

*Case Study: Private Training Establishment*

# E-learning and higher education: understanding and supporting organisational change

Stephen Marshall



**Author:**

Dr Stephen Marshall

[Stephen.Marshall@vuw.ac.nz](mailto:Stephen.Marshall@vuw.ac.nz)

**Publishers:**

Ako Aotearoa National Centre for Tertiary Teaching Excellence

PO Box 756

Wellington 6140

**Published:**

April 2012

**Design and layout:**

Fitzbeck Creative

**Acknowledgement:**

This project was supported through the Ako Aotearoa National Project Fund 2009, in the Research and Implementation Projects funding stream. The project builds on work funded by the New Zealand Ministry of Education Tertiary E-Learning Research Fund (TeLRF) and the Australasian Council on Open, Distance and E-Learning. The support of these organisations is gratefully acknowledged.

This project would not have been possible without the support and cooperation of a wider project team drawn from the participating institutions. For confidentiality reasons they cannot be named, but their contribution and legacy are deeply appreciated.

Data from institutions are included with the kind permission of the individual institutions, for which the author is grateful.

ISBN: 978-1-927202-08-1

<http://akoaooteaoroa.ac.nz/organisational-change-e-learning>



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## *Table of Contents*

Summary of Case Findings .....	3
Organisational Context .....	3
eMM Assessments and Change Projects .....	3
Methodology.....	3
Initial Capability Assessment .....	3
Change Projects Undertaken Following the eMM Assessment .....	6
Lessons for Other Institutions and for the Sector .....	8
References .....	12

## Summary of Case Findings

This case illustrates how a small institution with strong leadership and clear strategic and operational objectives can use technology to respond to a changing environment including changing requirements for student skills, national funding priorities and disasters such as the Christchurch earthquakes. Key change strategies include: clarity of leadership, distributed throughout the organisation; managed transitions toward intended outcomes; systems, processes and staff able to react positively and rapidly to a changing set of requirements; and a conservative approach to the role technology plays, while also recognising its essential contribution to the future of the organisation.

## Organisational Context

PTE-A is a private training establishment providing vocational training to approximately 1500 students engaged in full- and part-time study. The students are predominantly mature and are based throughout New Zealand, usually in either part-time or full-time employment in the industry. PTE-A has been in operation for more than 25 years, initially as a face-to-face provider, but in the last decade offering distance options as well. Distance delivery was originally undertaken using paper materials in a traditional correspondence model; however, an online option was introduced in 2009 and now constitutes the predominant mode of delivery. Over the last three years e-learning has gone from being one of three modes of delivery undertaken by PTE-A to the primary form used. Only very small numbers of students are still being taught by correspondence or face to face.

## eMM Assessments and Change Projects

### Methodology

The e-learning Maturity Model (eMM) assessments were conducted as described in Marshall (2006; 2010). The figure displays a summary of the eMM assessment with dark squares indicating a stronger capability than light as described in the legend. Each of the 35 key processes is described on five dimensions: *Delivery*; *Planning*; *Definition*; *Management*; and *Optimisation*. An initial eMM assessment was conducted in 2010 generating a report for the institution. This was used to inform a change workshop and identify change projects for implementation in 2010/2011. An additional eMM assessment was performed in late 2011 to identify changes in capability arising over the 18 months of the project.

### Initial Capability Assessment

The capability assessment for PTE-A in 2010 (shown in the figure) demonstrated that the institution was already very capable in its engagement with e-learning. The assessed capability is stronger than that assessed for any other New Zealand institution at that time, comparable to the largest international tertiary providers.

Notably, PTE-A had a strong capability in the *Optimisation* dimension, reflecting an ability to drive systemic change that is not evident in many institutions.

This very strong initial capability appears to reflect a number of factors working synergistically. PTE-A is a distance education institution and these tend to have stronger capabilities under the eMM as a result of the robust management systems required. In addition, the *Organisation* process capability is strong, reflecting the clear intention of the institution in engaging with e-learning and the clear leadership provided by the chief executive. This strength appears to drive capability throughout the rest of the processes, particularly in the *Definition, Management* and *Optimisation* dimensions. The relatively small size of PTE-A appears to have a mixed influence, allowing a rapid engagement with e-learning throughout the entire organisation, but also generating a sometimes informal culture and the absence of some formal management systems assessed by the eMM.

