



Interim Tertiary e-Learning Framework

About the *Interim Tertiary e-Learning Framework*

The *Interim Tertiary e-Learning Framework* has been developed by the Ministry of Education, in consultation with other government agencies, and the tertiary education sector. The National Library co-sponsored the project.

In October and November 2003, the Ministry of Education spoke to more than 70 e-learning practitioners, managers and other representatives from a range of universities, wānanga, polytechnics, colleges of education, private training establishments, and industry training organisations across the country, to get a picture of what is happening 'on the ground'. We have been impressed by the knowledge, passion and commitment demonstrated by the tertiary sector as it takes on the challenges presented by e-learning. We would like to acknowledge the time and efforts of all the people who have contributed to the development of the interim framework.

The interim framework provides high level direction for the development of New Zealand's tertiary sector e-learning capability. It identifies seven key action areas where centrally co-ordinated national initiatives are required. To implement the framework, an action plan will be developed over the course of April to July 2004. This *Tertiary e-Learning Action Plan* will include objectives, details and success measures for initiatives under each of key action areas.

The Ministry of Education will co-ordinate the development of the action plan, in active partnership with the tertiary education sector. To achieve this, a reference group for tertiary e-learning will be established.

The *Interim Tertiary e-Learning Framework* will eventually be superseded by an integrated, pan-sector e-learning strategy that will encompass the schools, early childhood and tertiary sectors.

The integrated strategy will include one vision and set of principles for e-learning in New Zealand, and will map dependencies and synergies between capability development initiatives within each of our three education sectors.

To develop the integrated e-learning strategy, the Ministry of Education will undertake a public consultation exercise inviting input from a wide range of stakeholders. It is envisaged that the vision and principles in the *Interim Tertiary e-Learning Framework* will provide a starting point for the development of the integrated strategy.

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1 Executive Summary

What is e-learning?

e-Learning is learning that is enabled or supported by the use of digital tools and content. It typically involves some form of interactivity, which may include online interaction between the learner and their teacher or peers. e-Learning opportunities are usually accessed via the internet, though other technologies such as CD-ROM are also used in e-learning.

e-Learning environments can be rich, interactive, dynamic and customisable, connecting learners with an almost limitless wealth of information. New patterns of learning are starting to emerge as a result. We are seeing an increasing emphasis on information literacy, increased flexibility as to where, when and how people learn, and exploration of new ways in which learners can be empowered to structure and manage their own learning experiences.

This presents challenges to our tertiary education organisations, which are currently working through some quite significant changes required to support these new models.

Why do we need a national tertiary e-learning framework?

In 2002, the Government released the *Tertiary Education Strategy 2002/07*. That strategy lays out a series of proposed changes to New Zealand's tertiary education system, to better support our national development goals, and respond to the challenges of globalisation, accelerating technological change, and the knowledge society.

e-Learning has a key part to play in this – it is already bringing significant changes to the education sector. A national tertiary e-learning framework will help ensure that these changes advance the Government's overall strategy for tertiary education in New Zealand. It also allows us to plan the development of an increasingly networked education system – more fluid, more responsive, and less constrained by geographical boundaries.

Although this interim framework focuses on the tertiary sector, our tertiary e-learning capabilities should not be viewed in isolation from New Zealand's education system as a whole. This interim framework will eventually be superseded by an integrated, pan-sector e-learning strategy that will encompass the schools and early childhood sectors, as well as the tertiary sector.

What is the framework?

The *Interim Tertiary e-Learning Framework* provides high level direction for the development of tertiary sector e-learning capabilities. It consists of a vision; a set of five guiding principles which will guide our tertiary sector in its path towards achieving the vision; and seven key action areas, where centrally co-ordinated national initiatives are required to enable efficient and effective sector capability development.

An overview of the interim framework is provided in the table overleaf.

What is the plan for implementation of the framework?

