Australian *Flexible* **Learning Framework**

supporting e-learning opportunities

Sustaining E-learning Innovations: A review of the evidence and future directions

Final report

November 2010

flexiblelearning.net.au

Australian Government

Department of Education, Employment and Workplace Relations

Acknowledgement

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Key messages

- The Australian Flexible Learning Framework (Framework[1]) has worked to a series of well-developed strategies that have leveraged successfully off the achievements of prior Framework strategies.

- Hundreds of Australian registered training organisations (RTOs) from all jurisdictions have received seed funding from various Framework programs that has allowed them to begin to explore the use of e-learning.

- LearnScope projects facilitated RTOs to build e-learning knowledge and capabilities.

- Flexible Learning Toolbox (Toolbox[2]) Champions and E-learning Coordinators[3] have been integral to organisations taking the first steps to build their e-learning knowledge, expertise and networks. Toolboxes provide a quality resource for many organisations and industries.

- While e-learning champions have impacted on the embedding and sustaining of e-learning innovations, the fragility of some e-learning innovations built around the role of internal e-champions is of concern.

- Larger organisations have more difficulty in maximising the full benefits of Framework funding due to various structural and cultural issues (e.g. unwillingness to share innovations across departments and locations).

- Private providers are not as strongly involved in seeking and winning multiple amounts of Framework funding.

The seven factors driving innovations around e-learning

- Strategy – organisations which are Innovative and Established Users of e-learning are strategic and adopt a longer term view.

- Senior leadership - is critical for sustaining e-learning innovations. Leaders show their support in many different ways, depending on their particular situation.

- Business case - a key driver to initiating and sustaining e-learning in for-profit businesses, especially around cost savings.

- Resourcing – in recent times, Framework funding has supported staff and their innovations in contexts where internal resourcing is reduced or where progress around e-learning is not a high priority.

- Champions - maximise e-learning impact by providing one-to-one mentoring and support and by helping teachers think through how new technologies can help to build their relationships with learners and industries.

- People supports - the role and reliance on internal and external people supports evolves over time. At least four different models are at work for providing people supports.

- Technology - large training organisations at the Innovator, Embedded User and Established User levels of e-maturity are well resourced around the hardware and software support required to sustain e-learning. The major risks are around keeping key IT staff.

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[1] The Framework is the national training system's e-learning strategy:
http://flexiblelearning.net.au
[2] http://flexiblelearning.net.au/toolboxes
[3] http://flexiblelearning.net.au/e-learningcoordinators

Executive summary

There is little evidence of prior examinations into the sustaining and embedding of e-learning. Nevertheless, the vocational education and training (VET) sector has led the way, and in drawing from the experiences of registered training organisations (RTOs) and their partners, this report is among the first Australian examinations of the VET sector's success in sustaining e-learning innovations.

In summary, this report addresses two critical questions:

Q1.   What is the evidence around how Australian RTOs are sustaining e-learning?

Q2.   Going forward, what factors might guide the achievement of more sustainable e-learning innovations in the future?

Three research methods were used to investigate these questions:

1.   A review of research around sustaining e-learning to identify critical success factors – see *Sustaining e-learning innovations: Literature review* for a detailed review.

2.   A meta-analysis of Framework funded initiatives to examine how they have contributed to initiating and sustaining e-learning innovations, and to provide a rationale for the choice of the case study organisations – see *Sustaining e-learning innovations: Meta-analysis.*

3.   An examination of these 10 Australian cases and their e-learning journey; and the role of seven key factors in determining how implementing and embedding e-learning has contributed to their success – see *Sustaining e-learning innovations: Vignettes.*

Two analytical tools were used. First, the project used a typology of e-maturity that classifies organisations around their progress in embedding e-learning. Second, a diagnostic framework (see below) was developed that identifies the role of seven factors in driving innovations around e-learning.

The seven factor diagnostic tool

Strategy	Vision, values, strategy and planning that underpins e-learning as a core feature of the current and future operations of the organisation.
Senior leadership	Leadership at the executive team level that supports and champions e-learning, and promotes the use of e-learning as a tool for cultural and structural change.
Business case	A continued business focus that promotes the case about how e-learning brings benefits such as more flexible training to dispersed workforces, delivered more consistently, of higher quality, and with reduced time and financial costs.
Resourcing	Resourcing that supports initial e-learning initiatives and subsequent efforts to embed across the organisation, and this could be internal or external funding (eg Framework funds).
Champions	Experts in instructional design and/or the application of new technologies who promote and support others to review and introduce new ways of delivering training to clients.
People supports	Competent and supportive IT staff who share the vision and strategic goals of promoting e-learning solutions across various parts of the organisation.
Technological supports	Hardware and software support together with reliable and robust network facilities.

Findings from the meta-analysis

Building awareness and capability - There is substantial evidence that champions across quite different contexts have played and will continue to play key roles in promoting and sustaining e-learning. However, there is a note of caution here and elsewhere in the current report. Champions believe that their e-learning innovations might not be sustained without their continued efforts and influence in their respective organisations. Substantial awareness and capability building were also achieved through LearnScope, with more than two-thirds of organisations involved reaching the enactment stage of putting e-learning into practice. Importantly, many have moved on from this stage over time to become successful embedders of e-learning.

Building networks - Framework E-learning Coordinators have built strong relationships that have assisted organisations over a number of years to resolve various challenges in their roll-out of e-learning, to identify resources within and outside the Framework, and to provide skilling and support that have been central to sustaining e-learning.

Providing resources - Toolboxes in particular were used as a first step in many organisations that today are now well advanced in sustaining e-learning. Also a number of community engagement projects have progressed further with their e-learning activities, either through further Framework funding or other sourced funding.

Building community engagement - A number of the engagement projects have progressed successfully to the stage of the community having well established e-learning capability.

Building industry relationships - Business organisations report major benefits through accessing Framework resources around being better able to audit the need and demand for more e-learning and around integrating e-learning into the longer-term plans for their businesses.

Findings from the 10 case study vignettes

The critical drivers for sustaining e-learning that have been identified RTOs are: senior leadership support; organisational strategy (often involving a dedicated e-learning strategy with specific objectives and performance indicators); and the significant momentum gained once the business case is well-established.

Businesses identify the business case as the key driver, especially around cost savings. Major barriers for both types of organisations were the lack of a strategic plan, a lack of funding and a lack of access to IT expertise or support to sustain the progress being made around e-learning initiatives.

The drivers behind sustaining e-learning in the ten organisations

Strategy - Being strategic and adopting a longer term view of e-learning were key messages to emerge from organisations that are Innovative or Established Users of e-learning. Their focus on being strategic about the use of new technologies emerged both in their larger organisational strategy, and also often in a separate e-learning strategy. A key strategic goal among the more advanced users of e-learning is the ambition to improve upon the student and employer experiences in how training is being delivered

Senior leadership - Leadership support from the top is critical for sustaining e-learning innovations. What is apparent from the cases is that leaders are showing their support in many different ways, depending of what is required in a particular

situation. For instance, at GippsTAFE, senior leaders supported the establishment of the Innovation Department that plays a major role in driving the organisation to achieve its stated ambition around more flexible delivery.

Business case - A core message, possibly to be expected, is that the business case emerged as a key driver to initiating and for sustaining e-learning in for-profit businesses, especially around cost savings. For SunWater, a primary motivator is the business case for the use e-learning to reduce the high costs of transporting learners from all over Queensland and interstate to a classroom setting. For Filterfab, the business case is about added value to its clients through online courses about safety that its clients in the laundry industry could not afford to provide.

Resourcing - If organisations are to thrive and survive, they need to provide 'safe spaces' for staff to innovate. Such spaces include the funds, time and access to expertise to experiment. In many of the ten cases, Framework and internal funds provided staff in these organisations safe places and more opportunities to be creative and innovative. In fact, outside funding permitted more risk taking and more support for trailing cutting edge technologies.

Champions - Framework projects have grown internal champions who are vital in raising the levels of awareness about e-learning, and in supporting VET practitioners to grow in confidence about the applications for new technologies. A core group of GippsTAFE staff (including at least one at a senior level who championed e-learning) were involved initially in the Framework's Flexible Learning Leaders project. The Queensland Ambulance Service Flexible Learning Leader established an e-learning Leaders Group with membership across regions in the Queensland, as well as a multimedia group to aid the growth in e-learning awareness. Today these regional offices continue to each have a person responsible for e-learning.

People supports - Overall the cases illustrate at least four different models at work for providing people supports:

- a central support model

- a central unit linked to a network of internal e-champions model

- a partnering model with external expertise linked to internal e-champions

- a decentralised model.

