

# Commentary on issues of higher education and research

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## Universities of Technology

In the first issue of *Commentary* we addressed the characteristics of leading research universities, and why some such institutions ought to be supported and encouraged in New Zealand. In this issue, we consider the implications of another class of institution now being proposed – the “University of Technology”. The proposal for this new class of institution comes both in a Bill recently introduced into the House (see box) and in a report published by the Tertiary Education Commission.<sup>1</sup>

### The New Zealand situation

In this country, the Education Act 1989 currently provides for five types of tertiary institution: universities, polytechnics (some of which are referred to as institutes of technology), wānanga (Māori tertiary institutions), colleges of education (all of which have now been merged into universities) and specialist colleges. The Act defines the characteristics of each kind of institution and attributes to each an important and valuable role within the New Zealand tertiary landscape.

The characteristics of a university are defined in section 162 (4) (a) of the Education Act, which states “that universities have all the following characteristics” (and other classes of institution must have at least one of them):

- (i) they are primarily concerned with more advanced learning, the principal aim being to develop intellectual independence;
- (ii) their research and teaching are closely interdependent and most of their teaching is done by people who are active in advancing knowledge;

### Education (Establishment of Universities of Technology) Amendment Bill

This private member’s Bill is in the name of the Hon. Brian Donnelly, New Zealand First’s education spokesperson and respected chairman of Parliament’s Education and Science Select Committee, who brings a life-time interest and career in education to his current role.

The purpose of Mr Donnelly’s Bill is to amend the Education Act 1989 to provide for the establishment of a new category of tertiary institution, the “university of technology”. It is argued that the addition of such a category will “help to bridge a significant legal gap within the current structure of the tertiary education sector, while enhancing flexibility and encouraging differentiation”.<sup>2</sup> The Bill’s general policy statement asserts that a university of technology will “demonstrate

the essential characteristics of any other university but the primary mission of a University of Technology will be to raise workplace skills and knowledge to meet a broad spectrum of industry, business and community needs”.

Mr Donnelly asserts that this new category will “accommodate the pressure for recognition of increasingly complex and sophisticated knowledge in trade and vocational fields through graduate and postgraduate qualifications”.<sup>3</sup>

Under the proposed legislation a number of polytechnics could become universities of technology.

1 Tertiary Education Commission, 2007. “Progress Report of the Institutes of Technology and Polytechnics Steering Group”. Available online at [www.tec.govt.nz/templates/StandardSummary.aspx?id=2550](http://www.tec.govt.nz/templates/StandardSummary.aspx?id=2550)

2 Education (Establishment of Universities of Technology) Amendment Bill 2007. Explanatory note. General Policy Statement

3 Hansard 25 July 2007. Education (Establishment of Universities of Technology) Amendment Bill – First Reading, Hon. Brian Donnelly (NZ First).

	Universities	Balance of tertiary sector
A rated researchers <sup>5</sup>	99.6%	0.4%
B rated researchers	97.5%	2.5%
C rated researchers	87.3%	12.3%
R rated researchers	41.0%	59.0%
PBRF funding allocation	97.4%	2.6%

- (iii) they meet international standards of research and teaching;
- (iv) they are a repository of knowledge and expertise;
- (v) they accept a role as critic and conscience of society.

All eight of the New Zealand universities are deemed to meet these criteria, including the one (Auckland University of Technology) which, by virtue of its history, has “University of Technology” in its name. None of the other tertiary institutions in the country comes even remotely close to meeting the research requirements for classification as a university.<sup>4</sup> Indeed research capability in the tertiary sector, as assessed by the Performance Based Research Fund (PBRF), is almost exclusively concentrated in the universities (see table above). Thus all but three of the A rated researchers nationally and the vast majority of B rated researchers work in the university sector, and that sector receives all but 2.6 percent of the funding allocated to institutions on the basis of research performance.

