Productivity Commission Response

This submission contains the personal views of staff that currently work at the University of Canterbury. The contents should not be taken as representing the views of the University.

Introduction

The Productivity Commission Issues paper calls for advice from the sector with a view to gaining insight and well-informed feedback on a range of issues raised. The report asks the sector to consider ways in which productivity can be enhanced. The most fundamental challenge in responding to this paper, however, is the general lack of critical definitions relevant to the overall thrust of the enquiry. '*Productivity'* is referred to throughout the report, though nowhere is it comprehensively defined. Rather it is implicitly embedded as an *economic outcome.* This is done despite the Commission's own acknowledgment of the wider social and cultural value of tertiary education. We see this value in many ways. Education in New Zealand (NZ) is rapidly globalising, bringing changes to both the student body and the opportunity to deliver education differently. Employment has become a key issue for graduates everywhere. Moreover, as we progress headlong into the information age the relationship between teaching and research, and its connection to innovation, dissemination, and uptake become even more critical to understand and foster. This paper attempts to address some of these key issues, contextualised in the experiences at the University of Canterbury[1].

Education and society

The Productivity Commission acknowledges that tertiary education improves economic and social outcomes for individuals through creating higher levels of income, health and life satisfaction. According to the Graduate Longitudinal Study New Zealand (GLSNZ)[2], when respondents were asked to indicate how university education has benefited them, 'personal development' was the most strongly endorsed of all items proposed, with around 80% of graduates rating this highly **[Q29].** Likewise, the Commission has highlighted the benefits of tertiary education to wider society; alongside revenue generation and other improved financial productivity, higher levels of volunteerism, trust and other markers of social capital follow where education levels are elevated across society. Despite extensive social outcomes, the metric proposed for directly evaluating 'productivity' is considerably narrower.

The recent decades have seen a transition in the Government's implicit value 'statements' regarding the role of university education. *Participation* in education was the metric used in the 90s to determine success, changing in the last decade to prioritise *completion* rates. Most recently, however, *post-study outcomes* with a particular relevance to the economy, has become the metric of interest. The Commission states, "the TEC intends to actively reduce funding from 2017 to providers with poor graduate outcomes, as measured by national level graduate outcome data"[3]. However, unless such outcomes are fully contextualised, such a narrow evaluation of productivity will lead to erroneous conclusions about the extent of the contribution education makes to the breadth of society **[Q29].**

[1] Where specific questions from the issues paper are responded to, these are identified in square brackets.
[2] Refer Tustin et. al. (2012).
[3] Refer page 36, Issues Paper.

Raising education levels in priority learner communities is critical, but it takes time. First-year priority learners at UC are now being retained at roughly equivalent rates to their Pakeha student counterparts[4]. Since 2010 there has been an overall increase in first-year retention of Māori and Pasifika, now approximating that of Pakeha. However, the academic performance of priority learners remains below average, with Pasifika the most challenged[5] **[Q54; Q55; Q58].** Moreover, though recruitment efforts have been partially successful, both Māori and Pasifika are underrepresented at UC, and many are the first-in-family to attend University. We therefore argue that the measurement of productivity still needs to account for these and other milestone achievements, if the university sector is to be fairly judged on productivity **[Q54; Q55; Q58].** After all, the benefit and extent of reaching such milestones, in particular for priority learners, may take considerably longer to be accrued and understood. As such, any evaluation of the outcomes of degree-level education must consider the role of life-long learning and its enduring contribution to raising levels of education across society *and* over time.