Technological supports - Training organisations at the Innovator, Embedded User and Established User levels of e-maturity report being well resourced around the hardware and software support required to sustain e-learning. As these organisations have been well resourced over the years by state funding in particular, there were few risks that their infrastructure would be degraded in ways that would impede further efforts to further sustain and embed e-learning. Rather their major concern was managing the risks that key staff with the unique mix of IT, teaching and people skills would leave the organisation.

The Australian Flexible Learning Framework

The Framework has worked to an underlying strategic plan since its inception. This strategic focus has evolved over 10 years. The Framework began by awareness-raising around the value of e-learning and the need to build e-learning capability (2000-2004; see Figure 1). The focus then shifted and escalated to include demonstration projects (2005-2007) and then on to embedding e-learning into VET organisations (2008-2011).[4]

Figure 1: Changes in emphasis, strategy and focus over time of the Framework

	2000-2004	2005-2007	2008-2011
The emphasis:	Capability building	Client engagement	Integration
The Strategy:	Demonstrating and raising awareness of the potential of e-learning	Engaging with clients from key policy target groups	Embedding e-learning in training providers and businesses
The focus:	Building provider capability	Strengthening the role of clients in shaping VET provision to meet their needs	Capitalising on the infrastructure and knowledge created to date

Source: Framework 2008[5]

The third and current Framework strategy is focused upon embedding e-learning in training providers and in their organisational partners. Developments have included:

- disaggregation of Toolboxes into a learning object format accessed from the Framework's LORN[6]

- national endorsement of the *VET Teacher E-learning Toolkit*[7] that has specified the web and desktop-based functionality requirements to support e-learning in the national training system

- development of the *VET E-portfolio Roadmap*[8] to promote portability of learners' evidence of achievement to support training and education pathways

- E-learning Innovations[9] projects which have continued to build upon the partnerships between businesses and RTOs around growing, sustaining and embedding e-learning

- development of an industry sector wide model of stimulus funding[10] for multi-year plans centred on embedding e-learning to improve productivity.

Appendix A provides further details about the range of Framework project funding that was accessed by the 10 organisations.

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[4] Australian Flexible Learning Framework 2007a; 2007b; 2007c

[5] Australian Flexible Learning Advisory Group 2007a

[6] The LORN online portal provides a one-stop-shop for practitioners and training providers to find and download more than 2,500 free or for cost learning objects from collections across Australia, including the Toolbox Repository: http://flexiblelearning.net.au/lorn

[7] http://flexiblelearning.net.au/teachertoolkit

[8] http://flexiblelearning.net.au/e-portfolios

[9] http://flexiblelearning.net.au/innovations

[10] http://industry.flexiblelearning.net.au

Aims and methodology

Seed funding provided by the Framework has enabled many types of Australian organisations to introduce some aspect of e-learning innovation into how they do business. This funding has come in the form of various projects such as LearnScope, Flexible Learning Leaders, Industry Engagement, Industry Engagement projects, Inclusive e-Learning, Community Engagement, Indigenous Engagement, and most recently, E-learning Innovations (refer Appendix A for more detailed information about each of these projects). In addition, there has been the funding for Toolboxes and for people support through the E-learning Coordinator service, as well as support to develop national infrastructure for managing electronic learning resources (including e-portfolios) in the training system. This Framework funding and support has initiated innovations that organisations have further supported by their own internal funding, infrastructure support, the hiring of key staff, and by the professional development of their staff around e-learning.

It is not possible for this report to incorporate the vast array of Framework initiatives over these three strategic periods. Rather this report brings together, and reviews, evidence for the sustained impact of various e-learning initiatives in Australian organisations that at some time have been funded by the Framework. As the focus is upon sustaining e-learning, the project identified organisations that reveal an 'e-learning journey' in how over some years they have managed their strategy, people, resources and infrastructure to drive the growth in e-learning. Part of this journey involved key Framework initiatives that initiated the passion or showed the business case for e-learning. Finally, based on their stories we make a number of recommendations that might be considered by those who lead the Framework's initiatives.

This review is very timely. In Australia, there is little evidence of prior examinations into the sustaining and embedding of e-learning. At the same time, the VET sector has led the way, and in drawing from the experiences of VET organisations and their partners, the current report is among the first Australian examinations of our success in sustaining e-learning innovations.

In summary, this report addresses two critical questions:

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Three research methods were used to investigate these questions:

1. A review of research around sustaining e-learning to identify critical success factors - see *Sustaining e-learning innovations: Literature review* for a detailed review.

2. A meta-analysis of Framework funded initiatives to examine their contributions to initiating and sustaining e-learning innovations, and to provide a rationale for the choice of the case study organisations - see *Sustaining e-learning innovations: Meta-analysis.*

3. An examination of these 10 Australian cases around their e-learning journey and the role of seven key factors in determining their success to date around the implementation and embedding of e-learning - see *Sustaining e-learning innovations: Vignettes.*

E-maturity and the seven factor diagnostic tool

Two analytical tools were used. First, the project used a typology of e-maturity that classifies organisations around their progress in embedding e-learning. Second, a diagnostic framework was developed for this project that identifies the role of seven factors in driving innovations around e-learning.

The e-maturity typology was developed in prior UK research by the British Educational Communications and Technology Agency (BECTA) that has examined the progress of organisations around sustaining and embedding their e-learning. BECTA is the government agency leading the national drive to ensure the effective and innovative use of technology throughout learning. In particular, BECTA developed a measure of e-maturity and validated a classification system in over 300 private and public sector organisations.[11] This classification system is used in the current project to classify and review the e-learning journey of the 10 case study organisations, while an instrument for measuring e-maturity and for classifying organisations was developed (see Appendix A in *Sustaining e-learning innovations: Vignettes*).

In the BECTA typology, organisations are classified around six different levels of e-maturity:

1. The Novice (4% of all UK organisations examined) - know very little about e-learning.

2. The Sporadic User (21%) - the use of e-learning is localised or sporadic with use in some departments or for some courses.

3. The Developing User (42%) - developing and coordinating their use of e-learning more successfully.

4. The Established User (23%) - e-learning is established across the organisation and is transforming how learning and development is managed.

5. The Embedded User (10%) - e-learning is thoroughly embedded within the organisation and the organisation has a learning culture which influences everyday work.

6. The Innovator (0%) - there is thought leadership and innovation in how the business is using e-learning, being prepared to experiment in new areas and with new technologies.

It is widely accepted that any innovation occurs within a system of interconnected elements, with a range of factors at work (see *Sustaining e-learning innovations: Literature review* for a more comprehensive review). In this seven factor diagnostic tool (see Table 1 overleaf), e-learning innovations occur through a system of interconnected elements that sustain a curve of upward innovation.

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[11] Overton & Hills, 2009; 2010.

Table 1: The seven factor diagnostic tool

Strategy	Vision, values, strategy and planning that underpins e-learning as a core feature of the current and future operations of the organisation.
Senior leadership	Leadership at the executive team level that supports and champions e-learning, and promotes the use of e-learning as a tool for cultural and structural change.
Business case	A continued business focus that promotes the case about how e-learning brings benefits such as more flexible training, to dispersed workforces, delivered more consistently, of higher quality, and with reduced time and financial costs.
Resourcing	Resourcing that supports initial e-learning initiatives and subsequent efforts to embed across the organisation, and this could be internal or external funding (eg Framework funds).
Funding	Funding from internal and/or external sources that supports initial e-learning initiatives and subsequent efforts to embed across the organisation.
Champions	Experts in instructional design and the application of new technologies who promote and support others to review and introduce new ways of delivering training to clients.
People supports	Competent and supportive IT staff who share the vision and strategic goals of promoting e-learning solutions across various parts of the organisation.
Technological supports	Hardware and software support together with reliable and robust network facilities.

Also, the role and impact of each factor varies across different organisations. For instance, the process of innovation might start with developing a strategic plan that identifies key knowledge and training that builds people capability as an integral component for producing the outcomes required by the organisation. In addition, leadership is critical for resourcing and sustaining innovation.[12] Leaders are often central to promoting the vision and supporting the business case around how such innovations bring benefits to employees, customers, their business partners and the wider community. Champions can also emerge as key agents for change, but champions alone cannot shift e-learning from the margins to the mainstream.

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[12] Callan 2009; Callan & Esposo 2010

A summary of the key findings from the meta-analysis

Over the past 10 years, the Framework has invested in building e-learning infrastructure on a national basis. This activity has secured the availability of technological infrastructure and quality e-learning resources (eg Toolboxes and learning objects). Between 20-24% of the $15 million allocated to the Framework annually has been spent on creating and maintaing e-learning resources that have been made available to RTOs at a fraction of their development costs. Some money was also spent on keeping the nation abreast of the latest developments in technologies, their educational uses and on developing and maintaining national e-standards.

