDC) and external research income (ERI) measures, incorporating data from the years 2006-2009 and additional information on subject area weightings.

### Chapter outline

Chapter one describes how the PBRF funding process works, and gives a brief overview of funding for 2010 and 2011.

Chapter two outlines the Quality Evaluation (QE) measure.

Chapter three outlines the ERI measure.

Chapter four outlines the RDC measure and also contains supplementary data and analysis on RDC counts over both the 2010 final funding and 2011 indicative funding periods.

## Chapter 1 : Overview

### Introduction

#### Fund background

1. The Tertiary Education Commission Te Amorangi Mātauranga Matua (TEC) manages the PBRF which has the primary goal of encouraging and rewarding excellent research in New Zealand's tertiary education sector. This involves assessing the quality of research carried out by degree-granting tertiary education organisations (TEOs)<sup>1</sup> – and their wholly-owned subsidiaries – and funding them on the basis of their research performance.
2. The PBRF considers the quality of research carried out by researchers working at participating TEOs, rather than the quantity of research outputs or the particular nature of the research as such. The purpose of the PBRF is not to provide funding for research projects, but to reward research excellence and support TEOs to provide an environment that produces research of a high quality. One of the key reasons for taking this approach is to ensure that degree-level teaching is underpinned by high quality research activities.
3. The PBRF has grown since its introduction in 2003 to \$250 million per year in 2010.<sup>2</sup> The original funding that allowed the creation of the PBRF came from existing Vote Education research funding paid as a top-up to Student Component Funding to support the delivery of postgraduate courses.

#### Participants

4. A total of 45 TEOs met the eligibility criteria<sup>3</sup> for PBRF funding in 2009 and 2010. Of this group, 27 participated in the measures that form the PBRF. These participants include all eight of New Zealand's universities; ten of the 17 eligible institutes of technology and polytechnics (ITPs); two of the three eligible wānanga; and seven of the 17 eligible private training establishments (PTEs).

#### Components

5. The PBRF has three components: a periodic Quality Evaluation (QE) measure; a Research Degree Completions (RDC) measure; and an External Research Income (ERI) measure. In the PBRF funding formulae, these three components are weighted 60 percent, 25 percent, and 15 percent respectively.
6. For each of the components, a provider's share of funding is determined by its performance relative to other participating TEOs. Quality Evaluations were held in 2003 and 2006, with the latter setting TEOs' current QE ratios until the next round in 2012.

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<sup>1</sup> Industry Training Organisations (ITOs) are not eligible for PBRF funding.

<sup>2</sup> Unless otherwise specified, all funding figures in this report are GST exclusive and by calendar year.

<sup>3</sup> The PBRF Guidelines state that providers must have degree-granting authority and also participate in all three measures, even if their funding entitlement in one or more measure is likely to be zero.

The RDC and ERI measures are calculated annually using weighted three-year averages.

### **The 2012 Quality Evaluation and beyond**

7. In preparation for the 2012 Quality Evaluation, further consultation with the sector was undertaken during 2008-2010. New Guidelines were published by the TEC on 30 June 2010 and have been revised to provide further detail and clarification as required. Additional documents published in support of the 2012 Quality Evaluation can be found on the PBRF page of the TEC website.
8. The PBRF was reviewed following both the 2003 and 2006 Quality Evaluation rounds. A new review underway by the Ministry of Education will conclude in July 2013 with findings on the extent to which the PBRF has achieved its longer-term aims.

### **Applying the funding formulae**

9. Indicative PBRF funding allocations are made before the funding year starts, usually around November. These indicative allocations are based on TEOs' performance against each of the three PBRF measures and the funding pool size. This is measured using the most up-to-date information available for each measure at the time funding is calculated.
10. Participating TEOs receive monthly PBRF payments through the tertiary education funding system, with each monthly payment normally being of an equal amount. A final wash-up funding adjustment for each year is then made in around July of the following year. This is based on final information received from TEOs and takes into account any changes in a TEO's overall PBRF entitlement. Wash-up adjustments may be credits or debits.
11. The amount of a TEO's final PBRF entitlement may differ from its indicative allocation due to a range of factors which may include:
  - the size of the PBRF pool changing between the indicative allocation and the wash-up;
  - a TEO leaving the PBRF during the course of a year by ceasing operation or changing course offerings, which may increase the value of each remaining TEO's share;
  - errors found in PBRF data as a result of checks which, when corrected, may result in an increase or a decrease in the share of a TEO (with a corresponding adjustment for other TEOs); and
  - the overall number of RDC or amount of ERI increasing or decreasing, affecting the proportion of funding available to each TEO.

### **2010 final funding allocations**

12. A total of \$250.0 million in PBRF funding was available in 2010 and was allocated as shown in Table 1.1 below.

**Table 1.1: Final 2010 PBRF funding allocations – by measures**

TEO	Quality Evaluation	External Research Income	Research Degree Completions	Total Funding
University of Auckland	\$40,520,297	\$13,843,535	\$18,880,667	<b>\$73,244,499</b>
University of Otago (inc. Dunedin College of Education)	\$33,632,779	\$8,584,062	\$10,729,964	<b>\$52,946,805</b>
Massey University	\$21,830,726	\$4,632,232	\$8,553,337	<b>\$35,016,295</b>
University of Canterbury (inc. Christchurch College of Education)	\$15,894,288	\$2,608,402	\$8,628,278	<b>\$27,130,968</b>
Victoria University of Wellington	\$14,598,889	\$2,890,712	\$5,727,470	<b>\$23,217,071</b>
University of Waikato	\$9,566,957	\$1,788,248	\$4,272,878	<b>\$15,628,083</b>
Lincoln University	\$4,678,741	\$2,096,185	\$1,847,373	<b>\$8,622,299</b>
Auckland University of Technology	\$4,107,649	\$723,069	\$2,750,001	<b>\$7,580,719</b>
Unitec New Zealand	\$2,331,202	\$154,434	\$431,075	<b>\$2,916,711</b>
Otago Polytechnic	\$500,787	\$15,943	\$179,314	<b>\$696,044</b>
Waikato Institute of Technology	\$346,056	\$29,376	\$238,888	<b>\$614,320</b>
Manukau Institute of Technology	\$496,795	\$7,182	-	<b>\$503,977</b>
Christchurch Polytechnic Institute of Technology	\$376,071	\$48,183	-	<b>\$424,254</b>
Te Whare Wānanga O Awanuiārangi	\$199,457	\$17,850	\$59,771	<b>\$277,078</b>
Whitecliff College of Arts and Design	\$42,878	-	\$167,835	<b>\$210,713</b>
Open Polytechnic of New Zealand	\$174,765	\$19,205	-	<b>\$193,970</b>
Eastern Institute of Technology	\$159,684	\$6,048	-	<b>\$165,732</b>
Te Wānanga O Aotearoa	\$162,641	-	-	<b>\$162,641</b>
Nelson Marlborough Institute of Technology	\$85,350	-	-	<b>\$85,350</b>
Whitireia Community Polytechnic	\$63,578	\$13,150	-	<b>\$76,728</b>
Northland Polytechnic	\$54,559	\$7,064	-	<b>\$61,623</b>
Carey Baptist College	\$51,749	\$252	-	<b>\$52,001</b>
Laidlaw College	\$25,875	\$24	\$25,334	<b>\$51,233</b>
Bethlehem Institute of Education	\$22,178	\$7,080	-	<b>\$29,258</b>
AIS St Helens	\$22,178	-	-	<b>\$22,178</b>
Good Shepherd College	\$22,178	-	-	<b>\$22,178</b>
Anamata	\$12,937	\$3,075	-	<b>\$16,012</b>
<b>Total</b>	<b>\$149,981,244</b>	<b>\$37,495,311</b>	<b>\$62,492,185</b>	<b>\$249,968,740</b>

13. Due to calendar and financial year adjustments, the final amount available for 2010 allocations was approximately \$30,000 less than when indicative allocations were made.
14. All 27 PBRF-participating TEOs received funding through the Quality Evaluation measure in 2010. A total of \$150.0 million of PBRF funding was allocated between TEOs in 2010 based on 2006 Quality Evaluation scores.
15. For 2010, 22 providers were eligible to receive their share of \$37.5 million in ERI funding, based on a weighted average derived from their 2006-2008 performance.
16. Also based on performance in 2006-2008, a total of \$62.5 million in RDC funding was available for allocation to 14 TEOs in 2010.

### Universities

17. Together, New Zealand's eight universities received 97.37 percent of the total available final PBRF funding in 2010.
18. For almost all TEOs in 2010, the largest proportion of their final PBRF funding came from the QE measure. The exception to this rule was Whitecliffe College whose QE allocation made up 20.35 percent of its total funding, with the remaining 79.65 percent



derived from its RDCs. Also departing from receiving the bulk of funding from the QE, Laidlaw College received roughly equal proportions of funding from the QE and RDC components (50.50 percent and 49.45 percent, respectively).

19. Just as they did the previous year, the University of Auckland and the University of Otago together received slightly more than 50 percent of the total available funding in 2010. There were nevertheless distinct differences in the relative strengths of these two highest performing universities in the PBRF.
20. Of all participating TEOs, the University of Auckland received the greatest share of the total QE allocation. In terms of its overall PBRF funding, however, it received proportionately less from this measure than the University of Otago: the proportion of total funding made up by the QE component was 63.52 percent for the University of Otago, and 55.32 percent for the University of Auckland.
21. Conversely, the University of Auckland generated significantly higher proportions of funding from the two other components: RDC and ERI funding respectively made up 25.78 and 18.90 percent of its total allocation, while these same measures accounted for 20.27 and 16.21 percent of the University of Otago's overall PBRF funding.

#### **ITP sub-sector**

22. In 2010, the ITP sub-sector received 2.30 percent of the total PBRF funding. The performance-based distribution of this \$5.74 million was highly variable.
23. Unitec alone received more than 50 percent of the entire PBRF funds allocated to ITP sub-sector – a total of \$2.92 million, compared with the \$696,044 allocated to the second highest funded ITP, Otago Polytechnic. For each of the measures, Unitec received slightly more than all of the other ITPs combined.
24. While the QE accounted for the majority of each ITP's total PBRF allocation, the proportion of individual provider's funding made up of this measure ranged widely, from 56 percent at Waikato Institute of Technology to 100 percent at Nelson Marlborough Institute of Technology.
25. The highest individual proportions of ERI funding were generated by the otherwise lowest performing providers in the PBRF within the ITP sub-sector: funding from this component accounted for 17.14 percent of Whitireia's total allocation and for 11.46 percent of Northland Polytechnic's, compared with 5.29 percent of Unitec's.
26. However, each provider's proportion of ERI funding is not only a function of its performance against this measure, but also against the RDC (and QE) measure. Whitireia and Northland Polytechnic did not produce any RDC funding, and in dollar terms, they received relatively small amounts of ERI compared with higher performing providers with lesser ERI proportions but positive RDC returns.
27. Allocations for RDCs were paid to three of the ten PBRF-eligible ITPs, for which this measure was a significant source of revenue: RDC funding accounted for 38.89 percent of Waikato Institute of Technology's total PBRF allocation and contributed over a quarter of Otago Polytechnic's total allocation. RDC funding was sizeable for Unitec too, with its 14.8 percent share netting this provider more than \$431,000.

### Wānanga and PTE sub-sectors

28. The wānanga and PTE sub-sectors respectively received 0.18 and 0.16 percent of the total PBRF fund in 2010.
29. Of the two participating wānanga, Te Whare Wānanga o Awanuiārangi produced the strongest performance, attracting funding from all three measures to make up its total \$277,078 (of which 72.0 percent was from QE; 6.4 percent was from ERI; 21.6 percent was from RDC). Conversely, Te Wānanga o Aotearoa's lesser PBRF funding was derived entirely from the institution's 2006-based performance in the QE.
30. Two of the seven participating PTEs also received 100 percent of their funding from the QE component. Two other providers in this sub-sector – Laidlaw College and Whitecliffe College – were the only ones to receive RDC funding, for whom, as previously noted, it represented a sizeable proportion of their total allocation.
31. ERI was minimal to non-existent for the majority of participating PTEs, except for two providers – Bethlehem Institute of Education and Anamata – for whom this measure made up 24.2 percent and 19.2 percent of their total funding.

### High-level comparison of final funding allocations for 2009 and 2010

**Table 1.2: Final 2009 and final 2010 funding allocations – totals**

TEO	Total Funding 2009	Total Funding 2010	Change (%)
University of Auckland	\$69,799,017	\$73,244,499	4.94%
University of Otago (inc. Dunedin College of Education)	\$50,623,041	\$52,946,805	4.59%
Massey University	\$35,350,726	\$35,016,295	<b>(0.95%)</b>
University of Canterbury (inc. Christchurch College of Education)	\$24,713,383	\$27,130,968	9.78%
Victoria University of Wellington	\$21,487,096	\$23,217,071	8.05%
University of Waikato	\$15,251,174	\$15,628,083	2.47%
Lincoln University	\$8,597,344	\$8,622,299	0.29%
Auckland University of Technology	\$6,420,128	\$7,580,719	18.08%
Unitec New Zealand	\$2,772,155	\$2,916,711	5.21%
Otago Polytechnic	\$593,863	\$696,044	17.21%
Waikato Institute of Technology	\$640,263	\$614,320	<b>(4.05%)</b>
Manukau Institute of Technology	\$484,795	\$503,977	3.96%
Christchurch Polytechnic Institute of Technology	\$423,837	\$424,254	0.10%
Te Whare Wānanga O Awanuiārangi	\$279,214	\$277,078	<b>(0.77%)</b>
Whitecliff College of Arts and Design	\$282,753	\$210,713	<b>(25.48%)</b>
Open Polytechnic of New Zealand	\$212,688	\$193,970	<b>(8.80%)</b>
Eastern Institute of Technology	\$154,148	\$165,732	7.51%
Te Wānanga O Aotearoa	\$156,823	\$162,641	3.71%
Nelson Marlborough Institute of Technology	\$81,490	\$85,350	4.74%
Whitireia Community Polytechnic	\$77,237	\$76,728	<b>(0.66%)</b>
Northland Polytechnic	\$54,866	\$61,623	12.32%
Carey Baptist College	\$49,790	\$52,001	4.44%
Laidlaw College	\$60,208	\$51,233	<b>(14.91%)</b>
Bethlehem Institute of Education	\$28,094	\$29,258	4.14%
AIS St Helens	\$21,175	\$22,178	4.74%
Good Shepherd College	\$21,175	\$22,178	4.74%
Anamata	\$27,518	\$16,012	<b>(41.81%)</b>
<b>Total</b>	<b>\$238,664,001</b>	<b>\$249,968,740</b>	<b>4.74%</b>

32. Across all three measures, final funding allocations were higher in 2010 than in 2009. The full amount of the \$250 million annual appropriation was disbursed in final funding for 2010 – that is, over \$11 million more than final allocations for the previous year. However, the performance of some TEOs led to a reduction in their funding.
33. For some TEOs, the differences in final funding allocations between 2009 and 2010 led to a change in their rankings by total PBRF funding. Thus in Table 1.2 above, five couplets of providers inverted their order between years, with the first of each of the following pairs receiving more funding in 2010 than the second: Otago Polytechnic and Waikato Institute of Technology; Te Whare Wānanga o Awanuiārangi and Whitecliffe; Eastern Institute of Technology and Te Wānanga o Aotearoa; Northland Polytechnic and Laidlaw College; AIS St Helens and Good Shepherd College, and Anamata.
34. Funding for each of the three measures increased by 4.74 percent. This was applied as a flat rate of change for every participating TEO in the QE component, while percentage changes for the ERI and RDC components varied widely between providers in 2010. More detailed analysis is provided in subsequent chapters on each of the three measures.