The GLSNZ is a significant breakthrough in gathering a nationwide quantification of the array of various outcomes of graduates over time. Alongside metrics connected with incomes and employment outcomes, the GLSNZ also gathers data on health and wellbeing, community engagement, values, goals and life circumstance **[Q31].** Because of its longitudinal design, this study is possibly the single best tool New Zealand has to quantify many of the personal and wider social benefits accrued in connection with increased education. Coupled with employment outcomes, this data should be used to provide a better-rounded measure of the contribution university education makes to society over the life-course of individuals **[Q30].**

Employers and employment

UC actively engages with employers in connection with programme review and curriculum development **[Q17].** Professional disciplines, such as teacher education, routinely work closely with employers in development of new curriculum, while accreditation ensures the input by professional bodies (such as the Institute of Professional Engineers New Zealand) into programme content. Coursework internships frequently require assessments to be shared between the 'employer' and the University, while quality assurance reviews of our programmes also enliven the employer voice. For example, the Bachelor of Science (BSc) at UC usefully engaged a number of local and national level employers to provide qualitative feedback as to the suitability of the BSc to meet the needs of job market[6] **[Q32; Q17].** UC has also developed the *co-curricular record (CCR)*. The CCR keeps verifiable records of those activities which foster the development of skills and attributes, but that are not directly credited to degrees such as volunteer work, sporting achievements and some internships. This record is a useful mechanism that enables students to identify and keep connected with their own co-curricular development that aligns with the graduate profile. As employers indicated that highly desirable employees present with a well-rounded suite of experiences, the CCR facilitates students to be able to pro-actively respond to this **[Q32].** Victoria University have also conducted a Survey of Employers and Graduates, in part to identify

[4] Rates of retention of Māori In 2010, Māori and Pasifika freshers (first time in degree level study) were being retained into second year at a rate of 67% and 58% respectively. By 2015, these cohorts have approach rates of retention that approximate the 81% reported by Pakeha students; Māori were retained at 79% and Pasifika at 78%. Data has been gathered from annual true fresher retention reporting prepared by the Deputy Vice-Chancellor's office (DVCO).
[5] Refer annual performance data gathered by Deputy Vice-Chancellor's office (DVCO).
[6] Sampson (2013).

employer satisfaction with graduates' skills[7]. They found that employers tended to prioritise many skills and attributes classified as transferable in nature **[Q32].** These kinds of activities illustrate the high level of engagement undertaken between universities and employers to ensure that our curriculum and programmes remain fit for purpose, and agile in response to the world of work **[Q33].**

The University of Canterbury remains committed to the monitoring and evaluation of graduate outcomes that has culminated in a suite of routine metrics gathered from alumni within 12 months of graduating. Our desire to capture this data is consistent with the views held at other institutions. Universities in New Zealand are increasingly interested in undertaking independent Graduate Destinations research, to improve understanding of graduates' employment patterns, occupations, destinations and related information. Stakeholders external to the University are seeking this information as well. Despite this, graduate destinations data has not been collected on a pan-university basis since the last NZVCC Graduate Destinations Survey in 2006 (preceded by annual reports and surveys since 1973). After the dissolution of the NZVCC programme of Graduate Destinations Research, universities have been left to their own devices, resulting in a range of evaluation practices and a lack of consistency across the sector with respect to such survey activity.

Internationalisation

There is little doubt that over the coming decades, universities will continue to engage in fostering greater global awareness and internationalisation of the student community. UC now makes the commitment that by 2018, our graduating students will leave university with a greater global awareness, as part of the suite of attributes that underpin the UC graduate profile. UC makes the commitment to graduates that they "will comprehend the influence of global conditions on their discipline and will be competent in engaging with global and multi-cultural contexts"[8]. Alongside this we have further committed to developing biculturally confident citizens that are able to function effectively in a multicultural world[8].

The internationalisation of the student body brings significant educational, social and cultural gains to all, while institutions undoubtedly benefit from increased revenue generation. For example, UC is now working with *Navitas*, a large international external recruiter and first year bridging program provider, who have direct access to international markets and expertise. This relationship has enabled UC to tap into offshore markets in a controlled and targeted way. Though *Navitas* are completely independent from UC, they have a high rate of transfer into the second year at UC thereby fostering a greater opportunity to increase revenue streams from this sector with minimal costs to the institution. Our relationship with *Navitas* is an important part of our strategy for increasing recruitment of undergraduate international students in particular.

