



Stocktake project team Brigid Thorn and Chris Knol from Projects International with Dr Peter Coolbear, Ako Aotearoa (absent – Martin Eadie, Projects International).

## Stocktake of qualifications and support for new tertiary teachers

Did you know there are about one hundred publicly listed qualifications offered by New Zealand providers for tertiary teachers? This seems an astonishingly large number for a relatively small country, especially when there is no national requirement for such a qualification in order to become a tertiary teacher.

Over the next year or so, Ako Aotearoa aims to facilitate debate about how best to support the development of tertiary teaching in New Zealand as a profession. Gaining an overview of the nature of the qualifications offered by tertiary education organisations and the support offered to beginning tertiary teachers is an important place to start.

Accordingly, we have commissioned Projects International to undertake the stocktake for us. The work comprises two elements. The first is a review of publicly available information about qualifications offered through the sector. The second is a survey of tertiary education organisations about their expectations of the staff they

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## Welcome

Reflecting on a year more than three-quarters gone, it seems to me I have spent a large proportion of time thinking and talking about (hopefully in that order) the need to develop a robust evidence base on how learners may best benefit from their tertiary education experience. I make no apologies for this. Indeed, I'm sure it will continue to be a preoccupation for Ako Aotearoa in the years to come. Such an evidence base is a critical ingredient of the development of tertiary teaching as a profession; it is essential to demonstrating its value, and a crucial test of whether we are achieving our moral purpose as educators. Much of our work over the past few months has been with this in mind.

Since our August newsletter, we have spent a lot of time working with our independent panels short listing expressions of interest for our National Project Fund. Again, this has been a highly competitive process, with a total of 65 expressions of interest, from which 15 project teams have been invited to provide full applications. Short listed are projects that the panels felt had the potential to impact most widely on improving teaching and learning, and were the most firmly evidence based.

We have also selected recipients for our 2009 Good Practice Publication Grants (listed on page 7), and are delighted to announce the publication of the *Ako Aotearoa Good Practice Publication Grants e-Book* on our website. This contains the first completed publications from the 2008 round and will be added to successively as work is completed. There is considerable variety in these reported examples of good practice. Some are highly innovative, others, especially in retrospect, may not seem particularly original. The one thing they have in common is that they have been shown to work for learners.

In my last *Welcome* article I promised we would be looking at undertaking further work with the Australasian Survey of Student Engagement (AUSSE). I'm pleased to announce we are in the process of starting two projects with the Australian Council for Educational Research. The first (for existing users of the instrument) will focus on how to best use the rich data set the AUSSE provides in making organisational decisions about enhanced support for students. The second will explore the development of a version of the survey for the Institutes of Technology and Polytechnics (ITPs) sector. Exciting work!

With best wishes

**Dr Peter Coolbear**  
Director, Ako Aotearoa

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employ in teaching roles: how much they value teaching experience as an initial selection criteria and what support they offer new employees beginning their teaching careers.

It is important to emphasise this stocktake exercise is intended to be just that – a review of the present situation that might provide the basis for future debate about how tertiary teacher support and education might best be achieved in the future.

While it is clear to us that one hundred qualifications for tertiary teachers is an unsustainable number, we are also sure there is no one-size-fits-all solution. This study aims to identify both commonalities and differences between programmes offered. We also hope to identify and showcase examples of promising and proven good practice.

The United Kingdom House of Commons Innovation, Universities, Science and Skills Committee recently made strong recommendations for compulsory qualifications for university teachers.<sup>1</sup> Despite this, we make no assumptions that requiring staff to undertake a teaching qualification is an absolute prerequisite to ensuring an organisation offers effective teaching and learning: there may well be other models of induction and ongoing support for new staff that are equally effective. We are also, of course, well aware that many winners of national Tertiary Teaching Excellence Awards have had no formal teacher education.

By the time this newsletter goes to press, the work will be well under way. We expect to release our report in February.

<sup>1</sup> United Kingdom House of Commons Innovation, Universities, Science and Skills Committee: Universities and Students, August 2009, pp 82–84.

