Issues Paper – A response to the Productivity Commission Report "New Models of Tertiary Education"

The Open Polytechnic of New Zealand

Introduction

It is widely believed that greater participation rates in higher education impact upon the social and economic performance of nations, with international research reports advocating the benefits of educational attainment:

Education and skills hold the key to future wellbeing and will be critical to restoring long-term growth, tackling unemployment, promoting competitiveness, and nurturing more inclusive and cohesive societies. (OECD, 2014).

A well-educated and well-trained population is important for the social and economic well-being of a nation and individuals. Education plays a key role in providing individuals with the knowledge, skills and competencies to participate effectively in society and the economy; and also contributes to an expansion of scientific and cultural knowledge. The level of educational attainment of the population is a commonly used proxy for the stock of "human capital" that uses the skills available in the population.

The following issues paper responds to "New Models of Tertiary Education" (The New Zealand Productivity Commission, 2016). The purpose of the Commission's inquiry is to provide insightful, well-informed and accessible advice that leads to the best possible improvement in the wellbeing of New Zealanders. It specifically aims to determine whether the tertiary education system is appropriately responding to new opportunities, both technological and pedagogical, that might change its operational models.

Central to this issues paper is consideration of the increasing cost pressures for government, providers and students. Of particular interest to the Open Polytechnic is the impact of innovative delivery models on policy approaches, which could effectively manage public costs in a fast-growing system while maintaining access to quality education for disadvantaged learners.

The issues paper initially identifies the drivers to improved fiscal, economic and commercial viability in tertiary education, addresses the open, distance and flexible learning modality (ODFL), investigates the concept of "breaking the iron triangle", and concludes with suggestions for enhancing NZ tertiary education productivity. Our report focuses on the ITP subsector, and specifically the Open Polytechnic of New Zealand (NZ's specialist ODFL provider).

The "Drivers" of Improved Fiscal, Economic and Commercial Viability in Tertiary Education

In responding to the question of "New Models of Tertiary Education," it is important to consider what drives improved performance in Tertiary Education Organisations. It is necessary to consider these drivers from the perspective of both government policy (for example in choosing the optimum configuration of institutions within the sector), and the relative commercial viability of different business models for individual organisations.

Four key drivers can be identified (refer table on following page):

1. institutional structure,
2. student completion rates,
3. student demand (enrolments), and
4. mode of delivery.

Of course these are not the only important considerations; however, significant changes in any of these factors can generate different preferences with regard to future productivity improvements.

There has been a progressive reduction in the number of ITPs over the last 20 years (from 25 ITPs to the current 16). These adjustments to sector institutional structure (rationalisation and closure/merger of individual ITPs) have been variously triggered by viability issues, aspirations of 'esteem' (three ITPs have come under a University status) or a desire to create a level of scale which enables increased influence of vocational and professional education within a regional economy. Whilst these shifts have been substantial, and more ITP rationalisation may occur in the next few years, the new organisations have yet to demonstrate fundamental improvements in accessibility, quality and efficiency through adoption of pedagogical and technological innovations.

Student course completion rates appear static (at approximately 80%) across the ITP sector and student demand is managed within "capped" allocations to providers individually and subsectors collectively. Government forecasting also predicts that these allocations will reduce in the short-medium term, rather than increase, because of demographic shifts in the school leaver population. Consequently, neither of these "drivers" holds major benefits for productivity gains.

The most interesting driver from Open Polytechnic's perspective concerns the delivery mode (described in "driver 4", in the table below), and the relative efficiency between the types of learning modality it provides for students compared to that provided by regionally and campus-based ITPs. It is this difference in relative efficiency, alongside enhanced accessibility and possible scale that provides potential for enhanced productivity.

There is growing demand among learners for improved accessibility and convenience, lower costs, and direct application of course content to work settings, which is radically changing the environment for tertiary education globally. In this rapidly changing environment, which is increasingly based within the context of a global and knowledge-based economy, traditional polytechnics and universities are attempting to adapt purposes, structures, programmes, collaborations, and new organisations are emerging in response. Organisational changes and developments are being fuelled by accelerating advances in learning technologies and digital communications. Growing demand for education and training, combined with these technical advances, is a critical pressure point for challenging the dominant assumptions and characteristics of traditionally organised tertiary education institutes in the 21st century. This combination of demand, costs, application of vocational content, and new technologies provides an exciting opportunity for digital disruption in New Zealand's tertiary sector.