The Framework has also invested in developing people. Approximately 25% of the annual Framework budget was spent on LearnScope from 2000 to 2007. Additional e-learning demonstration projects were funded in 2005-2007, including businesses and communities, and for Indigenous and other equity groups. Since 2008 the ongoing professional development of people was embedded in E-learning Innovations projects. Approximately 43% of the total annual Framework funds were spent each year on these projects. A network of E-learning Coordinators and Toolbox Champions was also funded. They have provided on-the-ground support to both Framework and non-Framework related activities.

In turn, RTOs funded by the Framework have provided case studies, resources and tools for others to access, replicate and adapt further through the knowledge sharing services developed by the Framework. In 2010, approximately 17% of the annual $15 million Framework budget was spent on these services, including 4% on research on priority issues and e-learning benchmarking studies.

The meta-analysis that follows is not focused upon evaluating the effectiveness of various Framework initiatives such as those listed above. Others have done this, and reference is made to those reports. Nor was the focus upon providing a history of how the Framework has resourced and supported the growth of e-learning.

Rather, this section reports on how Framework resources (eg capital, people, resources) have helped to support the emergence of significant outcomes around building:

- awareness and capability
- networks
- e-learning resources
- community engagement
- industry relationships.

Types of organisations funded

The meta-analysis investigated the types of organisations funded by the Framework (see *Sustaining e-learning innovations: Meta-analysis* for more details on the findings from this meta-analysis). This analysis revealed that public RTOs tended to dominate with a larger average number of projects. Their funding possibly reflects their larger size, multiple campuses and greater diversity in their teaching areas that allow the potential opportunity for e-learning innovations. Other provider types averaged one or two projects each.

Outcomes around building awareness and capability

A key focus of the Framework has been on developing e-learning leaders and building e-learning capability within RTOs. From 1999-2005, a group of e-learning champions was created through the Framework's Flexible Learning Leader project. A review of this project concluded that it promoted potential leaders in technology, pedagogy and innovation who influenced change within their own institutions and at a state/territory level. E-learning champions have had a profound impact on their respective organisations:[13]

1. On practices - including strategic and business planning, professional development, learning programs and resources, funding and commercial activity and organisation structures.

2. On decisions - champions' enhanced knowledge base made them better placed to seize opportunities to advance e-learning in alignment with organisational initiatives.

3. On capacity - champions engaged in knowledge transfer and communities of practice, and contributed to improvements to e-learning practices.

4. On profile - organisations that adopted e-learning were seen to be more innovative.

Below are the profiles of three e-learning champions, each from a different context: an industry, a community, and a RTO.[14] Their stories are further evidence of the impact of this Framework innovation.

Greg Logan has championed e-learning in the dual diagnosis mental health services industry in Victoria. He has championed how e-learning enhances the goals of the mental health service and he has conveyed this message successfully to management, while also engaging clinicians to influence their practice.

Georgina Nou has championed e-learning in Aboriginal communities in Central Australia. She has worked freelance, with and through a range of organisations, and directly employed community helper mentoring processes with great passion and enthusiasm to assist in meeting learner needs.

Graeme Kirkwood has championed e-learning in a state-wide VET organisation by engaging the heads, hearts and hands of staff. His efforts have included undertaking a 12 month consultative process throughout TAFE Tasmania to build an overarching *Engaging learning* plan that included the educationally sound use of technology in the delivery blend.

In summary, there is now substantial evidence that champions across quite different contexts have played and will continue to play key roles in promoting and sustaining e-learning. However, there is a note of caution here. None of these three champions believed that their e-learning innovations would be widely sustained without their continued efforts and influence in their respective organisations. Nevertheless, on a more positive note there is considerable evidence that networks in the VET sector are sustained through technology and other means despite changes to key people in the networks, reduced funding or other major changes.[15]

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[13] I&J Management Services 2003

[14] Bowman *et al* 2009

[15] Figgis 2009; McKenna & Mitchell 2006; Mitchell 2006

From 2000-2007, building awareness and capability was also achieved through LearnScope. Reviews of LearnScope report that:

- More than two-thirds of organisations involved in LearnScope reached the enactment stage of putting e-learning into practice.

- It significantly facilitated organisations in building their e-learning knowledge and capabilities, while also promoting wider organisational change.

- Some 20% of organisations had moved to owning their e-learning and 15% to championing e-learning.[16]

Two examples of the effectiveness and facilitative role of LearnScope are provided below.[17] Each case illustrates how the initial funding from LearnScope assisted a teacher or a group of teachers in raising awareness about the potential applications of e-learning. In turn, this confidence inspired the application of e-learning solutions in promoting more flexibility around training, as well as in building a longer-term strategic advantage for the organisation by adopting e-learning solutions.

Community Services and Health (CS&H) Gilles Plains Campus of TAFE SA is a good example of the e-learning journey that continues today. It began to introduce e-learning alongside face-to-face delivery to achieve a blended learning approach in 2000. Judy Fawcett used the Framework's LearnScope project to skill herself and to train her colleagues. She was a participant twice and facilitated two teams of her peers to undertake projects. Results from LearnScope were promoted to management who built e-learning into strategy statements, and program and individual plans. Today CS&H Gilles Campus is explicit and strategic in its plans to introduce e-learning into many components of its courses.

Northern Territory Police Fire and Emergency Services Training College established a relationship with the Framework initially through LearnScope. The organisation was one of the original NT LearnScope team participants in 2000. Later it was one of the first RTOs in the NT to attempt building skills to contextualise Toolbox content. Between then and now, their training unit has evolved from using digital storytelling, blogs and wikis to having a fully integrated learning management system (LMS) and a team of staff dedicated to flexible learning. Currently, the flexible learning unit is working on the development of e-toolkits for using Point of View (POV) technology and e-portfolios for flexible assessment and skills recognition.

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[16] I&J Management Services 2007

[17] Kearns & Bowman(2008-2011) 2007

Outcomes around building networks

Interviews and examination of the regular progress reports provided e-learning coordinators to the Framework were completed as part of the meta-analysis. They revealed that E-learning Coordinators funded by the Framework have, through their strong relationships over time:

- continued to assist organisations over a number of years as they have worked out how best to manage the various challenges in their roll-out of e-learning

- identified sources of funding and support for local organisations both within and outside the Framework

- provided skilling and support that have been central to promotion efforts around the sustainability of e-learning innovations.

These roles continue today. Below are recent examples (taken from E-learning Coordinators' reports) about how they have assisted organisations by providing advice, ideas around funding, and other support towards promoting more sustainable e-learning.

Cleancare Victoria contacted the Victorian E-learning Coordinator in mid 2009. The meetings discussed the potential opportunities for the development of e-learning resources, the viability of such training, copyright and accreditation issues. An e-learning initiative was finally framed during March 2010, and Cleancare secured training resources through its partner organisation in the United States.

Queensland Education Centre in 2008 sought information about introductory e-learning workshops and resources. The E-learning Coordinator provided information and resources, encouraged them to review the *Practical Guide to E-learning for Industry* resource, and Centre staff attended information sessions and workshops about E-learning Innovations funding. Despite being unsuccessful for Framework funding, the E-learning Coordinator invited the RTO to participate in a pilot E-Start up program specifically designed by the Queensland Framework team to target smaller private RTOs. This pilot opportunity has sustained their interest in opportunities around e-learning.

The ACT Centre for Tourism and Hospitality contacted the local Framework team to talk about applying for innovations funding. Their client, the Department of Defence and other businesses, wanted recognition of skills for their staff and an easy to use recognition tool. The Centre's teachers attended workshops offered by the Framework, and with additional mentoring were successful in applying for E-learning Innovations funding. Project outcomes have included a learning object containing the RPL tool, while the E-learning Coordinator and the Toolbox Champion have investigated how to customise and use the tool for other RTOs and VET practitioners.

The Canberra College Cares (CCCares) in partnership with ACT Health provides an education and support program for young people, and pregnant and parenting students. Unfortunately, they were unsuccessful with their application for E-learning Innovations funding. However, the ACT FLAG representative and the Innovations Coordinator provided advice and mentoring so that CCCares were better equipped to apply for funding. In the end they won a Schools First National Impact Award, receiving a grant of $750,000. In moving forward, their relationship with the Framework has continued and convinced them of the need for an e-learning platform, and continued development of e-learning is a key priority that they are working to achieve.