## The international context

While over 120 of the 7000 or so universities around the world make use of the title “university of technology” they are generally located in Australia, Northern and Eastern Europe, parts of Asia, Africa, and the Middle East. There appear to be no examples of “universities of technology” in the United Kingdom, Canada or in the United States, countries against which (along with Australia) the New Zealand university system typically compares itself.<sup>6</sup>

It is often asserted that the establishment of “universities of technology” as a *separate category* of higher education institution is a

feature of education systems from which New Zealand might wish to take a lead. In fact, such an arrangement exists only in South Africa. That country’s Technikon (polytechnics) were reclassified in 2004 as “universities of technology”, to sit alongside “comprehensive universities” and “traditional universities”. The expectation is that these institutions will continue to fulfil the traditional role of the Technikon, but with a “greater commitment of service to, and upliftment of the community than has previously been the case”.<sup>7</sup>

The proposed establishment in New Zealand of a new category of institution, the “university of technology”, is therefore *not* in line with tertiary sectors overseas. This analysis is reinforced by the Second Report of the Tertiary Education Advisory Commission (TEAC) which commented that, “to the Commission’s knowledge, there is no separate statutory category of ‘university of technology’ in any comparable jurisdiction”.<sup>8</sup> The Commission went on to say, “The creation of two separate categories of university might have serious implications for the international standing of New Zealand’s higher education system.”

## The Australian situation

The one country against which New Zealand commonly benchmarks its university system, and which does have universities of technology, is Australia. It is therefore worthy of particularly close examination.

Many claims are made about the Australian situation by proponents of universities of technology – in particular, that they are part of a “dual-sector” system that improves articulation (ie movement) of students between the higher education sectors. “Dual-sector institutions” are those which have the

characteristics, and offer the programmes, of both polytechnics and universities. It is commonly assumed or asserted that all “universities of technology” in Australia are dual-sector institutions. As a consequence, in comparing the New Zealand situation with Australia, reference is often made to the “dual-sector” nature of Australia’s “universities of technology”. However, this reflects a lack of understanding of the application of these two terms in Australia.

It is important to appreciate that in Australia there is no protected definition or status for the use of the term “university of technology”. This is to say that, unlike the proposal in the Bill currently before New Zealand’s Parliament, there is no separate category of “university of technology”. In Australia, all universities (of technology or otherwise) must fulfil all of the criteria required to achieve university status. Use of the title “university of technology” is made at the discretion of the institution and of the state to illustrate the focus and academic strengths of an institution. In several instances, it also reflects their technological antecedents. There are four Australian institutions which are known as “universities of technology”: the University of Technology, Sydney; Curtin University of Technology; Queensland University of Technology; and Swinburne University of Technology.<sup>9</sup> The broad emphasis in the first three of these institutions is on the delivery of technology programmes at the degree level – 97 percent of their students are studying at the bachelors level or above. In all respects they meet the criteria for a “standard” university.<sup>10</sup> Only Swinburne is in a different category, as discussed below.

The second important point about the Australian system is that dual-sector institutions and universities of technology are not one and the same thing. Australia has five universities which are recognised as “dual-sector” institutions. That is, they offer Technical And Further Education courses (TAFE, now more commonly known as VET or Vocational Education Training) in addition to a traditional university academic curriculum. The aim behind the dual-sector model is “to promote greater harmonisation between the

4 New Zealand Vice-Chancellors’ Committee, 2006. “The Distinctive Contribution of Universities”. Available online at [www.nzvcc.ac.nz](http://www.nzvcc.ac.nz)

5 PBRF Quality Evaluation 2006 Release Summary. Tertiary Education Commission, Wellington. A rated researchers are deemed to rank with the best in the world; B rated, to be nationally recognised; C rated to be sound researchers; R to not meet the standards of C rated researchers. “PBRF funding allocation” refers to the funding allocated on the basis of institutional research performance.

6 This does not include institutions known as “institutes of technology” (like Massachusetts Institute of Technology in the US). Only those with both “university” and “technology” in their title have been included here.