## Hei Tauira – exemplars of success for Māori in tertiary education



Hot on the heels of our new publications featured in Issue 5 of *Ako Aotearoa Alert – Taking the Lead and Tertiary Assessment & Higher Education Student Outcomes: Policy, Practice & Research*, we are excited to support the production of *Hei Tauira – Teaching and Learning for Success for Māori in Tertiary Settings*, researched and written by Janinka Greenwood and Lynne-Harata Te Aika from the University of Canterbury, and funded by the Ministry of Education. This significant piece of research investigates “tauira”, exemplars

of success for Māori in tertiary education – analysing four Māori-based programmes in different parts of New Zealand and in different kinds of institutions that are seen to be successful by students, the Māori community, and the institution itself.

Lynne-Harata and Janinka worked closely with the participants to identify what makes the programmes successful – adopting the five overarching principles of *toko-a-iwi*, *a-wānanga* (institutional and *iwi* support), *tikanga* (the integration of Māori and *iwi*, values and protocols), *pūkenga* (the involvement of suitably qualified leadership and staff), *ako* (development of effective teaching and learning strategies), and *huakina te tatau o te whare* (opening up the doors to the house) to measure their success.

The full report will be available soon through the Ako Aotearoa website – [www.ako.aotearoa.ac.nz](http://www.ako.aotearoa.ac.nz). In addition, we are producing a summary document and double-sided reference card to provide readers with key examples and points, overarching principles, and findings. These will also be available soon via the web and in print. To order a free hard copy of these two items, please contact us at: [info@ako.aotearoa.ac.nz](mailto:info@ako.aotearoa.ac.nz).

## Formative evaluation of Ako Aotearoa

Ako Aotearoa has been operational for over two years now and is coming up to its second strategic planning cycle. This is a good time, therefore, to review where we are at, both to inform our strategy and test our operational assumptions.

One of the challenges we face is that our prime objectives – enhancing tertiary teaching and the best possible outcomes for learners – are medium to long term. Our initial work, completed in the middle of this year, was to commission the development of a monitoring and evaluation framework, based on an outcomes hierarchy model of what we are seeking to achieve.

We have now commissioned Dr Catherine Frethey-Bentham of TNS-Conversa to lead an independent formative evaluation of our organisation within the context of the framework. The evaluation will look at both the way we do things currently and our potential to add value to New Zealand’s tertiary sector in the future.

TNS-Conversa will be contacting as many people as possible, and, at present, expects to email the survey to everyone on our database in late November. For those who are not on our direct contact list, we will be adding details to our website on how to access the survey. We look forward to receiving your views.

# Taking the Lead on e-learning

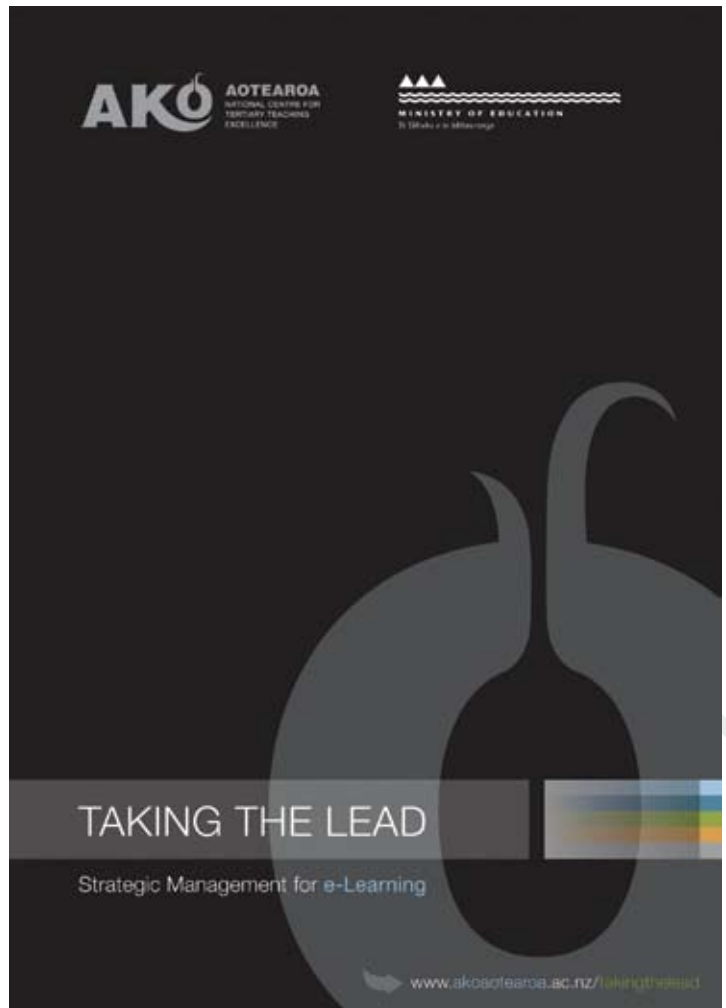
In its various forms, e-learning is transforming the way New Zealand tertiary educational organisations are teaching and supporting their students. As vice chancellors, managers, and chief executives move to strengthen the quality and strategic capability of their organisations in these challenging times, they need to make careful decisions on which new technologies to invest in, and how to get the best from the e-learning tools they utilise already. Either way, these decisions require clear thinking about which technologies best fit their strategic objectives and the learning needs of their students.