To implement the framework, an action plan will be developed over the course of April to July 2004. This *Tertiary e-Learning Action Plan* will include objectives, details and success measures for initiatives under each of the key action areas identified in the framework.

The Ministry of Education will co-ordinate the development and implementation of the action plan, in active partnership with the tertiary education sector, and in collaboration with government agencies and other stakeholders – including learners, iwi, community groups and businesses.

In order for the tertiary education sector to be an active partner in the e-learning framework, a permanent reference group for e-learning will be put in place. At present, a number of forums and consortia exist, but none is able to claim sufficient breadth or buy-in to be truly representative. The Ministry of Education will consult with the tertiary sector regarding the establishment of this group.

The Interim Tertiary e-Learning Framework

<p>Vision</p> <p>What impact can we reasonably hope e-learning will have on our education system?</p>	<p>The development of New Zealand's e-learning capabilities will contribute to –</p> <p>"A networked, flexible education system offering accessible, relevant, high quality learning opportunities to all New Zealanders"</p> <p>Accessibility</p> <ul style="list-style-type: none"> ▪ e-Learning will help remove barriers to educational opportunity and success, leading to increased participation at all levels in the tertiary system <p>Relevance</p> <ul style="list-style-type: none"> ▪ e-Learning will lead to life-long learning opportunities that are increasingly relevant to learners' individual needs <p>Quality</p> <ul style="list-style-type: none"> ▪ e-Learning will lead to better quality teaching and improved learning outcomes
<p>Principles</p> <p>What principles do we need to follow to have the best chance of achieving the e-learning vision?</p>	<ul style="list-style-type: none"> ▪ Take a learner-centred approach ▪ Follow and share good practice ▪ Exploit opportunities for collaboration ▪ Be innovative ▪ Develop models for financial affordability/sustainability
<p>Action areas</p> <p>What are the key action areas that need to be addressed at a national level in the short to medium term?</p>	<ul style="list-style-type: none"> ▪ Development of a vibrant, inclusive 'community of practice', through which practitioners are able to share e-learning information and experiences in a collegial manner ▪ Reliable research into e-learning in the New Zealand context ▪ Professional development for staff in tertiary organisations ▪ Adoption of relevant technical and design standards for e-learning developments ▪ Development of appropriate legal and policy frameworks for electronic rights management ▪ Development of qualifications and credentialing frameworks that recognise flexible learning pathways ▪ Exploration of new e-learning opportunities for marginalised learners

2 Introduction

2.1 What is e-learning?

e-Learning is learning that is enabled or supported by the use of digital tools and content. It typically involves some form of interactivity, which may include online interaction between the learner and their teacher or peers. e-Learning opportunities are usually accessed via the internet, though other technologies such as CD-ROM are also used in e-learning.

The last few years have seen a wave of digital tools and content being designed to facilitate the learning process. Tertiary organisations are increasingly including these components in the programmes of study they offer their students.

e-Learning enables different types of learning activities from those that rely on traditional teaching modes (e.g. the face-to-face lecture, tutorial or lab), and traditional media (e.g. books). It is increasingly used to support campus-based courses, and is bringing new dimensions to distance education.

Examples of e-learning...

- With the encouragement of her employer, Moana is studying part-time for a Certificate in Management through distance education. During her lunch break, she logs into the course website to check which readings she should be doing this week. While online, she prints out the course tutor's fact sheet on how to prepare a business case, which she needs for her next assignment.
- Paul is taking an evening course in Art History at his local High School. From his home PC he follows a web link provided by the class tutor. Arriving at the site, he takes a virtual 'tour' of the Sistine Chapel, noting down features to discuss in next week's class.
- Jeremy is studying chemistry at university. With end-of-year exams looming, he logs onto the course website and takes a multi-choice self-assessment test to find out which areas he needs to focus on in his revision. He gets a question about van der Waal's forces wrong, but isn't sure why. He does a web search for 'van der Waal', and finds a definition. As he still doesn't fully understand the concept, he posts a question in the class discussion forum. Several other students confess they are also confused, at which point the lecturer joins the discussion to explain.
- Denise is in her final year of a Diploma in Early Childhood Education. Her group needs to choose a topic for their end-of-year collaborative assignment. Denise reviews the assignments done by the previous year's class, which are posted online, to get ideas; and then logs into a pre-arranged online 'chat' with her group, to discuss their options.