Productivity Policy Options for Tertiary Education (ITP Sector)

How might economic and fiscal "gains" be achieved through new or better ITP sector policies? ***(Drivers)***	**What "mechanism" is at work?**	**Assumptions: Direct Fiscal Impacts** *(Potential)*	**Assumptions: Additional, Direct Economic Impacts** *(Potential)*
1. Redistributing courses and students between ITP institutions (through rationalisation and closure)	1.1 Some institutions may deliver courses (through the same mode) more efficiently than others 1.2 Some modalities of delivery may be more efficient (for the same courses/qualifications) than others 1.3 Some courses/qualifications may benefit from economies of scale in student numbers	**Short term**: reduced course development investment; new redundancy/adjustment costs **Medium term**: Lower EFTS SAC rates; reduced institutional losses (govt. liabilities)	**Short term**: Little or none **Medium term**: only to extent that educational outcomes improve
2. Enabling more students to complete their courses and qualifications	2.1 Some institutions may be better at supporting their students through to completion 2.2. Some modalities may suit some courses better and are therefore more conducive to student completion	**Short term**: Increased EFTS spending & loans (students study longer); **Medium term**: increased tax revenues; lower benefit payments	**Short term**: Little or none **Medium term**: higher incomes, reduced social costs
3. Increasing participation (compared to the number that would have gone straight into employment, or not sought to raise their workplace skills/qualifications)	3.1 Better marketing of existing courses/programmes 3.2 New and more job-relevant courses/qualifications 3.3 New workplace skill/qualification requirements	**Short term**: Increased EFTS expenditure & loans; reduced benefits **Medium term**: Increased tax revenues, reduced benefits	**Short term**: Reduced unemployment costs **Medium term**: Higher incomes, lower social costs
4. Finding new modes of delivery that make better use of existing resources and/or open new ways of learning that better suit some students including learners in the workforce *(Breaking the Iron Triangle)*	4.1 Taking advantage of, or combining, unique institutional strengths and efficiencies 4.2 Exploring opportunities in new technologies	**Short term**: course development and collaboration grants; other adjustment costs; lower student fees and loans **Medium term**: higher EFTS but lower EFTS SAC rates; higher tax revenues, reduced benefits.	**Short term**: Little or none **Medium term**: Higher incomes, lower social costs

Breaking the Iron Triangle

The “Iron Triangle” is a model that has been proposed to help explain the interplay and interactions between specified components of higher education systems at different levels and to take account of emerging trends towards open education systems. At sector and institutional levels, the notion of the iron triangle has been considered (Daniel et al, 2009), linking accessibility, quality and efficiency in order to suggest means for widening access to higher education for the same or lower cost without compromising outcomes.

The three vectors of access, quality and cost give a simple way of representing the different models of tertiary education. From this basic position, Daniel and Uvalić-Trumbić (2011) assert that ODFL, because it is not so constrained by physical limits, is able to change the shape and size of the triangle because it can provide quality in the educational experience (e.g. in the educational resources or support structures) at greater scale for a similar or even lower cost than place-based learning. This means giving the learner more flexibility in their studies, such that the learner is not constrained to studying in expensive (to build and maintain) campuses, but where they live and work; and where quality can be measured by their achievements and not by exclusivity of access. As Daniel et al (2009) conclude:

The aims of wide access, high quality, and low cost are not achievable, even in principle, with traditional models of higher education based on classroom teaching in campus communities. A perception of quality based on exclusivity of access and high expenditure per student is the precise opposite of what is required. (Daniel et al, 2009)

Currently, there is significant debate over the nature of teaching within tertiary and vocational education created by the increasing provision of, and demand for, online education and open education. These debates touch upon how students might learn, how teachers could teach and what role educational content plays in both those processes.

These educational processes and models determine all aspects of a TEI’s operating system and ultimately determine the dynamics behind its scalability and reach. A distinction can be made between lecture-based and resource-based tertiary provision. More categories may well be possible, however, these two serve to illustrate a model of pedagogical innovation in the current system.