### High-level comparison of indicative versus final funding for 2010

**Table 1.3: Indicative and final funding allocations for 2010**

TEO	Total Indicative Funding	Total Final Funding	Change (\$)	Change (%)
University of Auckland	\$73,822,802	\$73,244,499	<b>(\$578,303)</b>	<b>(0.78%)</b>
University of Otago (inc. Dunedin College of Education)	\$51,710,286	\$52,946,805	\$1,236,519	2.39%
Massey University	\$34,838,393	\$35,016,295	\$177,902	0.51%
University of Canterbury (inc. Christchurch College of Education)	\$25,563,155	\$27,130,968	\$1,567,813	6.13%
Victoria University of Wellington	\$22,753,118	\$23,217,071	\$463,953	2.04%
University of Waikato	\$15,464,007	\$15,628,083	\$164,076	1.06%
Lincoln University	\$8,319,966	\$8,622,299	\$302,333	3.63%
Auckland University of Technology	\$7,386,881	\$7,580,719	\$193,838	2.62%
Unitec New Zealand	\$2,863,826	\$2,916,711	\$52,885	1.85%
Otago Polytechnic	\$844,153	\$696,044	<b>(\$148,109)</b>	<b>(17.55%)</b>
Waikato Institute of Technology	\$611,421	\$614,320	\$2,899	0.47%
Manukau Institute of Technology	\$504,040	\$503,977	<b>(\$63)</b>	<b>(0.01%)</b>
Christchurch Polytechnic Institute of Technology	\$424,307	\$424,254	<b>(\$53)</b>	<b>(0.01%)</b>
Te Whare Wānanga O Awanuiārangi	\$273,014	\$277,078	\$4,064	1.49%
Eastern Institute of Technology	\$189,761	\$165,732	<b>(\$24,029)</b>	<b>(12.66%)</b>
Open Polytechnic of New Zealand	\$193,994	\$193,970	<b>(\$24)</b>	<b>(0.01%)</b>
Whitecliff College of Arts and Design	\$183,462	\$210,713	\$27,251	14.85%
Te Wānanga O Aotearoa	\$162,661	\$162,641	<b>(\$20)</b>	<b>(0.01%)</b>
Nelson Marlborough Institute of Technology	\$85,360	\$85,350	<b>(\$10)</b>	<b>(0.01%)</b>
Whitireia Community Polytechnic	\$76,738	\$76,728	<b>(\$10)</b>	<b>(0.01%)</b>
Northland Polytechnic	\$61,631	\$61,623	<b>(\$8)</b>	<b>(0.01%)</b>
Carey Baptist College	\$52,008	\$52,001	<b>(\$7)</b>	<b>(0.01%)</b>
Laidlaw College	\$50,385	\$51,233	\$848	1.68%
Bethlehem Institute of Education	\$29,262	\$29,258	<b>(\$4)</b>	<b>(0.01%)</b>
AIS St Helens	\$22,181	\$22,178	<b>(\$3)</b>	<b>(0.01%)</b>
Good Shepherd College	\$22,181	\$22,178	<b>(\$3)</b>	<b>(0.01%)</b>
Anamata	\$16,014	\$16,012	<b>(\$2)</b>	<b>(0.01%)</b>
<b>Total</b>	<b>\$246,525,007</b>	<b>\$249,968,740</b>	<b>\$3,443,733</b>	<b>1.40%</b>

35. After the wash-up for 2010, the final funding totalled across all three measures was 1.40 percent (\$3.4 million) higher than the indicative amount (\$246.5 million). This increase reflects the withholding of available RDC funding in the indicative allocation pending indicative data accuracy work on this measure. While final funding for both the QE and ERI components decreased slightly overall (by -0.013 percent), the allocations for RDCs rose by 5.87 percent (\$3.5 million) of the indicative funding (\$59 million). More detailed analysis is provided in subsequent chapters on each of the three measures.

### 2011 indicative funding allocations

36. As shown in Table 1.4, a total of \$250.0 million of indicative PBRF funding was allocated for the 2011 funding year.

**Table 1.4: Indicative 2011 funding allocations – by measures**

TEO	Quality Evaluation	External Research Income	Research Degree Completions	Total Funding
University of Auckland	\$40,525,364	\$13,743,636	\$20,339,615	\$74,608,615
University of Otago (inc. Dunedin College of Education)	\$33,636,984	\$8,280,037	\$11,034,832	\$52,951,853
Massey University	\$21,833,458	\$4,732,880	\$8,653,207	\$35,219,545
University of Canterbury (inc. Christchurch College of Education)	\$15,896,276	\$3,011,697	\$7,933,547	\$26,841,520
Victoria University of Wellington	\$14,600,714	\$2,944,500	\$5,235,176	\$22,780,390
University of Waikato	\$9,568,154	\$1,820,825	\$4,036,217	\$15,425,196
Lincoln University	\$4,679,326	\$1,997,348	\$1,861,238	\$8,537,912
Auckland University of Technology	\$4,108,163	\$701,102	\$2,297,775	\$7,107,040
Unitec New Zealand	\$2,331,493	\$101,046	\$578,905	\$3,011,444
Otago Polytechnic	\$500,849	\$41,987	\$123,310	\$666,146
Waikato Institute of Technology	\$346,099	\$20,174	\$217,288	\$583,561
Manukau Institute of Technology	\$496,857	\$12,481	-	\$509,338
Christchurch Polytechnic Institute of Technology	\$376,118	\$27,271	-	\$403,389
Te Whare Wānanga O Awanuiārangi	\$199,482	\$28,937	\$48,950	\$277,369
Eastern Institute of Technology	\$159,704	\$14,847	\$53,248	\$227,799
Open Polytechnic of New Zealand	\$174,787	\$3,738	-	\$178,525
Te Wānanga O Aotearoa	\$162,661	-	-	\$162,661
Whitecliff College of Arts and Design	\$42,883	-	\$51,566	\$94,449
Nelson Marlborough Institute of Technology	\$85,360	-	-	\$85,360
Whitireia Community Polytechnic	\$63,586	\$6,688	-	\$70,274
Laidlaw College	\$25,878	-	\$35,125	\$61,003
Northland Polytechnic	\$54,566	\$3,999	-	\$58,565
Carey Baptist College	\$51,756	\$97	-	\$51,853
Bethlehem Institute of Education	\$22,181	\$6,710	-	\$28,891
AIS St Helens	\$22,181	-	-	\$22,181
Good Shepherd College	\$22,181	-	-	\$22,181
Anamata	\$12,939	-	-	\$12,939
<b>Total</b>	<b>\$150,000,000</b>	<b>\$37,500,000</b>	<b>\$62,499,999</b>	<b>\$249,999,999</b>

37. All 27 PBRF-participating TEOs received allocations for 2011 through the Quality Evaluation measure, which used scores from the 2006 Quality Evaluation to allocate \$150.0 million of indicative funding.
38. For 2011, \$37.5 million was available for ERI indicative funding allocations, which were based on a weighted average resulting from 2007-2009 performance.

39. A total \$62.5 million was available for RDC indicative allocations for 2011, based on 2007-2009 performance. Fifteen TEOs were eligible to receive this indicative RDC funding for 2011.

### High-level comparison of indicative funding for 2011 with final funding for 2010

40. Table 1.5 compares 2010 final and 2011 indicative funding allocations, and reveals a range of changes in funding across TEOs.

**Table 1.5: Indicative 2011 funding compared to final 2010 funding – totals**

TEO	2010 Final Funding	2011 Indicative Funding	Change (\$)	Change (%)
University of Auckland	\$73,244,499	\$74,608,615	\$1,364,116	1.86%
University of Otago (inc. Dunedin College of Education)	\$52,946,805	\$52,951,853	\$5,048	0.01%
Massey University	\$35,016,295	\$35,219,545	\$203,250	0.58%
University of Canterbury (inc. Christchurch College of Education)	\$27,130,968	\$26,841,520	(\$289,448)	(1.07%)
Victoria University of Wellington	\$23,217,071	\$22,780,390	(\$436,681)	(1.88%)
University of Waikato	\$15,628,083	\$15,425,196	(\$202,887)	(1.30%)
Lincoln University	\$8,622,299	\$8,537,912	(\$84,387)	(0.98%)
Auckland University of Technology	\$7,580,719	\$7,107,040	(\$473,679)	(6.25%)
Unitec New Zealand	\$2,916,711	\$3,011,444	\$94,733	3.25%
Otago Polytechnic	\$696,044	\$666,146	(\$29,898)	(4.30%)
Waikato Institute of Technology	\$614,320	\$583,561	(\$30,759)	(5.01%)
Manukau Institute of Technology	\$503,977	\$509,338	\$5,361	1.06%
Christchurch Polytechnic Institute of Technology	\$424,254	\$403,389	(\$20,865)	(4.92%)
Te Whare Wānanga O Awanuiārangi	\$277,078	\$277,369	\$291	0.11%
Eastern Institute of Technology	\$165,732	\$227,799	\$62,067	37.45%
Open Polytechnic of New Zealand	\$193,970	\$178,525	(\$15,445)	(7.96%)
Te Wānanga O Aotearoa	\$162,641	\$162,661	\$20	0.01%
Whitecliff College of Arts and Design	\$210,713	\$94,449	(\$116,264)	(55.18%)
Nelson Marlborough Institute of Technology	\$85,350	\$85,360	\$10	0.01%
Whitireia Community Polytechnic	\$76,728	\$70,274	(\$6,454)	(8.41%)
Laidlaw College	\$51,233	\$61,003	\$9,770	19.07%
Northland Polytechnic	\$61,623	\$58,565	(\$3,058)	(4.96%)
Carey Baptist College	\$52,001	\$51,853	(\$148)	(0.28%)
Bethlehem Institute of Education	\$29,258	\$28,891	(\$367)	(1.25%)
ALS St Helens	\$22,178	\$22,181	\$3	0.01%
Good Shepherd College	\$22,178	\$22,181	\$3	0.01%
Anamata	\$16,012	\$12,939	(\$3,073)	(19.19%)
<b>Total</b>	<b>\$249,968,740</b>	<b>\$249,999,999</b>	<b>\$31,259</b>	<b>0.010%</b>

41. The total change of 0.010 percent was relatively small, especially compared with the 3.29 percent increase in the total PBRF allocation in the previous reporting period (between 2009 final and 2010 indicative funding).
42. Between the 2010 final and the 2011 indicative allocations, 15 of the 27 participating TEOs sustained decreases in their total funding (versus nine decreases on the same count in the 2009 indicative and 2010 final allocations).

### Universities

43. In the university sub-sector, five institutions saw reductions in funding between their 2010 final and 2011 indicative allocations. However, the fact that the three highest



performing universities received small increases – ranging from 0.01 to 1.86 percent – meant that the sub-sector made a net gain of approximately \$85,000.

44. Auckland University of Technology experienced the largest decrease, falling by 6.25 percent, and down from its previous rise in funding of 15.06 percent between its 2009 final and 2010 indicative funding. Although relatively small proportions, the other declines between 2010 final and 2011 indicative funding – ranging from 0.98 to 1.88 percent – were nevertheless significant in monetary terms, with funding impacts of \$84,000 to \$473,000.

#### **ITP sub-sector**

45. Taken as a whole, indicative funding for the ITP sub-sector increased by 0.97 percent on its total final allocations for 2010, despite six of the ten providers sustaining losses. While this positive net change resulted in an additional \$55,692 across the sub-sector, this was largely due to the 3.25 percent growth in funding by Unitec as the highest performing provider.
46. Of the three other ITPs to be allocated more for 2011 than they received in 2010, Eastern Institute of Technology realised the most significant growth, increasing its funding by 37.45 percent (or \$62,000), largely due to its (expected) RDC count. Manukau Institute of Technology and Nelson Marlborough Institute of Technology posted small to negligible increases in both percentage and dollar terms (1.06 and 0.01 percent respectively).
47. Of the six ITPs with reductions in funding, the most sizeable was Whitireia (down 8.41 percent), followed by Open Polytechnic (down 7.96 percent) which experienced a consecutive year of funding reductions, having lost 8.79 percent in the previous reporting period on this same count. Waikato Institute of Technology also had a successive decrease in total PBRF funding, on the back of a 4.50 percent loss in the between its indicative and final allocations in the previous reporting period. In the first two cases, these changes were primarily due to reduced performance against the ERI measure, while Waikato Institute of Technology again lost a substantial amount of funding against the RDC measure.

#### **Other providers**

48. In both the wānanga and the PTE sub-sectors, there was relatively minor change, with funding shifting within the range of 0.01 to 1.25 percentage points. There were, however, three outliers to this rule.
49. Laidlaw College realised a 19.07 percent (almost \$10,000) increase, principally due to its rise in RDC funding. Anamata's funding changed by a similar rate but in the opposite direction, its reduction of 19.19 percent (just over \$3,000) attributable to its zero return on the ERI measure for the 2011 allocation. The most sizeable change, however, was sustained by Whitecliffe College whose funding fell by 55.18 percent (\$116,264) – having previously dropped by 35.12 percent between its 2009 final and 2010 indicative allocations. This loss in funding for Whitecliffe College was again due to lessened performance against the RDC measure.

## Chapter 2 : The Quality Evaluation measure

### Introduction

50. The Quality Evaluation measure accounts for 60 percent of the total funds allocated through the PBRF each year. The Quality Evaluation process uses expert peer-review panels to assess research quality based on material contained in individual researchers' Evidence Portfolios (EPs). Previous Quality Evaluations were held in 2003 and 2006, and the scores from the latter are currently used in the funding calculation. The report on the 2012 Quality Evaluation will provide a refreshed picture of the quality and strengths of research in the sector, with the 2012 performance data updating the ratios for the allocation of this measure.<sup>4</sup>
51. Funding in relation to the Quality Evaluation is based on:
- quality categories assigned to EPs;
  - funding weightings for the subject area to which EPs have been assigned; and
  - Full-Time Equivalent (FTE) status of PBRF-eligible staff as at the date of the PBRF Census.

### Funding formula for the Quality Evaluation measure

52. The funding formula for the proportion of the quality measure allocated to each TEO is:

$\sum \text{TEO [(numerical quality score) x (funding weighting for relevant subject area) x (FTE status of researcher)]}$	$\times \text{total amount of funding available for the Quality Evaluation component of the PBRF}$
$\sum \text{all TEOs [(numerical quality score) x (funding weighting for relevant subject area) x (FTE status of researcher)]}$	

### Quality categories

53. The quality categories assigned to staff members' EPs have numerical weightings known as quality weightings, as set out below in Table 2.1 (where "NE" signifies new and emerging researcher, and "R" denotes research activity or quality at an insufficient level for the PBRF).

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<sup>4</sup> As noted earlier, the 2012 PBRF Quality Evaluation Guidelines provide detailed information about the Quality Evaluation process for 2012.

**Table 2.1: Quality category weighting**

Quality Category	Quality Weighting
A	5
B	3
C	1
C(NE)	1
R	0
R(NE)	0

**Funding weighting for subject areas**

54. The current subject area weightings, as set out in Table 2.2 below, are intended to reflect the relative cost of research in each EP's primary subject area.

**Table 2.2: Subject area weightings**

Subject Areas	Funding category	Weighting
Māori knowledge and development; law; history, history of art, classics and curatorial studies; English language and literature; foreign languages and linguistics; philosophy; religious studies and theology; political science, international relations and public policy; human geography; sociology, social policy, social work, criminology and gender studies; anthropology and archaeology; communications, journalism and media studies; education; pure and applied mathematics; statistics; management, human resources, industrial relations, international business and other business; accounting and finance; marketing and tourism; and economics.	A,I,J	1
Psychology; chemistry; physics; earth sciences; molecular, cellular and whole organism biology; ecology, evolution and behaviour; computer science, information technology, information sciences; nursing; sport and exercise science; other health studies (including rehabilitation therapies); music, literary arts and other arts; visual arts and crafts; theatre and dance, film and television and multimedia; and design.	B,L	2
Engineering and technology; agriculture and other applied biological sciences; architecture, design, planning, surveying; biomedical; clinical medicine; pharmacy; public health; veterinary studies and large animal science; and dentistry.	C,G,H,M,Q	2.5



### Full-time equivalent status of staff

55. Funding is generated in proportion to FTE status as supplied by TEOs in the PBRF Census: Staffing Return. FTE calculations for the funding allocations covered by this report included four particular considerations:<sup>5</sup>
- When staff members were concurrently employed at two TEOs during the year before the census date of 14 June 2006, they generated an FTE entitlement for each organisation based on their FTE status in their employment agreement with each TEO.
  - For most staff, the FTE that applied was the FTE status in the week of 12 June 2006 to 16 June 2006. However, if staff had changed their employment status within the TEO during the previous 12 months, their FTE status was their average FTE over the period (for example six months at 0.5 FTE and six months at 1 FTE = 0.75 FTE).
  - When a staff member started employment in the 12-month period before the census and was not previously employed by a participating TEO, then – providing they have an employment agreement of one year or more – their FTE status was as their employment agreement stated it to be at the census.
  - When a staff member left one participating TEO to take up a position in another participating TEO in the 12 months before the census, both TEOs had a proportional FTE entitlement.

### Quality Evaluation funding allocations for 2009, 2010, and 2011

56. In addition to the information provided in previous annual reports, this section contains new material, allowing greater comparative analysis within and between years. The relative performance of TEOs has not changed since the 2006 QE which fixed their ratios for this measure until the 2012 round. As noted earlier, changes for the QE component are thus a function of pool size, and any adjustments from the wash-up process or data corrections.