However, in growing the international student body, the sector and government need to remain cognisant of a number of issues. Over reliance on international students as part of NZ's business model leaves institutions potentially vulnerable to global economic fluctuations and other external effects. Unexpected events (such as the Canterbury Earthquake Sequence) and the development of other offshore markets (such as the recent rapid growth in home-grown English taught Universities in China) have the capacity to

[7] Kusmierczyk & Medford (2015).

[8] Refer the University of Canterbury Graduate Profile (n.d.)

rapidly and unexpectedly change the market **[Q3].** While these effects cannot be controlled there are many others we should proactively respond to **[Q44].**

With the rapid growth in international students over the last decade[9] the time, skills and language support required to engage with the growing numbers of non-English speaking background (NESB) students have also increased. Research undertaken in 2015 at UC revealed that the growth in international PhD enrolments has had a substantial impact on available resources to support learner needs, while NESB students can require significantly more time to supervise[10] **[Q28; Q36; Q44].** Education New Zealand's compulsory levy gathered from all tertiary educators has enabled the development of a world-class, forward thinking, sector-wide collaboration which has culminated in the *Code of Practice for the Pastoral Care of International Students*. Despite this, more could be done with respect to pastoral development and support, to ensure successful outcomes for students, teachers and universities; most particularly in a model contingent on the delivery of a *quality* student experience **[Q3].**

Survey research undertaken with current international students shows that *Brand New Zealand* is not the most significant driver for destination choice for *all* international students. UC's analysis of the International Student Barometer (ISB)[11] data reveals that while half of undergraduates came to UC because of *Brand New Zealand,* around two-thirds of postgraduates came because of the particular institution, presumably to access certain sets of expertise or personnel. Therefore, we must exercise caution in the management and validation of offshore franchise activity because of the potential risk of damaging an individual institution's brand in addition to *Brand New Zealand*. Due diligence should be undertaken in advance of any developments to ensure consistency and accuracy in university material and offerings. **[Q45]** Rampant growth in international student numbers, without due diligence may have unintended consequences for sector level achievement outcomes.

Affirming Ako – the teaching and research nexus

Interplay between the *creation* and *sharing* of knowledge, research and teaching are central University outputs that are best produced together **[Q10].** According to the Boyer Commission's investigation into undergraduate education in the United States:

> "*learning is based on discovery guided by mentoring rather than on the transmission of information. Inherent in inquiry-based learning is an element of reciprocity: faculty learn from students as students are learning from faculty*."[12]

In bicultural *Aotearoa* New Zealand, the above principle is not far from the idea of *Ako*. The Māori education strategy: *Ka Hikitia* reminds us that *Ako* is the:

> *"teaching and learning relationship where the educator is also learning from the student in a two-way process….where educators' practices are informed by the latest research and are both deliberate and reflective"*[13] **[Q10]**

[9] There has been over 300% growth in PhD students alone at UC since 2004.
[10] Sampson (2015).
[11] Refer International Student Barometer Data (ISB, 2015).
[12] Boyer Commission on Education Undergraduates in the Research University (1998).

Students stand to gain from learning in a research-intensive environment; positive effects include lecturer enthusiasm, the currency of knowledge, ability to give examples from personal experience, and credibility[14]. New Zealand undergraduates similarly report positive experiences of the university research culture, such as increased understanding of the topic, greater motivation and inspiration, as well as learning research skills and practical application of theory[15] **[Q11].** In the spirit of *Ako,* researchers gain too from student interaction. Engaging learners closely with research serves in (re)creating the process of knowledge discovery as students "learn in a research mode" [16]. In this way, teaching and research practices work best when integrated in universities rather than functioning as separate aspects of a higher education institution[17].