Recently, Hon Anne Tolley, Minister for Tertiary Education, announced her endorsement of a comprehensive collection of e-learning resources that are set to play a significant role in shaping the future e-learning strategy of many tertiary organisations – including *Taking the Lead: Strategic Management for e-Learning*.

This resource offers its own set of tools in the form of a full report, summary document, and quick reference card, all available online and in hard copy. The resource is designed to help institutional leaders in the planning and management of their e-learning strategies. Decision makers are prompted to consider key questions, such as the following.

- Will their organisation suffer if they don't adopt the new technology?
- How do they know students will achieve their learning outcomes using the technology?
- What are the implications for staff workload?
- Will the new technology open up new markets – geographic, demographic or subject?
- Is it a cost-effective solution in terms of capital and recurrent costs?
- Can they manage the technology themselves or will they be dependent on outside suppliers?
- Does the new technology present issues around intellectual property and privacy for learners and staff?

The full report is the result of an extensive study undertaken in 2007 by Dr Andrew Higgins (AUT University) and Professor Emeritus Tom Prebble (Massey University), commissioned by the Ministry of Education and operated under the support and guidance of Ako Aotearoa. Higgins and Prebble developed their report from initial consultation and interviews with peak bodies and quality assurance bodies within the sector. Using the 1999 New Zealand Universities Academic Audit Unit report<sup>2</sup> as a reference, the authors identified nine main themes that provided the framework for their interviews with leaders from universities, wānanga, and polytechnics across New Zealand. The 15 case studies that resulted from those interviews have been carefully selected as offering examples of one of the nine themes. They are not, however, to be read as representing 'best' or 'worst' practice.



The themes focus on:

- planning and administration
- organisational structure
- staff development and effectiveness
- instructional design and development
- teaching and learning
- student support
- collaborative and international arrangements
- assessment and moderation
- technological infrastructure.

In January 2009, Higgins and Prebble added an additional case study from the private training establishment sector to the report.

To read or download the full report, 12-page summary document, individual case studies, and double-sided reference card go to our website: [www.ako.aotearoa.ac.nz](http://www.ako.aotearoa.ac.nz), or email: [info@ako.aotearoa.ac.nz](mailto:info@ako.aotearoa.ac.nz) for a free hard copy of the summary document and reference card.

<sup>2</sup> Butterfield, S, Chambers, M, Moseley, B, Prebble, T, Uys, P & Woodhouse, D (1999). *External quality assurance for the virtual institution*. New Zealand Universities Academic Audit Unit.

BY IAN ROWE

# News from the Central Hub



## Ako Aotearoa Central Hub

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Simon Bailey, dairy herd manager (right), explains aspects of skills training at Taratahi Agricultural Training Centre to Ian Rowe (left) and Stephen Hannam (centre).