e-Learning environments can be rich, interactive, dynamic and customisable. They can connect learners with their peers, their teachers, and an almost limitless wealth of information. New patterns of learning are starting to emerge as a result. It is common for people to speak about e-learning as flexible, 'just in time' learning that accommodates students' differing circumstances and learning styles. We are also seeing an increasing emphasis on information literacy, and exploration of new ways in which learners can be empowered to structure and manage their own learning experiences.

Information literacy and the networked learner

"Information literacy is intrinsically linked to e-learning – encompassing the life-long ability to locate, use and evaluate information." – University librarian

In a networked, information-rich environment, information literacy is becoming increasingly critical. Computer networks provide the infrastructure for people to access information, but this infrastructure is of little value if they do not have the skills to use it effectively.

Networked learning environments enhance these skills through use in context. This has led some commentators to view e-learning as a natural and crucial learning pathway for citizens of the knowledge society, equipping them to become adaptable life-long learners.

In practice, however, many tertiary organisations are still working through the changes needed to support these new models of learning. e-Learning is often proving to be a catalyst to reflect on the teaching/learning process, and on all its associated administrative and support processes – including assessment and credentialling.

“e-Learning has made our staff look at their teaching practice, and pose certain questions – not just about course content, but about the teaching/learning process...” – University educational technologist

e-Learning therefore offers neither a replacement of, nor a simple adjunct to, our existing educational system. Instead, e-learning has the potential to *transform* current practice.

Some commentators refer to this as a new educational *paradigm*. Technological changes mean some of our basic assumptions about where, when and how people can access learning opportunities are no longer true – encouraging us to think in new ways about the purpose and structure of our education system. Much of the impetus for this change is coming from the evolving needs and expectations of a new generation of ‘digital natives’, for whom e-learning is a natural learning mode.

As this paradigm shift occurs, the need to talk about ‘e-learning’ as a distinct category of learning may decrease. This does not mean that in the future, all learning will become e-learning. Just as there is learning that does not involve books, there will still be learning that does not involve digital tools and content – but in the future, those technologies will be as embedded into our education system as books are now.

“e-Learning will not replace our campuses but it will change the way students learn when they are there. It will also open up new learning pathways and make it possible for people to more effectively undertake tertiary learning from home, work and other centres in the community.” – e-Learning Advisory Group

2.2 Why do we need a national tertiary e-learning framework?

In 2002, the Government released the *Tertiary Education Strategy 2002/07*. That strategy lays out a series of proposed changes to New Zealand’s tertiary education system, to better support our national development goals, and respond to the challenges of globalisation, accelerating technological change, and the knowledge society.

e-Learning has a key part to play in this – it is already bringing significant changes to our education sector. A national tertiary e-learning framework will help ensure that these changes contribute to the Government’s overall strategy for tertiary education in New Zealand (see Appendix I).

It will also help ensure that the development of our tertiary sector e-learning capability takes place *efficiently* and *cost-effectively*. Taking a co-ordinated, national approach will reduce duplication of effort, and leverage maximum benefits from New Zealand’s investment in e-learning.

New Zealand is not alone in this strategic focus – e-learning is a major global trend.¹ It is resulting in an increasingly borderless global education market, which offers both opportunities and threats for this country. The national framework aims to strengthen New Zealand’s tertiary e-learning capabilities, which in turn will strengthen our competitiveness in the export education market.