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<sup>5</sup> Some amendments relating to FTE status, including a revised definition of 'staff', have since been made and incorporated into the *2012 PBRF Quality Evaluation Guidelines*.

## 2009 final and 2010 final allocations

Table 2.3: Final 2009 and final 2010 funding allocations – QE measure

TEO	QE Final 2009	QE Final 2010	Change (\$)	Change (%)
University of Auckland	\$38,687,782	\$40,520,297	\$1,832,515	4.74%
University of Otago (inc. Dunedin College of Education)	\$32,111,749	\$33,632,779	\$1,521,030	4.74%
Massey University	\$20,843,440	\$21,830,726	\$987,286	4.74%
University of Canterbury (inc. Christchurch College of Education)	\$15,175,475	\$15,894,288	\$718,813	4.74%
Victoria University of Wellington	\$13,938,659	\$14,598,889	\$660,230	4.74%
University of Waikato	\$9,134,295	\$9,566,957	\$432,662	4.74%
Lincoln University	\$4,467,147	\$4,678,741	\$211,594	4.74%
Auckland University of Technology	\$3,921,882	\$4,107,649	\$185,767	4.74%
Unitec New Zealand	\$2,225,774	\$2,331,202	\$105,428	4.74%
Otago Polytechnic	\$478,139	\$500,787	\$22,648	4.74%
Waikato Institute of Technology	\$330,406	\$346,056	\$15,650	4.74%
Manukau Institute of Technology	\$474,327	\$496,795	\$22,468	4.74%
Christchurch Polytechnic Institute of Technology	\$359,063	\$376,071	\$17,008	4.74%
Te Whare Wānanga O Awanuiārangi	\$190,437	\$199,457	\$9,020	4.74%
Whitecliff College of Arts and Design	\$40,939	\$42,878	\$1,939	4.74%
Open Polytechnic of New Zealand	\$166,862	\$174,765	\$7,903	4.74%
Eastern Institute of Technology	\$152,462	\$159,684	\$7,222	4.74%
Te Wānanga O Aotearoa	\$155,286	\$162,641	\$7,355	4.74%
Nelson Marlborough Institute of Technology	\$81,490	\$85,350	\$3,860	4.74%
Whitireia Community Polytechnic	\$60,703	\$63,578	\$2,875	4.74%
Northland Polytechnic	\$52,091	\$54,559	\$2,468	4.74%
Carey Baptist College	\$49,409	\$51,749	\$2,340	4.74%
Laidlaw College	\$24,705	\$25,875	\$1,170	4.74%
Bethlehem Institute of Education	\$21,175	\$22,178	\$1,003	4.74%
AIS St Helens	\$21,175	\$22,178	\$1,003	4.74%
Good Shepherd College	\$21,175	\$22,178	\$1,003	4.74%
Anamata	\$12,352	\$12,937	\$585	4.74%
<b>Total</b>	<b>\$143,198,399</b>	<b>\$149,981,244</b>	<b>\$6,782,845</b>	<b>4.74%</b>

57. Between the final 2009 and final 2010 allocations, the pool available for the QE component increased by 4.74 percent. Accordingly, each provider received an additional 4.74 percent of its share of funding, as fixed by the 2006 ratios. As set out in Table 2.3 above, the dollar amounts varied widely, ranging from an increase of \$1.8 million for the University of Auckland (making up 27.02 percent of the pool) to an extra \$1,003 for both the Good Shepherd College and AIS St Helens (each on a 0.01 percent share).

## 2010 indicative and 2010 final allocations

Table 2.4: Indicative and final funding allocations for 2010 – QE measure

TEO	QE 2010 Indicative	QE 2010 Final	Change (\$)	Change (%)
University of Auckland	\$40,525,364	\$40,520,297	(\$5,067)	-0.013%
University of Otago (inc. Dunedin College of Education)	\$33,636,984	\$33,632,779	(\$4,205)	-0.013%
Massey University	\$21,833,456	\$21,830,726	(\$2,730)	-0.013%
University of Canterbury (inc. Christchurch College of Education)	\$15,896,276	\$15,894,288	(\$1,988)	-0.013%
Victoria University of Wellington	\$14,600,714	\$14,598,889	(\$1,825)	-0.012%
University of Waikato	\$9,568,154	\$9,566,957	(\$1,197)	-0.013%
Lincoln University	\$4,679,326	\$4,678,741	(\$585)	-0.013%
Auckland University of Technology	\$4,108,163	\$4,107,649	(\$514)	-0.013%
Unitec New Zealand	\$2,331,493	\$2,331,202	(\$291)	-0.012%
Otago Polytechnic	\$500,849	\$500,787	(\$62)	-0.012%
Waikato Institute of Technology	\$346,099	\$346,056	(\$43)	-0.012%
Manukau Institute of Technology	\$496,857	\$496,795	(\$62)	-0.012%
Christchurch Polytechnic Institute of Technology	\$376,118	\$376,071	(\$47)	-0.012%
Te Whare Wānanga O Awanuiārangi	\$199,482	\$199,457	(\$25)	-0.013%
Eastern Institute of Technology	\$159,704	\$159,684	(\$20)	-0.013%
Open Polytechnic of New Zealand	\$174,787	\$174,765	(\$22)	-0.013%
Whitecliff College of Arts and Design	\$42,883	\$42,878	(\$5)	-0.012%
Te Wānanga O Aotearoa	\$162,661	\$162,641	(\$20)	-0.012%
Nelson Marlborough Institute of Technology	\$85,360	\$85,350	(\$10)	-0.012%
Whitireia Community Polytechnic	\$63,586	\$63,578	(\$8)	-0.013%
Northland Polytechnic	\$54,566	\$54,559	(\$7)	-0.013%
Carey Baptist College	\$51,756	\$51,749	(\$7)	-0.014%
Laidlaw College	\$25,878	\$25,875	(\$3)	-0.012%
Bethlehem Institute of Education	\$22,181	\$22,178	(\$3)	-0.014%
AIS St Helens	\$22,181	\$22,178	(\$3)	-0.014%
Good Shepherd College	\$22,181	\$22,178	(\$3)	-0.014%
Anamata	\$12,939	\$12,937	(\$2)	-0.015%
<b>Total</b>	<b>\$149,999,998</b>	<b>\$149,981,244</b>	<b>(\$18,754)</b>	<b>-0.013%</b>

58. QE funding available for all providers decreased slightly between the indicative and final allocations for the 2010 calendar year, with an overall 0.013 percent reduction. Again, the fixed ratios meant that in dollar terms each TEO's decrease was proportionate to its share of the pool (thus the University of Auckland lost \$5,067 while funding for both the Good Shepherd College and AIS St Helens was down by a modest \$3).

59. Since the 2006 Quality Evaluation, universities have received 96.57 percent of funding against this measure.<sup>6</sup> Between the indicative and final allocations for 2010, this sub-sector sustained a relatively minor decrease of \$18,113 on its combined \$144.83 million QE revenue. Other TEOs together receive 3.43 percent of the funding allocated through this measure. In 2010, this equated to \$5.15 million in final funding, with a negligible \$643 aggregate reduction following the 2010 wash-up.

<sup>6</sup> This figure incorporates data from the Dunedin and Christchurch Colleges of Education which were previously reported separately from the universities with which they have since merged.

## 2010 final and 2011 indicative allocations

60. The maximum amount of the PBRF appropriation ring-fenced for the QE component (\$150 million) was available in both 2010 and 2011. This meant that providers' indicative allocations – based on the 2006 Quality Evaluation ratios – were the same for both years. In Table 2.5 below, each TEO's increase in indicative funding is therefore identical to the amount it lost after the wash-up for 2010.

**Table 2.5: Indicative 2011 funding compared to final 2010 funding – QE measure**

TEO	Numerator	Ratio	Final QE funding 2010	Indicative QE funding 2011	Change (\$)
University of Auckland	5,481	27.02%	\$40,520,297	\$40,525,364	\$5,067
University of Otago (inc. Dunedin College of Education)	4,549	22.42%	\$33,632,779	\$33,636,984	\$4,205
Massey University	2,953	14.56%	\$21,830,726	\$21,833,458	\$2,732
University of Canterbury (inc. Christchurch College of Education)	2,150	10.60%	\$15,894,288	\$15,896,276	\$1,988
Victoria University of Wellington	1,975	9.73%	\$14,598,889	\$14,600,714	\$1,825
University of Waikato	1,294	6.38%	\$9,566,957	\$9,568,154	\$1,197
Lincoln University	633	3.12%	\$4,678,741	\$4,679,326	\$585
Auckland University of Technology	556	2.74%	\$4,107,649	\$4,108,163	\$514
Unitec New Zealand	315	1.55%	\$2,331,202	\$2,331,493	\$291
Otago Polytechnic	68	0.33%	\$500,787	\$500,849	\$62
Manukau Institute of Technology	67	0.33%	\$496,795	\$496,857	\$62
Christchurch Polytechnic Institute of Technology	51	0.25%	\$376,071	\$376,118	\$47
Waikato Institute of Technology	47	0.23%	\$346,056	\$346,099	\$43
Te Whare Wānanga O Awanuiārangi	27	0.13%	\$199,457	\$199,482	\$25
Open Polytechnic of New Zealand	24	0.12%	\$174,765	\$174,787	\$22
Te Wānanga O Aotearoa	22	0.11%	\$162,641	\$162,661	\$20
Eastern Institute of Technology	22	0.11%	\$159,684	\$159,704	\$20
Nelson Marlborough Institute of Technology	12	0.06%	\$85,350	\$85,360	\$10
Whitireia Community Polytechnic	9	0.04%	\$63,578	\$63,586	\$8
Northland Polytechnic	7	0.04%	\$54,559	\$54,566	\$7
Carey Baptist College	7	0.03%	\$51,749	\$51,756	\$7
Whitecliff College of Arts and Design	6	0.03%	\$42,878	\$42,883	\$5
Laidlaw College	4	0.02%	\$25,875	\$25,878	\$3
ALS St Helens	3	0.01%	\$22,178	\$22,181	\$3
Bethlehem Institute of Education	3	0.01%	\$22,178	\$22,181	\$3
Good Shepherd College	3	0.01%	\$22,178	\$22,181	\$3
Anamata	2	0.01%	\$12,937	\$12,939	\$2
<b>Total</b>	<b>20,288</b>	<b>100%</b>	<b>\$149,981,244</b>	<b>\$150,000,000</b>	<b>\$18,756</b>

61. The PBRF Annual Report 2011 will confirm the final funding for 2011 relative to the indicative allocations tabled above.

## Chapter 3 : External research income

### Introduction

62. The external research income (ERI) measure accounts for 15 percent of the total funds allocated through the PBRF each year. ERI is included as a performance measure in the PBRF on the basis that it provides a good proxy for research quality. The underlying assumption is that external research funders are discriminating in their choice of who to fund, and that they will allocate their limited resources to those they see as undertaking research of a high quality.
63. ERI is defined as the total research income received by a TEO (and/or any wholly-owned subsidiary), excluding income from:
- TEO employees who receive external research income in their personal capacity (i.e. the external research income is received by them and not their employer);
  - controlled trusts;
  - partnerships; and
  - joint ventures.
64. Only income for work that has actually been undertaken may be included in the ERI calculation. A complete description of inclusions and exclusions is given in chapter five of the PBRF Guidelines 2006, along with guidance on the status of joint or collaborative research.
65. TEOs that participate in the ERI measure submit returns to the TEC showing the amount of PBRF-eligible ERI they have earned for the 12 months ending 31 December of the preceding year. A declaration signed by the TEO's Chief Executive, as well as an independent audit opinion, is provided to the TEC to support each ERI calculation. If the total ERI is less than \$200,000, the TEO is permitted to submit its worksheets in lieu of an independent audit opinion.

### Funding formula for the external research income measure

66. The ERI measure is calculated as a weighted three-year rolling average. The formula used to calculate the ERI measure for 2010 is:

$$\frac{\sum [(2006 \text{ ERI for TEO} \times 0.15) + (2007 \text{ ERI for TEO} \times 0.35) + (2008 \text{ ERI for TEO} \times 0.5)]}{\sum [(Total \text{ 2006 ERI for all TEOs} \times 0.15) + (Total \text{ 2007 ERI for all TEOs} \times 0.35) + (Total \text{ 2008 ERI for all TEOs} \times 0.5)]} \times \text{total amount of funding available for the ERI component of the PBRF}$$

67. The formula used to calculate the ERI measure for 2011 is:

$$\frac{\sum [(2007 \text{ ERI for TEO} \times 0.15) + (2008 \text{ ERI for TEO} \times 0.35) + (2009 \text{ ERI for TEO} \times 0.5)]}{\sum [(Total \text{ 2007 ERI for all TEOs} \times 0.15) + (Total \text{ 2008 ERI for all TEOs} \times 0.35) + (Total \text{ 2009 ERI for all TEOs} \times 0.5)]} \times \text{Total amount of funding available for the ERI component of the PBRF}$$

### External research income declared for the 2010 funding calculation

68. In 2006-2008, the total ERI declared by the 22 TEOs participating in the ERI measure was \$998.78 million.<sup>7</sup> Table 3.1 shows the ERI declared in each of these three years, the changes from year-to-year, and the weighted three-year averages used to allocate PBRF funding for this measure.

**Table 3.1: External research income 2006 to 2008**

TEO	2006	Change 2006 → 2007	2007	Change 2007 → 2008	2008	PBRF- weighted total (numerator)
University of Auckland	\$113,859,434	2.48%	\$116,683,274	18.73%	\$138,540,191	<b>\$127,188,157</b>
University of Otago	\$67,152,313	7.29%	\$72,047,118	20.97%	\$87,154,298	<b>\$78,866,487</b>
Massey University	\$38,039,685	8.91%	\$41,427,653	7.91%	\$44,706,446	<b>\$42,558,854</b>
University of Canterbury	\$20,411,518	11.07%	\$22,670,439	14.41%	\$25,936,887	<b>\$23,964,825</b>
Victoria University of Wellington	\$23,262,412	3.30%	\$24,029,305	22.01%	\$29,317,878	<b>\$26,558,558</b>
University of Waikato	\$15,236,406	7.26%	\$16,341,904	3.10%	\$16,848,972	<b>\$16,429,613</b>
Lincoln University	\$16,317,474	14.55%	\$18,691,168	9.88%	\$20,538,537	<b>\$19,258,798</b>
Auckland University of Technology	\$6,921,828	<b>(2.80%)</b>	\$6,728,068	<b>(3.39%)</b>	\$6,500,276	<b>\$6,643,236</b>
Unitec New Zealand	\$631,030	150.78%	\$1,582,521	<b>(2.64%)</b>	\$1,540,671	<b>\$1,418,872</b>
Otago Polytechnic	\$252,366	<b>(59.90%)</b>	\$101,195	44.69%	\$146,416	<b>\$146,481</b>
Waikato Institute of Technology	\$503,568	<b>(44.78%)</b>	\$278,074	<b>(30.21%)</b>	\$194,061	<b>\$269,892</b>
Manukau Institute of Technology	\$48,302	85.41%	\$89,559	<b>(38.83%)</b>	\$54,782	<b>\$65,982</b>
Christchurch Polytechnic Institute of Technology	\$296,441	183.88%	\$841,540	<b>(75.36%)</b>	\$207,363	<b>\$442,687</b>
Open Polytechnic of New Zealand	\$770,174	(94.06%)	\$45,778	96.15%	\$89,795	<b>\$176,446</b>
Eastern Institute of Technology	\$13,121	27.77%	\$16,765	469.37%	\$95,455	<b>\$55,563</b>
Whitireia Community Polytechnic	\$100,444	100.91%	\$201,799	<b>(65.19%)</b>	\$70,249	<b>\$120,821</b>
Northland Polytechnic	\$17,099	64.12%	\$28,062	274.28%	\$105,032	<b>\$64,903</b>
Te Whare Wānanga O Awanuiārangi	\$544,085	<b>(100.00%)</b>	-	-	\$164,779	<b>\$164,002</b>
Anamata	\$188,326	<b>(100.00%)</b>	-	-	-	<b>\$28,249</b>
Carey Baptist College	-	-	\$6,602	<b>(100.00%)</b>	-	<b>\$2,311</b>
Laidlaw College	\$1,466	<b>(100.00%)</b>	-	-	-	<b>\$220</b>
Bethlehem Institute of Education	\$60,000	-	\$60,000	16.83%	\$70,100	<b>\$65,050</b>
<b>Total</b>	<b>\$304,627,492</b>	<b>5.66%</b>	<b>\$321,870,825</b>	<b>15.66%</b>	<b>\$372,282,188</b>	<b>\$344,490,007</b>

<sup>7</sup> The total ERI for the 2006, 2007, and 2008 calendar years has been updated to reflect changes in the returns, and so may differ from that previously reported.