Outcomes through the provision of e-learning resources

Our interviews for this meta-analysis with Framework representatives, in addition to the examination of prior reviews and web searches, revealed that Toolboxes developed by Framework funding have:

- been used effectively as a first step in many organisations around building an initial awareness and understanding of the potential benefits of e-learning

- provided a quality product that is seen to be tried and tested and so reducing unexpected technical problems

- facilitated change in how organisations have thought about how, when and where they train their employees.

In addition, a 2007 evaluation on the impact of Toolboxes found:

- There was a general consensus among participants that Toolboxes contributed to the uptake of e-learning at their institution.

- The Toolbox Champion service was highly valued by teachers.

- Industry acceptance of Toolboxes was solid. However, the Toolboxes were seen to date quickly. Teachers also wanted smaller disaggregated forms of content and interactivity.

- There is a strong desire to customise materials, but there is a lack of existing skills in organisations to support doing this.[18]

Below are two examples of how Toolboxes have initiated developments towards achieving more sustainable outcomes around e-learning. There are many other examples in Framework reports about how the network of state Toolbox Champions over time have worked with E-learning Coordinators to compile, market and to deliver diverse training programs that supported the take-up of Toolboxes.

Federal Group Tasmania worked with Drysdale Institute in the customisation of the Hospitality and Tourism (Management) Toolbox. The Toolbox acted as a change agent for the Federal Group businesses through promoting debate around learning methodologies in the business, its education and communication strategies, and the best way forward around the implementation of its product and support systems. Today training is delivered online through WebCT and integrated with workplace activities and assessment, providing a more blended learning model than in the past.

Royal Perth Hospital used a customised Frontline Management Toolbox to help their managers and supervisors to better manage health and safety issues in the workplace. The Toolbox project prepared employees for more e-learning in the future. Towards sustaining e-learning, the hospital developed a flexible learning space on its server and a centralised e-depository for standards, forms and regulations.

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[18] Edith Cowan University 2007

Outcomes around building community engagement

The Framework's Community Engagement Project from 2005-2007 integrated e-learning in existing community based and regional development initiatives. In particular, a stated goal was to achieve sustainable e-learning in the funded communities beyond the initial pilots (see *Sustaining e-learning innovations: Meta-analysis* for more details). Outcomes from the pilots revealed that:

- Eighty community leaders, teachers and tutors were trained to facilitate e-learning programs for individual learners, in many instances using infrastructure that was built as part of the project.

- Over 1,000 individuals who had previously missed out or avoided education took up e-learning.

- More than 100 organisations worked within 14 creative community partnerships to promote and build e-learning strands into their local or regional development initiatives.[19]

Significantly, organisations that completed the pilots continued on their e-learning journey, while there was evidence around the emergence of best practice models for sustaining e-learning.[20] Our meta-analysis followed up a number of these projects. A number of Community Engagement projects have progressed further with their e-learning activities, either through further Framework funding or other sourced funding.

A case example below is of a community that went from not having any e-learning capability, to winning a national award around its use of e-learning.

The Alexandria Community Adult Learning Centre case highlights a remarkable set of outcomes in a two year e-learning journey. In the Framework funding period to December 2006, the Centre built an e-learning platform for the region that was accessed by upwards of 100 people. In addition, it trained staff and volunteers in e-learning facilitation and boosted community awareness that e-learning was an option. Post Framework funding and to August 2007:

- the local IT person became a LearnScope leader contributing further to local e-learning capability

- the Centre won a Community ICT National Award for best innovative use of open source software in non profit settings (in May 2007)

- a partnership was developed further with TAFE SA to offer accredited child care, aged care and teaching and assessment course

- local organisations including the hospital contacted the centre for assistance with e-learning for their workforces.

From late 2007 to the present, other initiatives also developed included a tool for identifying existing skills, learner circles to aid peer learning and additional e-learning options.

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[19] Bowman 2007

[20] Bowman 2007

However, in terms of lessons learned, this 2007 review of these community projects identified the need for better project models for the community sector:

> "An improved project model would incorporate a multi-phase feature and a better performance evaluation feature. A successful milestone funding approach would help selected communities move through preparedness building, implementation, and embedding phases. Time constraints were the biggest challenge reported to the Review. Everyone involved reported having been on an e-learning journey at a very brisk, if not full gallop, pace. An up to three year milestone funding model, depending on the starting points of the communities, is suggested. This is in line with research that suggests embedding innovative practices takes time."[21]

Other key lessons were that to achieve sustainability a greater focus is required upon the use of a working model, e-champions identified by the community, and more investment in their professional development. The 2005 Framework funded Indigenous Engagement project below has been sustained by adopting a number of these lessons.

NSW North Coast Institute TAFE partnership with North Coast Computer Project (NCCP) aimed to encourage ATSI (Aboriginal and Torres Strait Islander) people to pick up basic computing skills and to become more involved in further studies. By late 2005 the project had seen computer ownership increase from below 5% to over 60% in local Indigenous communities. The project has since been built on and rolled out to other Indigenous communities in the North Coast. In May 2007 the NCCP was awarded the Community ICT (Information and Communication Technologies) Innovator of the Year Award sponsored by Microsoft and Cisco.

Outcomes around building industry relationships

The Framework has focused upon building industry capability in the use of e-learning (see *Sustaining e-learning innovations: Meta-analysis* for more details). Between 2005 and 2007, the Framework funded and supported projects led by businesses that teamed up with RTOs to facilitate their e-learning initiatives. Organisational e-learning examples and a practical guide to e-learning for industry were developed and showcased to help other organisations embark on e-learning.[22] The meta-analysis revealed that:

- Key drivers in businesses for developing e-learning solutions were needs around meeting legislative requirements in changing occupational health and safety procedures, to induct new staff and to train staff located across multiple workplace sites.

- Overall, the e-learning resources and case studies produced have proven to be widely applicable elsewhere, and some organisations did diffuse the learning and resources to other organisations in their industry.[23].

In 2008, the Framework embraced a new industry sector wide model with workforce planning as the primary focus and stimulus funding for multi-year plans, through Industry Integration of E-learning funding and support. These plans have centred on embedding e-learning with the purpose of improving productivity. RTOs are involved as partners.

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[21] *Ibid* p 5

[22] Australian Flexible Learning Framework 2007b

[23] Industry e-learning demonstration projects summary sheet retrieved April 2010 from http://industry.flexiblelearning.net.au

Evidence gained for the meta-analysis demonstrated that:

- Such collaborative partnerships with milestone funding arrangements have achieved some change at an industry level, not just for individual organisations.

- Numbers of employers involved with e-learning have grown substantially in some industries.[24]

Other business-RTO partnerships were developed through the Framework's 2008-2011 E-learning Innovations projects. Here sustainability is a prominent goal. It appears that the application of annual merit based funding for these e-learning projects that built on existing projects is assisting embedding. A published review of these projects found that:[25]

- RTOs reported major improvements in having more reliable platforms, tools and processes; around promoting their e-learning capability externally; and in identifying new opportunities for e-learning.

- Business partners reported major gains in more resourcing of their e-mentors/ champions; in investigating alternative sources of funding; in being better able to audit the need and demand for more e-learning; and around integrating e-learning into the longer-term plans for their businesses.

Key messages

The meta-analysis examined prior evaluations of various Framework initiatives, as well as reports and databases, and also completed interviews with Framework staff. This analysis confirmed that:

- The Framework has worked to a developed strategy revised every three years to leverage the achievements of the prior strategy.

- Hundreds of organisations from all jurisdictions have received seed funding including all types of training providers, businesses and communities.

- Some organisations were funded several times by the Framework. Large public training organisations were the most frequently funded.

- New funding initiatives seem to be effective around promoting sustainability through the application of annual merit based funding that build more on existing projects.

- Toolboxes have provided a first step for many organisations and industries to build their understanding of the potential benefits of e-learning.

- Champions have had major impacts on the embedding and sustaining of e-learning innovations in their respective organisations.

- LearnScope projects were instrumental in building e-learning knowledge and capabilities among staff in many VET organisations.

- Over time E-learning Coordinators have through their relationships with organisations and their champions facilitated the embedding and in some cases the sustaining of e-learning innovations.

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[24] FLAG 2009; 2010

[25] Smith 2009

Seven drivers for sustaining e-learning

Following a rigorous selection process, 10 organisations were identified that differed in size, industry and location (see *Sustaining e-learning innovations: Meta-analysis)*. *Sustaining e-learning innovations: Vignettes* provides the full case study for each organisation, with each case organised around the findings from the application of the seven factor diagnostic tool.