“e-Learning is a global phenomenon and New Zealand must carve out its own niche in the e-learning market, mindful that it has many competitors. We must expand our vision of export education to harness the potential of e-learning, extending our educational services to people all over the world who may never set foot in this country.” – e-Learning Advisory Group

¹ In response, many countries are developing their own e-learning strategies; see, for example, the UK’s *Towards a Unified e-Learning Strategy* Consultation Document, released in July 2003.

Of course, with or without a national framework, e-learning is already on the agenda for our tertiary organisations, many of which have made significant progress in developing and implementing their own e-learning strategies.

But many of the benefits of e-learning cannot be realised at the level of the individual institution. Internet technologies offer the potential for an increasingly networked education system. A national framework enables us to focus on the characteristics of the system as a whole – more fluid, more responsive, and less constrained by geographical boundaries.

The development of an information systems infrastructure to support the tertiary education system is addressed in a related government document, the *Tertiary Information Strategy*. The *Tertiary Information Strategy* aims to streamline existing tertiary information collection and exchange between providers and government, and enhance administration services and learning pathways for learners. It therefore has important synergies with the current framework, and it is recommended that the two are read in conjunction.

Tertiary Information Strategy: guiding principles

- The internet will be the main way that information is accessed and shared
- The system will be developed in an open, inclusive and collaborative manner
- Data and information will be collected and shared for multiple purposes
- The system will be simple to use and reflect the current diversity of tertiary sector information technology. The system will allow tertiary participants to 'talk to one another' and use 'open standards' for exchanging information and data
- The privacy of users will be safeguarded
- Systems will be in place to ensure all information is reliable and accurate
- The connected community will be developed in a way that is cost-effective for providers and users

This interim framework for e-learning in the tertiary sector anticipates the development of an integrated, pan-sector e-learning strategy encompassing the schools and early childhood sectors, as well the tertiary sector. The integrated strategy will include one vision and set of principles for e-learning in New Zealand, and will map dependencies and synergies between capability development initiatives within each of our three education sectors. It is envisaged that the vision and principles in the *Interim Tertiary e-Learning Framework* will provide a starting point for the development of the integrated strategy.

Why do we need a national tertiary e-learning framework...?

- To harness the transformative potential of e-learning, in advancing the government's overall strategy for tertiary education
- To help ensure that the development of our tertiary sector e-learning capability takes place *efficiently* and *cost-effectively*
- To protect and advance New Zealand's position in an increasingly globalised education market
- To provide direction for the development of e-learning across the tertiary system *as a whole*
- To support tertiary organisations as they respond to an environment of fast-paced technological change, and corresponding risk and uncertainty
- To contribute to the development of an integrated e-learning strategy across the early childhood, schools and tertiary sectors

2.3 What has been achieved so far?

In July 2001, the Government convened a group of ten tertiary sector representatives, with a wealth of combined expertise and experience in e-learning. The group's report, *Highways and Pathways: Exploring New Zealand's e-Learning Opportunities*, was released in March 2002.

The report included a wide-ranging discussion of issues and opportunities relating to e-learning in the tertiary sector, along with eight recommendations to Government. These recommendations have helped drive Government e-learning initiatives over the past two years. Initiatives have included the establishment of the e-Learning Collaborative Development Fund, and the launch of two electronic entry points, or portals, to tertiary education in New Zealand: the e-learning portal (www.e-learn.govt.nz) and the tertiary education portal (www.ted.govt.nz).

During this period, New Zealand's tertiary organisations have continued to expand on their e-learning provision, and have entered into new and promising collaborative arrangements. At the same time, our commercial design and development sector has increased the scope and depth of its e-learning offerings, and the corporate e-learning market has grown.²

The momentum of e-learning development in New Zealand is therefore increasing. Consequently, it is even more critical that this momentum is channelled in directions that will bring about tangible benefits for our tertiary organisations, our learners and our nation. This is the challenge that lies before us.

² For a discussion of the state of New Zealand's e-learning market, see *Overview Study – e-Learning: The Market and New Zealand's Capability*, Elizabeth Valentine for New Zealand Trade and Enterprise (forthcoming).