## A visit with Stephen Hannam

Central Hub Advisory Group member, Stephen Hannam of Taratahi Agricultural Training Centre took time out of his busy day to show Ian Rowe the centre's facilities set in beautiful rural Wairarapa.

Taratahi was founded in 1919 by a bequest of land to the nation as a training centre for returned service personnel after World War I. Currently, there are over 60 students who, together with the teaching staff, run the Taratahi farms as commercial entities while acquiring their qualifications.

Stephen has held the position of educational partnerships manager for the last two years but has been an educational staff member at Taratahi since 1986. Stephen jokingly says he started teaching "straight from the tractor". Though formally trained (with a diploma in Farm Management from Lincoln University), he appreciates the "ability to get out of the classroom" and put the theoretical components of each course into practice on the campus.

Stephen says his involvement with the Central Hub Advisory Group has been spurred specifically by his interest in tutor training and the teaching of practical skills. He is proud to be supporting an organisation like Ako Aotearoa that promotes excellence in teaching. During his work on appraising Hub Funded Projects, he has seen an increasing focus on projects that contribute useful outcomes for teachers.

When asked about the future of tertiary education, Stephen noted how agricultural education is "fighting for every dollar" despite the current increased importance of sustainability and environmental issues affecting farming and, therefore, agricultural education.

One way Stephen rounds out his life is by competing in marathons and triathlons. It was a pleasure to see the excellent facilities at Taratahi and meet with Stephen in a role other than as a member of the Central Hub Advisory Group.

## Power hour of research at Universal College of Learning

Over 30 teachers from the Universal College of Learning (UCOL) in Palmerston North attended a recent late-afternoon seminar on research run by UCOL staff. Two of the presentations resulted from projects commissioned by the Central Hub. Janet Walke and Michael O'Connell presented their work on professional supervision as a vehicle for facilitating change in teaching practice (as previously reported in Issue 5 of *Ako Aotearoa Alert*). The research outputs from this project are now available on our website. Click on the project outputs link on the right-hand side of the central hub homepage at: [www.akoatearoa.ac.nz/akoatearoa-central-hub](http://www.akoatearoa.ac.nz/akoatearoa-central-hub).

The second presentation was by Jan Parsons – "Communicating in Clinical Placements: Critical Success Factors for ESOL Students". It was based on the preliminary findings of her project on the experiences of nursing students for whom English is a second language. The results of this project will inform teaching practices within nursing programmes and improve educational outcomes for ESOL students. Jan's research outputs will be on our website shortly.

Ako Aotearoa is pleased these Hub Funded Projects resulted in professional development opportunities for the teaching colleagues of the project leaders.

## Creative teaching techniques in Hawke's Bay

A recent Hub Funded Project involved five private training enterprises from Hastings participating in a one-day workshop on enhancing creative teaching techniques. The project was initiated by Liddy Trotter at FutureCol and attracted 28 teachers to an interactive offering from Julia Bruce, a 2008 recipient of a Tertiary Teaching Excellence Award.

The evaluations from the day were very positive. An extension of that evaluation will be video interviews with at least five of the participants to find out what they learned from the day and what creative techniques they have used since the workshop. Plus, a video interview will ask Julia about her facilitation of the day and provide an example of a teacher reflecting on practice with a view to making improvements. These video clips will be available soon on our website, together with the project report.



Participants at the one-day workshop on enhancing creative teaching techniques – a project funded by the Central Hub.

## Teaching and learning conference meets e-Fest

Registrations totalled 204 for the conference held at UCOL in Palmerston North between 29 September and 2 October. Ako Aotearoa was pleased to be the principal sponsor especially when the byline for the event was "Teaching for Excellence—Excellence in Teaching".

As well as supporting individual educators, one of Ako Aotearoa's key aims is to foster institutional strategies for the improvement of teaching and learning, so the workshop session: "Whole of organisation engagement in effective learning" was particularly interesting. It outlined the processes undertaken at the Eastern Institute of Technology (EIT) that resulted in the development of the *EIT Model for Effective Learning*. The workshop was presented by EIT staff members Karen Young and Fred Koenders. Participants experienced one stage of the model's development, provided feedback to Karen and Fred about how the model could be strengthened, and were asked to reflect on the applicability of the process within their own organisation.