In the light of the specific relationship of teaching and research characteristic of the university environment, the single most effective strategy would see the elevation of the value of teaching within the sector. The current funding model favours research as it drives significant funding through PBRF and other mechanisms. This serves to underemphasise the equally important task of teaching and its contribution to future research endeavour in the (re)creation of knowledge. In addition, the TECs metrics[18], which creates league tables for universities on 1) successful completion of courses; 2) completion of qualifications; 3) student progression to higher level study; and 4) students retained in study, further dampens innovative teaching, since staff become risk-averse to drops in educational performance indicators that may initially result from trialling new teaching developments **[Q62].**

Academic staff often do not have formal preparation in teaching[19]. University academics are usually hired based on their expertise and prowess as researchers, and not on their formal teaching credentials[20]. No relationship between these two activities has been found in the New Zealand context leading to a call for a more effective integration between both activities[21]. Perhaps in response, in several jurisdictions, lecturers are beginning to be required or strongly encouraged to obtain formal training in tertiary teaching **[Q12].** In New Zealand, a pilot project started last year to introduce the Higher Education Academy accreditation scheme for lecturers at Auckland University of Technology, Massey University, and Unitec. At the University of Canterbury, attaining the Postgraduate Certificate in Tertiary Teaching, or equivalent, now carries some weight in the academic promotion process **[Q12],** as do teaching awards **[Q15].** Yet more should be done to reinforce the critical role of fostering *Ako* in New Zealand Universities.
In contrast, unbundling research from teaching would come at a cost, as has been discovered elsewhere. Unbundling divides academic communities into research-intensive and teaching-only roles, which leads to longer term negative consequences for individuals[22] while weakening any attempt to produce cohesive learning as knowledge (re)creation **[Q11].** With respect to the institute, the university's reputation, built on the research profile rather

[13] Ministry of Education (n.d).
[14] Lindsay & Jenkins (1998).
[15] Spronken-Smith et al (2014).
[16] This argument borrows heavily from the work of Harland (2015).
[17] Jones (2013).
[18] Refer TEC (2014).
[19] Menges & Austin (2001), Walczyk, Ramsey & Zha (2007).
[20] Fernández-Baboa & Stiehl (1995); Menges & Austin (2001); Walczyk & Ramsey (2003) and Weiss (1992).
[21] Hattie & Marsh (1996).
[22] Kimber (2003).

than teaching ability is a substantial driver for student choice of institution[23] including for international students (as discussed above). However, in an unbundled scenario, where teaching and research are delivered separately, the power of research prowess to attract the international and domestic market will be lost, while factors that might be driving student perceived choice become detached from actual experience[24]. Since the Commission's proposed business model relies on the institution's reputation for recruitment, unbundling of teaching and research undermines this objective.

Assuring quality

Each of the NZ universities has made the commitment to have programme approval and accreditation linked at the inter-institutional level. Each university has its own internal approval processes and the Universities New Zealand Committee on University Academic Programmes (CUAP) provides an additional independent peer review and approval process. This process enables the various proposals to be peer reviewed on matters of quality, by each of the other universities. This brings a fresh set of eyes to proposals and often the backwards and forwards exchanges can strengthen a proposal or stimulate further constructive thinking. Recently changes in languages teaching at one university stimulated a discussion at CUAP about language provision across the university sector. An outcome was a dialogue with the Tertiary Education Commission and on a local level there was collaboration across two universities that allowed majors to continue to be offered at both institutions using shared teaching and technology. Despite such rigour, negative consequences do occur. The limitations of the two annual rounds and the length of time for approval dampen enthusiasm and creativity. Internal approval requirements mean that proposals must be developed up to 18 months before they can be offered. Some of this could be ameliorated by having more targeted peer review and by changing the timelines by bringing CUAP approval closer to that of the NZVCC **[Q67].**

Qualification reviews are undertaken as a matter of course. Within three years of the graduation of the first cohort of any new qualification, major or endorsement the university must undertake a Graduating Year Review and submit this to CUAP. These are peer reviewed by two other universities to ensure requirements are met and to suggest process improvements. These formal reviews are to assure the University and CUAP that the qualification is meeting its aims and is of an appropriate standard. These new qualifications are then added to the University review schedule. All qualifications are reviewed on a five yearly cycle. These are formal reviews with input from an overseas reviewer and an academic from another NZ university. They have general overarching terms of reference related to the quality of the degree and other terms of reference as may be determined. Academic reviews often identify curriculum improvements and provide a focus for faculties to consider their offerings. In support of such reviews, UC draws upon its sizeable body of data gathered directly from students. As a further step in quality assurance, the periodic academic audit process by the AQA (Academic Quality Agency for NZ Universities) has recently begun to spot check review reports.

