



Cultivating Innovative Talent: The Role of Universities

**Notes for comments to the Third New Zealand-China
Higher Education Forum.**

**Shanghai Expo
14 June 2010**

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Governments, companies, organisations and communities are competing in a world of economic, social, environmental and cultural change that is moving faster than ever.

To meet this challenge, they need people who are creative, innovative and flexible. And they need an education system that is capable of producing this talent.

Da Jia How. Thank you for the opportunity to speak with you today.

Wo shi Steve Maharey, Vice-Chancellor of Massey University.

I was asked to provide some thoughts on how universities can contribute to training/growing/encouraging innovative thinking that leads to economic and social development.

Let me start by stating what has become obvious - this is vitally important. Innovation and creativity are the cornerstones of success in the 21st century.

The Chinese government has shown it understands this by placing innovation at the centre of its 2006 five-year plan and aiming to become an “innovation country” by cultivating a “rich talent base” to drive economic and social development.

Here is what a recent Government policy paper had to say:

“A culture of innovation breeds innovative endeavours; while innovation endeavours in turn spur the culture of innovation...We shall encourage the innovative spirit of daring to be first and daring to take risks. We shall tolerate failure, conquer shallowness, and provide a stage for various innovative ideas and activities to display their individual attractions, so that the sparks of creation can converge, spread and give off their radiant light”.

The New Zealand Government agrees, and is seeking to build the nation's future on an ability to create, distribute and exploit knowledge.

So we know innovation is important. But what is it?

Type the word innovation into any search engine and you will be rewarded with more references than you can handle. So, for our purposes today I will avoid definitions and note simply what we expect from innovation. We face a lot of challenges. We want to create new and valuable ways of doing things which will build a better future. That is what innovation is about.

I come from a nation that prides itself on being creative and innovative.

Our heritage is built on individuals tinkering about and coming up with something different.

This is a still from the film "The World's Fastest Indian" which tells the story of Burt Munro, played by Anthony Hopkins in the film, who adapted an Indian motorcycle and then broke the under 1000cc world speed record in 1967.

This spirit of innovation underpinned the huge success of the agri-food industry in New Zealand.

Today it can be found in the ideas as diverse as ANZODE nickel-Zinc battery, the Yike Bike, the Martin Jetpack, the Aquada sport amphibian, Navman. Terrasaw. And that is without mentioning the technology that made the film Avatar possible – which comes from Wellington New Zealand.

But we know that the tradition of individual creativity and innovation is not enough for the challenges we face today. We need to build a nation that is innovative and creative in all areas.

The driver for a renewed emphasis on innovation in New Zealand is our traditional reliance on commodities. Highly successful in the last century, it is not the way forward in this century. Innovation has to be a national characteristic.

The driver for the Chinese government can be captured by the phrase “Made in China”. The question is, when will the phrase “Invented in China” be as widespread.

This is, of course, where education comes in.

Our futures are heavily reliant on what we teach our people. We can literally see the future in our education systems. What we teach today is what the world will be tomorrow.

What then should we in the university sector be doing?

Two points first. I want to map out what we in New Zealand are doing and what we want to do. In other words we are not doing everything we should. No nation is. But we are doing some of what needs to be done and we have an idea of what else needs to be done. I will call this the innovation agenda.

Second, that innovation agenda has to start at the beginning – with parents, early childhood education, primary and secondary education - because they produce the people universities enrol. What we can do is limited if we do not get students with the right understanding of learning.

New Zealand has placed an enormous emphasis on educating parents as first teachers and on early childhood education. I stress education here because we have discovered that the best education investment is in these early years when the foundations for learning are laid down.

Similarly, major changes are taking place the primary and secondary levels. The system is focused on developing active learners who have the ability to create knowledge, self-assess and apply what they know to the real world. To make this possible everything - curriculum, teacher training, assessment models, school organisation and buildings, parental involvement – everything is changing.

I should note that this change is taking place in a very successful education system. New Zealand's best students rank among the best in the world. They rank highly in PISA, PIRLS and TIMSS. Literacy levels are significantly above the world international average. Teachers are tertiary qualified. Over 95% of 3-4 year olds attend early childhood education.

But we understand that what was successful last century will not be successful this century when schooling was focused on the transfer of content to largely passive students. Now students must be able to create and use knowledge and this requires us to think quite differently about learning.

For example, one of the most important elements of change in New Zealand is the understanding that creativity and innovation are not confined to a few individuals. We all have the potential to be creative in some way. This has led to a rapid expansion in areas like the arts, design and performance within schools to encourage young people to think of themselves as creative.

Let me return to the universities and their contribution to the innovation agenda. A good deal of change is going on. Recent years have seen a dramatic growth in participation.

We are being asked to make a clear contribution to the development of the nation. Our higher education strategy focuses attention on excellence, relevance, access and connectiveness.

There is an emphasis on effective teaching, what is being taught is being reviewed and new technology is being used more as a tool to enrich the learning experience. Students are being offered more opportunities to travel during their time at university and this needs to grow.

I was recently talking with two international Phd students (not from China) enrolled at Massey and asking them what the difference was between higher education in their home country and New Zealand. They said that at home they would have been given a topic and done what they were asked to do without question until they completed their studies.

In New Zealand they helped shape the topic, questioned their supervisor, explored different ways of solving the problem, discussed their work with other students, made changes and felt they were able to be more creative and innovative.

That is the learning experience that cultivates innovation.

It is also important to cultivate the teachers and researchers.

New Zealand has many strengths of value to the academic community. Low population density and a beautiful country allow us

to offer a lifestyle that is highly desirable. (Note the attraction of research teams to New Zealand)

Our system allows for cooperation and collaboration between institutions. (Note the role of the CORES) The small size of our population encourages cross discipline interaction that is so vital for innovation.

As a tolerant and open society, we encourage an environment of creativity and innovation. There is a “can-do” tradition that encourages people to try something new.

We know we need to invest in infrastructure that supports learning and research. The KAREN network is an example of what is being done.

Innovation has to be the focus of the national agenda and there must be investment from the public and private sector. There must be champions of innovation. The newly appointed Prime Minister’s Chief Science Advisor, Professor Sir Peter Gluckman is an example of this in New Zealand.

The recently established Department of Science and Innovation which brings together policy and funding functions is an example of the public sector working better to support innovation. The most recent Budget focused on technology transfer and encouraged closer links between research and business.

Finally, I would stress the importance of meetings like this and the relationship between New Zealand and China.

We share an understanding of the challenges we face and the solutions.

As nations we will want to be innovators. But we know that in the new times we live in, the innovation agenda is not something to attempt alone. As each of us achieves the goal of being more innovative we will make a greater contribution to a world that needs to be more innovative. We will gain from working openly with each other – especially through exchanges of staff and students.

Thank you for the opportunity to speak with you today. It is a privilege to be here at the Shanghai Expo. The world is here, as the quote I mentioned earlier said:

“So the sparks of creativity can combine and give off their radiant light”.