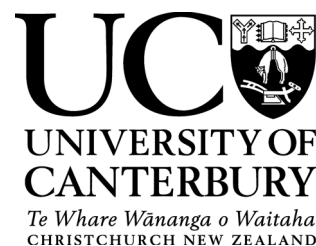


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The Faculty of Arts at the University of Canterbury thanks the Productivity Commission for the opportunity to respond to the “Issues Paper: New Models of Tertiary Education” (February 2016) (referred to hereafter as *Issues Paper*)

I. THE EVER-CHANGING TERTIARY SECTOR

On page one of “Issues Paper: New Models of Tertiary Education” one reads the provocative statement that the terms of reference for the Productivity Commission included the charge that there is “considerable inertia” in the tertiary sector (*Issues Paper* p.1).

This assertion is not supported by data, and is actually contradicted by Figure 6 (*Issues Paper* p.9) showing the high proportion of tertiary students obtaining university degrees and Figure 15 (*Issues Paper* p.38) showing the high qualification completion rates for university qualifications.

Worldwide, tertiary educators must graduate students who will contribute positively to national productivity. This means that all tertiary educators and institutions must keep up with advances in technology and pedagogy.

A. The challenges that face the **university sector** are these:

- 1) Economically efficient delivery of an education that develops high-level **flexible and transferable skills** that graduates take with them into the workplace:
 - advanced literacy (ability to read and understand research reports and technical writing and apply this information to other areas)
 - critical and analytical thinking
 - ability to think or express oneself creatively
 - ability to be an independent learner
 - ability to identify problems and use previous knowledge and skills and research to find solutions

- 2) To educate an increasing number of students who are not all sufficiently or equally prepared for tertiary education:
 - The current target model for university education is one with a staff: student ratio of 25-30:1 (Fig.9, *Issues Paper* p.15 shows an average across all universities and subjects, with a lower ratio)
 - Universities can operate efficiently with ratios like this, but the onus is on students to seek help where/when they need it
- 3) To educate students to work in a world where they will constantly need to adapt to new technology and new occupations:
 - Universities graduate students with a set of transferable skills, which can be applied to thousands of different occupations and careers (especially the Bachelor of Arts)
 - Flexible and transferrable skills are the best solution for an employment market that is constantly changing
 - Employers need to be aware that universities graduate students who can perform a range of tasks with a modest amount of job-specific training (*Issues Paper* p.46)
 - It is impossible for tertiary providers to produce graduates who can fit every conceivable job
- 4) To educate students in a manner that is suited to their learning needs and makes responsible and effective use of new technology.

B. In order to meet the goals outlined in Section A above, **universities have changed greatly in the last 20 years.**

- 1) University staff (academic and non-academic) are as digitally literate as their colleagues in businesses and service providers. Since 1996 universities have adopted the following technologies into their teaching delivery models:

1995-2000: adoption of basic software including word-processors, excel, powerpoint, databases, and websites

2000-2010: Use of email, social media platforms, and communication software such as Skype and Adobe Connect both to teach and communicate with students and the international scholarly community

2010-present: widespread use of teaching/learning platforms such as Moodle, Blackboard, WebCT (etc), and other task-specific software

- 2) The changes to teaching that have occurred as a result of these developments include:
 - Mixed model delivery using classroom contact, Moodle and other forms of online delivery
 - Recorded lectures and flipped learning

- Blended and distance learning/teaching
- Student online discussion forums
- Online assessment including quizzes and tests
- Provision of a range of levels of resources from remedial to advanced (catering for all levels of students)
- Use of electronic and internet-based resources to support student learning

3) Other changes to teaching and learning:

- The creation of graduate profiles for every subject and qualification: these are a synopsis of the skills and attributes that students will have obtained when they graduate
- Learning outcomes for each paper, subject and qualification (subject-specific and transferrable skills), and linked to course activities and assessment
- Tutorial sessions based on transferrable skills development through exercises at the tutorial and assessment afterwards
- Classroom activities that include any or all of the following
 - Class discussions on questions posed by the students, based on the reading
 - Analysis of primary evidence or data
 - Small group work on course-related tasks
 - Student presentations arising from group work or individual research
- Highly varied assessment tasks that develop transferrable employment skills in the context of a discipline

Teachers and learners in the modern university are active and co-operative, as well as digitally literate and adaptable. They meet the model of teaching outlined on p.16 of the *Issues Paper*.