69. The \$989.36 million in ERI declared by universities formed just over 99 percent of the total in 2006-2008. The remaining TEOs reported just under one percent of the total ERI, totalling \$9.42 million over the three year period.
70. ERI reported by TEOs increased overall by 5.66 percent between 2006 and 2007, and by some 15.66 percent between 2007 and 2008. This most recent growth is largely attributable to strong increases in ERI generated by the university sub-sector, particularly by the University of Auckland and the University of Otago as the two highest performers.
71. Whether positive or negative, year-on-year changes in the amount of ERI declared varied widely for many TEOs, and were often substantial in dollar terms. There was, however, overall stability within the ranks in terms of relative performance, with individual TEOs' shares of the total ERI pool fluctuating by about one percent or less over the period. The University of Auckland, the University of Otago, and Massey University remained the only providers with a double-digit share of the pool (averaging approximately 37 percent, 22 percent, and 12 percent respectively over the three year period), together accounting for more than 71 percent of the ERI funds in 2006, 2007, and 2008.
72. Over the three year period, seven of the eight universities increased their ERI, with four of those universities further increasing their rate of growth from 2006/07 to 2007/08. In this sub-sector, the most significant growth relative to TEOs' previous year baseline ERI was the 22.01 percent rise achieved by Victoria University between 2007 and 2008 (eclipsing its prior 3.30 percent increase for 2006/07).
73. Auckland University of Technology, however, reported consecutive falls against this measure, dropping by 2.80 percent in 2006/07, and then again by 3.39 percent in 2007/08 (reducing its ERI by sizeable sums, in the order of \$200,000 each year). The only other provider to decrease consecutively in ERI for this three-year period was Waikato Institute of Technology. This ITP's ERI funding reduced markedly, falling 44.78 percent and 30.21 percent in 2006/07 and 2007/08 respectively.
74. Between 2006 and 2007, ERI increases of more than 100 percent were achieved by three TEOs: CPIT by 183.88 percent; Unitec by 150.78 percent; and Whitireia by 100.91 percent. As the highest performing provider in PBRF outside the universities, Unitec's additional ERI of \$951,491 contributed to its sub-sector's overall positive growth in ERI in 2006 (balancing out the reductions ranging from 45 and 94 percent sustained by three other polytechnics).
75. Between 2007 and 2008, Eastern Institute of Technology and Northland Polytechnic both had exponential change to their ERI, realising increases of 469.37 and 274.28 percent respectively. These two providers were notably the only ones outside the university sub-sector to achieve growth in consecutive years.
76. While it is more likely for TEOs to multiply smaller ERIs by more than 100 percent, this rate of change may not be sustainable.
77. These sorts of fluctuations can be seen in the wānanga and PTE sub-sectors. Four of the five providers that reported ERI within the 2006-2008 period also declared a 100

percent reduction in ERI in one of the years. Bethlehem Institute of Education was the sole provider in these sub-sectors to generate stable ERI in this period.

### External research income declared for 2011 indicative funding calculations

78. In 2007-2009, the total ERI declared by the 20 TEOs participating in the ERI measure was \$1.105 billion. Table 3.2 shows the ERI declared in each of these three years, the changes from year-to-year, and the weighted three-year averages used to allocate PBRF funding for this measure.

**Table 3.2: External research income 2007 to 2009**

TEO	2007	Change 2007 → 2008	2008	Change 2008 → 2009	2009	PBRF Weighting
University of Auckland	\$116,683,274	18.73%	\$138,540,191	7.98%	\$149,595,526	<b>\$140,789,321</b>
University of Otago	\$72,047,118	20.97%	\$87,154,298	<b>(0.16%)</b>	\$87,018,665	<b>\$84,820,405</b>
Massey University	\$41,427,653	7.91%	\$44,706,446	19.10%	\$53,244,095	<b>\$48,483,452</b>
University of Canterbury	\$22,670,439	14.41%	\$25,936,887	41.68%	\$36,746,477	<b>\$30,851,715</b>
Victoria University of Wellington	\$24,029,305	22.01%	\$29,317,878	11.18%	\$32,595,392	<b>\$30,163,349</b>
University of Waikato	\$16,341,904	3.10%	\$16,848,972	22.31%	\$20,608,092	<b>\$18,652,472</b>
Lincoln University	\$18,691,168	9.88%	\$20,538,537	1.94%	\$20,937,208	<b>\$20,460,767</b>
Auckland University of Technology	\$6,728,068	<b>(3.39%)</b>	\$6,500,276	19.93%	\$7,795,524	<b>\$7,182,069</b>
Unitec New Zealand	\$1,582,521	<b>(2.64%)</b>	\$1,540,671	<b>(66.44%)</b>	\$516,996	<b>\$1,035,111</b>
Otago Polytechnic	\$101,195	44.69%	\$146,416	396.78%	\$727,370	<b>\$430,110</b>
Waikato Institute of Technology	\$278,074	<b>(30.21%)</b>	\$194,061	-	\$194,061	<b>\$206,663</b>
Manukau Institute of Technology	\$89,559	<b>(38.83%)</b>	\$54,782	247.73%	\$190,493	<b>\$127,854</b>
Christchurch Polytechnic Institute of Technology	\$841,540	<b>(75.36%)</b>	\$207,363	<b>(22.30%)</b>	\$161,119	<b>\$279,368</b>
Open Polytechnic of New Zealand	\$45,778	96.15%	\$89,795	<b>(100.00%)</b>	-	<b>\$38,295</b>
Eastern Institute of Technology	\$16,765	469.37%	\$95,455	143.40%	\$232,339	<b>\$152,093</b>
Whitireia Community Polytechnic	\$201,799	<b>(65.19%)</b>	\$70,249	<b>(61.14%)</b>	\$27,301	<b>\$68,508</b>
Northland Polytechnic	\$28,062	274.28%	\$105,032	<b>(100.00%)</b>	-	<b>\$40,971</b>
Te Whare Wānanga O Awanuiārangi	-	-	\$164,779	189.79%	\$477,510	<b>\$296,428</b>
Carey Baptist College	\$6,602	<b>(100.00%)</b>	-	-	-	<b>\$990</b>
Bethlehem Institute of Education	\$60,000	16.83%	\$70,100	0.43%	\$70,400	<b>\$68,735</b>
<b>Total</b>	<b>\$321,870,825</b>	<b>15.66%</b>	<b>\$372,282,188</b>	<b>10.44%</b>	<b>\$411,138,569</b>	<b>\$384,148,674</b>

79. The \$1.096 billion in ERI declared by universities formed 99.22 percent of the total across 2007, 2008, and 2009. The remaining TEOs reported just under one percent of the total ERI, totalling \$8.59 million over the three year period.

80. ERI reported by TEOs increased overall by 15.66 percent between 2007 and 2008, and by 10.44 percent between 2008 and 2009. A number of factors contributed to this decrease in growth rate, not least the 66.44 percent reduction in ERI from Unitec (the highest performing ITP), and the decelerated performance by the top two providers in the university sub-sector. Compared with the previous period (2007/08), fortunes notably changed inversely for University of Otago and Auckland University of Technology, with the former reporting a loss (0.16 percent) and the latter declaring a substantial gain (19.93 percent).



81. In the ITP sub-sector, two providers (Open Polytechnic and Northland Polytechnic) filed a zero return in 2009 which would subsequently lead to sizeable reductions in their indicative ERI funding for 2011. Although the majority of the ITPs again reported losses in ERI between 2008 and 2009, the three providers that reported increases all achieved triple-digit rates of growth, ranging from 143.40 percent (Eastern Institute of Technology) to 396.78 percent (Otago Polytechnic).
82. More than ever, the challenge remains for the non-university sub-sectors to generate ERI to attract additional funding from this stream. With Anamata and Laidlaw College no longer qualifying for ERI in the 2007-2009 period due to lack of declared income, just three providers remained in the wānanga and PTE sub-sectors. The future inclusion of Carey Baptist College (on a 0.0003 percent ratio) also appears tenuous, not having produced ERI in 2008 or 2009. The performance of Bethlehem Institute of Education nevertheless remained constant, and Te Whare Wānanga o Awanuiārangi recovered somewhat from previous reductions to post a 189.79 percent increase to its ERI in 2009.

### External research income funding allocations for 2009, 2010, and 2011

83. In addition to the information provided in previous annual reports, this section contains new material, allowing greater comparative analysis within and between years.

### 2009 final and 2010 final allocations

**Table 3.3: Final 2009 and final 2010 funding allocations – ERI measure**

TEO	ERI Final 2009	ERI Final 2010	Change (\$)	Change (%)
University of Auckland	\$13,159,165	\$13,843,535	\$684,370	5.20%
University of Otago (inc. Dunedin College of Education)	\$8,031,620	\$8,584,062	\$552,442	6.88%
Massey University	\$4,553,416	\$4,632,232	\$78,816	1.73%
University of Canterbury (inc. Christchurch College of Education)	\$2,432,052	\$2,608,402	\$176,350	7.25%
Victoria University of Wellington	\$2,642,736	\$2,890,712	\$247,976	9.38%
University of Waikato	\$1,826,897	\$1,788,248	(\$38,649)	(2.12%)
Lincoln University	\$2,019,161	\$2,096,185	\$77,024	3.81%
Auckland University of Technology	\$750,737	\$723,069	(\$27,668)	(3.69%)
Unitec New Zealand	\$127,136	\$154,434	\$27,298	21.47%
Otago Polytechnic	\$20,207	\$15,943	(\$4,264)	(21.10%)
Waikato Institute of Technology	\$46,481	\$29,376	(\$17,105)	(36.80%)
Manukau Institute of Technology	\$10,468	\$7,182	(\$3,286)	(31.39%)
Christchurch Polytechnic Institute of Technology	\$64,774	\$48,183	(\$16,591)	(25.61%)
Te Whare Wānanga O Awanuiārangi	\$23,487	\$17,850	(\$5,637)	(24.00%)
Whitecliff College of Arts and Design	-	-	-	-
Open Polytechnic of New Zealand	\$45,826	\$19,205	(\$26,621)	(58.09%)
Eastern Institute of Technology	\$1,686	\$6,048	\$4,362	258.72%
Te Wānanga O Aotearoa	\$1,537	-	(\$1,537)	(100.00%)
Nelson Marlborough Institute of Technology	-	-	-	-
Whitireia Community Polytechnic	\$16,534	\$13,150	(\$3,384)	(20.47%)
Northland Polytechnic	\$2,775	\$7,064	\$4,289	154.56%
Carey Baptist College	\$381	\$252	(\$129)	(33.86%)
Laidlaw College	\$440	\$24	(\$416)	(94.55%)
Bethlehem Institute of Education	\$6,919	\$7,080	\$161	2.33%
AIS St Helens	-	-	-	-
Good Shepherd College	-	-	-	-
Anamata	\$15,166	\$3,075	(\$12,091)	(79.72%)
<b>Total</b>	<b>\$35,799,601</b>	<b>\$37,495,311</b>	<b>\$1,695,710</b>	<b>4.74%</b>

84. Between the final 2009 and final 2010 allocations, funding for the ERI component increased by 4.74 percent. TEOs' share of this pool was nevertheless determined by their relative success in attracting ERI over previous three year periods.
85. In the university sub-sector, six providers received increases in ERI funding in 2010, ranging from 1.73 to 9.38 percent of their 2009 amount (Massey and Victoria University, respectively). Reduced funding was paid to University of Waikato and Auckland University of Technology in line with their lesser performance against this measure.
86. Unitec continued its strong PBRF performance in the ITP sub-sector, receiving an additional 21.47 percent of its 2009 ERI funding in 2010. However, the majority of this sub-sector sustained significant losses in their final 2010 ERI funding, ranging from -20.47 percent (Whitireia) to -58.09 percent (Open Polytechnic). Although two providers received increases in 2010 of more than 100 percent on their ERI 2009 funding, the dollar amounts were modest (each in the order of \$4,300), and the sub-sector as a whole gained less ERI funding for 2010 than in 2009.
87. In the wānanga and PTE sub-sectors, only one of the six providers to receive funding had an increase in its final allocation between 2009 and 2010 (Bethlehem Institute of Education). Funding for the five other providers declined by sizeable proportions (but relatively small amounts), ranging from 24 percent (Te Whare Wānanga o Awanuiārangi) to 100 percent (Te Wānanga o Aotearoa).

## 2010 indicative and 2010 final allocations

Table 3.4: Indicative and final funding allocations for 2010 – ERI measure

TEO	ERI 2010 Indicative	ERI 2010 Final	Change (\$)	Change (%)
University of Auckland	\$13,845,266	\$13,843,535	(\$1,731)	-0.013%
University of Otago (inc. Dunedin College of Education)	\$8,585,135	\$8,584,062	(\$1,073)	-0.012%
Massey University	\$4,632,811	\$4,632,232	(\$579)	-0.012%
University of Canterbury (inc. Christchurch College of Education)	\$2,608,729	\$2,608,402	(\$327)	-0.013%
Victoria University of Wellington	\$2,891,073	\$2,890,712	(\$361)	-0.012%
University of Waikato	\$1,788,471	\$1,788,248	(\$223)	-0.012%
Lincoln University	\$2,096,447	\$2,096,185	(\$262)	-0.012%
Auckland University of Technology	\$723,160	\$723,069	(\$91)	-0.013%
Unitec New Zealand	\$154,454	\$154,434	(\$20)	-0.013%
Otago Polytechnic	\$15,945	\$15,943	(\$2)	-0.013%
Waikato Institute of Technology	\$29,379	\$29,376	(\$3)	-0.010%
Manukau Institute of Technology	\$7,183	\$7,182	(\$1)	-0.014%
Christchurch Polytechnic Institute of Technology	\$48,189	\$48,183	(\$6)	-0.012%
Te Whare Wānanga O Awanuiārangi	\$17,853	\$17,850	(\$3)	-0.017%
Eastern Institute of Technology	\$6,048	\$6,048	-	0.000%
Open Polytechnic of New Zealand	\$19,207	\$19,205	(\$2)	-0.010%
Whitecliff College of Arts and Design	-	-	-	
Te Wānanga O Aotearoa	-	-	-	
Nelson Marlborough Institute of Technology	-	-	-	
Whitireia Community Polytechnic	\$13,152	\$13,150	(\$2)	-0.015%
Northland Polytechnic	\$7,065	\$7,064	(\$1)	-0.014%
Carey Baptist College	\$252	\$252	-	0.000%
Laidlaw College	\$24	\$24	-	0.000%
Bethlehem Institute of Education	\$7,081	\$7,080	(\$1)	-0.014%
AIS St Helens	-	-	-	
Good Shepherd College	-	-	-	
Anamata	\$3,075	\$3,075	-	0.000%
<b>Total</b>	<b>\$37,499,999</b>	<b>\$37,495,311</b>	<b>(\$4,688)</b>	<b>-0.013%</b>

88. Changes in ERI funding between 2010 indicative and final allocations were negligible, with all providers losing between zero and 0.017 percent (a decline of \$4,688 in total). The overall reduction of the pool by 0.013 percent (the same as for the QE component) saw each provider's funding changed relative to its performance-based ratio.

## 2010 final and 2011 indicative allocations

89. As seen in Tables 3.1 and 3.2, the total ERI earned by TEOs was \$998.78 million for the 2010 final, and \$1.105 billion for the 2011 indicative (a 10.66 percent or \$106.51 million increase). Table 3.5 provides detail of 2010 final funding and 2011 indicative allocations for the ERI measure.