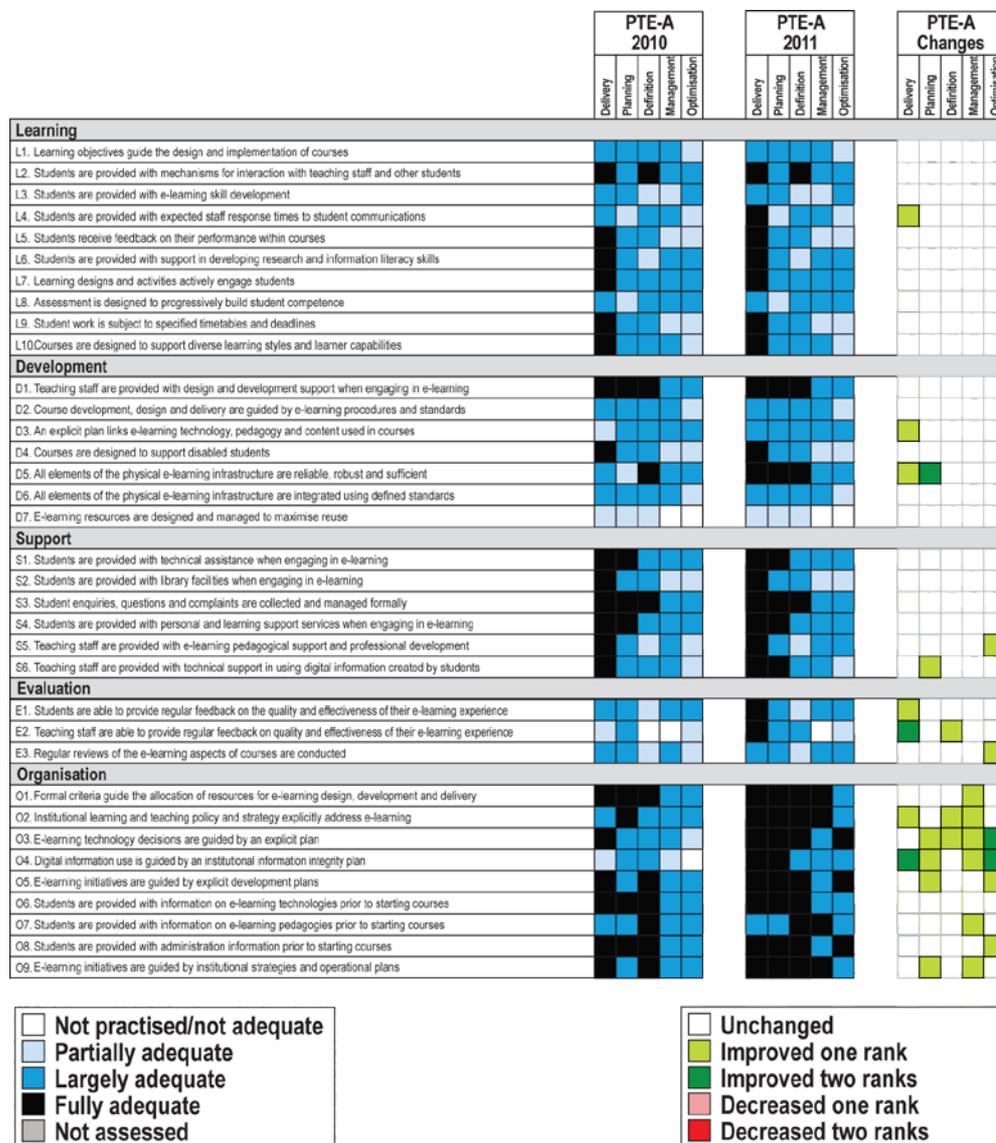


Figure: PTE-A eMM Assessments for 2010 and 2011, changed capability marked in green and red in the right-side diagram

The strategic direction of PTE-A is clearly driven by an awareness of the role that technology plays in the organisation. In the assessment, this is shown by the very strong capabilities assessed for process O2 ('Institutional learning and teaching policy and strategy explicitly address e-learning') and process O9 ('E-learning initiatives are guided by institutional strategies and operational plans'). A meta-analysis of eMM assessments (Marshall, 2011) indicates that capability in these processes strongly supports capability overall. In essence, having a clear understanding of what the institution is trying to achieve with its e-learning activities and investment results in a significantly greater ability to undertake and sustain e-learning as measured by the eMM assessment.