Table 2 presents the 10 organisations, their reported levels of e-maturity, and the year that they commenced e-learning. Significantly, as the table reveals, there does not appear to be a strong relationship between the level of e-maturity and the number of years since the organisation commenced e-learning. Alternatively as e-maturity is a continuum, there could be a connection between time and level of e-maturity, but some organisations have actually stagnated or regressed in their journey. In fact, at least one organisation (ie Tasmanian Polytechnic) does report experiencing some periods of stagnation due to the disruptions of large-scale organisational change.

Table 2: 10 organisations current e-maturity compared with commencement year

Organisation	Organisation type	Current level of e-maturity	Commenced e-learning
GippsTAFE, VIC	Public RTO	Innovator	1998
Queensland Ambulance Service, QLD	Enterprise RTO	Embedded	2004
Tabor Adelaide, SA	Private RTO	Embedded	2006
North Coast Institute of TAFE, NSW	Public RTO	Established	2006
Challenger Institute of technology, WA	Public RTO	Established	1999
Tasmanian Polytechnic	Public RTO	Developing	1999
The Federal Group, TAS	Enterprise with RTO partner	Developing	2007
SunWater, QLD	Enterprise with RTO partner	Developing	2005
Byron Region Community College, NSW	ACE provider with RTO status	Sporadic (for sustainability)	2007
Filterfab, SA	Enterprise with RTO partner	Sporadic (for safety)	2005

Table 3 overleaf provides an overall summary of the most important factors that impacted positively and negatively upon the organisation's sustainable use of e-learning. While acknowledging that all seven factors need to be present to sustain and embed e-learning, the interviews and the existing case materials highlighted for each case that some factors were more significant than others. In summary:

- RTOs tend to identify as the critical drivers in sustaining e-learning their senior leadership support, their organisational strategy often together with a dedicated e-learning strategy with specific objectives and performance indicators, and the significant momentum gained once the business case is well-established through benefits to learners, staff and industry partners.

- Businesses identify the business case as the key driver, especially around cost savings.

- Major barriers for both types of organisations were the lack of a strategic plan, a lack of funding and a lack of access to IT expertise or support to sustain the progress being made around e-learning initiatives.

Table 3: Drivers and restraining factors in sustaining e-learning

Organisation	Drivers	Restraining factors
GippsTAFE	Senior leadership and continuing central support agency	Maintaining required skills mix in central agency
Queensland Ambulance Service	Continual championing of e-learning	Cut backs in central technology support as austerity measure
Tabor Adelaide	Senior leadership making a budget available	Funds to do all that could be done
North Coast Institute of TAFE	Strategy for more flexible learning with allocated funding	Funding and reluctance among some teachers
Challenger Institute of Technology	Strategy that got people involved backed by e-mentors	Challenges around keeping up with the new technologies
Tasmanian Polytechnic	Dispersed existing and high e-capability in business units	No organisation wide e-learning goals/strategy
The Federal Group	Senior leadership support and funding	No fully developed e-learning strategy
SunWater	Business case with supportive leadership	Access to technology and e-learning resources
Byron Region Community College	Local leaders pursuing sustainability goals	Funds for ongoing professional development and embedding of new e-learning projects
Filterfab	Business case, senior leadership support and positive customer feedback	Limited ICT experience

Strategy

Being strategic and adopting a longer term view around e-learning are key messages to emerge from those organisations that are more Innovative or more Established Users of e-learning. Their focus upon being strategic about the use of new technologies emerged both in the larger organisational strategy, and also often in a separate e-learning strategy.

The cases reveal (see *Sustaining e-learning innovations: Vignettes*) that a key strategic goal among the more advanced users of e-learning is the ambition to improve upon the student and employer experience in how training is being delivered. For instance, North Coast TAFE aims to provide an innovative and seamless approach to e-learning, teaching and assessment. It wants to provide its staff with the tools, technologies and support that encourages them to provide work based and flexible delivery options that better suit the needs of learners and employers. Challenger Institute of Technology has a strategic focus upon working with industry and the wider community to provide a wider range of delivery options for workforce skills development and community capacity building. Its Industry Training Centres are aligned with these goals through offering a large range of accredited industry-approved courses specifically tailored to individual business enterprises.

A specific stand-alone e-learning strategy with its associated goals and performance indicators is also a feature of the more Established and Innovative Users of e-learning. At GippsTAFE, there is a well-known and adaptive learning strategy where e-learning is a major component in its current and future operational plans. Short and longer-term goals, and measurable e-learning targets, are regularly monitored. *Collaboration Online* at the Queensland Ambulance Service is an organisation-wide e-learning strategy that it has progressively developed with the growth in its e-learning capabilities. Again it drives sustainability through stating stretch goals and measurable targets that are frequently monitored. North Coast TAFE believes that the recently introduced e-learning strategy with its associated objectives, performance indicators and commitments in funding will be a major driver for what they expect to be a period of accelerated growth in their e-learning innovations.

Tabor Adelaide is another good example of the impetus provided by an effective e-learning strategy. The College has risen to the Embedded User category in e-maturity despite having only adopted e-learning since 2006. The College developed an e-learning strategy and implementation plan in 2008, and today the strategy provides a framework for the development of its online and virtual learning capacity, and the evolution of an environment and culture that supports continuous quality improvement in e-learning.

However, these organisations are the exception rather than the rule among the case studies (refer Table 3). Tasmanian Polytechnic and The Federal Group confirmed that the lack of an e-learning strategy had held back their embedding and sustaining of e-learning.

SunWater expressed some concerns that they may be stagnating. Furthermore, as shown in the Framework's 2010 E-learning Benchmarking Survey findings, 55% of RTOs still do not address e-learning in their business strategy (ie 65% small, 53% medium), and 39% have no e-learning strategy.[26]

Senior leadership

Leadership support from the top is critical for sustaining e-learning innovations. What is apparent from the cases is that leaders are showing their support in many different ways, depending of what is required in a particular situation. For instance, at GippsTAFE senior leaders supported the establishment of the Innovation Department that currently plays a major role in driving the organisation to achieve its stated ambition to the best flexible delivery institute in Australian. Day to day leaders support strategic and innovative partnerships to further test and build upon this proven organisational capability.

Likewise, the leadership team at Queensland Ambulance Service supported the large investment required to introduce and to sustain its e-learning strategy and its associated funding, despite cut-backs in funding to the larger department. Challenger Institute of Technology supports its Systems Steering Committee that operates as an off-shoot of the executive team to explore quality and flexible training solutions. E-learning champions are also members of the Institute executive. The leaders at North Coast Institute of TAFE have supported the recent development and pushed for the acceptance of the e-learning strategy. Also their support is confirmed almost daily through how they talk publically about the merits of sustaining e-learning.

In summary, senior leadership support emerges as a consistent factor behind efforts to sustain e-learning. This finding is not surprising given that the role of senior

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[26] I & J Management Services 2010

leaders is to make the key decisions around organisational strategy, and major funding programs and appropriate people and organisational structures to deliver on those strategic objectives. Their impact in driving and sustaining e-leaning is also apparent in smaller organisations. The Director of Byron Region Community College worked closely with Byron Shire Council to initiate the sustainable community e-learning project. Today this senior management support continues to drive innovative e-learning for sustainable community development. Tabor Adelaide leaders, despite its smaller size, agreed to commit funds to create a full time role dedicated to strategically growing and developing their e-learning capacity.

Business case

A core message, possibly to be expected, is that the business case emerged as a key driver to initiating and for sustaining e-learning in the for-profit businesses, especially around cost savings. For SunWater, a primary motivator is the business case for the use e-learning to reduce the high costs of transporting learners from all over Queensland and interstate to a classroom setting. The productivity losses from this travel, along with the inevitable delays in training new employees, needed to be addressed. For Filterfab, the business case is about added value to its clients through online courses about safety that its clients in the laundry industry could not afford to provide.

Like SunWater, Federal Group's decision to continue to move towards embedding and sustaining is driven by the numerous cost efficiencies offered by online learning compared with traditional training methods. At the Federal Group, e-learning assists in managing complex issues around staff induction and training in often remote and regional locations, and across a diversified business. The power of the business case is demonstrated in its recent e-orientation project funded by the Framework. This project has provided a user-friendly portal that assists the induction of new staff irrespective of location. It is resolving problems around the previous variety of on-boarding practices across the Federal Group, and this online-learning initiative is helping Federal Group as a business deliver a more consistent, higher quality orientation experience for all new employees.

What emerged from the 10 cases is that the business case is typically around training required to meet needs around compliance. Businesses like those above need to manage corporate risks or they are punished by their shareholders. Federal Group and SunWater need to be assured that risk in their business is being managed well through the provision of foundation OH&S training for new employees that is consistent with legislative requirements and enterprise standards. E-learning solutions are providing a cost-effective provision of this required training. Indeed, many of the online innovations being developed by GippsTAFE allow its numerous industry partners in Australia to meet compliance requirements for staff in health, insurance, community services, and the energy and electrical sectors.