**Table 3.5: Indicative 2011 funding compared to final 2010 funding – ERI measure**

TEO	2010 Ratio	2010 Final Funding	2011 Ratio	2011 Indicative Funding	Ratio Difference	Funding Change (\$)	Funding Change (%)
University of Auckland	36.92%	\$13,843,535	36.65%	\$13,743,636	(0.27%)	(\$99,899)	(0.72%)
University of Otago	22.89%	\$8,584,062	22.08%	\$8,280,037	(0.81%)	(\$304,025)	(3.54%)
Massey University	12.35%	\$4,632,232	12.62%	\$4,732,880	0.27%	\$100,648	2.17%
University of Canterbury	6.96%	\$2,608,402	8.03%	\$3,011,697	1.07%	\$403,295	15.46%
Victoria University of Wellington	7.71%	\$2,890,712	7.85%	\$2,944,500	0.14%	\$53,788	1.86%
University of Waikato	4.77%	\$1,788,248	4.86%	\$1,820,825	0.09%	\$32,577	1.82%
Lincoln University	5.59%	\$2,096,185	5.33%	\$1,997,348	(0.26%)	(\$98,837)	(4.72%)
Auckland University of Technology	1.93%	\$723,069	1.87%	\$701,102	(0.06%)	(\$21,967)	(3.04%)
Unitec New Zealand	0.41%	\$154,434	0.27%	\$101,046	(0.14%)	(\$53,388)	(34.57%)
Otago Polytechnic	0.04%	\$15,943	0.11%	\$41,987	0.07%	\$26,044	163.36%
Waikato Institute of Technology	0.08%	\$29,376	0.05%	\$20,174	(0.02%)	(\$9,202)	(31.32%)
Manukau Institute of Technology	0.02%	\$7,182	0.03%	\$12,481	0.01%	\$5,299	73.78%
Christchurch Polytechnic Institute of Technology	0.13%	\$48,183	0.07%	\$27,271	(0.06%)	(\$20,912)	(43.40%)
Open Polytechnic of New Zealand	0.05%	\$19,205	0.01%	\$3,738	(0.04%)	(\$15,467)	(80.54%)
Eastern Institute of Technology	0.02%	\$6,048	0.04%	\$14,847	0.02%	\$8,799	145.49%
Whitireia Community Polytechnic	0.04%	\$13,150	0.02%	\$6,688	(0.02%)	(\$6,462)	(49.14%)
Northland Polytechnic	0.02%	\$7,064	0.01%	\$3,999	(0.01%)	(\$3,065)	(43.39%)
Te Whare Wānanga O Awanuiārangi	0.05%	\$17,850	0.08%	\$28,937	0.03%	\$11,087	62.11%
Anamata	0.01%	\$3,075	-	-	(0.01%)	(\$3,075)	(100.00%)
Carey Baptist College	0.00%	\$252	0.00%	\$97	(0.00%)	(\$155)	(61.51%)
Laidlaw College	0.00%	\$24	-	-	(0.00%)	(\$24)	(100.00%)
Bethlehem Institute of Education	0.02%	\$7,080	0.02%	\$6,710	(0.00%)	(\$370)	(5.23%)
<b>Total</b>	<b>100.00%</b>	<b>\$37,495,311</b>	<b>100.00%</b>	<b>\$37,500,000</b>	<b>-</b>	<b>\$4,689</b>	<b>0.013%</b>

### Universities

90. In the university sub-sector, the greatest changes in both percentage points and dollars were the 1.07 percent increased share realised by the University of Canterbury (allocated an additional \$403,295), and the 0.81 percent decrease to the University of Otago's ratio (to the value of -\$304,025).
91. In terms of relative performance, Victoria University achieved a higher ERI ratio than the University of Canterbury in 2010, but its increase in 2011 nevertheless fell behind the latter's 15.46 percent growth to secure an 8.03 percent share of the pool. On a smaller baseline, Lincoln outperformed the higher overall performing University of Waikato in both the 2010 and 2011 ERI ratios, proving to be relatively strong in generating ERI despite sustaining a 4.72 percent drop in funding for 2011.
92. Reductions in ERI funding for 2011 notably went to the two overall highest and two lowest performing universities. Together, the University of Auckland and the University of Otago nevertheless received almost 60 percent of the funding available for this measure in both years (37 and 22 percent of the pool, respectively).

**Other TEOs**

93. Outside of the universities, Eastern Institute of Technology again increased its share of the funding for this measure (this time by 145.49 percent), with rises for indicative allocations also going to Otago Polytechnic and Manukau Institute of Technology. All other ITPs saw reductions in their funding for this component, ranging from -31.32 percent to -80.54 percent of their 2010 final funding. While all PTEs also stood to lose funding in 2011 (between 5.23 and 100 percent), Te Whare Wānanga o Awanuiārangī was up by \$11,087 or 62.11 percent on its final 2010 allocation.

## Chapter 4 : Research degree completions

### Introduction

94. The research degree completions (RDC) measure accounts for 25 percent of the total funds to be allocated through the PBRF each year. The use of RDC as a performance measure in the PBRF serves two key purposes:
- It captures, to some degree, the connection between staff research and research training, thus providing some assurance of the future capability of tertiary education research; and
  - It provides a proxy for research quality. The underlying assumption is that students choosing to undertake lengthy, expensive and advanced degrees (especially Doctorates) will tend to search out departments and supervisors that have excellent reputations in the relevant fields for high quality research and research training.
95. To be eligible for the RDC measure, research-based postgraduate degrees (such as Masters and Doctorates) must be completed within a TEO, and meet the following criteria:
- the degree has an externally assessed research component of 0.75 Equivalent Full-Time Student (EFTS) value or more;
  - the student who has completed the degree has met all compulsory academic requirements by 31 December of the relevant year; and
  - the student has completed the course successfully.
96. Following extensive work with the sector to improve reporting practices, the TEC has moved to using the SDR for RDC data collection, on which funding decisions are based after TEOs confirm their figures. This new process was first used for the final 2010 funding allocation.

### Funding formula and allocations

97. The RDC measure is calculated as a weighted three-year rolling average, with additional weightings for the following factors:
- the funding category of the subject area (“cost weighting”);
  - Māori and Pacific student completions (“equity weighting”); and
  - the volume of research in the degree programme (“research component weighting”).
98. The formula used to calculate the number of research degree completions for each TEO is:

$$\text{RDC} = [(\text{cost weighting for relevant subject area}) \times (\text{equity weighting}) \times (\text{research component weighting})]$$

99. The cost weightings for the various subject areas, as shown in Table 4.1 below, are the same as those applied in the Quality Evaluation part of the PBRF. They are determined by the course's Student Achievement Component funding category as set down in the course register.

**Table 4.1: Cost weighting**

Student Achievement Component – Funding Category	Weighting
A, I, J	1
B, L	2
C, G, H, M, Q	2.5

100. Table 4.2 shows the equity weighting applied to each individual research degree completion. This weighting aims to encourage TEOs to enrol and support Māori and Pacific students, as their representation at higher levels of the New Zealand Qualifications Framework is low.<sup>8</sup> The ethnicity weighting is applied to each matched course completion record, based on the student ethnicity from the student file associated with the matched enrolment.

**Table 4.2: Equity weighting**

Ethnicity	Weighting
Māori	2
Pacific	2
All other ethnicities	1

101. The research component weighting uses a “volume of research factor” (VRF) based on the volume of research making up the completed degree programme, as shown in Table 4.3.

**Table 4.3: Research component weighting**

Research component weighting	VRF
Less than 0.75 EFTS	0
0.75 EFTS to 1.0 EFTS research component	EFTS value of research component
Masters course of 1.0 thesis or more	1
Professional doctorate with research component	EFTS value of research component
Doctorate	3

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<sup>8</sup> From the 2012 Quality Evaluation onwards, a strategic equity weighting of 4 will be applied to all RDCs in which the content of the thesis is written entirely in te reo Māori.



102. For 2010 funding, the formula for the proportion of the RDC measure allocated to each TEO is:

$$\frac{\sum [(2006 \text{ RDC for TEO} \times 0.15) + (2007 \text{ RDC for TEO} \times 0.35) + (2008 \text{ RDC for TEO} \times 0.5)]}{\sum [(Total \text{ 2006 RDC for all TEOs} \times 0.15) + (Total \text{ 2007 RDC for all TEOs} \times 0.35) + (Total \text{ 2008 RDC for all TEOs} \times 0.5)]} \times \text{total amount of funding available for the RDC component of the PBRF}$$

103. For 2011 funding, the formula for the proportion of the RDC measure allocated to each TEO is:

$$\frac{\sum [(2007 \text{ RDC for TEO} \times 0.15) + (2008 \text{ RDC for TEO} \times 0.35) + (2009 \text{ RDC for TEO} \times 0.5)]}{\sum [(Total \text{ 2007 RDC for all TEOs} \times 0.15) + (Total \text{ 2008 RDC for all TEOs} \times 0.35) + (Total \text{ 2009 RDC for all TEOs} \times 0.5)]} \times \text{total amount of funding available for the RDC component of the PBRF}$$

## Research degree completion funding allocations for 2009, 2010, and 2011

### 2009 final and 2010 final allocations

**Table 4.4: Final 2009 and final 2010 funding allocations – RDC measure**

TEO	RDC Final 2009	RDC Final 2010	Change (\$)	Change (%)
University of Auckland	\$17,952,070	\$18,880,667	\$928,597	5.17%
University of Otago (inc. Dunedin College of Education)	\$10,479,672	\$10,729,964	\$250,292	2.39%
Massey University	\$9,953,870	\$8,553,337	(\$1,400,533)	(14.07%)
University of Canterbury (inc. Christchurch College of Education)	\$7,105,856	\$8,628,278	\$1,522,422	21.42%
Victoria University of Wellington	\$4,905,701	\$5,727,470	\$821,769	16.75%
University of Waikato	\$4,289,982	\$4,272,878	(\$17,104)	(0.40%)
Lincoln University	\$2,111,036	\$1,847,373	(\$263,663)	(12.49%)
Auckland University of Technology	\$1,747,509	\$2,750,001	\$1,002,492	57.37%
Unitec New Zealand	\$419,245	\$431,075	\$11,830	2.82%
Otago Polytechnic	\$95,517	\$179,314	\$83,797	87.73%
Waikato Institute of Technology	\$263,376	\$238,888	(\$24,488)	(9.30%)
Manukau Institute of Technology	-	-	-	-
Christchurch Polytechnic Institute of Technology	-	-	-	-
Te Whare Wānanga O Awanuiārangi	\$65,290	\$59,771	(\$5,519)	(8.45%)
Whitecliff College of Arts and Design	\$241,814	\$167,835	(\$73,979)	(30.59%)
Open Polytechnic of New Zealand	-	-	-	-
Eastern Institute of Technology	-	-	-	-
Te Wānanga O Aotearoa	-	-	-	-
Nelson Marlborough Institute of Technology	-	-	-	-
Whitireia Community Polytechnic	-	-	-	-
Northland Polytechnic	-	-	-	-
Carey Baptist College	-	-	-	-
Laidlaw College	\$35,063	\$25,334	(\$9,729)	(27.75%)
Bethlehem Institute of Education	-	-	-	-
ALS St Helens	-	-	-	-
Good Shepherd College	-	-	-	-
Anamata	-	-	-	-
<b>Total</b>	<b>\$59,666,001</b>	<b>\$62,492,185</b>	<b>\$2,826,184</b>	<b>4.74%</b>



104. Between the final 2009 and final 2010 allocations, funding for the RDC component increased by 4.74 percent. TEOs' shares of this pool were determined by their relative success against the RDC measure for the respective three year periods.
105. In the university sub-sector, five providers received increases on their 2009 RDC funding for 2010, ranging from 2.39 percent (University of Otago) to 57.37 percent (Auckland University of Technology). Massey University underwent the most significant reduction in terms of both percentage points and funding, dropping by 14.07 percent or \$1.4 million on its previous year's performance.
106. Of the ten ITPs participating in the PBRF, three reported RDC data for the 2009 and 2010 funding years. Two of these providers increased their RDC funding in 2010, with Otago Polytechnic achieving a rise of 87.73 percent (\$83,797) on its 2009 allocation. Unitec's 2.82 percent growth in RDCs netted it an additional \$11,830.

### 2010 indicative and 2010 final allocations

**Table 4.5: Indicative and final funding allocations for 2010 – RDC measure**

TEO	RDC 2010 Indicative	RDC 2010 Final	Change (\$)	Change (%)
University of Auckland	\$19,452,172	\$18,880,667	(\$571,505)	<b>(2.94%)</b>
University of Otago (inc. Dunedin College of Education)	\$9,488,167	\$10,729,964	\$1,241,797	13.09%
Massey University	\$8,372,126	\$8,553,337	\$181,211	2.16%
University of Canterbury (inc. Christchurch College of Education)	\$7,058,150	\$8,628,278	\$1,570,128	22.25%
Victoria University of Wellington	\$5,261,331	\$5,727,470	\$466,139	8.86%
University of Waikato	\$4,107,382	\$4,272,878	\$165,496	4.03%
Lincoln University	\$1,544,193	\$1,847,373	\$303,180	19.63%
Auckland University of Technology	\$2,555,558	\$2,750,001	\$194,443	7.61%
Unitec New Zealand	\$377,879	\$431,075	\$53,196	14.08%
Otago Polytechnic	\$327,359	\$179,314	(\$148,045)	<b>(45.22%)</b>
Waikato Institute of Technology	\$235,943	\$238,888	\$2,945	1.25%
Manukau Institute of Technology	-	-	-	-
Christchurch Polytechnic Institute of Technology	-	-	-	-
Te Whare Wānanga O Awanuiārangi	\$55,679	\$59,771	\$4,092	7.35%
Eastern Institute of Technology	\$24,009	-	(\$24,009)	<b>(100.00%)</b>
Open Polytechnic of New Zealand	-	-	-	-
Whitecliff College of Arts and Design	\$140,579	\$167,835	\$27,256	19.39%
Te Wānanga O Aotearoa	-	-	-	-
Nelson Marlborough Institute of Technology	-	-	-	-
Whitireia Community Polytechnic	-	-	-	-
Northland Polytechnic	-	-	-	-
Carey Baptist College	-	-	-	-
Laidlaw College	\$24,483	\$25,334	\$851	3.48%
Bethlehem Institute of Education	-	-	-	-
AIS St Helens	-	-	-	-
Good Shepherd College	-	-	-	-
Anamata	-	-	-	-
<b>Total</b>	<b>\$59,025,010</b>	<b>\$62,492,185</b>	<b>\$3,467,175</b>	<b>5.87%</b>

107. The final wash-up for the 2010 RDC funding increased indicative allocations by 5.87 percent (\$3.5 million). Fifteen of the 27 participating TEOs were allocated RDC funding for 2010. Twelve of those providers received an increase on their 2009 funding, ranging

from 1.25 percent (Waikato Institute of Technology) to 22.25 percent (University of Canterbury).

108. In the university sub-sector, the three South Island providers all produced double-digit growth (22.25 percent by the University of Canterbury; 19.63 percent by Lincoln; and 13.09 percent by the University of Otago). While the latter continued its solid performance as one of the top performing universities in the PBRF, the growth achieved by the other two providers was also strong, particularly for Lincoln. The University of Auckland was the only provider in this sub-sector (and one of three TEOs overall) to undergo a reduction, losing 2.94 percent (\$571,505) of its indicative funding in the final wash-up.
109. Change was variable between the four ITPs that reported RDC data. In its final funding, Unitec received an additional 14.08 percent on its indicative allocation (the relatively sizeable sum of \$53,196). Waikato Institute of Technology also increased its funding, albeit by a more modest 1.25 percent (\$2,945). The other two ITPs underwent significant negative change. Otago Polytechnic's final funding decreased by 45.22 percent, some \$148,045. The wash-up also resulted in Eastern Institute of Technology's entire indicative allocation of \$24,009 being recovered due to no RDCs.
110. While few of the other participating providers returned RDC data, the three that did so all enjoyed a rise in funding between their indicative and final allocations for 2010. The largest increase in both percentage points and dollars was realised by Whitecliffe College which generated an extra 19.39 percent or \$27,256. Operating on a smaller RDC baseline funding, Te Whare Wānanga o Awanuiārangi received 7.35 percent (just over \$4,000). Laidlaw College's 3.48 percent growth was a more modest \$851.

### 2010 final and 2011 indicative allocations

111. For the 2010 final funding, \$62.49 million was available for allocation through the RDC measure, based on 2006-2008 data. A slightly higher total of \$62.50 million was available for the 2011 indicative RDC allocations, based on 2007-2009 data.
112. Fifteen TEOs were eligible to receive indicative RDC funding for 2011, with Eastern Institute of Technology being allocated funding through this measure after a nil result in the wash-up for 2010, as noted above.
113. Detailed information about RDCs for 2006 to 2009 is provided later in the chapter.
114. Table 4.6 compares 2010 final and 2011 indicative funding allocations for the RDC measure.<sup>9</sup>

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<sup>9</sup> The RDC figures for over-lapping years (2007 and 2008) may not match due to current data accuracy work. Updated figures will be reported in the 2011 annual report.