II. TEACHING QUALITY(*ISSUES PAPER* QUESTION 12 AND P.16)

Mr. Murray Sherwin's assumption that lecturers would rather be researching (presentation made to the University of Canterbury on 6 April 2016) reflects a profound lack of information on the part of the Productivity Commission. Similarly, no evidence is supplied to support the insinuation (*Issues Paper* p.17 and Q14) that teaching at New Zealand universities is not up to the highest standard.

The average teaching evaluation score in the College of Arts at the University of Canterbury is 4.6 out of 5 (92%). This score has improved (from 3.9/5) in the last 15 years.

Why are teaching evaluation scores in the Faculty of Arts so high?

The dramatic changes that have taken place in university teaching in the last 20 years (see Section IB above) mean that lecturers do not merely lecture, but rather **engage their students as co-learners**.

In the modern university classroom:

- **Course content is research-informed.** Classroom activities and lectures are based on the wide reading of scholarly literature and the expert knowledge and research of the lecturer.
- **Course content is intellectual property** generated from the expert knowledge, research of current scholarship, and personally generated research of the lecturer.
- **Assigned course readings** consist of a collection of books and scholarly articles that **support and reinforce students' learning:**
 - Reading assignments help students identify problems and areas for future research
 - Reading assignments make students aware of the important principles and questions in a discipline or field
 - Reading assignments expose students to different arguments and opinions on important issues

Universities support, recognize and incentivize good teaching:

- Teaching awards exist at the College, University and National level
- The University of Canterbury creates opportunities for professional development of teaching through the Academic Services Group and the Postgraduate Certificate in Tertiary Teaching
- There are opportunities to share good teaching practice at all levels of the university (departments, schools, colleges, and at university level)
- Demonstration of effective teaching is a requirement for promotion

III. WHAT IS THE MOST EFFECTIVE WAY TO TEACH AT THE TERTIARY LEVEL?

The *Issues Paper* (p.16) quotes Biggs (2012, p.41) as follows:

“...[g]ood teaching is getting most students to use the higher cognitive level processes that the more academic students use spontaneously.”

To this we may add the observation that adults of all ages use “higher level cognitive processes” more easily when they study a subject they enjoy.

Tertiary graduates who engage “higher level cognitive processes” are fundamental to a highly productive nation.

Section I.A.1 above identified the “higher cognitive level processes” that are developed by bachelors degrees and are part of the graduate profile for this type of degree:

- advanced literacy (ability to read and understand research reports and technical writing and apply this information to other areas)
- critical and analytical thinking
- ability to think or express oneself creatively
- ability to identify problems and use a combination of previous knowledge and skills and research to find solutions
- **ability to be an independent learner**

University Entrance through NCEA does not sufficiently prepare students to be independent learners:

- “Most students” as identified by Biggs are average or weak students
 - Average/weak students often lack the motivation and self-discipline to be effective independent learners
 - Average/weak students cannot learn simply by reading the assigned readings and listening to lecture recordings (the MOOC model)
 - Average/weak students need support in their learning from lecturers, tutors, and units within the university that give remedial help for academic skills

It is a myth that MOOCs and their variants can deliver tertiary teaching effectively:

- The *Issues Paper* discusses MOOCs and online learning in Chapters 4 and 5
 - MOOCs and other competitors are really just lectures online.
 - Putting a lecture, or a whole series of lectures online does not make lecturing “innovative”; it is an old, ineffective model repackaged
- MOOCs do not constitute effective teaching, nor do they facilitate it
 - The average and weaker students need face-to-face engagement with a lecturer who can recognize and respond to their needs
 - MOOCs do not engage students in the way that classroom activities can because they do not offer face-to-face teaching
- MOOCs are not as cost-effective as they appear to be.
 - Students must still submit work and have it marked.
 - Students also have questions that must be answered, and must be able to seek help for things they don’t understand.
- The majority of students enrolled in MOOCs and other forms of “mass lecturing” fail the course because they need learning support from qualified lecturers and their peers.
- The few students who successfully pass a MOOC course have the following attributes:
 - Adult learner (over age 30)
 - Previous tertiary degree
 - Work experience
- Humans are social beings who learn from face-to-face communication, and who learn by interacting with each other
 - A MOOC learning environment does not foster this type of communication, which is why MOOCs have very high failure rates

IV. RESEARCH-INFORMED TEACHING (*ISSUES PAPER* QUESTION 11)

University degrees are the most desirable of tertiary qualifications, as is shown by the *Issues Paper* (p.9).

This is because universities produce students who have the capacity to be innovative, creative and productive (that is, who have the attributes listed in Section I.A.1). In order to do so, universities must employ academic staff who have these same attributes and

use them to generate new knowledge, solve problems, or create and innovate through research.

One has to be an independent researcher in order to develop these capabilities in students, and to mentor students embarking on the research/problem-solving/innovation pathway.

Students who have been educated by academic staff actively engaged in research have the following attributes that contribute positively to New Zealand's future productivity:

- Ability to ask questions and identify problems in need of a solution
- Ability to engage in background research to determine what is already known and where the gaps are
- Ability to formulate a hypothesis or attempt to create a solution
- Ability to gather relevant data
- Ability to analyse the data and draw conclusions
- Ability to think creatively or "outside the box"

Some research is industry-funded problem-solving research. Other research is open-ended. Both types are needed for productivity.

- The foundational principles of modern science are not the result of industry-funded research. Future "productivity" depends in part on the development of knowledge that may not have an immediate, obvious commercial application.
- High-level research, for example that in industry or Crown Research Institutes, depends on a supply of graduates with research skills entering the job market.

Polytechnics are not able to deliver the skills in Section I.A.1

- Because they train students for specific occupations
- Because they are not staffed by enough people with research degrees
- Because the students they take in often lack "University Entrance" through NCEA.

Students with University Entrance have only modest research skills and have not yet reached their productivity potential. Universities hone and develop these nascent skills and produce graduates who are better able to start to conduct research and use it to solve problems. To fulfil this task for the New Zealand, universities must have research-active staff.

V. THE TERTIARY SECTOR DOES NOT OPERATE INDEPENDENTLY OF PRIMARY AND SECONDARY EDUCATION

Tertiary providers (all of them) educate students who have completed primary and secondary education.

- Education is a long-term investment, so producing students who choose to enrol in STEM-related qualifications requires an investment in numeracy education from year 1 of their education

- In young people the level of education relies on brain development (which is dependent on biological age), so literacy and numeracy skills must be developed gradually and consistently in their education.
- “Productivity” in the employment sector requires the education of a significant proportion of students to the tertiary level, and with the right literacy and numeracy skills (Question 29)

University study requires reasonably high literacy and numeracy skills, as well as the ability to express oneself in writing and verbally with relative ease

- Literacy and numeracy requirements for UE may be too low for the kind of productivity envisioned by the Productivity Commission and the current government (Question 29).
- This level of productivity is a long-term investment that involves a cohort of students from the first day they enter primary school.

VI. NOT ALL NZQA LEVEL 5 COURSES ARE THE SAME (*ISSUES PAPER P.6 AND 26*)

Polytechnics and other tertiary providers develop specific skills in students, and the level 5 courses attached to their qualifications are closely tied to the skills requirements for a particular occupation.

- While all level 5 courses require some “higher cognitive processes” from students, the skills developed by level 5 courses vary greatly.
- The skills developed in some level five courses are too specific to be transferred to another qualification (*Issues Paper p.6*):
 - A student who completes level 5 courses in Law or English literature cannot effectively transfer that credit towards a nursing degree and still become an effective nurse.
 - A student who completes a level 5 polytechnic course **may not** actually have the literacy and numeracy skills required for level 5 university courses.
- Students who transfer to a new qualification cannot necessarily apply all previous credit at a particular NZQA level because every qualification has a Graduate Profile that is met by the specific courses required for that qualification (*Issues Paper p.26, Fig.12*).