For the large training providers such as NSW North Coast Institute of TAFE, and Challenger Institute of Technology at Western Australia, c*entral to their business cases is the regional nature of their campuses, and savings in staff and learner time and greater cost effectiveness.* Both organisations also want to increase the confidence of their teachers around new forms of delivery and assessment, including the provision of work-based solutions to employers around more flexibility.

In summary, once the business case is established, as the case studies reveal it is a key factor in sustaining the focus upon e-learning. In particular, e-learning is helping businesses to deliver required induction, OH&S and other programs in a more consistent and cost effective way. Indeed, a large number of Framework funded

projects have supported such initiatives around meeting such compliance requirements or in supporting training providers to design these e-learning solutions.

Resourcing

If organisations are to thrive and survive, they need to provide 'safe spaces' for staff to innovate. Such spaces include the funds, time and access to expertise to experiment. In many of the 10 cases, Framework funds and internal resourcing provided staff in these organisations such safe places and more latitude to be creative and innovative. In fact, they reported that when compared to using often tightly monitored internal funds, outside funding permitted more risk taking and more support from within the organisation for trialling cutting edge technologies. In the Federal Group, three major projects that introduced innovative solutions to staff orientation would not have occurred without the seed funding from the Framework. At Tabor Adelaide, the Framework LearnScope and E-learning Innovations funding provided the stimulus that got this organisation started on its e-learning journey, allowing staff the funds and time to try something that was different. Today resourcing for e-learning comes from the organisation's own budget. Senior management has realised the potential benefits of e-learning to its students and to growing the organisation's business and identified funds from Tabor's budget to improve teaching and learning through e-learning.

For others such as Challenger Institute of Technology, Framework funding allowed staff to live the organisation's values about being more innovative. Challenger has received funds from the Framework   over several years. Funding has included numerous LearnScope projects as well as other structure funding for learning demonstration projects, inclusive e-learning funding, community partnerships, and for the Empowering Learners program. However, over at least a decade e-learning has been funded also by the Institute budget especially around supporting professional development and some fee for service funding. It is believed that e-learning innovations will continue to be introduced at the Institute if there is reduced Framework funding in the future.

For Tasmanian Polytechnic, the Framework funds allow staff to sustain their commitment to innovative training solutions, a commitment that is coming under challenge as the Polytechnic manages through its complex and demanding change process. Queensland Ambulance Service is working hard to maintain its technology requirements and to ensure the best uses of e-learning continue, despite recent funding restrictions imposed by the Queensland Government. Also links that the Framework provides with other professionals and to professional development opportunities are central in stopping the degradation of e-learning capabilities and culture in these organisations that are under threat.

Framework funding has supported innovation and sustained staff in contexts where funding has been reduced (eg Queensland Ambulance Service) or where good progress to date around e-learning has been pushed back as a priority (eg Tasmanian Polytechnic). Framework funding is helping these organisations to sustain their progress around e-learning despite reduced funding or major change.

As organisations grow in their e-learning maturity, their reliance on Framework funding is reported to be less critical for sustaining e-learning. This again is a fairly consistent finding across the cases. For example, at GippsTAFE now classified as an Innovator in its levels of e-maturity, over time it has been able to source funding more from fee for service activities each year. Such funding is now the major source for its Innovation Department. Framework funding and support is more targeted in enabling increased mentoring in pockets of the organisation where e-learning expertise remains limited, and in accessing Framework supported networks to keep up-to-date

with e-learning information and trends. Overall GippsTAFE could sustain its e-learning through its fee for service e-learning. However, the networks that the Framework has enabled at GippsTAFE are highly valued, as well as access to valuable forums and benchmarking that give GippsTAFE an understanding of the big picture trends in e-learning.

Possibly a number of organisations have been too reliant on Framework funding to support their e-learning journey. In the worst cases, this over-reliance on Framework funds and support has promoted short-term and often very narrowly focused on specific projects or initiatives. In short, some organisations have accessed Framework funds with little proof that they are adopting a more strategic and longer term position around e-learning. Further, the strategic aims being pursued by the Framework (eg community partnerships), might not be aligned at all to the strategic goals of the organisation. Some organisations are more motivated about accessing funding per se than accessing funding that might support its current strategic goals.

Tabor Adelaide in Adelaide demonstrates the value of showing a commitment to advancing e-learning by accessing internal funding rather than relying on Framework funds. Tabor Adelaide is a rapid Embedder in terms of e-maturity. Funding for e-learning comes from the organisation's budget as senior management has fully accepted the potential benefits of e-learning to its learners and to growing the organisation's business. Tabor is able to sustain e-learning without any outside funding, and significantly as a result, this position means that it has essentially safeguarded the organisation against the risks of any degradation to its progress around e-learning by relying on external funding. In short, while it is acknowledged that the Framework LearnScope and E-learning Innovations funding, for instance, greatly assisted the organisation at the beginning of their journey, it has not applied for additional funds in recent times.

Champions

Framework projects have grow internal champions who were vital in raising the levels of awareness about e-learning, and in supporting VET practitioners as they grew in confidence about the applications for new technologies (see *Sustaining e-learning innovations: Meta-analysis*). The cases confirm this assertion. A core group of GippsTAFE staff were involved initially in the Framework Flexible Learning Leaders project including at least one at senior level who championed e-learning. The Queensland Ambulance Service Flexible Learning Leader established an e-learning Leaders Group with membership across regions in the state, as well as a multimedia group to aid the growth in e-learning awareness. Today these regional offices continue to each have a person responsible for e-learning.

Tabor Adelaide used a Framework funded LearnScope project to provide professional development to a group of lecturers whose successful use of e-learning was building awareness. Such professional development approach continues today, supported an officer whose major role is to provide one on one mentoring to lecturers about the applications of new technologies. The role of champions around specific software such as Adobe Connect, and Moodle is still central to how North Coast is supporting its staff in sustaining and growing the applications of more flexible delivery and e-learning. Driving the success of many projects at Challenge TAFE are the champions who have emerged at its many sites.

Champions have also come from the Framework and other external consultants to provide personal and professional support over the years, and on specific projects. The Federal Group have benefited from the champions from the Drysdale Institute together with consultants from GlobalNet ICT. Filterfab have accessed TAFE SA champions and external consultants to provide a form of championing. Byron College

has used Framework Toolbox Champions and E-learning Coordinators as a source of professional advice in developing their own skills development.

The cases also confirm that to support teachers to take up and sustain e-learning, a particular type of expert is required. They are not just an experienced teacher or an IT expert, but a professional who has a combination of both skills sets. Organisations that are more successful in sustaining e-learning have identified experts in instructional design who understand the classroom and training environment, the application of technologies and are competent and supportive. This type of expert was present in varying degrees in the 10 organisations, albeit in various configurations that suited the context of the organisation.

For instance, Tabor Adelaide has a small Online Learning Support Team with these skills, as well as an educational technology mentors in each school to increase the reach of the Online Learning Support Team. The Framework's network of Toolbox Champions and E-learning Coordinators is used for additional technical and people supports. The approach at GippsTAFE is to develop a team that provides higher order skills to facilitate effective teaching and learning through e-learning. This team facilitated delivery model over time has embedded and sustained leading edge e-learning. In particular, they use a team of educational designers who have a much broader focus than instructional designers as they are active teachers with field credibility who understand the realities at the coalface. In addition, they have not actively set out to develop individual champions of e-learning. Its Innovation Department mentors teachers in e-learning use and provides teachers with online self-help services.

Another lesson to emerge from the cases is that the role and reliance on internal and external people supports do evolve over time. At Queensland Ambulance Service each regional offices continues to have a person responsible for e-learning, but they are no longer viewed as e-champions. Rather they are part of a regional e-learning network that act as change agents and work with and are trained by the central e-learning team in the Brisbane office. Also in the early days at Queensland Ambulance Service, GippsTAFE and Tabor Adelaide, Framework Toolbox Champions and/or E-learning Coordinators were a consistent source of advice. However, today Queensland Ambulance Service develops its own resources to meet its quite specific training and related resources needs.

In summary, champions in the past and today are critical to sustaining e-learning. In particular, champions play a major role in the initial stages around awareness raising and idea generation about what might be possible applications to learning of the new technologies. The cases confirm that champions can maximise e-learning impact within the organisation through their one-to-one mentoring and support, by helping to establish communities of practice, and holding whole of organisation themed professional development events to showcase people. In particular having the support and dialogue with champions, helps teachers undertake the small steps around 'giving it a go' with more confidence, and to think through how new technologies can build on current practices that connect them to their learners.