Another workshop of interest, with the catchy title "How to Create a Cell Phone Application without being a Geek", was delivered by Massey University telecommunications and network engineering student William Demchick. The session included hands-on experience of building an education programme for delivery via cell phones without having to understand the underlying technology involved.

## Ian Rowe's top tip for teachers

When you have designed group work for students and sent them off on the task it is important to leave them time before you visit each group. Some teachers get anxious about whether their task will work and it is possible for that anxiety to be transferred to groups. To complete the task, groups have to make sense of the instructions, sort out who is doing what, take tentative steps on the task, and relax into the work. That all takes time.

If you visit too early these processes will be interrupted. If the activity is soundly planned you shouldn't need to visit each group early in the task. So, my rule is, only visit when at least one-third of the time for the task has elapsed, or if a group requests assistance.

## Visit of Professor Philippa Levy

The Central Hub of Ako Aotearoa is planning to host Professor Phillipa Levy who is visiting New Zealand on a Higher Education Research and Development Society of Australasia (HERDSA) New Zealand Fellowship. Professor Levy is director of the Centre for Inquiry-based Learning in the Arts and Social Sciences at the University of Sheffield, United Kingdom. She will be presenting seminars in Wellington on 8 and 9 December this year.

Examples of Phillipa's interests are: inquiry-based pedagogies in higher education; the research/teaching nexus; networked learning and learner support; information literacy; and the scholarship of teaching and learning. She has published widely on these themes.

Details of the seminars and workshops will be publicised to tertiary education organisations, with the information also available on our hub page of the Ako Aotearoa website. These sessions will be of interest to teachers, professional development staff, and education researchers.

## Interactive case studies project

The Central Hub Advisory Group recently approved a project involving Dr Isabelle Hoong from the Institute of Food, Nutrition and Human Health at Massey University, Wellington. Isabelle will be creating two scenario-based interactive-learning CD-ROMs, one on endocrinology, the other on reproduction. The goal is to develop resources designed to enhance student learning and then evaluate the extent to which the method achieves better learning outcomes for students. The results will inform teachers wanting to use similar methods of blended learning for their students.

We look forward to reporting on Isabelle's work.

## Ako Aotearoa–TLRI Colloquium: Tertiary Research in Progress



Dr Elana Curtis, Krystal Wojnowski, and Dr Airini.



From left to right Marie Cameron, Dr Jane Quinlivan, Dr Jane Abbiss, and Dr Vanessa Andreotti.



Associate Professor Sergiy Klymchuck (left) with Associate Professor Peter Watson.

Collectively, Ako Aotearoa and the Teaching and Learning Research Initiative (TLRI) fund a substantial amount of large-scale projects relating to tertiary teaching and learning. At the beginning of September we jointly hosted the inaugural “Tertiary Research in Progress Colloquium” with the New Zealand Council for Educational Research, which manages the TLRI. Our goal was to identify early synergies across projects and enable funded researchers to network informally with like-minded colleagues. In our view, it was a great success, notable for the honesty and openness with which different teams shared their work. The event highlighted several issues relevant to the broad network of tertiary education researchers across New Zealand.

In all, 17 teams presented at the colloquium (including two doctoral students supported by Ako Aotearoa). Of particular note was the ambition of this work, with each project team focused on core issues for the New Zealand tertiary sector, committed to enhancing the outcomes of tertiary learners, and all seeking to achieve a broad impact in their work. A sample of the themes arising from the presentations includes: the importance of the learner voice, supporting and learning from kaupapa Māori, enhancing the validity and reliability of assessment, the importance of creating smoother transitions between the compulsory and tertiary sector, and how to best measure benefits to learners within a complex educational frame.

Taken together, these themes reinforce what many working in this area already know: research into tertiary teaching and learning can be challenging. Admittedly, some of the practices that we know work for learners are not “rocket science”, such as having a learner focus, providing timely and effective feedback, and incorporating learner feedback about teaching into practice. Arguably, what is most challenging is the complexity of the tertiary sector and multiple influences on learner outcomes – these issues generated very interesting debate at the colloquium.