The course model used by PTE-A to support student learning is innovative. The PTE-A documentation very clearly conveys to students the range of modes of delivery supported and the expectations of students studying by those modes. All three modes of delivery are structured in the same way using the same assessment and learning objectives and students can freely choose which mode they use on a course-by-course basis.

Students are able to commence their studies at any point during the year if they choose to study online and join other students in a cohort that comprises students at various stages of completion of the module (typically a four to six-week period). Students are explicitly encouraged to support their peers and assist the teaching staff in helping other students at any earlier stage progress in their studies.

The first course all students undertake online is a course on how to learn online. This provides students with guidance in using the online environment both from a technical and pedagogical perspective and it also ensures that any problems they have are identified early and resolved. This course is also used for professional development of the PTE-A teaching staff, who are required to complete the same course before doing another related course on how to teach online. This ensures that staff have direct personal experience of the mode of learning their students are engaging in.

As well as being taught by teachers experienced in e-learning, students have access to pastoral and learning support services. These services are designed to support students at a distance, primarily via telephone but also using a range of communication technologies. Student activity and progress is proactively monitored by both the teachers and the support staff to ensure that students maintain momentum and engagement in their studies.

Unusually, PTE-A does not use a standard Learning Management System (LMS), but has chosen to create and maintain a custom system designed to support their particular pedagogical model. This was originally driven by the need to support continuous enrolment, something that established systems did not do well, if at all. The dependence of the organisation on technology and the need to develop their own system has led to the creation and investment in a substantial information technology and development team.

The 2010 eMM capability assessment, while very positive, identified a number of areas where improvements could be made. These were primarily the fruits of success, resulting from an evolution in the needs of the organisation as it shifted from one mode to another. The most important issue was to address the dependency the organisation had on its technology infrastructure, through a formal risk analysis and an increased focus on operational activities associated with ensuring business continuity was managed. A second area of concern was the extent to which the technology had been integrated into the pedagogical design of the courses. Finally, there was a need to improve the systems managing and monitoring the experience of staff and students in the courses using technology.

Technology systems are well known as having significant risks of failure unless actively managed. This includes equipment and software failures, as well as a range of human issues including security and continuity of expertise. A small organisation that grows increasingly dependent on technology for its core business needs to develop a more sophisticated understanding of the risks it faces and needs to be able to actively manage the services it purchases from other 'outsourced' providers. Systems that meet the original needs of the organisation may not scale well as numbers of users grow and as requirements become more complex.

Despite the investment in technology and the clear intention that e-learning be the primary form of delivery in the future, PTE-A initially tried to ensure that all modes of delivery were functionally and pedagogically identical. While this met the expectations of external accrediting groups, it did mean that the online courses made relatively little use of technology to extend and change the experience of the students. Very little use of multimedia was occurring, and communication technologies were adjuncts rather than actively integrated into learning activities and assessments.

The transition to increased use of technology and the attempt to maintain a common pedagogy also meant that the evaluation, feedback and review processes in the organisation failed to examine the impact that technology was having on the experience of students and staff. Existing systems assumed traditional models and did not explicitly ask students and staff about the particular technologies in use.

### **Change Projects Undertaken Following the eMM Assessment**

The eMM assessment results and analysis were shared with a group of PTE-A staff and managers at a workshop and a process of issue prioritisation and project planning was facilitated. Four projects were identified as a result of that workshop:

- A formal risk analysis and examination of the technology infrastructure
- Collection of feedback information from staff and students on their experience using technology
- A re-examination of the pedagogical model being used in courses triangulating the learning objectives, learning activities and assessment

- A re-examination of the ways in which technology is integrated into online courses and an expansion of the types of technology being used.

These projects were assigned to specific staff and undertaken during 2010/2011. In each case these projects are not complete, but all have started to generate changes and impact on the capability of the organisation.

In addition, changes to the requirements for teacher registration and the new requirement that teachers demonstrate 'ICT mastery' provided useful external support for the direction PTE-A had already set for itself. The e-learning induction course is being updated to introduce assessment activities that will help demonstrate the capabilities of students and provide important information for PTE-A to use in improving its systems and support for both students and staff.