Lecture-based	Resource-based (ODFL)
• Centres on formal lecture sessions; assumes face-to-face tuition • Decentralised pedagogical decision-making • Low up-front costs, higher variable costs of delivery • Infrastructure sensitive to student volume • Scalability involves investment in bricks & mortar, and tutorial staff • Requires cohort-based and scheduled approach • High variability of delivery and quality	• Centres on self-paced resource base; distance education • Centralised pedagogical decision-making • High up-front costs, lower variable costs of delivery • Infrastructure not very sensitive to scalability • Scalability involves investment in tutorial staff • Independent and self-determined study is assumed • More consistency in quality and delivery

So-called blended learning fits along a continuum across the two, in that blended learning is either driven by a single lecturer and accompanied with real-time lecture-style activities or is resource-based and accompanied with real-time tutorial support. Neither the lecture-based or resource-based system has an inherent advantage in terms of student performance; as a distance learning Open Polytechnic has course completions comparable with lecture-based providers.

The Role and Contribution of the Open Polytechnic of New Zealand

As the specialist national provider of flexible learning, Open Polytechnic is one of New Zealand's largest education organisations, enrolling 30,000 students per year in ODFL programmes. While OPNZ increases access to tertiary education for a diverse constituency of learners, its predominant role is to support ongoing up-skilling for people in employment – either within current jobs and career pathways or for career change. As a result, OPNZ is one of New Zealand's largest educators of people in the workforce.

Distance learning is an essential component of New Zealand's strategies for lifting vocational skills and increasing workforce participation and productivity. It provides access to vocational education for learners who seek flexible learning because of work and life circumstances.

Because of its 70-year history in the field and uniquely specialized form and purpose, Open Polytechnic provides national leadership in vocational distance learning excellence and investment. It sets the benchmark for practice, outcomes and quality in distance learning (where its own performance is world-class); and it achieves economies of scale that reduce the financial burden of tertiary education on both students and the public purse.

Over the past 20 years, there have been many suggestions made (by both crown agencies and other TEOs) regarding future roles for OPNZ that could support the ITP sector in terms of ODFL expertise, learning management system hosting, or curriculum development. The predominant obstacles to OPNZ taking up one or more of these roles stem from the various factors that inhibit deep, system-wide collaboration more generally. More immediately, at least some ITPs argued that OPNZ's taking up some form of 'system-enabler' role should also require OPNZ to withdraw from delivery. They viewed OPNZ as a competitor that "unfairly" recruited learners in their region, which consequently negatively impacted their financial outcomes; and thus they advocated OPNZ's role should exclude provision.

In reality, OPNZ's distinct constituency of learners (part-time, employed, and frequently only a small number of learners within each region that OPNZ can aggregate to viable cohorts nationally) is often difficult for a traditional campus-based provider to service. This is to leave aside the not insignificant issue of student choice.

However, there are potential models that could be explored, that might utilise educational technology innovations and ODFL principles to enhance accessibility, quality and efficiency, across the ITP subsector or wider sector.

Key Innovations that could Inform New Models of Tertiary Education Delivery

The concluding section of the 2016 Horizon report provides a succinct summary of currently emerging trends in tertiary education internationally:

"Changes in higher education are upending the traditional notion of the university and transforming the paradigm for how postsecondary learning works. These developments are being fueled by a growing body of research that highlights the disconnect between the demands of the 21st century economy and what college graduates are prepared to do when they leave academia."

"Part of the effort to make students more work-savvy is taking place through new policy initiatives, programs, and curriculum that encourage students to work with peers from different disciplinary backgrounds on innovative solutions to complex problems."

"Another feature of this trend is the emphasis on exploring alternate methods of delivery and credentialing in order to accommodate a rapidly increasing student population and the diversity of their needs. Emerging models, such as hybrid learning and competency-based education, are revealing the inefficiencies of the traditional system for non-traditional students. These new paradigms are centered on online learning, a method that allows universities to cater to consumer demand, make college credentials more accessible, and design programs that offer a better value proposition for learners at all stages."

The latter paragraph is of particular relevance for the potential role of ODFL in the New Zealand ITP (and wider tertiary education) sector, and for a changing paradigm of learning that, in response to a reality of constant economic change, takes place continuously throughout a person's working life and not only for a prescribed period of immediate post-school learning.

The perspective here echoes the deliberations of the Innovations in Tertiary Education Delivery Summit (ITES), convened by Minister Joyce in 2014 with the purpose of starting "a national conversation about innovative new ways of delivering tertiary education; the opportunities and challenges these present, and the future of tertiary education." (ITES Summary of Proceedings, 2014).