One of the key questions arising from the colloquium is how to best identify, promote, and increase effective tertiary teaching and learning practices that result in *demonstrated* learner benefit. Part of the answer lies in conducting, disseminating, and acting on the implications of high-quality research. But what does high-quality research in the tertiary sector look like?

There are at least three key features to such research. First, the research questions posed must be of (inter)national relevance that build upon and extend existing knowledge. Second, research methodology, theoretical perspectives, and analytical procedures employed should be selected based on their ability to answer the research

questions posed. Third, the learner benefit measured should correspond to the expected outcomes of the research/intervention. This relies on appropriate selection from the wide variety of research approaches, theoretical frameworks, and measurement techniques available in education and the social sciences.

Conducting high-quality research on its own is not enough to effect change in practice. Careful attention must also be paid to how the implications of key findings are communicated, for example, to the research community, practitioners, and policy makers. Practitioners and policy makers are faced with decisions about what interventions/approaches to employ, often within significant time and resource constraints. To have the largest impact, research findings should be clearly and concisely communicated, have appropriate regard to context, and focus on the implications for policy and recommendations for practice.

If high-quality educational research is communicated in a way that enables practitioners, leaders, and policy makers to make decisions and act, then the development of this evidence base becomes a form of educational leadership. In our view, research can and should be a form of leadership, which plays a significant role in driving change for the benefit of learners. This was the key challenge identified at the colloquium, and a challenge for the sector more broadly. Ako Aotearoa and the TLRI look forward to further supporting work to create an evidence base that will drive change so that learners will benefit.

All of the one-page summaries are available on the Ako Aotearoa and TLRI websites.

# 2009 Good Practice Publication Grant recipients announced

Applications closed for the 2009 Good Practice Publication Grants in late August. We received 48 applications for the scheme, and have selected 20 practices for publication on our website. The practices selected were those that, in our view, demonstrated the most evidence of learner benefit, and had the most potential to influence other educators. We look forward to adding these new publications to our developing e-book.

Title	Name	Organisation
Te Puawaitanga o Te Kakano: ACE – Nurturing the Seeds of Learning Within Rural Māori Women	Faithe Hanrahan	Opotiki District Community Activities Office
Making a Difference in Prison with Storybook Dads	John Crawford-Smith, Alexandra Fusco	The Methodist Mission, Approach Community Learning
“Ignite Potential” – Motivating Tutors to Light Up the Learning Environment	Simon Jigwan Park, Janet Toland	Victoria University of Wellington
The Impact of Project Based Teaching and Learning on Student Outcomes	Elly Govers	Eastern Institute of Technology
Meta-Cognition of the Design Process: Analogical Reasoning and its Role in Ideation	Mike McAuley	Massey University
Embedding Qualifications Achievements – Benefits for the Health and Disability Sector	Donovan Ryan	Careerforce
Case Study of Student Engagement at Solomon Group (an innovative Māori Private Training Establishment)	Kiri Solomon	Solomon Group Education and Training Academy
Enhancing Learning and Confidence for Māori through Community Participation	Therese Humphries, Sharlene Pene	Gracelands Insight Learning
Programming Puzzles: Practice Makes Perfect	Dale Parsons	Otago Polytechnic
Digital Literacy in Art: Cultural, Practical and Technical Experiences	Rachel Gillies, Susan Ballard	Otago Polytechnic
HITO Training Salon of the Year Case Studies	Erica Cumming	Hairdressing Industry Training Organisation
Engaging Pacific Learners – A Resource for Trainers and Teachers	Malia Talakai, Sandy Thomson, Fraser Macdonald	Unitec New Zealand
Creating a Space to Close the Theory Practice Gap	Wendy Trimmer, Kay Laracy, Michele Love-Gray	Whitireia Community Polytechnic
Rubrics in University Assessment: Power, Peril and Perception	Keith Comer, Ase Nygren, Kaylene Sampson	University of Canterbury
A Genre Approach to Understanding Thesis Writing Expectations	John Bitchener	AUT University
Peerwise – Student Generated Assessment Questions	Paul Denny, John Hamer, Andrew Luxton-Reilly	The University of Auckland
Feedback and Feedforward: Assessment for Enhancing Learning in an Online Environment	Mandia Mentis	Massey University
Na Tena Rau na Tena Rau Tipu Ora ai te Rakau: Creating Sustainable Communities through Education	Ani Pahuru-Huriwai, Elizabeth Clements	Te Aroha Kanarahi Trust, Insight Trust
He Moana Pukepuke e Kengia e Te Waka (A Choppy Sea can be Navigated)	Ellen Catherine Dickey	Manukau Institute of Technology
Using Drama Students to Prepare Student Nurses to Transition to Registered Nurse	Michelle Nicholson-Burr, Jane Kelly	Manukau Institute of Technology