The current AQA systems of periodic audit based on self-review reflect international best practice following guidelines issued by the OECD[25]. National quality assurance arrangements

[23] This is discussed and referenced at length in Diamond et al. (2012).
[24] Macfarlane (2007).
[25] OECD (2008).

via AQA are sufficiently robust to assure stakeholders that universities are operating in a transparent manner, which is fit for purpose **[Q50].** The quality assurance system is also agile, as demonstrated by the fact that the reference points established for each review cycle are amended to reflect the current climate. This allows specific issues that have arisen to be addressed in a timely and thoughtful fashion. For example during the most recent cycle, a new expectation for universities was introduced to build capacity in risk management, recovery plans and possible infrastructure failure as a result of lessons learnt from the Canterbury earthquakes. Further improvements are already being discussed for the next cycle. Looking at overseas experiences, the AQA system is closely linked to that adopted in Scotland – enhancement-led institutional review which aims at improving the student's learning experience **[Q52].**

The University of Canterbury is committed to ensuring the student voice is heard, and systematically uses Student Evaluations of Teaching (SETs) to evaluate the courses and teaching processes at UC. Student evaluations are used to provide both summative and formative information regarding the course and teaching quality, and aid in identifying both aspects of teaching that are of merit, and areas which may require improvement. UC policy stipulates the course of action for those evaluations that raise concerns with the quality of the teaching and learning **[Q16].** The Commission provides only anecdotal evidence in support of claims that there are problems with the use of SETs to inform quality of teaching. For example, the Commission suggests that variation in the composition of courses and motivation of the students enrolled undermines the comparability of SETs. However, research has shown that SETs are highly generalisable across courses, and that "different courses taught by the same teacher tend to be similar, as do different teachers who teach the same courses"[26]. Regarding the Commission's concerns with the outlook and motivation of students affecting the comparability of SETs, UC is currently in the process of reviewing the metrics used in SETs. The development of new metrics will measure whether there are any differences that may affect SETs, such as class size and motivation. Appropriate controls will be put in place should there be any evidence of these influences **[Q16].** Concerning the potential for influencing factors, care must be taken when suggesting biases are inherent in SETs, as past studies in this area have been shown to be methodologically flawed resulting in compromised conclusions[27]. Systematic review of the SET results at UC will investigate the possibility of biases. If found, these will be appropriately controlled for in the reporting of results**[Q16].**

The Commission claims that there is a strong incentive for teachers "to maximise students' immediate benefits rather than their long-term benefits"[28], suggesting a lack of student ability to recognise the value of learning until years later. However student immaturity and lack of experience is neither a sufficient argument to disregard ratings nor supported by the research literature[29]. Multiple studies have shown that students SETs remain remarkably consistent across time[30]. Furthermore, research has also shown a negative relationship between workload/difficulty and SET results, which indicates that students rate easier workloads lower and more difficult workloads higher on SETs[31]. Therefore we cannot concur with the Commission's claim that "student evaluations create a risk that teachers will

[26] Marsh (1982) p.58.
[27] See Marsh & Roche (1997).
[28] Refer Productivity Commission Issues Paper, p.19.
[29] Aleamoni (1999).
[30] Refer Feldman (1989), Marsh (1984) and Overall & Marsh (1980).
[31] Marsh (1987).

prioritise their students' experiential enjoyment and entertainment over their learning"[32]. Nor can we agree with the Commission regarding the detrimental effects of grade inflation, and expressed fears that teachers make courses easier and inflate grades to retain high evaluations of teaching. Research at the University of Canterbury found no evidence of structural grade inflation[33].