7 Higher Education South Africa, 2004. “Position, Role and Function of Universities of Technology in South Africa”. Available online: [www.hesa.org.za/hesa/](http://www.hesa.org.za/hesa/)

8 TEAC, 2001. “Shaping the System: Second Report of the Tertiary Education Advisory Commission”. Available online at [www.tec.govt.nz](http://www.tec.govt.nz)

9 Times Higher Educational Supplement (2005) adjudged University of Technology, Sydney to be 87th in the world, Curtin University of Technology to be 101st equal, and Queensland University of Technology 118th. Their success has not been achieved through a lessening of emphasis on internationally published research.

10 Department of Education, Science and Training, 2005. Higher Education Statistics Collections. “Table 23: All Students by State, Higher Education Provider and Broad Level of Course, Full Year 2005”. Available online at: [www.dest.gov.au/sectors/higher\\_education/default.htm](http://www.dest.gov.au/sectors/higher_education/default.htm)

higher education and TAFE sectors particularly through encouraging institutions to develop articulation pathways".<sup>11</sup>

The dual-sector model is confined to four universities in the state of Victoria – RMIT University, Swinburne University of Technology, Victoria University and the University of Ballarat – and one in the Northern Territory (Charles Darwin University). Only Swinburne uses the title "University of Technology". The Royal Melbourne Institute of Technology is known more usually as RMIT University or simply RMIT. Victoria University was previously known as Victoria University of Technology. Thus, of the four dual-sector institutions, only one now uses the title "university of technology", and of the four institutions known as "universities of technology" only one is a dual-sector institution. It is thus abundantly clear that the term "dual-sector institution" is not synonymous with the term "university of technology". Indeed, were it not for Swinburne, there would be no overlap between these two groups at all!

The third point goes to the question of whether dual-sector institutions do in fact increase the movement of students between the polytechnic (vocational) and university sectors. The available evidence indicates that they do not. A 1999 project and joint report of the Australian National Training Authority and the Australian Vice-Chancellors' Committee found that while there is evidence to support the view that dual-sector models can be effective in increasing opportunities for students to articulate into higher levels of tertiary education, the same goals have also been achieved by several TAFE institutions "through partnerships with HE [Higher Education] without the need or requirement to become a 'single' institution". The same project found that strong and effective mechanisms for linking qualifications and enabling articulation do not depend upon the creation of dual-sector institutions.<sup>12</sup>

Indeed, "being a dual-sector university does not guarantee high levels of TAFE articulation. Despite having four of Australia's five dual-sector institutions,

Victoria still does not have a significantly higher level of articulation than the national average."<sup>13</sup> Several large non-dual sector universities in Victoria offer more places in degree programmes to VET graduates than do the dual-sector institutions. Monash and Deakin University "collectively play as large a role in the recruitment of TAFE students to HE as do the three metropolitan multi-sector institutions put together".<sup>14</sup>

## Vocational education and the teaching of technology

In the context of "universities of technology", the term "technology" is often used as a synonym for "vocational education", which further confuses the issue of what universities of technology might actually achieve.

There is no doubt that New Zealand has critical requirements in terms of vocational education. Meeting a wide variety of industry, business and community needs is an important aspect of the function of tertiary education institutions, and requires them to develop close relationships with professional bodies and businesses to address particular skills shortages.

However, the argument that there is a need and a role for a category of "universities of technology" in New Zealand is highly dubious. Certainly, there is no need for such institutions to provide a special link with industry. It is already established that the role of interfacing with industry is, in New Zealand, a "particular focus" for institutes of technology and polytechnics. To quote the Tertiary Education Strategy 2007-2012:<sup>15</sup>

*Economic transformation to a high skill, high productivity, and high wage economy that is internationally competitive is a key priority for New Zealand. This requires continuous development of a productive, skilled workforce....*

*... The roles of institutes of technology and polytechnics reflect these aims:*

1. *to provide skills for employment and productivity*
2. *to support progression to higher*

*levels of learning or work through foundation education*

3. *to act as a regional facilitator.*

Of course, economic transformation is not the sole preserve of the polytechnic sector. As was pointed out in the first issue of *Commentary*, university graduates and research have a huge impact on a nation's economic growth and capacity.