## e-Book publication now available on our website

Good Practice Publication Grants from 2008 are now available on our website in the *Ako Aotearoa Good Practice Publication Grants e-Book*. This e-book features the first completed Good Practice Publications from our 2008 round. We will be adding to the e-book on an ongoing basis. This will include additional grants funded in the 2008 round and publications from 2009 and beyond. In time, we will add an index to the publications as the number of entries expands.

Included in the e-book will be a range of different practices that have been shown to benefit learners. The practices cover various topics with examples from across the breadth of the tertiary education sector. Some are simple interventions, others are highly sophisticated: the common element is that they are responses to learner needs and – most importantly – have been shown to be of benefit to learners.

The goal of this scheme is to share and promote good practice, and encourage use among other practitioners. We have asked the writers to share their context with us as well as the practice itself and, where possible, identify what supported the effectiveness of the practice and what barriers had to be overcome. This will assist others to judge whether such interventions might be relevant in their particular teaching and learning environment.

This is a relatively new initiative for Ako Aotearoa and we have encountered challenges as the scheme has developed. Largely, the challenges have related to the provision of evidence of learner benefit. In particular, many prospective contributors have found it difficult to gather robust evidence demonstrating that their practice has resulted in direct benefit to learners. Although many of the publications describe practices that intuitively seem to be good practice, robust systematic evidence was not always available to demonstrate this convincingly.

In last year's inaugural round we did not require practitioners to provide detailed descriptions of what types of evidence had been obtained. In large part, we put trust in the sector's capability to gather and communicate this evidence. Over the past year, we have come to appreciate the difficulties people are having regarding how to gather and analyse evidence to indicate learner benefit, and how to then communicate these benefits more broadly. We now require further detail in applications about how learning is improved through the practice reported. We also acknowledge that this is not always easy and the issue extends well beyond this particular funding stream.

In this sense, we view the e-book publication in two ways. First, to illustrate a range of good practice activities we hope will assist practitioners in their teaching. Second, as the starting point of an ongoing and constructive debate about how to gather, analyse, and communicate evidence of enhanced learning resulting from our practice.

Go to [www.akoatearoa.ac.nz/gppg-ebook](http://www.akoatearoa.ac.nz/gppg-ebook)



## Good Practice Publication Grants



# e-Book



Professor Carl Wieman.

### Ako Aotearoa to host Nobel Prize winner and science educator, Carl Wieman

Carl Wieman, winner of the 2001 Nobel Prize in Physics and founding director of the Carl Wieman Science Education Initiative (CWSEI) at the University of British Columbia, will be visiting New Zealand in mid-December with his wife Sarah Gilbert, associate director of CWSEI.

Professor Wieman's research has been recognised with numerous awards and honorary degrees, including the Nobel Prize in Physics for the creation of Bose-Einstein condensates. In the past several years, he has been particularly involved with efforts to improve science education. He has worked on a variety of research projects and innovations in teaching physics to a broad range of students, including the Physics Education Technology Project (<http://phet.colorado.edu>), which creates educational online interactive simulations and studies their effectiveness. He also does research on student beliefs about physics and chemistry, learning quantum physics, and on problem-solving skills.

Ako Aotearoa will be arranging for Professor Wieman to meet with a range of science educators in Wellington and Auckland during his stay.



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