“University Entrance” means something significant in terms of students’ achievements and skills:

- The literacy and numeracy levels required indicate skills and ability that can be developed to produce researchers, innovators and problem-solvers who will contribute to New Zealand’s productivity.
- Data collected by New Zealand universities shows that students who did not achieve UE have a higher-than-average failure rate at university between the ages of 20 and 30.

VII. UNBUNDLING TEACHING AND RESEARCH WILL CREATE A GREATER SKILLS DEFICIT (ISSUES PAPER PP.13-14)

Students cannot move from high school to a Crown Research Institute or to any other form of employment that requires creative, high-level thinking or problem-solving of the sort that supports high levels of national productivity. A bachelor's degree is, as it were, a research apprenticeship, and then students must earn postgraduate qualifications.

- High productivity requires students are trained to write well, to think critically and analytically, to identify problems and ask questions, to research answers to those questions or solutions to the problems.

Students can only be taught to become researchers, problem-solvers and innovators by people who are actively engaged in doing those activities themselves.

New Zealand universities will plummet in international rankings if teaching is unbundled from research.

- The leading universities in the UK, USA, Canada and Europe countries—countries with much higher productivity levels than New Zealand— have university lecturers actively engaged in research.
- Universities that have separated teaching from research are lower than New Zealand universities in international rankings.
- **Highly ranked universities have not separated teaching and research positions.**

High international rankings for New Zealand universities are the key to attracting full-fee-paying international students and highly qualified staff members

- New Zealand universities must compete with the US, UK and Canada for international students, which effectively means they must offer the same quality of education *in addition to* the many other attractions of living in New Zealand.
- New Zealand universities require international full-fee paying students for fiscal viability (Question 28); teaching-only universities cannot be supported by the national tax base alone.
- Low-paid “teaching-only” positions will not be attractive to highly qualified academic staff and will lead to a loss of quality and international reputation for New Zealand universities.
- Because New Zealand must compete for qualified university staff, and even to keep its own graduates from going overseas, it's not viable to “cut corners” on tertiary education by unbundling teaching from research.

New Zealand universities are run at comparatively low cost to the student, even though that cost has increased in recent years. There are no cost controls in the US beyond what the market will bear. At the many private (and often the most prestigious) universities students pay fees in excess of \$20,000 per year, not including living costs. Therefore US data is not relevant to New Zealand.

New Zealand can therefore fulfil the two important goals of 1) producing future researchers/problem-solvers/innovators and 2) attracting international students if it maintains the high standing of its universities as institutions of quality research and research-led teaching.

VII. PRODUCTIVITY AND INVESTMENT IN TERTIARY EDUCATION (Question 29 and pp.34-38)

It is impossible to compare the productivity of New Zealand, a country of slightly over 4 million, with the productivity of Australia, Canada and the UK, which have significantly larger populations, much greater land mass and natural resources, and a larger tax base.

The Productivity Commission would do well to compare levels of income to universities in those countries (through government funding, fees, and research grants) and examine the disparity with the funding of New Zealand universities. One key to productivity is the funding to education. The higher the investment, the higher the return.

The Productivity Commission should also consider other factors related to national productivity:

- Loss of highly qualified graduates to jobs overseas (the “Brain Drain”)
- Loss of productivity caused by students who do not or cannot put sufficient effort into their tertiary education to meet their full potential:
 - The “achieved” mentality partly fostered by NCEA (also known as “C’s get degrees”)
 - Student mental health: at least 1 in 4 students suffer mental illness that is a barrier to their success as a student, and to their later productivity
 - Students who work over 20 hours per week at a job while also enrolled in full time studies in order to stay debt-free and who therefore cannot devote sufficient time to their studies

Finally, the Productivity Commission should ask the hard questions: what makes other countries more productive than New Zealand, and what role does tertiary education (in all forms) play in national productivity overseas?

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