SETs are simply one metric in a suite of evaluations used to assess quality. At UC the U-Count survey[34] is a census level instrument that evaluates the student experience and provides a valuable insight into student impressions of connectedness and belonging; one of the most fundamental predictors of undergraduate development and growth[35]. The postgraduate student experience is continually being evaluated using the UC Postgraduate Student Experience Questionnaire – which supports academic development endeavours for postgraduate supervisors[36]. The Postgraduate Exit Survey[37] assesses student views of postgraduate qualifications upon degree completion. This metric provides vital feedback on the quality of the postgraduate qualifications and information on the strengths of the University, as well as indicating areas for improvement. Additionally, the Graduate Destinations Survey shows the tangible successes of UC alumni in the world of work, and enables us to be sure we are preparing our graduates for their futures[38] **[Q14].** Such evaluations across the life span of students, allow the University to react appropriately and responsively to the student experience and enable us to feed into academic development endeavours. Combined, these assessments of quality demonstrate UC's dedication to the fostering of successful, well-rounded and skilled graduates who will thrive in their future endeavours **[Q16].**

The cost of education

The arguments put forward in the Issues Paper (p58-60), suggesting that *higher tuition fees have not restricted access to higher education by disadvantaged students,* should be challenged on two grounds: firstly the related assumptions of the original study used as "evidence linked to behaviour"; and secondly, the suitability of the UK model to describe likely outcomes, should a similar approach be adopted in NZ **[Q37].** With respect to the first of these, the newspaper article referenced in the Issues Paper has drawn on the UK based University and Colleges Admissions Services (UCAS) Analysis and Research findings[39]. While that work found that applications of 'disadvantaged' 18 years olds in the UK were at a higher rate in 2015 than at any other time, this does not directly explain drivers or motivators to engaging in tertiary education. It could be argued that increased enrolments may be a product of increasing rates of unemployment, particularly in an environment where costs can be delayed through student loans. The generational culture of debt acceptance and the recent movement from a "savings to a consumption-based society" has resulted in "a consequential tolerance and normalisation of higher student debt levels"[40]. Access to higher education for disadvantaged students is more likely to be a product of the normalisation of

[32] Refer Productivity Commission Issues Paper, p.19.
[33] Brogt (2016).
[34] Mackenzie (2015).
[35] Astin (1993).
[36] Sampson et.al. (2015).
[37] Gardner (2015).
[38] Sampson (2015)[b].
[39] UCAS (2015).
[40] O'Loughlin & Szmigin (2006) p.340.

debt rather than any direct connection to fee increases **[Q37]**. Additionally, it should be noted that the UK's own Higher Education Funding Council indicate that those UK universities that have been most successful at widening participation have also experienced the highest drop-out rates across the country[41]. This should evoke further caution around the use of "applications to enrol" as a proxy measure for successful recruitment, irrespective of relative socioeconomic advantage **[Q37].**

Secondly, supposing there is merit to the argument that increasing price will drive up demand as shown in the UK context, then the question arises as to whether such an approach would create the same behavioural outcomes in NZ society. The UK tertiary education environment has had a longstanding tradition of private high-cost tertiary education. The Issues Paper (p.59) argues that that price increase would function as a kind of incentive to encourage the "consumer" to select quality (marked by higher price). On this basis, the higher-cost private institutions should have been recruiting some and turning away a plethora of other students, from across the social strata that were willing to pay for such "quality" as indicated by price, more so in an environment where costs can be deferred. However, the traditional white middle classes largely underpin elite universities[42]. The socially disadvantaged and less mobile are underrepresented in universities such as Oxford, Cambridge, Imperial College London and indeed many of the other Russell Group institutions (when compared with national averages), even when adjusted for ability at entry[43] **[Q37].**