3 e-Learning Vision

This framework aims to promote continuing exploration of the opportunities e-learning opens up. It recognises that within the sector, there are many different views about e-learning. The vision is therefore a basis for ongoing discussion. At the same time, it is intended to provide a shared sense of where we are heading that the majority of stakeholders find useful and illuminating.

The vision answers the question: what impact can we reasonably hope e-learning will have on New Zealand's tertiary education provision? What value can e-learning offer? In answering this question, we do not assume that any e-learning development will automatically bring positive benefits; rather, we attempt to identify e-learning's positive *potential*.

Tertiary e-Learning Vision

The development of New Zealand's e-learning capabilities will contribute to –

"A networked, flexible tertiary education system offering increasingly *accessible, relevant, high quality* learning opportunities to all New Zealanders"

Accessibility

e-Learning will help remove barriers to educational opportunity and success, leading to increased participation at all levels in the tertiary system. This will occur because:

- Learners will have a greater choice of options as to where, when and how they learn, and how their learning is recognised
- e-Learning will be a catalyst for tertiary organisations to review and enhance their models of learner support

Relevance

e-Learning will lead to life-long learning opportunities that are increasingly relevant to learners' individual needs. This will occur because:

- Programmes of learning will be increasingly flexible and customisable
- Tertiary learning opportunities will be increasingly embedded in learners' work and community environments
- Learners will continue to access learning opportunities that reflect New Zealand's unique culture

Quality

e-Learning will lead to better quality teaching and improved learning outcomes. This will occur because:

- e-Learning will offer new and innovative pathways for learning, to complement existing pathways
- e-Learning will be a catalyst for increased focus on the teaching and learning processes

What will be the impact of e-learning in the future..?

Who will be the learners?

Learners at all levels of the tertiary sector will be increasingly representative of the general population, in terms of age, gender, ethnicity, culture, dis/ability and individual circumstance – e-learning will help provide diverse learning options that meet their differing needs.

Where will they learn?

Learning will occur in many places, as it always has done. But e-learning will mean that people's interactions with the tertiary organisations that support and credentialise their learning will take place from the location most convenient to the learner – whether from home, from within their local community, from the workplace, or from a traditional campus.

We will see more community-based learning centres, located in schools, libraries, marae, and other public buildings. These centres will provide the physical and network infrastructure and localised support to enable people to successfully uptake e-learning opportunities offered by remote institutions.

Partnerships between and amongst tertiary organisations, businesses, and off-shore education providers will be more common. Learners will no longer necessarily study 'at' one institution: e-learning will provide them with seamless access to content and services from multiple providers, from where-ever they are located. Flexible qualifications and credentialling frameworks will accommodate these more complex learner pathways.

When will they learn?

While many learners will continue to access traditional programmes of full-time study, increasing numbers will study part-time. Greater focus on life-long learning will mean that more people will access learning opportunities and be accredited for their learning while remaining in the workforce, often through the use of flexible, e-supported programmes and assessment options.

More people will be engaged in self-paced learning, and there will be increased flexibility in timetabling study around work and family commitments.

How will they learn?

Learners will participate in a range of learning situations, from face-to-face lectures, tutorials, labs and practical demonstrations to online discussions and collaborative activities. Newer technologies such as mobile internet and broadband will expand the range of experiences available through e-learning.

Learners will continue to use print-based resources (such as books and worksheets), but will also use increasingly sophisticated digital tools and content, such as interactive virtual simulations.

Who will **help** them learn?

Tertiary teaching staff will be confident and proficient e-teachers. They will work in partnership with technical and learning support staff, instructional designers and librarians to ensure that their students are able to fully enjoy the benefits offered by e-learning.

4 Principles

The vision provides a destination to aim for: a future that is open, but not inevitable.

In practice, e-learning initiatives have had varying levels of success in New Zealand and world-wide. To date, it is not clear that consistent gains have been made in terms of accessibility, relevance and quality – we are still a long way from realising the e-learning vision.