Nor is it readily apparent that the delivery of education through a "university of technology" rather than through a polytechnic or institute of technology will necessarily "raise workplace skills." The advancement of workplace skills is a multifaceted process, with recent research in Australia suggesting that "workplace employers...have a responsibility, equal to that of the universities, to ensure that their [students'] transition to the workplace is as smooth as it can be and that their learning at work is characterised by continual (and structured) critical reflection".<sup>16</sup>

Furthermore, there is no need in New Zealand for a category of universities of technology to assist students to move between vocational and higher education. New Zealand already provides multiple pathways into university-level education. These pathways are underpinned by clear guidelines supporting the recognition of prior study and the transfer of credit between New Zealand universities and other institutions involved in tertiary study (including polytechnics).<sup>17</sup> The aim of these arrangements is to facilitate access and promote new study opportunities without compromising the quality or standards of qualifications. Through the New Zealand Vice-Chancellors' Committee, our existing universities also subscribe to the New Zealand Qualification Authority's "Credit Recognition and Transfer Policy" in the active support of learning pathways. The articulation that dual-sector institutions were set up to achieve in Australia (but evidently without notable success) is thus achieved by other means.

It is also important to appreciate that technology is taught not only in polytechnics

11 Swinburne University of Technology, 1997. "Submission: Higher Education Review". Available online at: [www.dest.gov.au/archive/highered/hereview/submissions/submissions/S/swinburn.htm](http://www.dest.gov.au/archive/highered/hereview/submissions/submissions/S/swinburn.htm)

12 ANTA/AVCC, 1999. "Pathways to Partnership". Report and draft policy guidelines. Available online at: [www.universitiesaustralia.edu.au/documents/policies\\_programs/teaching\\_learning/credit\\_transfer/01\\_title\\_and\\_contents.pdf](http://www.universitiesaustralia.edu.au/documents/policies_programs/teaching_learning/credit_transfer/01_title_and_contents.pdf)

13 Professor Ian Young, Vice-Chancellor, Swinburne University of Technology (speaking at Post-Compulsory Education: Bridging the Gap Symposium, Victoria University, 18 May 2005).

14 Teese, 1997. Reported in ANTA/AVCC, 1999. "Pathways to Partnership".

15 Tertiary Education Strategy 2007-12, p14. Available online at [www.tec.govt.nz](http://www.tec.govt.nz)

16 Crebert, G (2004). Institutional Research into General Skills and Graduate Attributes: Constraints and Dilemmas. Available online at: <http://lifelonglearning.cqu.edu.au/2002/papers/crebert.pdf>

17 Committee on University Academic Programmes (updated January 2006), Functions and Procedures, Sections 8.2 and 8.3. Available on the NVZCC website: [www.nvzcc.ac.nz/files/cuap/FANDP05.pdf](http://www.nvzcc.ac.nz/files/cuap/FANDP05.pdf)

and institutes of technology but also in the university sector. In 2005, New Zealand's universities enrolled a third of all "technology" students as measured by equivalent full-time students (EFTS) (a total of 16,487), while institutes of technology and polytechnics enrolled 48 percent (24,465 EFTS).<sup>18</sup>

## Branding issues

Representatives of polytechnics who argue in favour of universities of technology commonly assert that the brand "university" is necessary to attract students, and, in particular, international students. Indeed, it is likely that this is the real driver for the proposed new class of institution.

The proposition that international student numbers would be increased if institutes of technology and polytechnics were re-branded as "universities of technology" is highly questionable. OECD analysis shows that New Zealand already recruits a relatively high proportion of international students into Tertiary Type-B programmes (ie practical, technical or occupational skills programmes with a minimum duration of two years full-time equivalent at the tertiary level – the kinds of programme typically offered by institutes of technology and polytechnics). In 2003, a total of 32.6 percent of all our international students were enrolled in such programmes, compared with 14.8 percent in the United Kingdom and 6 percent in Australia.<sup>19</sup> Only Belgium and Malaysia recruited more international students into Tertiary-Type B programmes in the OECD.<sup>20</sup> It does not appear, from these numbers, that students are dissuaded from pursuing courses such as those offered by our current

polytechnics, despite the absence of a "university of technology" category.