In contrast to the UK, New Zealand society is far more egalitarian. Ministry of Education data[44] reveals that in 2014 NZ had relatively similar proportions of degree level Māori students in all universities, with the exception of the University of Waikato, which is located in an area with a high concentration of Māori in the population, and fewer in the South Island universities where fewer Māori reside. It seems that NZ society on the whole is less likely to respond to arguments and instruments of class distinction and social stratification as a trigger for university choice. In NZ, where University Entrance to all universities is seen as attainable for most learners, capacity for price increase to drive demand seems unlikely. Moreover, such a mechanism may even actively work to dissuade many priority learners from engaging with tertiary education at all which is contrary to the priorities set by the Ministry of Education. **[Q37; Q53; Q54].** The cost of education should be regulated to ensure that we can bring along all learners, including priority learners and others, who are at risk of being left behind.

Technology and MOOCs

The University of Canterbury is anything but inert in connection with adoption of new technology in the learning environment **[Q59].** Precipitated by the Canterbury Earthquakes, UC has moved rapidly into the flexible learning world. All first year courses and around 90% of other undergraduate courses at UC are now connected to the Virtual Learning Environment (VLE), and the recording and flexible access to lecture material using

[41] Reay et. al. (2010).
[42] Ibid.
[43] Ibid.
[44] Ministry of Education (2014).

Instructional video recordings is increasing. In 2015, with the assistance of E-Learning support team, UC's teaching staff created a total of 2319 hours of instructional video in the first three months of teaching. This represents a 24% increase on the 1835 hours created in the same period for the previous academic year. Some staff are extremely agile in their teaching, experimenting with new approaches **[Q59].** However, this is not across the board. Rather, individual staff tend to spot opportunities, and through such leadership others are encouraged to pursue similar technological approaches to facilitate student learning. Indeed, the uptake of innovative ideas in the teaching and learning space is frequently associated with modelling of technique or behaviour by "early adopters" and subsequently transmitted to become more widespread practice **[Q60].**

The earthquakes have further allowed UC to consider and develop better learning spaces; lectorial spaces and other flexible or informal learning environments have increased as a result of post-quake design decisions. These environments have enabled new modes of learning, and informal spaces are fostering greater peer-to-peer engagement. The Rutherford Science and Innovation Centre currently under construction, is set to be at the cutting edge of science, creating a hub of modern facilities that foster seamless collaborative learning, teaching and research for students and staff[45]. While such initiatives indicate a proactive move toward embracing technology in the learning and teaching environment, students overwhelmingly still seek out the personal experience and a sense of connection and belonging in the social realm, as part of their university experience[46] **[Q35].**

With respect to MOOCs, UC delivered an offering back in 2013. The course entitled 'Scenario Planning for Educators' aimed at the wider community of education practitioners. We recruited 131 participants from 34 countries. To date, however, UC has not engaged with the set up and delivery of MOOCs. The MOOC pilot highlighted that this form of delivery is best suited to applied skills courses (eg. computer programming) where assessments can be automated and less consideration needs to be given to individual student needs. Internationally, MOOCs have yet to find a sustainable financial model and continue to have a very high attrition rate. Moreover, while MOOCs organise and present the course material well, the overall instructional design and quality control have been questioned[47]. Nonetheless, teaching at UC has moved to a blended delivery model with relevant subject matter delivered online in a controlled environment, which manages assessment quality and enables more personalised teaching in areas that require it. Internationally, MOOCs have yet to find a sustainable financial model and continue to have a very high attrition rate. However, if the landscape changes, UC has demonstrated that it is able to actively respond to need or opportunity **[Q43].** UC has taken the conscious decision to concentrate on *quality* over quantity by investing in truly world-class campus facilities to attract and retain the best students and staff to study and work in Christchurch.