There is nearly universal agreement that post-school education is now engaged in a process of transformation, driven by the intersection of emerging (and often disruptive) technology, globalization, economic and social change, the rise of the empowered student-consumer, all set against the need to contain burgeoning costs for both individuals and the public purse.

In our view, there are a number of key themes that in a New Zealand context will inform and shape the transformation process underway.

Networked Learning

Current and emerging technology creates the potential for a much more deliberately networked (as opposed to institution-centric) system of provision, in which students can not only seamlessly transfer credit and qualifications between providers and sectors but access courses and unbundled services from multiple providers within their programmes of study. A networked paradigm also includes the pooling of resources for content delivery, shared

services and maximized institutional collaboration - all of which have the potential to enhance efficiency and responsiveness at the system level, and choice at the student level.

Any movement in this direction will be likely to deliver significant benefits in a country with a small population relative to its geographic size, and where a large number of tertiary education institutions (again relative to national population), with associated physical and academic infrastructures, operate in a strongly sector-based and institution-centric way.

Unbundling and Disaggregation

Related to a networked paradigm, the concept of unbundling and disaggregation operates at multiple layers to increase choice, efficiency and responsiveness.

For students, it means only paying for those services they wish to access and being able to choose different providers for different components in the learning process according to their particular needs.

For institutions, it means both enabling this process; and moving beyond ownership of (and investment in) all aspects of the teaching, learning, assessment and support process for all programmes they support, to delivering designated components themselves while accessing content and services from other suppliers. The use of quality-assured third party content designed for a New Zealand context is just one obvious example.

Re-visioning Assessment

Assessment is a key aspect of unbundling that offers wide scope for innovation in fusing vocational learning more closely with the world of work and with the needs and lives of modern working learners. It is also the area of potential innovation, perhaps, that would involve the most significant change to current systems of funding and quality assurance, as well as academic practice.

This nascent methodology decouples assessment from teaching and focuses on competencies and outcomes, thereby opening the way to recognizing that particularly adult learners acquire subject knowledge through multiple means outside of formal academic settings – through work, informal learning, community engagement, employment-based training and development, the exponentially expanding resources available on the internet and so on.

The new organizational capability in this context becomes robust, credible design for determining and assessing outcomes and competencies wherever the student has acquired the underpinning knowledge-base.

Such an approach legitimately accelerates credentialing, reducing time and cost for the student and the amount of taxpayer subsidy required for a qualification outcome. For example, what is currently taught and funded as a 3-year degree could be completed in a much shorter timeframe, with students mixing full courses of supported study completed over a trimester, with others where they receive only learning materials and test out assessments whenever they choose.

For vocational learning at least, competency and outcomes-based assessment, also gives employers a more clearly specified view of the skills delivered by a course of study.

Fusing Learning and Work

Re-visioning assessment has the further benefit of bringing more closely together the worlds of academic credentialing and work. Along with assessing organizational learning and development for academic credit, appropriately-designed assessment tasks can be designed for the student's workplace setting, directly benefiting both student (in a work context) and their employer (through enhanced knowledge and skills applied directly to the workplace).

Micro-credentialing

The emerging concept of micro-credentialing and the related idea of 'badges' has the potential to further strengthen the connection between vocational learning and work, and is already being used in areas such as IT certifications. It involves identifying, unbundling and credentialing discrete work-related competencies contained in a formal course of study or acquired through work, informal learning, community engagement and so on.

In this way, learners receive credit for the full array of competencies and skills they possess, and employers receive a deeper and richer picture of a current or prospective employee's skill-set.

Evangelists in this area foresee a future in which micro-credentials and portfolios of learning replace formal academic qualifications as the primary 'learning currency' for employability. However, employer groups at the Innovations in Tertiary Education Delivery summit argued that for employers, academic qualifications are and will be likely to remain the trusted credential for learning, chiefly because they remain the most efficient and validated proxy for skills and knowledge attained.

The preferred middle ground we would advocate is building stand-alone micro-credentials into formal qualifications, thereby achieving the benefits both of hyper-specificity and richer learner profiles, while retaining the wider coherence of a full programme of study.

Enabling Funding Policy

Perhaps the most important aspect in developing new models for tertiary education, will inevitably be the extent to which funding policies can adequately adjust to the innovative features above. In this regard it is reassuring that the Tertiary Education Commission is moving away from a reliance on funding that is based on inputs and outputs, to outcomes that focus more on broader social and economic outcomes for New Zealand.

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