The updated assessment undertaken in late 2011 is shown in the figure with changed assessments marked in green. The pattern of change shows that PTE-A operates very much as a managed organisation with change first happening predominantly in the *Organisation* processes. What is not yet evident in the assessments are the downstream activities resulting from the work of the last year, which are expected to have a significant impact on capability in other areas, particularly the *Learning* processes.

The risk analysis project initiated after the 2010 assessment has had a dramatic impact on PTE-A. The capability assessment of process D5 ("All elements of the physical e-learning infrastructure are reliable, robust and sufficient") has shown a substantial improvement over the last year. This reflects the extremely effective response to the issues of IT robustness and risk management raised in the initial analysis. Substantial management, structural and technical changes have happened rapidly and are clearly addressing the immediate risks and issues while also putting in place a robust and professional framework to support ongoing dependence on the IT systems. The significant personnel changes made combined with the new approach to management of the IT systems acknowledge the dramatic impact technology is having on PTE-A's operations, strategic intentions and perceptions of itself as an educational provider.

The recognition of the need to have better information on the staff and student experience of online learning at PTE-A was identified in the 2010 assessment and new feedback surveys for staff and students have been developed but not yet fully implemented. Once implemented, these will increase capability in the *Management* and *Optimisation* dimensions across the process set, as well as within the *Evaluation* process area, and will help sustain the strong rate of improvement apparent already.

A new model of triangulating the learning objectives, assessment and learning activities has been identified and is in the process of being discussed by staff and used in the pilot courses, including a revised e-learning induction course. Development of a set of guidelines to support the model is intended but has not yet happened. As part of qualification review activities, the alignment of assessment

with the learning objectives has been reviewed for all courses. These actions, combined with a renewed examination of how technology and media are being used to support student learning throughout all courses, should see substantial improvements, particularly in the *Learning* processes.

## Lessons for Other Institutions and for the Sector

It would be a mistake to see the success of PTE-A and ascribe it to the simple decision to switch from correspondence delivery to online delivery. The capability assessed by the eMM has not been generated solely within the last couple of years as the switch in focus occurred. The changes seen reflect a planned transition that has been underway for several years. PTE-A started by identifying ways in which technology could be used to help a proportion of their students undertake their studies. Rather than adapting their existing model of learning and teaching to the technology, they created systems that took that model and made use of technology to sustain it and engage with students willing and able to use the technology. This established a record of success within the organisation and provided the confidence and experience needed to improve on existing models.

Timing was important as well. The opportunity to engage in the eMM project came at a point at which incremental growth had reached a key inflection point where increasing dependence on technology had grown beyond the initial systems but had not yet failed significantly. Two other events helped give the initial eMM assessment relevance. The first was the introduction of requirements that students demonstrate ICT mastery in order to get registered; the second was the Christchurch earthquakes. The earthquakes demonstrated the practical benefits of having a well-designed set of IT systems supporting learning and teaching. Systems were already sited and managed in a way that meant that physical disruption to the servers was a minor issue and no data was lost.

*“When Christchurch happened, it brought it into stark reality where I think, as a college, we were dependent on moving along – having structures but not really admitting that we need a risk management framework and we need to create certain policies and embed them in the college so that we are actually going to formally look at risk management, business continuity, disaster recovery. So I think that some of the things we were talking about, for myself and to a certain extent for the IT team, were kind of esoteric, but were brought into stark reality. And we put ourselves in the position of some of our colleagues down in Christchurch who lost everything. They lost their student records, their ability to deliver their courses...they literally lost everything”. [Manager]*

Once staff and students were able to return to learning and teaching activities (something they wished to do as a return to normality) they were able to do so easily, using systems they were already familiar with.

*“Interesting how many of our academic staff said, ‘I want to get back in’ because this is real. This is here, this is tangible, this is consistent, this is what we know. Let’s put back in the things that we can control. The things we can’t control are there but when we know we’re doing the stuff that are consistent in our lives, it’s helping us with the other’. So that’s been good.” [Manager]*

This example has brought home the need for professional management of the systems and data, and also the necessity for staff and students to be familiar with the technology before they need to depend on it.