**Table 4.6: Indicative 2011 funding compared to final 2010 funding – RDC measure**

TEOs	2010 Ratio	2010 Final Funding	2011 Ratio	2011 Indicative Funding	Ratio Difference	Funding Change (\$)	Funding Change (%)
University of Auckland	30.21%	\$18,880,667	32.54%	\$20,339,615	2.33%	\$1,458,948	7.73%
University of Otago (inc. Dunedin College of Education)	17.17%	\$10,729,964	17.66%	\$11,034,832	0.49%	\$304,868	2.84%
Massey University	13.69%	\$8,553,337	13.85%	\$8,653,207	0.16%	\$99,870	1.17%
University of Canterbury (inc. Christchurch College of Education)	13.81%	\$8,628,278	12.69%	\$7,933,547	(1.11%)	(\$694,731)	<b>(8.05%)</b>
Victoria University of Wellington	9.17%	\$5,727,470	8.38%	\$5,235,176	(0.79%)	(\$492,294)	<b>(8.60%)</b>
University of Waikato	6.84%	\$4,272,878	6.46%	\$4,036,217	(0.38%)	(\$236,661)	<b>(5.54%)</b>
Lincoln University	2.96%	\$1,847,373	2.98%	\$1,861,238	0.02%	\$13,865	0.75%
Auckland University of Technology	4.40%	\$2,750,001	3.68%	\$2,297,775	(0.72%)	(\$452,226)	<b>(16.44%)</b>
Unitec New Zealand	0.69%	\$431,075	0.93%	\$578,905	0.24%	\$147,830	34.29%
Otago Polytechnic	0.29%	\$179,314	0.20%	\$123,310	(0.09%)	(\$56,004)	<b>(31.23%)</b>
Waikato Institute of Technology	0.38%	\$238,888	0.35%	\$217,288	(0.03%)	(\$21,600)	<b>(9.04%)</b>
Eastern Institute of Technology	-	-	0.09%	\$53,248	0.09%	\$53,248	
Te Whare Wānanga O Awanuiārangi	0.10%	\$59,771	0.08%	\$48,950	(0.02%)	(\$10,821)	<b>(18.10%)</b>
Whitecliffe College of Arts and Design	0.27%	\$167,835	0.08%	\$51,566	(0.19%)	(\$116,269)	<b>(69.28%)</b>
Laidlaw College	0.04%	\$25,334	0.06%	\$35,125	0.02%	\$9,791	38.65%
<b>Total</b>	<b>100.00%</b>	<b>\$62,492,185</b>	<b>100.00%</b>	<b>\$62,499,999</b>	<b>-</b>	<b>\$7,814</b>	<b>0.013%</b>

115. The university sub-sector continued to perform most strongly against the RDC measure, receiving 98.2 percent of the available funding in both their final 2010 and indicative 2011 allocations.
116. The University of Auckland and the University of Otago were again the top performers, jointly receiving 47.38 percent (\$29.6 million) of the available funding in 2010, and increasing to just over 50 percent (\$31.4 million) in 2011 indicative allocations.
117. The University of Auckland stood to make particularly good gains in its indicative funding, increasing its allocation by 7.73 percent on its final 2010 amount – this was the largest positive percentage point shift in the university sub-sector, and the third largest in the sector as a whole.
118. The more moderate increases allocated to the other top performers, University of Otago and Massey, were still of significant value (\$304,868 and \$99,870 respectively). Lincoln was also allocated a small increase of 0.75 percent, bucking the trend of the less highly performing universities to undergo reductions in their 2011 RDC allocations.
119. While the average weighted percentage point change for the university sub-sector was -3.27 percent, the wide scale of the relative baselines and ratios meant that this nevertheless equated to a \$1,639 growth overall. The remaining TEOs jointly received 1.8 percent of RDC funding in both 2010 and 2011, equating to \$1.1 million in both years.
120. Unitec had a major increase of 34.29 percent (almost \$150,000). Eastern Institute of Technology was also expected to perform well, being allocated \$53,248 for 2011 on a higher ratio than the wānanga and PTEs despite only participating in the RDC measure since 2008. Having previously lost its entire indicative RDC allocation in the final 2010

wash-up, Eastern Institute of Technology's receipt of RDC funding for the first time will be confirmed in the 2011 wash-up.

121. Indicative funding for the two other ITPs stood to fall by 31.23 and 9.04 percent (Otago Polytechnic and Waikato Institute of Technology, respectively), a significant reduction for these relatively solid performing ITPs in the PBRF. Decreased funding was also allocated to Te Whare Wānanga o Awanuiārangi, the only wānanga participating in the RDC measure (a 18.10 percent drop on its 2010 final funding).
122. Performance was variable in the PTE sub-sector. Following a 19.39 percent increase on its 2010 indicative RDC allocation in the wash-up, Whitecliffe College was set to lose a substantial amount of its relatively large baseline RDC funding in its 2011 indicative allocation (a drop of 69.28 percent, over \$116,000). Laidlaw College, however, stood to gain 38.65 percent in its 2011 funding, albeit on a much smaller scale. This nevertheless enabled the PTE to further make further gains against its 27.75 reduction in RDC funding between final 2009 and final 2010 allocations.

### Research degree completions by ethnicity

123. Table 4.7 below presents ethnicity counts for RDCs. To provide a maximum of meaningful data on change here, this table combines figures from the years of two RDC funding periods (both the 2010 final and the 2011 indicative allocations) to cover 2006-2009.

**Table 4.7: Research degree completions by ethnicity, 2006-2009**

Ethnicity	2006	Proportion of 2006 total	Change 2006 →2007	2007	Proportion of 2007 total	Change 2007 →2008	2008	Proportion of 2008 total	Change 2008 →2009	2009	Proportion of 2009 total
European	1,563	62.42%	-2.05%	1,531	60.18%	9.86%	1,682	61.01%	4.82%	1,763	60.44%
Asian	397	15.85%	31.23%	521	20.48%	4.41%	544	19.73%	12.13%	610	20.91%
Other	199	7.95%	13.07%	225	8.84%	3.11%	232	8.41%	-5.17%	220	7.54%
Māori	138	5.51%	-11.59%	122	4.80%	8.20%	132	4.79%	-3.03%	128	4.39%
Not stated	75	3.00%	-9.33%	68	2.67%	25.00%	85	3.08%	8.24%	92	3.15%
Pacific Peoples	62	2.48%	-20.97%	49	1.93%	51.02%	74	2.68%	6.76%	79	2.71%
MELAA	70	2.80%	-60.00%	28	1.10%	-71.43%	8	0.29%	212.50%	25	0.86%
<b>Total</b>	<b>2,504</b>	<b>100.00%</b>	<b>1.60%</b>	<b>2,544</b>	<b>100.00%</b>	<b>8.37%</b>	<b>2,757</b>	<b>100.00%</b>	<b>5.80%</b>	<b>2,917</b>	<b>100.00%</b>

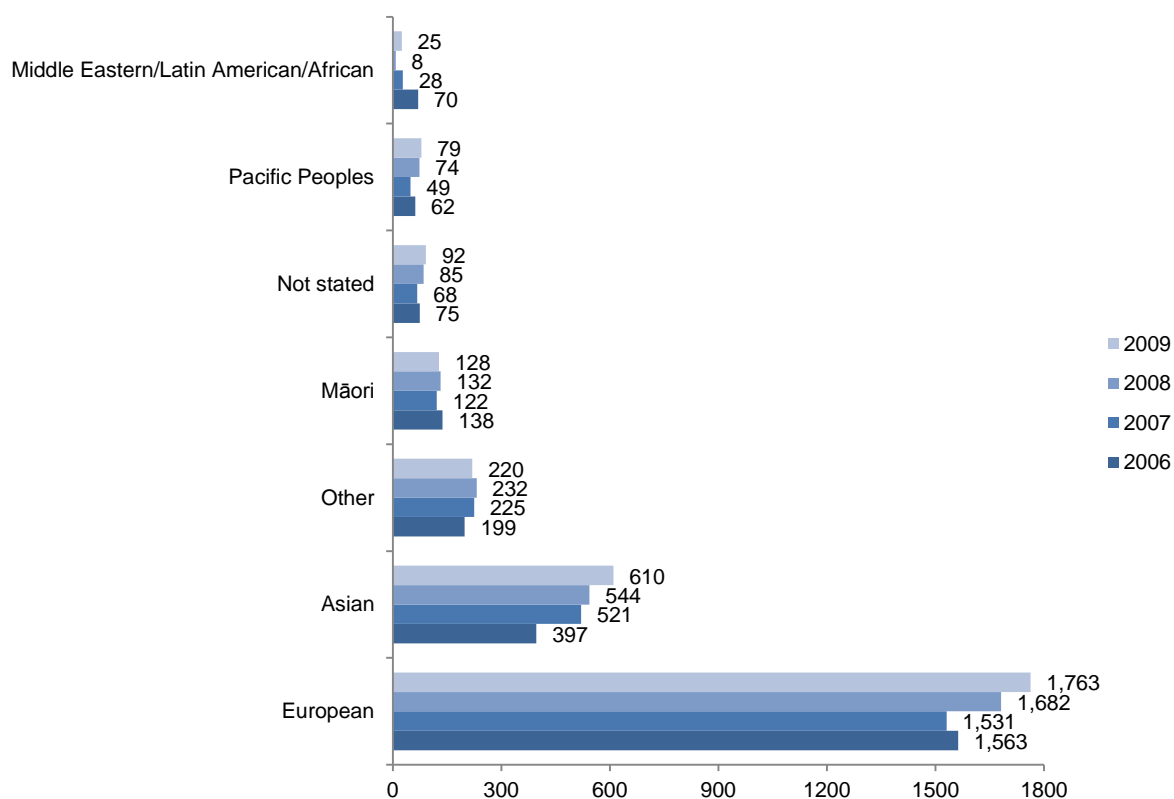
\*MELAA refers to Middle Eastern/Latin American/African

124. Year-on-year, the counts of RDCs have risen, the most significant growth being the 8.37 percent rise between 2007 and 2008 following declining numbers for all but Asian and 'Other' categories in the previous year.
125. Six of the seven ethnic categories grew between 2007 and 2008, with 'Not stated', and Pacific Peoples categories realising double-digit increases of 25 and 51 percent respectively. MELAA, however, underwent a 71.43 decline in numbers on the previous year. These being the three categories with the smallest baselines, their large percentage point shifts had lower relative impact in the total pool. Thus the 51.02 percent gain in Pacific Peoples between 2007 and 2008 was in effect 25 completions, and netted less than one percent increase in the share of the pool.
126. Sizeable growth also occurred overall between 2008 and 2009, with increased numbers for all categories except 'Other' and Māori. Although it equated to just four fewer

students, this decrease for the Māori category (of -3.03 percent) contributed to its decline in the proportion of the total RDC student body for the fourth consecutive year (falling from 5.51 percent in 2006 to 4.39 percent in 2009). While a category's share remains relative to the performance of the others, this appears to be a sub-optimal outcome for Māori, particularly as an equity-weighted group.

127. The results of the other weighted priority group, Pacific Peoples, were more variable but positive overall. Between 2006 and 2009, the RDC count increased from 62 to 79, and the proportion of the Pacific Peoples category proportion of the pool rose slightly from 2.48 to 2.71 percent.
128. Over the four years of data, the proportion of learners identifying as European remained steady, fluctuating between 60.18 and 62.42 percent of the total RDC student body. The most significant change for this group was the 9.86 percent rise between 2007 and 2008.
129. The Asian group underwent the most accelerated growth, with rates of change as high as 31.23 percent achieved on a substantial baseline. Overall this category increased its share of RDCs from 15.85 in 2006 to 20.91 percent in 2009. It should be noted that non-weighted ethnicity codes may have been under-reported, particularly in the manual returns system prior to the adoption of the SDR for collection of RDC data.
130. Further factors to consider in the analysis of ethnicity data include the fact that students may change their reported ethnicity or ethnicities over the course of their study which can exceed six years in duration.

**Figure 4.1: Research degree completions by ethnicity, 2006-2009**



**Research degree completions by TEO, 2006-2009**

131. The tables in the series that follows provide RDC counts for the years 2006 to 2009, thereby incorporating overlapping data used for two funding periods<sup>10</sup> and allowing greater analysis of changes over time.

<sup>10</sup> While these counts were accurate at the time funding decisions were made in late 2011, they may be subject to change. Any revisions for the years 2007 to 2009 will be reflected in the PBRF Annual Report 2011.



**Table 4.8: RDCs by NQF grouping with change between years, 2006-2009**

TEO	PBRF NQF grouping	2006	Change 2006 →2007	2007	Change 2007 →2008	2008	Change 2008 →2009	2009	Total
The University of Auckland	Doctorates	177	11.30%	197	15.23%	227	7.93%	245	846
	Masters	622	<b>(6.43%)</b>	582	2.92%	599	17.70%	705	2,508
	PG Dips & Hons	7	<b>(14.29%)</b>	6	0.00%	6	<b>(16.67%)</b>	5	24
University of Otago (inc. Dunedin College of Education)	Doctorates	131	11.45%	146	5.48%	154	14.94%	177	608
	Masters	245	<b>(13.47%)</b>	212	1.42%	215	4.19%	224	896
	PG Dips & Hons	14	50.00%	21	<b>(19.05%)</b>	17	5.88%	18	70
Massey University	Doctorates	78	46.15%	114	4.39%	119	1.68%	121	432
	Masters	331	<b>(34.44%)</b>	217	14.75%	249	<b>(6.43%)</b>	233	1,030
University of Canterbury (inc. Christchurch College of Education)	Doctorates	66	59.09%	105	28.57%	135	<b>(14.07%)</b>	116	422
	Masters	134	91.79%	257	<b>(18.68%)</b>	209	<b>(1.44%)</b>	206	806
Victoria University of Wellington	Doctorates	43	104.65%	88	<b>(15.91%)</b>	74	1.35%	75	280
	Masters	182	6.04%	193	34.20%	259	<b>(8.49%)</b>	237	871
University of Waikato	Doctorates	55	14.55%	63	<b>(25.40%)</b>	47	38.30%	65	230
	Masters	167	<b>(22.16%)</b>	130	2.31%	133	<b>(1.50%)</b>	131	561
Auckland University of Technology	Doctorates	7	85.71%	13	269.23%	48	<b>(22.92%)</b>	37	105
	Masters	105	<b>(58.10%)</b>	44	204.55%	134	8.96%	146	429
	PG Dips & Hons	2	<b>(50.00%)</b>	1	<b>(100.00%)</b>			1	4
Lincoln University	Doctorates	36	<b>(25.00%)</b>	27	<b>(25.93%)</b>	20	65.00%	33	116
	Masters	49	<b>(22.45%)</b>	38	<b>(10.53%)</b>	34	11.76%	38	159
Unitec New Zealand	Doctorates			1	<b>(100.00%)</b>			1	2
	Masters	28	46.43%	41	<b>(21.95%)</b>	32	121.88%	71	172
Waikato Institute of Technology	Doctorates	1	<b>(100.00%)</b>			1	<b>(100.00%)</b>		2
	Masters	4	50.00%	6	0.00%	6	<b>(50.00%)</b>	3	19
	PG Dips & Hons	7	42.86%	10	<b>(10.00%)</b>	9	22.22%	11	37
Otago Polytechnic	Masters	5	100.00%	10	40.00%	14	<b>(71.43%)</b>	4	33
Whitecliffe College of Arts and Design	Masters	7	71.43%	12	<b>(25.00%)</b>	9	<b>(100.00%)</b>		28
Te Whare Wānanga O Awanuiārangi	Masters			7	<b>(57.14%)</b>	3	0.00%	3	13
Laidlaw College Incorporated	Masters	1	200.00%	3	33.33%	4	25.00%	5	13
Eastern Institute of Technology	Masters							6	6
<b>Total</b>		<b>2,504</b>	<b>1.60%</b>	<b>2,544</b>	<b>8.37%</b>	<b>2,757</b>	<b>5.80%</b>	<b>2,917</b>	<b>10,722</b>

### Universities

132. While none of the participating TEIs sustained consistent year-on-year growth in their total count of all RDC types between 2006 and 2009, the three highest performing universities produced steady rises in the numbers of PhDs completed over these four years (The University of Auckland; University of Otago; Massey). With the exception of Lincoln, doctoral completions also rose in the remaining universities, albeit less consistently and over two – rather than all three – measured periods of change.

133. The University of Canterbury and Auckland University of Technology made gains in doctoral completions in two consecutive years on significant rates of change: between 2006 and 2007, for example, PhD completion rose by 59.09 percent and 85.71 percent for these two respective universities. Based initially on a single-digit count, Auckland University of Technology's rate further increased over the subsequent interval where the number of doctorates grew from 13 to 48 – or a 269.23 percent rise between 2007 and 2008 alone. These steep increases for Auckland University of Technology reflect at least in part the relatively recent establishment of the institution as a university in 2000, and its concomitant approval to grant PhDs.