People supports

Overall the cases illustrate at least four different models at work for providing people supports:

- a central support model

- a central unit linked to a network of internal e-champions model

- a partnering model with external expertise linked to internal e-champions

- a decentralised model.

A central unit approach provides all of the expertise required to support teachers to take up and sustain e-learning. GippsTAFE exemplifies this model. Its Innovation Department provides comprehensive expertise and services directly to all teachers and external partners. The skills mix in the Innovation Department includes people with a sound understanding of teaching combined with high order educational design skills, communication skills, technical skills, problem solving skills, advocacy skills, mentoring skills and tenacity. Also Tabor Adelaide uses a central unit model to rapidly embed e-learning. A full time e-learning officer was appointed in 2008 to undertake one-on-one mentoring of lecturers who were targeted and trained through a Framework funded LearnScope project.

The second model has a central unit linked with a dispersed network of internal champions. Several of the 10 organisations employ this model, having a small central unit with e-learning expertise and an outreach network of e-champions that engage with individual teachers. For example, the Queensland Ambulance Service has eight regional offices, each with a person responsible for e-learning who acts as a change agents trained by and working with a central e-learning team. The North Coast Institute of TAFE has a central Learning Technologies Team that provides hands on support to all staff. The Faculties employ Faculty e-learning contacts to act as overall project managers and to support the development of the resources at each stage around e-learning initiatives. Also Challenger Institute of Technology supports seven e-learning mentors who are located within a Learning and Development Unit. The organisation supports these mentors to act as change champions and to support various communities of practice.

Particularly the for-profit businesses in the sample of 10 organisations use an approach that has external expertise combined with internal e-champions. The Federal Group Tasmania taps into the people and infrastructure resources of their partners and also of the Framework. SunWater has introduced a national Water Industry qualification for bulk water suppliers by building a relationship with the Wide Bay Institute of TAFE. A blended delivery approach has involved an integrated coaching system, using internal and external resources, in an online conferencing and local workplace environment. Structured online chat sessions and forums occur using the Wide Bay Institute of TAFE's LMS. The e-learning initiatives of Filterfab have come about through its partnership with TAFE SA and the companies that Filterfab services in the laundry industry.

Finally, Byron Bay Region Community College uses both internal and external avenues to develop its e-learning expertise. It worked initially with GippsTAFE to provide an e-learning leadership support network and uses Framework Toolbox Champions and E-learning Coordinators for professional advice in developing their own skills.

In the fourth model to emerge from the cases, local delivery units deliver e-learning with central support. The Tasmanian Polytechnic currently operates using this model. In the Polytechnic, business delivery units drive e-learning leveraging off the

considerable e-learning expertise inherited from TAFE Tasmania. The units seek support as required from central business units that focus respectively on the development of learning resources, professional development and technology infrastructure. This decentralised model suits the desire of more motivated teachers to develop their own e-learning responses, but it does not aid uptake among the less motivated on e-learning.

In summary, while people supports are critical for sustaining e-leaning, different organisations establish this support in different ways. Each approach provides its own benefits. However, given the success of GippsTAFE and Tabor Adelaide in extent to which they are sustaining and embedding e-learning, the more central model stands ahead of the rest. This approach provides all of the required expertise to support teachers to take up and sustain e-learning through a Department or Unit that includes people with a sound understanding of teaching combined with high order educational design skills, communication skills, technical skills, problem solving skills, advocacy skills, mentoring skills and tenacity.

Technological supports

Overall, training organisations at the Innovator, Embedded User and Established User levels of e-maturity reported being well resourced around the hardware and software support required to sustain e-learning. As these organisations have been well resourced over the years by state funding in particular, they were few risks that their infrastructure would be degraded in ways they would impede efforts to further sustain and embed e-learning. Rather their major concern was managing the risks that key staff with the unique mix of IT, teaching and people skills would leave the organisation. In summary, as the Framework moves forward, there seems little reason to support any IT infrastructure funding from large training organisations with high levels of e-maturity.

However, the story is somewhat different in the smaller case study organisations, both classified as Sporadic Users of e-learning. Byron College has access to audio visual equipment and expertise through its media qualifications in VET courses. Overall, access to technology hardware is moderate, while there is a need for better professional development for staff managing the IT infrastructure. Filterfab staff have not developed any in-house capability around the technology to support their online resources, but rely upon technology and technology support from external consultants.

The cases demonstrate that as e-maturity grows, there is a growing preference among organisations to develop their own resources. Many positive comments were made by those in the cases about the valuable role of Framework Toolboxes especially at the initial stages (eg Sporadic or Developing Users). Toolboxes were used often as a first step in building their awareness of the potential benefits of e-learning. As quality assured products, they minimised risks by providing resources free of technical problems. Across the cases, there was strong agreement that Toolboxes had contributed to the uptake of e-learning. However, in the present times no organisation reported major use of these resources as they had moved to preferring their own tailor made products or using those provided by consultants.

Key messages

General

- RTOs identify as the critical drivers in sustaining e-learning the roles of senior leadership support, organisational strategy, often a dedicated e-learning strategy and a strong business case of the benefits to learners, staff and industry partners.

- Businesses identify the business case more as the key driver, especially around cost savings.

- Major barriers to sustaining e-learning for most organisations include the lack of a strategic plan, a lack of funding and a lack of access to IT expertise or support.

The role of the seven factors

- Strategy - being strategic and adopting a longer term view around e-learning are key messages to emerge from organisations that are the more Innovator and Established Users of e-learning. Their focus upon more flexibility through using new technologies emerged both in their larger organisational strategy, and also often in a separate e-learning strategy. The lack of focus provided by an e-learning strategy in particular was holding back embedding and sustaining of e-learning in organisations with lower levels of e-maturity.

- Senior leadership - is critical for sustaining e-learning innovations. Leaders are showing their support in many different ways, depending of what is required in their particular situation.

- Business case - emerged as a key driver to initiating and for sustaining e-learning in the for-profit businesses, especially around cost savings. More broadly, the business case is typically around the training required to meet needs around compliance. A large number of Framework funded projects have supported such initiatives around meeting compliance requirements.

- Funding - Framework funds provide staff with safe places to be innovative. Also Framework funding has supported innovation and sustained staff in contexts where funding has been reduced or where good progress to date around e-learning is being pushed back as a priority. As organisations grow in their e-learning maturity, their reliance on Framework funding is less critical for sustaining e-learning.

- Champions - in the past and today are critical to sustaining e-learning. They play a major role in the initial stages around awareness raising and idea generation about the role for new technologies. Champions maximise e-learning impact through their one-to-one mentoring and support, by helping to establish communities of practice, and by helping teachers think through how new technologies can build on their current practices that connect them to their learners.

- People supports - the role and reliance on internal and external people supports evolves over time. At least four different models are at work for providing people supports. However, the more central model stands ahead of the rest given the track records of those organisations that have adopted this approach. It provides the required expertise to teachers to take up and sustain e-learning through a Department or Unit that includes people with a sound understanding of teaching combined with high order educational design skills, advocacy skills and mentoring skills.

- Technology - large training organisations at the Innovator, Embedded User and Established User levels of e-maturity are well resourced around the hardware and software support required to sustain e-learning. These organisations have been well resourced by state funding. Rather their major risks are around keeping key staff with the unique mix of IT, teaching and people skills. The cases also demonstrate that as e-maturity grows, there is a growing preference among organisations to develop their own resources.

Future directions and recommendations

There is little doubt that a strong case exists for how e-learning brings the greater flexibility, responsiveness and learner-focus required to our national training system (see *Sustaining e-learning innovations: Literature review*). Technology-enabled training solutions assist in our response to increasing skill shortages, the wider variety of learners who now need training and the training needs of our emerging industries.

This final section concludes with some reflections and recommendations that might be debated further by the Framework towards achieving its current strategic objectives around the greater sustainability of e-learning.

Towards driving greater outcomes around sustainability, it is recommended that the following issues be examined further by the Framework:

Funding - Adopt different funding/resourcing models that encourage organisations to be more strategic and to build upon growing capabilities. For example, target future funding more towards organisations that are Developing Users of e-learning rather than those that have already achieved Embedded or Innovator levels of e-maturity. In addition, in line with the AQTF 2010 and the focus on enhancing best practice, when applying to the Framework for funding the RTO must more explicitly demonstrate its growing focus upon how flexibility is central to its efforts in providing training that is more responsive to broader economic goals and social inclusion objectives.

