
# The challenge of equivalence: Meshing food technology with blended learning across campuses and modes

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Multi-campus delivery creates important challenges around the issue of equivalence. This paper describes a number of lessons learnt from the design and delivery of a food technology programme across three campuses – Auckland, Palmerston North and Singapore – and the way digital technologies are being implemented to promote an exceptional and distinctive learning experience for all students. The increasing use of blended learning has posed many challenges for academic staff and the paper outlines some of the difficulties involved in multi-campus and multi-mode course delivery. With another distance delivery mode to Brazil planned in the near future, and potentially others, the paper concludes with 10 recommendations for those planning to utilise new digital technology to deliver equivalent learning experiences irrespective of campus or location.

Key words: multi-campus delivery, blended learning, equivalence, international education

## Introduction

There is growing pressure to provide students in higher education with more blended and flexible learning opportunities (Garrison & Vaughan, 2008). This paper describes how one University is responding to this challenge against the backdrop of increasing globalisation of university-level education.

The Bachelor of Food Technology honours degree (BFoodTech) was first established in Palmerston North in 1962 and has run as the "gold" standard for New Zealand and Australia since that time. However, the degree has sought to expand as the available pool of local students has reduced and international demand remained high. The degree fully expanded to Auckland in 2001, but was only aligned to be equivalent (i.e. with identical learning outcomes) in 2005. Singapore Polytechnic (SP) and Massey University (MU) agreed to offer the BFoodTech in Singapore from 2008, and in 2010, a Masters degree for food company students will be taught in Brazil. However, workloads, travel costs, and the pressure to produce research outputs, have placed a strain on teaching innovation.

A wide range of skills are needed to teach what are typically small cohorts of students. Adoption of Moodle as the new Learning Management System (LMS) for MU will enable staff to teach students anytime and anywhere. A blend of leading-edge learning technologies such as an online portfolio management system, a synchronous web-conferencing tool and video conferencing will strengthen these efforts. However, it is well known that technology cannot replace good teaching practice.

MU has a long history of using innovative delivery technologies and the challenge of equivalence is supported by a formal policy. Notably, the policy recognises that equivalence does not mean exactly the same learning activities or learning resources as long as students meet the same learning outcomes. However, this policy was not developed with international delivery in mind and the issues of equivalence are more complex with the growth of new international partnerships.

These ventures pose a significant challenge for a Food Technology faculty relatively inexperienced in digital technologies and distance learning, especially international delivery. Through a reflective process,

individually and with staff, similar to action research (see Laurillard, 2008), we have learnt a number of lessons. The following reflections, in particular of the Singapore venture, serve as useful pointers for exploiting the potential of new global, technology-enabled delivery ventures.

## Reflection 1: Assume nothing. Review how your programme will need to adapt

An international campus will not run the same as the home university campus and adaptive strategies are needed (Dunn & Wallace, 2006). In our Singapore experience, increasing numbers of staff have made changes to their delivery style, laboratory structure, taught content and workload. Even the block-mode teaching structure has been lengthened (notably engineering courses) to give students more time to engage with the information – hence a move back to a semester structure. There are significant and increasing restrictions on the amount of travel and this has clearly encouraged more sharing of teaching loads and exploration of information and communication tools (ICT).

## Reflection 2: Consistency is the foundation for quality

In Singapore, staff have been focused almost solely on teaching. However, the development of templates and other documentation to support staff teaching has been just as crucial. Generally speaking, students function far better with a consistent and clear structure for their learning programme.

## Reflection 3: Draw on as wide a range of university support services as possible

Many non-educational factors affect how teaching is delivered, e.g. budgets, government and university rules. A diverse organisational group was developed for the Singapore venture and helped to minimise unforeseen issues. For example, the issues surrounding contracts with library database vendors were unknown to the Food Technology faculty. Library staff were able to point out how the Singapore campus affected these contracts and negotiate new agreements in time for Singapore students to access the necessary resources.

## Reflection 4: A dedicated administrative academic staff member makes the difference

Reflection 3 highlighted the breadth of support needed; Reflection 4 highlights the need to integrate the knowledge gained from a broad support network. With Singapore and Brazil, an academic was seconded using the Export Education Innovation Programme and enabled academic and support staff a focal point for the range of issues they faced, including discussion about course content, technical, ICT and administrative issues. Integration of these issues by the seconded academic provided additional solutions.

## Reflection 5: This is the perfect time to redesign your teaching method

For Singapore, every staff member rewrote or redesigned some aspect of their course, even where it was not necessary to do so. Academics often use the *need* to change some aspect of their course to make far greater changes. Opportunities like an overseas course are infrequent, and we suggest this is the best time to apply new learning design philosophies, if you get in early before staff begin their planning. Notably, we found, academics rarely appreciated directives in this area, rather they wanted to see the value of any change from their perspective. The Singapore venture caused staff to re-evaluate their teaching methods and become more open to ICT for both the new course and the equivalent existing courses in New Zealand.

## Reflection 6: Help staff reduce their workload before applying clever teaching technologies

In Singapore, our staff have worked far greater hours than in New Zealand, and so have their students. Laurillard (2007) asserted that staff time is a very precious resource and must be considered when exploring digital technologies. This means adopting technologies that will measurably improve both educational and time management outcomes. We are using a MU Fund for Innovation and Excellence in Teaching grant to explore how Laurillard's conversational framework (Laurillard, 2002) and benefits-

orientated model (Laurillard, 2007) can be applied to our Food Technology programmes. This is a work in-progress.

## Reflection 7: Reconsider laboratory teaching

Staff have found the traditional laboratory report difficult to assess and provide timely feedback for students within the block course environment, in Singapore. Staff have adapted to more oral-focused approaches to promote feedback. In future, it is likely that virtual laboratories or simulations will replace some of the conceptual laboratories (Corter et al., 2007). This has been successfully trialled using scenario-based learning tools.

## Reflection 8: Identify critical ICT infrastructure well in advance

The Singapore venture was the first of its kind from MU and the ICT network is the most crucial for any of the campuses. The SP and MU ICT security protocols were quite different and the time taken to merge the networks proved costly in terms of considerable disruption for students as well as MU and SP staff in the early stages of the programme.

## Reflection 9: ICT must be chosen for the right balance of reliability and affordability

Video conferencing has had a relatively limited use in Singapore, despite the investment in facilities and costs involved with travel. This is mainly due to inconsistencies with available bandwidth (which is shared with other users) and the perception of it being a non-interactive medium (Freeman, 1998). The lack of interactivity centres around two areas, firstly difficulties in simulating a whiteboard (we do not have interactive whiteboards), and secondly poor resolution in order to recognise individual students (the class size is 35). Indeed a tool that can handle changes in bandwidth and can allow interaction more easily, without spending thousand s of dollars is preferable. An online communication tool, such as Adobe Connect has shown promising results and gained more favourable responses from staff. It is also less expensive. Its potential applications are quite significant as all Singapore students have wireless-networked notebook computers in class.

## Reflection 10: Students are students but staff are staff!

The institutional and staff differences were greater than those between the New Zealand and Singaporean students. Sufficient professional development time must be allowed for teaching staff to understand the international context and make effective use of their counterpart's competencies, and teaching style. In our case, differences in the roles each staff member assumed meant information flows were slow. For example, SP laboratory technicians are only required to operate equipment, not teach. This resulted in MU academic staff teaching far more in laboratories.

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