134. This same explanation cannot, however, be attributed to the sizeable rises in doctoral completions at the long-established University of Canterbury, nor Victoria University of Wellington which realised an increase of 104.65 percent between 2006 and 2007. As these figures are not sustained in subsequent years, however, they suggest one-off 'surges' in completions, and may reflect earlier 'surges' in uptake – targeted or otherwise – and/or transferrals from Masters degrees.<sup>11</sup>
135. Indeed, growth rates for Masters completions were more frequently inferior to those of PhDs in the university sub-sector. While seven universities achieved multiple rises in doctoral completions between 2006 and 2009, just four universities achieved the same for Masters in this period.
136. It must be noted, however, that baseline numbers of Masters were substantially higher than doctoral counts. In effect, rates of change were often lower for level nine courses relative to PhD completions on smaller denominators as can be seen, for example, in the 2007 figures for the University of Auckland.
137. The ratios of doctoral to Masters completions varied considerably within the university sub-sector. Calculations based on the total number of each university's RDCs from 2006 to 2009 show a spread of provider clusters: in the higher bracket, Lincoln, the University of Otago, and the University of Canterbury had the highest proportions of PhD completions (42 percent, 39 percent, and 34 percent respectively); Massey and the University of Waikato shared a 30:70 weighting for L10 and L9 courses; and in the lower range, PhDs made up one quarter of all RDCs at the University of Auckland and Victoria University of Wellington, with Auckland University of Technology an outlier on this count (its lesser 20:80 ratio of doctorates to Masters again attributable in part to the relative newness of its eligible research degree programmes).
138. Many factors may account for the variance in RDC ratios, not least of which the different pathways of post-Bachelor progression that an institution might favour – whether entry into doctoral level study, for instance, is gained directly or via Masters and even Postgraduate Diplomas or Honours programmes.
139. There was a significant difference in the proportions of research degrees between the two highest performing universities from 2006 to 2009. Whereas the proportion of PhDs at the University of Otago was 14 percentage points clear of the University of Auckland, the latter achieved a greater amount of doctoral completions, as well as producing a particularly high number of Masters (and thus, a large pool of potential PhD candidates).
140. As noted, these two universities have enjoyed consecutive increases in completion rates for both PhDs and Masters between 2007 and 2009. Other providers that have experienced declines may nevertheless expect to recover and/or increase their RDC counts in future years if participation and retention rates for long duration courses have been stable and/or rising.

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<sup>11</sup> These figures may also reflect improved reporting practices and greater accuracy in data returns.



### Other TEOs

141. In the ITP sub-sector, counts of RDCs remained traditionally low compared with the universities. The exception was Unitec which conferred more PBRF-eligible Masters degrees over 2006-2009 than Lincoln, and almost doubled the latter's tally of eligible level 9 completions in 2009. Unlike the other providers, Waikato Institute of Technology most commonly awarded Postgraduate Diplomas and Honours – these made up 64 percent of its aggregate RDCs between 2006 and 2009.
142. Masters were the only level of research degrees awarded by the other participating TEIs, two of which were first approved to offer these qualifications in 2003 (the first Masters were awarded by Eastern Institute of Technology in 2009, and by Te Whare Wānanga o Awanuiāraangi in 2007). The latter will also expect to award doctorates in the future, having been granted authority in 2008 to offer these degrees.
143. Two PTEs produced graduates of Masters degrees, with Laidlaw steadily increasing its count while Whitecliffe sustained two consecutive falls.

### Research degree completions by broad field of study and subject-area weighting, 2006-2009

144. This section provides sets of tables and associated commentary on research degree completions between 2006 and 2009 for each level of PBRF-eligible postgraduate study. In addition to subject-area weightings, data is cut by broad field of study, as defined by the New Zealand Standard Classification of Education (NZSCED).<sup>12</sup> TEOs appear by alphabetical order.

### All RDC types

145. Table 4.9 sets out the numbers of RDCs (all types aggregated) for each TEO by broad field of study.

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<sup>12</sup> For more detail, see [http://www.educationcounts.govt.nz/data-services/collecting-information/code\\_sets/new\\_zealand\\_standard\\_classification\\_of\\_education\\_nzsced/nzsced\\_broad\\_fields\\_of\\_study](http://www.educationcounts.govt.nz/data-services/collecting-information/code_sets/new_zealand_standard_classification_of_education_nzsced/nzsced_broad_fields_of_study)

**Table 4.9: Aggregated RDC types by broad field of study and TEO, 2006-2009**

Broad NZSCED	TEO	2006	2007	2008	2009	Total
Agriculture, Environmental and Related Studies	Lincoln University	27	20	16	19	82
	Massey University	20	19	18	10	67
	The University of Auckland	6	10	10	10	36
	University of Canterbury	6	6	4	3	19
	University of Otago	23	16	17	20	76
	University of Waikato	1		4	1	6
	Victoria University of Wellington	5	9	14	10	38
Architecture and Building	Lincoln University				2	2
	Massey University	3	1	1	2	7
	The University of Auckland	13	15	21	78	127
	Unitec New Zealand		5	2	28	35
	Victoria University of Wellington	4	5	5	4	18
Creative Arts	Auckland University of Technology	27	8	46	48	129
	Massey University	40	29	52	36	157
	Otago Polytechnic	5	6	11	1	23
	The University of Auckland	104	70	134	139	447
	Unitec New Zealand	7	11	4	5	27
	University of Canterbury	16	27	16	21	80
	University of Otago	6	9	8	5	28
	University of Waikato	9	15	9	19	52
	Victoria University of Wellington	42	46	57	53	198
	Waikato Institute of Technology	11	16	15	14	56
	Whitecliffe College of Arts and Design	7	12	9		28
Education	Auckland University of Technology			5	4	9
	Massey University	40	37	31	15	123
	The University of Auckland	46	34	43	35	158
	Unitec New Zealand	10	7	16	14	47
	University of Canterbury (inc. Christchurch College of Education)	8	7	10	7	32
	University of Otago (inc. Dunedin College of Education)	13	9	8	5	35
	University of Waikato	17	29	32	27	105
Victoria University of Wellington	19	19	11	9	58	

**Table 4.9: Aggregated RDC types by broad field of study and TEO, 2006-2009 – continued**

Broad NZSCED	TEO	2006	2007	2008	2009	Total
Engineering and Related Technologies	Auckland University of Technology	4	2	12	16	34
	Lincoln University	2	1			3
	Massey University	32	41	26	47	146
	The University of Auckland	76	88	81	92	337
	University of Canterbury	47	90	77	59	273
	University of Otago	7	5	12	10	34
	University of Waikato	12	13	18	14	57
	Victoria University of Wellington	12	12	23	20	67
Food, Hospitality and Personal Services	Auckland University of Technology			1		1
Health	Auckland University of Technology	22	13	45	27	107
	Eastern Institute of Technology				6	6
	Massey University	32	26	28	40	126
	Otago Polytechnic		4	3	3	10
	The University of Auckland	102	103	130	140	475
	Unitec New Zealand		1	1	6	8
	University of Canterbury	6	14	15	17	52
	University of Otago	62	81	85	89	317
	Victoria University of Wellington	6	8	12	15	41
	Waikato Institute of Technology	1		1		2
Information Technology	Auckland University of Technology	5	3	13	21	42
	Lincoln University		2	6	3	11
	Massey University	20	21	15	15	71
	The University of Auckland	46	52	47	50	195
	Unitec New Zealand	5	7	7	6	25
	University of Canterbury	5	22	5	14	46
	University of Otago	18	11	14	7	50
	University of Waikato	17	17	9	15	58
	Victoria University of Wellington	2	13	14	13	42

**Table 4.9: Aggregated RDC types by broad field of study and TEO, 2006-2009 – continued**

Broad NZSCED	TEO	2006	2007	2008	2009	Total
Management and Commerce	Auckland University of Technology	14	18	23	39	94
	Lincoln University	20	20	9	20	69
	Massey University	25	22	22	32	101
	The University of Auckland	44	45	35	33	157
	Unitec New Zealand	1	7	2	7	17
	University of Canterbury	8	6	7	5	26
	University of Otago	19	18	17	28	82
	University of Waikato	12	7	7	12	38
	Victoria University of Wellington	13	19	24	26	82
Mixed Field Programmes	Auckland University of Technology	38	11	20	21	90
	Unitec New Zealand	5	4		3	12
	Victoria University of Wellington				1	1
Natural and Physical Sciences	Auckland University of Technology	2	1	6	3	12
	Lincoln University	15	12	13	23	63
	Massey University	56	46	68	57	227
	The University of Auckland	175	180	165	204	724
	University of Canterbury	43	91	101	85	320
	University of Otago	137	143	142	143	565
	University of Waikato	83	47	44	55	229
	Victoria University of Wellington	42	57	79	74	252
Society and Culture	Auckland University of Technology	2	2	9	5	18
	Laidlaw College	1	3	4	5	13
	Lincoln University	21	10	10	4	45
	Massey University	141	89	107	100	437
	Te Whare Wānanga O Awanuiārangi		7	3	3	13
	The University of Auckland	194	188	166	174	722
	Unitec New Zealand				3	3
	University of Canterbury	61	99	109	111	380
	University of Otago	105	87	83	112	387
	University of Waikato	71	65	57	53	246
	Victoria University of Wellington	80	93	94	87	354
Unknown	Auckland University of Technology			2		2
<b>Total</b>		<b>2,504</b>	<b>2,544</b>	<b>2,757</b>	<b>2,917</b>	<b>10,722</b>

146. Looking at the sub-totals for each field of study reveals the performance of each provider in a given subject-area. To a large extent, the universities' performance reflects their traditional strengths. The highest volume of RDCs at Victoria University, for instance, was in society and culture. This was also the most prevalent field of study at the University of Waikato, Massey, and the University of Canterbury. The latter demonstrated high performance in the sciences and engineering, which both accounted for more than 20 percent of its RDCs.
147. Also performing to its institutional strengths was the University of Otago where natural and physical sciences made up 36 percent of its total RDC outputs between 2006 and 2009, some 11 percentage points ahead of its next highest-yielding field of study (society and culture). Over 50 percent of all RDCs at Lincoln, a historically land-based institution, were in the twin fields of agriculture, environmental and related studies, and natural and physical sciences. Completions in management and commerce accounted for slightly more than the latter, consistent with Lincoln's grounding when considered in the context of farming as a business.
148. Figures for the three Auckland-based providers show different institutional strengths in terms of RDC outputs. The University of Auckland produced almost identical numbers of graduates in natural and physical sciences (724) and in society and culture (722), with health accounting for third largest share of completions (475). While lower in absolute terms, completions in health constituted a significant proportion of RDCs at Auckland University of Technology (20 percent or 107 counts). This was second only to this institution's outputs in creative arts (24 percent share or 129 counts). Unitec's highest volumes of completions lay in education (27 percent or 47 counts), followed by architecture and building (20 percent or 35 counts).

**Table 4.10: Doctoral completions by subject weighting and broad NZSCED, 2006-2009**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Auckland University of Technology	1	Creative Arts			1	1	2
		Education			3	2	5
		Health			3		3
		Management and Commerce		6	6	7	19
		Mixed Field Programmes			1	1	2
		Natural and Physical Sciences				1	1
		Society and Culture	1	1	4	1	7
		Unknown			2		2
	2	Creative Arts			2	2	4
		Health	1	4	6	4	15
		Information Technology	1	1	7	9	18
		Natural and Physical Sciences	2	1	3	1	7
	2.5	Engineering and Related Technologies	1		2		3
		Health			8	8	16
Society and Culture		1				1	
Lincoln University	1	Management and Commerce	3	3	1	7	14
		Society and Culture	5	2	2		9
	2	Agriculture, Environmental and Related Studies	2	1		1	4
		Information Technology		1	1	1	3
		Natural and Physical Sciences	7	5	4	8	24
		Society and Culture	2	1	1		4
	2.5	Agriculture, Environmental and Related Studies	13	11	9	8	41
		Architecture and Building				2	2
		Engineering and Related Technologies	1	1			2
		Management and Commerce	2	1			3
Natural and Physical Sciences		1	1	2	6	10	

**Table 4.10: Doctoral completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Massey University	1	Creative Arts	1		1	1	3
		Education	11	15	10	11	47
		Engineering and Related Technologies	1				1
		Management and Commerce	7	11	5	17	40
		Natural and Physical Sciences	3	1	5	3	12
		Society and Culture	13	17	19	11	60
	2	Creative Arts			1		1
		Health	7	7	10	7	31
		Information Technology	2	8	6	2	18
		Natural and Physical Sciences	10	16	27	23	76
		Society and Culture	4	6	7	13	30
	2.5	Agriculture, Environmental and Related Studies	9	10	10	5	34
		Architecture and Building	1				1
		Engineering and Related Technologies	4	13	9	20	46
		Health	4	6	4	6	20
		Management and Commerce		1	2	1	4
		Natural and Physical Sciences	1	3	3	1	8
	The University of Auckland	1	Creative Arts	3	3	5	2
Education			23	13	18	17	71
Management and Commerce			4	8	8	5	25
Natural and Physical Sciences			7	7	4	8	26
Society and Culture			29	36	34	29	128
2		Creative Arts	4	6	3	9	22
		Health	3		5	2	10
		Information Technology	5	8	13	6	32
		Natural and Physical Sciences	34	40	52	56	182
		Society and Culture	16	18	18	12	64
2.5		Architecture and Building	3	3	2	7	15
		Engineering and Related Technologies	21	28	28	45	122
		Health	20	23	35	39	117
		Management and Commerce	1			1	2
		Natural and Physical Sciences	4	4	2	7	17
Unitec New Zealand	1	Education				1	1
	2.5	Information Technology		1			1



**Table 4.10: Doctoral completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
University of Canterbury	1	Creative Arts		2	1	1	4
		Education	1	1	3	1	6
		Information Technology	1	2			3
		Management and Commerce	4	3	3	3	13
		Natural and Physical Sciences		1	6	2	9
		Society and Culture	7	17	19	17	60
	2	Creative Arts		1	1		2
		Engineering and Related Technologies	2	1	1	2	6
		Information Technology	1	5	3	3	12
		Natural and Physical Sciences	24	34	36	35	129
		Society and Culture	6	5	9	10	30
	2.5	Agriculture, Environmental and Related Studies	1	2	3		6
		Engineering and Related Technologies	18	29	39	34	120
		Health	2	2	1	4	9
Natural and Physical Sciences				10	4	14	
University of Otago	1	Creative Arts			3		3
		Education	3		4	2	9
		Management and Commerce	6	9	10	17	42
		Natural and Physical Sciences	5	2		4	11
		Society and Culture	24	23	12	24	83
	2	Creative Arts		1	2		3
		Engineering and Related Technologies	1	1			2
		Health	2	1	3	1	7
		Information Technology	3	6	6	3	18
		Natural and Physical Sciences	43	53	62	57	215
		Society and Culture	13	5	3	10	31
	2.5	Engineering and Related Technologies			3		3
		Health	25	38	39	51	153
		Natural and Physical Sciences	3	3	3	3	12
Society and Culture		3	4	4	5	16	

**Table 4.10: Doctoral completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
University of Waikato	1	Creative Arts	1	2		3	6
		Education	4	3	5	9	21
		Management and Commerce	9	3	7	7	26
		Natural and Physical Sciences	1	1	1	1	4
		Society and Culture	8	22	5	10	45
	2	Agriculture, Environmental and Related Studies	1		4	1	6
		Creative Arts				1	1
		Education	2	3	2	1	8
		Information Technology	3	6	5	6	20
		Natural and Physical Sciences	19	10	7	13	49
	2.5	Society and Culture	4	4	6	3	17
		Engineering and Related Technologies	2	6	3	9	20
Victoria University of Wellington	1	Creative Arts		1			1
		Education	6	12	4	3	25
		Management and Commerce	3	7	8	7	25
		Natural and Physical Sciences		2		5	7
		Society and Culture	12	24	18	16	70
	2	Agriculture, Environmental and Related Studies			1		1
		Creative Arts		1	3		4
		Engineering and Related Technologies	1	1	1	2	5
		Health	1	4	4	1	10
		Information Technology	2	5	5	8	20
		Natural and Physical Sciences	10	23	22	26	81
		Society and Culture	7	7	8	6	28
	2.5	Architecture and Building	1	1			2
		Engineering and Related Technologies				1	1
<b>Total</b>			<b>539</b>	<b>751</b>	<b>822</b>	<b>869</b>	<b>3,035</b>