An alternate model for University Education

In summary, the Commission's model argues that the University needs to attract world-class teaching and research staff (stage 1), whose reputation and quality improve the student experience (stage 2), which in turn increases domestic student numbers (stage 3). The same world-class staff build the international research profile (stage 4) that improves international rankings (stage 5). This leads to greater export education revenue (stage 6), which, when

[45] Refer http://www.canterbury.ac.nz/learningresources/projects/rsic/
[46] Mackenzie (2015).
[47] Margaryan, et al. (2015).

combined with growth in domestic students, leads to a level of revenue generation that can maintain the institution (stage 7). Conceived this way, the model is contingent on effectiveness at each of the seven stages detailed, if it is to be at all successful. We therefore suggest that the Commission should be cognisant of a number of risk factors inherent in this model, when pursuing the drive for increased 'productivity' **[Q3].**

Growing student numbers is central to the success of the Commission's model. Despite this, we know the forecast pipeline of domestic students eligible to enter the University sector, will be somewhat restricted in the coming years[48], resulting in greater competition between institutions for the reducing domestic market. Within the small pool of entirely public universities in New Zealand, substantial resources are targeted at marketing respective institutions, despite little substantive qualitative differences between them. Moreover, such competition has the added and unintended consequence of limiting information sharing among institutions. Currently, there is very little desire and willingness to share institutional knowledge (and/or data), and hence a difficulty to collaborate in a fashion that may result in innovative solutions to sector wide problems **[Q8].** In this way, competition wins over collaboration and innovation **[Q62].**

For the current business model to remain viable in the face of a dwindling pool of eligible domestic students, the only option is to grow export education revenue. Yet as detailed above, internationalisation and growth comes with its own suite of added resourcing costs and risks. Additionally, the importance of rankings as a tool for recruiting international students, and the model's high level of emphasis on QS rankings and other performance-based mechanisms, can stifle "blue skies" initiatives and quality research, as staff increasingly substitute research quality for quantity [49] to meet this new ranking driven goal.

On the teaching front, economies of scale work efficiently from a provider perspective, but without sufficient resourcing growing class sizes will result in larger, more seemingly cost-effective courses. Yet these are logistically more difficult to transform into active learning environments, critical for both domestic and international students. Instead, these classes will likely default to a lack-lustre environment of 'stand-and-deliver' lectures, where the cost is overwhelmingly borne by the student. The following summarises the known risks to learners from large class settings [50]. **[Q7]**

- Lack of interaction with faculty members (in and out of class)
- Lack of structure in lectures
- Lack of or poor discussion sections
- Inadequate contact with teaching assistants
- Inadequacy of classroom facilities and environment
- Lack of frequent testing or graded assignments

In contrast to these, both research and experience has shown that (inter)active learning environments are superior to traditional lecture settings in delivering quality learning outcomes[51] that positively impact the student experience so central to the proposed model.

It may be time to rethink the model upon which university education in New Zealand is predicated. The Commission's model denies a fundamental ecological principle of the

[48] Ministry of Education (2015).
[49] Frey & Rost (2010).
[50] Cited in Cooper & Robinson (2000) p.7.
[51] For example see Hake (1998); for a New Zealand example, see Kennedy et al., (2013).

carrying capacity implicit in the higher education environment. Beyond this capacity, quality and its impact on the financial sustainability of the sector becomes compromised. Throughout, we have highlighted a number of elements that should lead the Commission to widen the measurement of 'productivity'. Such a measure should embrace the breadth of the role of education in building social capital as the 'glue that binds' healthy and productive communities and societies, and which brings along priority learners. We have suggested the importance of quality teaching and principles of *Ako* that are fostered at the teaching-research nexus; we have used our educational expertise to respond to the changes that will arise from increased internationalisation and technology uptake; and we have challenged the Commission to think more closely about the relationship between cost and access, particularly for our priority learners and other disadvantaged people. Finally, we suggest that the lack of substantive differences between the small number of New Zealand universities presents the opportunity to develop a system within which productivity is measured by a wider metric that can account for the quality of output harnessed across the life course of individuals and society.

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