Professional development of experts and champions - There are major concerns about maintaining the people and skill sets that are provided often by internal IT and user support units. In particular, the Framework might develop a training resource or fund a program to help with the transition of selected and highly skilled teachers to build their skills sets to be better technologists, and in building the skills sets of high performing IT specialists around understanding teaching theory and practice.

Large public providers - The meta-analysis and case studies confirmed that Framework funding has provided multiple sets of funds across its different programs to many large organisations, especially public providers. At the same time, there is evidence from interviews with Framework staff and others, as well as published reports and evaluations, that growth in the levels of e-learning is disappointing in some of these organisations. One proposition is that some of these larger organisations have more difficulty due to structural factors (ie silos, dispersed campuses, specific industry focus in their departments to the exclusion of other industries and qualifications). There are also cultural factors at work (eg larger proportions of teachers still operating around teacher-focused philosophies, barriers to the sharing of new knowledge). As these large training organisations are so central to our national training system, there is a need to better understand what is helping and hindering their embedding and sustaining of e-learning

Private providers - There is the related question around why private providers are not as strongly involved in seeking and winning multiple sets of Framework funding. No clear reasons emerged to explain this situation. This issue needs to be

investigated further, and initiatives put in place to remove any perceived or real barriers that are either impacting upon their willingness to apply or upon the success.

Sharing knowledge and expertise - Framework research has established within Australia a group of high quality and experienced researchers and evaluators. In addition, there are those experts working in the front line who are making informed choices every day about technology and training solutions. These two groups, and others, might now be brought together in forums, debates and ensuing publications to ensure that future government policy takes full account of the opportunities and challenges technology is bringing to our tertiary sector

Continuing to support e-learning networks - The 10 organisational case studies and small vignettes in the meta-analysis highlight how forums supported by the Framework have created knowledge sharing. The Framework has also established strong networks in which organisations are able to discuss and learn from others about what works or does not in driving and sustaining e-learning. This role is highly valued by practitioners and needs to continue, and possibly accelerated to keep pace with new technologies that need to be investigated by VET organisations in their pursuit for more flexibility and smarter training solutions. For instance, Australian RTOs and their industry partners need to be better informed about the implications of the growing use of web 2.0 technologies by young people; the development of mobile, ubiquitous and contextual computing; and the growing demand for increasingly technological skills in the workplace. There are challenges here where the expansion in mobile social networking by young learners, for example, does not necessarily translate into opportunities for supporting learning that occurs in formal education and training.

Continuing to support the VET practitioner - Each of these developments above challenge teacher skills, and shape the nature of the additional professional development that is required for the VET practitioners. Young learners from the 'net generation' often have more technical competence than their teachers, but when it comes to vital digital literacy skills, the need for good teaching remains as strong as ever. The Framework has a role to play to ensure that teachers have the space and support to become confident pedagogical innovators with new technology as well as leading change in this area.

Commission research - As highlighted in the case studies, a number of interrelated factors drive and sustain e-learning innovations. There is no evidence that one factor stands well ahead of the rest. Indeed, at different stages in the growth of e-maturity, some factors are more critical than others. For instance, among the more Sporadic Users it was the opportunity to gain funding to attempt a creative response to an industry need that was especially critical. On the other hand, more Established and Innovative Users have developed their thinking over time to the extent that e-learning is a critical element in their corporate strategies around being more flexible in the highly competitive national training market. The current research is retrospective, and there is a need to examine organisations over time through a well-designed longitudinal study. As a result, it will be possible to draw firm conclusions about the mix and interplay of factors at different points in time. In addition, in a related research project there is a need to better understand the structural, cultural and other factors that are hindering the embedding and sustaining of e-learning in larger training providers

Complete a national survey of e-maturity levels in our VET organisations - Although the current sample of Australian organisations is small and not representative, there are interesting similarities between the e-maturity profiles that emerge, and those reported in the UK by BECTA. The BECTA report identified that 21% of UK organisations were Sporadic Users of e-learning, 42% were Developing Users, 23% were Established Users, only 10% were classified as Embedded Users

(10%), and no organisation was identified as an Innovator. In this research, using a tool developed to measure e-maturity in Australian RTOs, GippsTAFE was classified as an Innovator. That is, it demonstrates thought leadership and innovation in how the organisation is using e-learning, being prepared to experiment in new areas and with new technologies. These results in general parallel the UK findings, but a much larger study is required to fully test the e-maturity profiles that exist in Australian organisations. Finally, the Framework might explore how this national survey of e-maturity might be incorporated into the annual benchmarking survey.

Future research - Develop further upon the initial work presented in this report around an e-maturity tool. This tool might be used in a developmental or planning way to assist organisations in mapping how they are supporting and sustaining e-learning. The seven factor tool can identify, based on best practice examples noted in this report, where organisations might need to improve their efforts to sustain e-learning innovations. In addition, the tool might be used by the Framework to either guide organisations in preparing applications around seeking Framework funding and support, or to guide how organisations report to the Framework on how the funding was applied.

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Appendix A: Framework project funding that was accessed

Community Engagement Project (2005-2007)

The Community Engagement Project aimed to create sustainable demand for and use of e-learning in communities. The project focused on developing sustainable capacity for delivery of e-learning in communities: http://creativecommunity.flexiblearning.net.au

Note: called E-learning for Creative Community Partnerships in 2005-2006

E-learning Innovations (2008-2010)

E-learning Innovations integrates and embeds e-learning into the national training system by funding and supporting the implementation of innovative e-learning solutions for businesses and individuals, tailored to local priorities: http://flexiblelearning.net.au/innovations

Flexible Learning Leaders Project (2000-2004)

The Flexible Learning Leaders (Leaders) project aimed to enhance the capacity of a number of VET professionals to lead the implementation of flexible learning in their own organisations, in their state or territory and/or nationally.

 With a track record in flexible learning, VET leaders are selected for their potential to champion advances in flexible learning. Flexible Learning Leaders received funding of up to $25,000 through the Framework, supplemented by funding from their own organisation: http://flexiblelearning.net.au/leaders

Flexible Learning Toolboxes (2000-2010)

The Flexible Learning Toolboxes (Toolboxes) business activity adds to and upgrades the Toolbox collection of high quality, cost effective, interactive e-learning and assessment resources will be expanded with new products and upgrades to the existing collection.

The Toolbox Repository provides access to Toolbox learning objects for the VET community. Support for RTOs in implementing Toolboxes is provided through the Toolbox Champion Support Service, and a range of tools are available to support product development and delivery: http://flexiblelearning.net.au/toolboxes

Inclusive E-learning Project (2005-2007)

The Inclusive E-learning Project aimed to increase the uptake of e-learning as an effective and efficient delivery strategy for increasing VET participation by under-represented and priority learner groups including youth at risk, learners with a disability and mature age workers.

The project worked to support the mainstream uptake of e-learning for young people and people with a disability by consolidating and disseminating lessons learned on the benefits and adoption of e-learning. It also conducted further exemplar programs that give young VET learners and learners with a disability opportunities to experience e-learning: http://pre2009.flexiblelearning.net.au/inclusive

Note: called E-learning for Target Learner Groups in 2005-2006

Industry Engagement Project (2005-2007)

The Industry Engagement Project worked with industry to facilitate their demand for rapid workforce development through flexible technology-driven solutions that enable Australian businesses to be competitive in the global market.

The project provided the opportunity for businesses to trial and showcase e-learning as a solution to meeting training demand and tackling key business challenges: http://industry.flexiblelearning.net.au

Precursor to current industry activity below

Industry Integration of E-learning (2008-2010)

Industry Integration of E-learning funds industry sectors to develop multiple year plans for the inclusion of e-learning in overall industry-led workforce development. Industry sectors are led by industry or professional associations or lead employers working with other employers so they cover an industry sector. In each case, there are partnerships with RTOs: http://industry.flexiblelearning.net.au

LearnScope (2000-2007)

LearnScope built the capability of the VET workforce and VET organisations to embed flexibility in teaching and learning into their normal work practices through the adoption of e-learning.

LearnScope projects supported the uptake of e-learning in VET delivery in the classroom, workplace and online, with a focus on professional development for LearnScope participants through engagement of students and industry in e-learning delivery and demonstration of how clients are benefiting from e-learning initiatives: http://flexiblelearning.net.au/learnscope

New Practices in Flexible Learning Project (2005-2007)

The New Practices in Flexible Learning Project aimed to explore and increase the uptake of innovative, practical and sustainable approaches to e-learning in workplaces, communities and training organisations.

The project worked to increase the development, uptake and embedding of innovative e-learning practices, and to also build on and embed the Framework's past achievements and increase uptake of e-learning in target areas: http://flexiblelearning.net.au/newpractices

For more information

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