**Doctorates**

149. Table 4.10 above shows notable growth in PhD completions in higher weighted subject areas between 2006 and 2009.
150. Natural and Physical Sciences accounted for by far the highest overall volume of PhDs, which were also concentrated in the higher cost categories. In this particular field of study, double-weighted doctorates underwent a steady rise at Massey and at Victoria University of Wellington – by 2009, both institutions had more than doubled their 2006 baseline of 10 PhDs. On a considerably larger scale, the University of Otago grew year-on-year (from 43 PhDs in 2006 to 57 in 2009); the University of Auckland experienced even more accelerated growth (34 to 56 PhDs over the four year period); and the University of Canterbury also produced consistently high numbers of PhD graduates in double-weighted natural and physical sciences qualifications.
151. In terms of 2.5-weighted doctorates in natural and physical sciences, the highest counts peaked in 2009 at both the University of Auckland and Lincoln – while the absolute numbers remain low (seven and six completions respectively), the rate of increase from 2006 is marked, and will be of particular interest if sustained.
152. Engineering and related technologies also underwent growth, especially in 2.5-weighted degrees, and particularly at the University of Auckland which had a sharp rise in these types of completions, producing 45 of these PhDs in 2009, up from 21 in 2006 and 28 in both 2006 and 2008. There was also strong growth in the highest weighted engineering degrees at the University of Canterbury, Massey, and the University of Waikato.
153. Significant rises were achieved in the field of health, with the University of Otago and the University of Auckland effectively doubling their 2006 counts of 2.5-weighted PhDs by 2009 (from 25 to 51, and from 20 to 39, respectively). Auckland University of Technology also experienced rapid growth in these ‘premium’-costed qualifications, from no graduates in 2006 and 2007 to eight doctoral completions in both 2008 and 2009. In double-weighted health doctorates, low but steady numbers were maintained at Massey and Auckland University of Technology.
154. In the field of management and commerce, many of the universities either maintained a steady stream of outputs or increased completions over the four year period, with the University of Otago almost tripling its baseline of six PhDs and Massey achieving a 150 percent increase on its 2006 count of seven doctorates.
155. Changes experienced by individual TEOs, rather than trends across the sector, include:
- an apparent downward trend in society and culture doctorates at Lincoln in both 1.0- and 2.0-weighted cost categories (albeit on single-digit baselines);
  - an increase in PhDs in double-weighted information technology qualifications at Auckland University of Technology (from one completion in both 2006 and 2007 to nine in 2009), and also at Victoria University of Wellington (from a 2006 baseline of two counts to eight in 2009); and
  - a rise in architecture and building doctorates weighted 2.5 at the University of Auckland (more than doubling its baseline of three to produce seven graduates in

2009), and also at Lincoln where two completions were achieved in 2009 following three years of no graduates in this field of study and highest cost category.

**Table 4.11: Masters completions by subject weighting and broad NZSCED, 2006-2009**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Auckland University of Technology	1	Creative Arts	1	3	11	24	39
		Education			2	2	4
		Food, Hospitality and Personal Services			1		1
		Health		2	3		5
		Management and Commerce	14	12	17	32	75
		Mixed Field Programmes	25	6	11	11	53
		Natural and Physical Sciences			1		1
		Society and Culture		1	5	4	10
	2	Creative Arts	26	5	32	21	84
		Health			2	3	5
		Information Technology	4	2	6	12	24
		Mixed Field Programmes	6	2	8	9	25
		Natural and Physical Sciences			2	1	3
		Engineering and Related Technologies	2	1	10	15	28
		Health	21	7	23	12	63
		Mixed Field Programmes	6	3			9
Eastern Institute of Technology	2				6	6	
Laidlaw College Incorporated	1	Society and Culture	1	3	4	5	13
Lincoln University	1	Management and Commerce	11	14	6	9	40
		Society and Culture	12	5	5	2	24
	2	Agriculture, Environmental and Related Studies	4	3	4	2	13
		Information Technology		1	5	2	8
		Management and Commerce		1			1
		Natural and Physical Sciences	6	6	5	4	21
		Society and Culture	2	2	2	2	8
	2.5	Agriculture, Environmental and Related Studies	8	5	3	8	24
		Engineering and Related Technologies	1				1
		Management and Commerce	4	1	2	4	11
Natural and Physical Sciences		1		2	5	8	

**Table 4.11: Masters completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Massey University	1	Creative Arts	1	2	8	1	12
		Education	29	22	21	4	76
						3	3
						14	53
				3	3	4	10
			72	46	49	43	210
	2	Agriculture, Environmental and Related Studies	2	1			3
		Creative Arts	38	27	42	34	141
		Health	15	9	12	21	57
		Information Technology	18	13	9	13	53
		Natural and Physical Sciences	40	20	28	25	113
		Society and Culture	52	20	32	33	137
	2.5	Agriculture, Environmental and Related Studies	9	8	8	5	30
		Architecture and Building	2	1	1	2	6
		Engineering and Related Technologies	27	28	17	24	96
		Health	6	4	2	6	18
		Management and Commerce		3	1		4
		Natural and Physical Sciences	2	3	2	1	8
	Otago Polytechnic	2	Creative Arts	5	6	11	1
Health				4	3	3	10
Te Whare Wānanga O Awanuiārangi	1	Society and Culture		7	3	3	13
The University of Auckland	1	Creative Arts	44	15	14	11	84
		Education	23	20	25	16	84
			39	35	27	27	128
			13	5	7	9	34
			104	86	77	82	349
	2	Agriculture, Environmental and Related Studies	3	4	7	6	20
		Creative Arts	53	46	111	117	327
		Education		1		2	3
		Health	50	37	37	18	142
		Information Technology	41	37	31	38	147
		Management and Commerce		2			2
		Natural and Physical Sciences	114	116	89	118	437
		Society and Culture	38	42	32	46	158
	2.5	Agriculture, Environmental and Related Studies	3	6	3	4	16
		Architecture and Building	10	12	19	71	112
		Engineering and Related Technologies	55	60	53	47	215
		Health	29	43	53	81	206
		Information Technology		7	3	6	16
		Natural and Physical Sciences	3	8	11	6	28

**Table 4.11: Masters completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Unitec New Zealand	1	Creative Arts	1	3	1	3	8
		Education	10	7	16	13	46
		Management and Commerce	1	7	2	7	17
		Society and Culture				3	3
	2	Creative Arts	6	8	3	2	19
		Health		1	1	6	8
		Information Technology	5	6	7	6	24
	2.5	Mixed Field Programmes		2		1	3
		Architecture and Building		5	2	28	35
		Mixed Field Programmes	5	2		2	9
University of Canterbury (inc. Christchurch College of Education)	1	Creative Arts	4	3	2	2	11
		Education	7	6	7	6	26
		Management and Commerce	4	3	4	2	13
		Natural and Physical Sciences			1	6	7
		Society and Culture	36	49	44	53	182
	2	Creative Arts	12	21	12	18	63
		Engineering and Related Technologies	4	5	7	1	17
		Information Technology	3	15	2	11	31
		Natural and Physical Sciences	19	52	45	33	149
	2.5	Society and Culture	12	28	37	31	108
		Agriculture, Environmental and Related Studies	5	4	1	3	13
		Engineering and Related Technologies	23	55	30	22	130
		Health	4	12	14	13	43
		Natural and Physical Sciences		4	3	5	12

**Table 4.11: Masters completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total	
University of Otago (inc. Dunedin College of Education)	1	Creative Arts	1				1	
		Education	10	9	4	3	26	
		Management and Commerce	13	9	7	11	40	
		Natural and Physical Sciences	1		1	1	3	
		Society and Culture	40	33	38	38	149	
	2	Agriculture, Environmental and Related Studies	23	14	2	2	41	
		Creative Arts	5	8	3	5	21	
		Engineering and Related Technologies	1		2	3	6	
		Health	11	11	14	13	49	
		Information Technology	15	4	7	4	30	
		Natural and Physical Sciences	65	63	60	58	246	
		Society and Culture	22	15	18	25	80	
	2.5	Agriculture, Environmental and Related Studies			2	15	18	35
		Engineering and Related Technologies	5	4	7	7	23	
		Health	22	25	24	22	93	
		Information Technology		1	1		2	
		Natural and Physical Sciences	8	7	4	4	23	
		Society and Culture	3	7	8	10	28	
	University of Waikato	1	Creative Arts	1			5	6
			Education	10	20	22	17	69
		Management and Commerce	3	4		5	12	
		Natural and Physical Sciences		1			1	
		Society and Culture	30	23	19	15	87	
2		Creative Arts	7	13	9	10	39	
		Education	1	3	3		7	
		Information Technology	14	11	4	9	38	
		Natural and Physical Sciences	63	35	36	41	175	
		Society and Culture	29	16	27	25	97	
2.5		Engineering and Related Technologies	10	7	15	5	37	



**Table 4.11: Masters completions by subject weighting and broad NZSCED, 2006-2009 – continued**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total	
Victoria University of Wellington	1	Creative Arts	22	20	20	20	82	
		Education	13	7	7	6	33	
			Management and Commerce	10	12	16	19	57
			Mixed Field Programmes				1	1
			Natural and Physical Sciences	7	3	9	1	20
			Society and Culture	45	52	59	58	214
	2	Agriculture, Environmental and Related Studies	5	9	13	10	37	
		Architecture and Building	1	2			3	
			Creative Arts	20	24	34	33	111
			Engineering and Related Technologies	11	9	17	17	54
			Health	5	4	8	14	31
			Information Technology		8	9	5	22
			Natural and Physical Sciences	25	29	48	42	144
			Society and Culture	16	10	9	7	42
	2.5	Architecture and Building	2	2	5	4	13	
		Engineering and Related Technologies		2	5		7	
Waikato Institute of Technology	2	Creative Arts	4	6	6	3	19	
		Health	1		1		2	
Whitecliffe College of Arts and Design	2	Creative Arts	7	12	9		28	
<b>Total</b>			<b>1,881</b>	<b>1,755</b>	<b>1,903</b>	<b>2,013</b>	<b>7,552</b>	

### Masters

156. As with doctoral degrees, data indicate a tendency between 2006 and 2009 towards greater numbers of Masters completions in higher cost weighted categories in select fields of study.
157. Striking increases have occurred in the counts of architecture and building graduates, particularly in 2.5-weighted courses. The University of Auckland achieved a gain of over 600 percent over the four year period in this category, growing its baseline of 10 to award 78 Masters in 2009. Unitec also underwent a steep rise in this cost category, going from single-digit completions in 2007 and 2008 to 28 completions in 2009.
158. Sharp rises in higher cost weighted courses were also achieved in the field of health, with the University of Auckland's count of 2.5-weighted Masters growing from 29 in 2006 to 81 in 2009. In this same institution, there was a concurrent decrease in double-weighted health Masters which fell successively from 50 completions in 2006 to 18 in 2009. At the University of Otago, however, the numbers of Masters graduates in health were consistent over the four year period in both the 2.0 and 2.5 cost-weighted categories (averaging 12 and 23 annual completions respectively).
159. Following years of fluctuating figures, in 2009 Massey posted a spike in double-weighted health Masters – data in the PBRF Annual Report 2011 will provide more

context for determining whether this might be a one-off increase or indicative of an upwards trend.

160. In institutions where Masters in health were one of the few, if only, types of RDC-eligible level nine programmes on offer, numbers of double-weighted completions were low but steady or increasing: Otago Polytechnic averaged three outputs per year from 2007-2009 while Eastern Institute of Technology's first cohort of graduates in 2009 took it from zero to six health graduates.
161. Increases also occurred in the field of creative arts. Most notably, the University of Auckland experienced a significant rise in 2.0-weighted degrees, growing its 2006 baseline of 53 to 117 completions over the four year period (almost equalling the number of natural and physical science graduates in 2009). Concomitantly, this institution posted a linear decrease in 1.0-weighted Masters, dropping from a similar 2006 baseline of 44 to 11 in 2009. At the same time, the other Auckland-based university, Auckland University of Technology, realised a straight rise in 1.0-weighted MAs which increased from just one in 2006 to 24 in 2009. While there was no discernible trend over this period with higher weighted MAs in creative arts, this remained the highest volume field of study in the 2.0 cost category at Auckland University of Technology.
162. For Victoria University, creative arts produced the second highest number of completions in both its cost categories. In addition to stable counts for 1.0-weighted degrees, this institution posted relatively sizeable growth in double-weighted completions between 2006/7 and 2008/9 – again, future data will corroborate whether this is sustained as an upward trend. Of interest also, creative arts was either the only or one of the few fields of study offered at Masters level outside of the university sub-sector (at Waikato Institute of Technology and Whitecliffe College which both had fluctuating counts).
163. Notable changes also occurred in the field of agriculture, environmental and related studies. At the University of Otago, there was a noticeable drop-off in double-weighted Masters, with a fall from 23 completions in 2006, to 14 in 2007, to just two in both 2008 and 2009. There was, however, a corresponding rise in 2.5-weighted degrees which increased to 15 and 18 Masters in these latter two years, up from counts of zero in 2006 and two in 2007. Massey had declines over the four year period in both cost categories from single-digit baselines, not reporting any double-weighted completions in 2008 or 2009. Although this field of study accounted for the highest volume of Masters in the 2.5-weighted category at Lincoln, numbers were somewhat inconsistent (the restoration in 2009 of the 2006 baseline (eight) after consecutive years of decline may or may not prove to be a one-off rise).
164. Counts of Masters in management and commerce were interestingly variable between institutions over the four year period. The University of Auckland experienced a decline in completions while Auckland University of Technology underwent a solid rise, more than doubling its 2006 count of 14 single-weighted completions to reach 32 by 2009 (surpassing the number of completions by the University of Auckland that year). Indeed, for Auckland University of Technology, management and commerce was the highest yielding field of study in the 1.0-weighted category, and the second highest overall.

165. For Lincoln, this field of study accounted for the most Masters completions over the four year period (40 in total) out of all weighted categories. On slightly higher numbers, Victoria University underwent consistent year-on-year growth in this field which nevertheless remained a very distant second in volume to society and culture (almost four times as many aggregate completions than management and commerce in the single-weighted category).
166. Society and culture also accounted for high and relatively consistent volumes of outputs at the University of Auckland, Massey, the University of Canterbury, and the University of Otago, for all of which it was by far the highest yielding field of study in the 1.0-weighted category, if not out of all. The first two universities notably sustained significant drops on their 2006 counts but maintained reasonably stable numbers thereafter. The University of Waikato and Lincoln notably underwent steady declines in 1.0-weighted Masters in society and culture between 2006 and 2009. At the University of Waikato, completions in education exceeded those in society and culture in both 2008 and 2009. Education is also proving to be a strength at Unitec where it accounted for the highest total number of Masters between 2006 and 2009.
167. Natural and physical sciences produced a high volume of completions, particularly at the University of Auckland and University of Otago where numbers mostly held steady in the primary category (2.0-weighted). Greater fluctuations were observable in these types of completions at the other universities.

**Table 4.12: Postgraduate Diplomas and Honours completions by subject weighting and broad NZSCED, 2006-2009**

TEO	Subject weighting	Broad NZSCED	2006	2007	2008	2009	Total
Auckland University of Technology	2.5	Engineering and Related Technologies	1	1		1	3
		Mixed Field Programmes	1				1
The University of Auckland	2	Creative Arts			1		1
	2.5	Society and Culture	7	6	5	5	23
University of Otago	2	Natural and Physical Sciences	8	10	8	11	37
	2.5	Health	2	6	5	2	15
		Natural and Physical Sciences	4	5	4	5	18
Waikato Institute of Technology	2	Creative Arts	7	10	9	11	37
<b>Total</b>			<b>30</b>	<b>38</b>	<b>32</b>	<b>35</b>	<b>135</b>

**Postgraduate Diplomas and Honours**

168. Overall, numbers of RDC-eligible postgraduate diplomas and honours tended to be single-digit and held more or less steadily at the four institutions where they were awarded between 2006 and 2009. All of these completions notably fell into mid- to high-subject cost categories, with 56 percent of the degrees double-weighted and the balance of 60 counts 2.5-weighted.
169. Natural and physical sciences were a strong suit for the University of Otago, accounting for 55 of its 70 completions over the four year period. Second to this institution in volume of outputs was Waikato Institute of Technology whose aggregate 37 completions were all in the field of creative arts. All except one of the University of Auckland's total of 24 completions were in society and culture courses weighted 2.5, and slightly declined over three years. Auckland University of Technology's postgraduate diplomas and honours were all in the highest weighted category but were negligible in number (four over four years).