Factors that have helped PTE-A succeed in its use of technology include:

- Strong leadership, willing to engage with staff at all levels of the organisation and harness their ideas while still providing a clear sense of direction and strategic intent
- Statements of the business outcomes enabled by the technology, framed in terms of goals that are easily understood by all staff and able to be measured as they are achieved
- A clear sense of who the students are that the institution is teaching
- External requirements that students demonstrate ICT mastery
- Timely examples of the relevance and impact of the technology for the organisation
- The ability to make structural changes, recognise the need for new skills and be able to attract and retain staff with skills and experience not already present within the institution.

It would be easy to dismiss the experience of PTE-A as representing a special case where the leadership model and small size of the institution have made it easy to use technology. Certainly the scale has made it easier for the implications of the decisions made to be more apparent, but that must be balanced by the risks that have been taken. A small institution is usually more constrained than a larger one by the lack of resources. PTE-A’s real advantage seems to be a lack of complacency in its leadership. Staff have an awareness that the organisation needs to continually change and evolve and that the systems enabling that change need to be actively built and sustained. PTE-A has benefited from a strong leader, but also from a strong culture of leadership and an awareness of the need for leadership development. A number of staff at different levels of the organisation have demonstrated leadership of academic, technical and operational aspects, and there are explicit forums and mechanisms for sharing ideas and using the collective wisdom of the entire staff.

*“People are more aware of the importance [of e-teaching and e-learning]. And it’s people who would not normally have really assumed a responsibility or they would have done it because it’s their job. They would have gone out, sourced and done this because they were asked to. But I’ve seen much more ownership now. I’m seeing more ownership in the e-teaching and e-learning.” [Manager]*

There have also been challenges. Significant staff changes happened over the last year as the needs of the institution evolved. Online learning models, included blended delivery, remain outside of the experience of many people in the sector and can cause issues when interacting with external agencies and processes. The national context, both in terms of education strategy and in the funding instruments used by the Tertiary Education Commission (TEC), does not encompass genuine student flexibility and the use of models of instruction other than the traditional classroom.

Strategies that can be used to overcome these, and other, challenges apparent at PTE-A include:

- Using transition plans to help students and staff move from existing approaches at a pace appropriate to their needs and with support mechanisms resourced and managed to stay with them. At PTE-A this is apparent in the use of multiple modes of delivery initially (face-to-face, correspondence, online-blended), the use of the induction courses for both staff and students ensuring online students were properly prepared to learn online, and most recently, the introduction of a 'lite' form of the LMS as a transition for the remaining few students still commencing study face-to-face
- The recognition, both strategically and operationally, of multiple benefits of the technology. As well as supporting changing requirements in New Zealand, PTE-A has been able to use the experience, skills and systems it has to expand internationally. This has the important consequence of providing revenue out of the control of the New Zealand Government, while also providing experience that can be used to improve the systems here. Earthquakes are thankfully rare, but PTE-A has also demonstrated the benefit of strong existing systems in coping with events that might have otherwise damaged the business severely – as illustrated by the experience of very large institutions not able to do so
- Perhaps surprisingly, PTE-A has genuinely benefited from being a 'fast follower', able to learn from the experiences of much wealthier institutions in many countries. They have adopted a model of technology use that is conservative, despite the apparently radical decision to create their own LMS from scratch. Their IT systems have been built slowly and incrementally using mainstream and well-established technologies. Despite this, they have realised that the information technology infrastructure must be able to grow with changing demands and needs to be managed actively and constantly. Core services such as hosting and network connectivity can be outsourced, provided that very clear standards are defined and the relationships are actively managed by senior staff experienced in IT management.

The final, and most important, lesson is the need to be able to cope with success. Successful models of online learning can easily dominate the operations of an institution within very short time frames if the systems and processes are able to respond to student preferences. PTE-A has gone from online learning being a minor part of their operation to constituting over 90 percent of their business in less than

three years with much of that growth occurring in the last 12 months. The work of Kurzweil (2005) and others warns that technological change is not subject to merely exponential rates of evolution, but double exponential growth – when the various success factors align, organisations have very little time to seize the opportunity.

*“I think that’s one of the strengths of [PTE-A]. We see something that is effective, that can support student learning, and we don’t hold back on it. We look at all the possibilities: Can we do it next week? Can we do it next month? And we go for it.”*  
*[Academic]*

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