Furthermore, the OECD has concluded that the popularity or attractiveness of an individual tertiary institution does not depend solely on the reputation of that institution, but "on the overall perception of the quality of the country's post-secondary education".<sup>21</sup> Therefore, to ensure that our institutions are able to promote themselves successfully in the overseas marketplace, New Zealand needs to ensure that consistent messages are being sent about the high quality of all our tertiary institutions. Those messages and the reputation of our tertiary system should not be placed at risk through the application of inconsistent standards between one category of university and another.

In any event, were "universities of technology" to be created, they would inevitably suffer from a lower status and prestige both nationally and internationally. This is evidenced by New Zealand and Australian experience – the Auckland University of Technology (now branded as "AUT University"), Victoria University of Technology (now "Victoria University") and Royal Melbourne Institute of Technology (now "RMIT University") have all moved to drop the word "technology" and to brand themselves as universities. In 2005, Victoria University of Technology applied to the Victorian Government to have the name "Victoria University" recognised in legislation. This name had already been in widespread use for seven years, and it was officially adopted in August 2005. At the time, Vice-Chancellor Elizabeth Harman was quoted as saying that the word "technology..."

reflects the past, not the future, and it suggests we are a narrow specialist when in fact we are a broad educational provider".<sup>22</sup>

Even more bizarre is the recent suggestion that the term "university of technology" could be applied to a voluntary partnership of institutes of technology and polytechnics operating under a single national brand.<sup>23</sup> Such a proposal demonstrates a fundamental lack of understanding of the meaning, in an international context, of the term "university".

In conclusion, it is clear that no "university of technology" created from a New Zealand polytechnic or institute of technology could possess the essential characteristics of a university (as stated in New Zealand law, and as understood in an international context). Yet these are the characteristics that reputable universities in countries with which we commonly compare ourselves (eg UK, Australia, Canada, and US) and the new emerging universities of the Asia Pacific region take as self evident. If New Zealand departs from this benchmark then our universities will have to rely on their individual reputations rather than the generic reputation for good quality that New Zealand universities have built up over the years.<sup>24</sup> As was demonstrated in the first issue of *Commentary*, creating an international quality research university in New Zealand is already extremely difficult given the low level of public and private investment in our university system. It will be further hampered if we destroy our international reputation for research-led university education by proliferating types of universities and confusing their characteristics.

18 "Technology" defined here as NZSCED Narrow Bands 02 (Information Technology), 03 (Engineering), 04 (Architecture), and 05 (Urban Environment). In 2004, a total of 17,097 "technology" EFTS were enrolled in universities representing 42 percent of all technology EFTS, compared with 36 percent in institutes of technology. Source: Tertiary Data Warehouse, Ministry of Education website, accessed March 2007.

19 OECD definition – Tertiary-type B programmes are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.

20 OECD, 2005. "Education at a Glance" Table C3.4 Distribution of Foreign Students, by level and type of tertiary education (2003).

21 OECD, 2004. "Internationalisation and Trade in Higher Education: Opportunities and Challenges".

22 [http://en.wikipedia.org/wiki/Victoria\\_University\\_of\\_Technology](http://en.wikipedia.org/wiki/Victoria_University_of_Technology)

23 Tertiary Education Commission, 2007. "Progress Report of the Institutes of Technology and Polytechnics Steering Group". Available online at [www.tec.govt.nz/templates/StandardSummary.aspx?id=2550](http://www.tec.govt.nz/templates/StandardSummary.aspx?id=2550)

24 New Zealand Vice-Chancellors' Committee submission on the application by the Council of Unitec "For Unitec to be disestablished as an Institute of Technology and established as a University" [2005].



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Te Whare Wānanga o Tāmaki Makaurau

*Commentary* is produced on an occasional basis by the Office of the Vice-Chancellor at The University of Auckland, and brings together some of the research-based evidence relevant to current issues in higher education and research.

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