Perhaps the most significant gains that have been made relate to a steadily increasing understanding of the principles that should guide e-learning development, to give us the best chance of realising the potential of e-learning, while avoiding its risks.

A thriving e-learning community in New Zealand will actively look for opportunities to put the five e-learning principles into practice: taking a learner centred approach, demonstrating good practice, exploiting opportunities for collaboration, being innovative, and developing models for financial sustainability.

4.1 Learner-centred

'Learner-centred' can mean many things. In this framework, it means striving to meet learners' differing needs, rather than requiring them to adapt to the internal logic of a 'one size fits all' system. This requires systematic consideration of the learner's experience when making decisions about the content, structure, teaching methods, learning activities and support provisions associated with any learning opportunity. This has not always happened with e-learning in the past – leading to the now-common refrain that e-learning should be driven by sound pedagogy first and foremost, not simply by technology:

"If you add technology to teaching without looking at its impacts, you just go from bad teaching to expensive bad teaching." – University educational technologist

e-Learning is generating some quite significant changes to the learning experience. In particular, many learners are spending extended periods interacting with web-based systems, which may or may not be designed to facilitate ease of use. It is essential that tertiary organisations understand the factors that will provide their learners with the best chance of achieving positive learning outcomes. Guess-work is not sufficient: research and evaluation are required.

This learner-centred orientation draws additional resonance from the Māori concept of 'the whole learner', which recognises that people bring personal histories and cultural and social identities to their learning:

"The tertiary education system will have a greater capability to reflect the 'whole learner – recognising that, for Māori, tertiary education contributes to a holistic vision of wealth that is cultural, social, economic, environmental and spiritual." – Tertiary Education Strategy 2002/7

4.2 Good practice

Tertiary organisations are faced with a multitude of decisions when implementing e-learning. These decisions should be informed by emerging good practice, looking to evidence from New Zealand and from overseas.

This does not mean reinventing the wheel. In many cases, good practice in e-learning will be an extension of principles which have already been well-established – for example, through New Zealand's strong tradition of distance education provision. In particular, much of what we already know about the principles of sound pedagogy and learner support can be extended to the e-learning context.

But it is also important to acknowledge that e-learning introduces some complex issues in relation to the use of technology. Through e-learning, many tertiary organisations are finding they are increasingly involved in purchasing, customising or developing software and digital resources for use by their learners. These include Learning Management Systems and interactive learning objects (e.g. virtual simulations or interactive games). These systems and

resources should reflect good practice in terms of instructional design, functional design and interface design.³ This will include compliance with relevant technical and design standards, including web accessibility and interoperability standards.

It is important that e-learning initiatives are thoroughly evaluated, and where possible, that results of evaluations are shared:

“Right now, there’s a lot of rhetoric, hype and misinformation around e-learning. Above all we need more honest critical assessment of what we’re doing.” – University Senior Teaching Fellow

4.3 Collaboration

A networked education system is very much more than the sum of its parts. Prior to the internet, it made sense to structure the system in discrete, relatively self-contained units according to geographical location. To reap the benefits of a networked system, increased collaboration between tertiary organisations is required.

A variety of different collaborative arrangements are currently being explored in an e-learning context. They include sharing investment in physical and technical infrastructure; co-developing or licensing the use of digital learning materials; sharing information about e-learning initiatives; sub-contracting aspects of learner support (such as technical support); and developing shared qualifications frameworks. These arrangements should not be restricted to the tertiary sector. New models of supportive and/or commercial arrangements with other education providers and with public and community organisations should also be explored.

The aim of such arrangements, on a national level, is to leverage greater benefits from scarce expertise, reduce costs and duplication of effort, and increase the accessibility, relevance and quality of learning opportunities available to people in their own locales.

This may lead to some tertiary organisations repositioning themselves within the educational value chain:

“We need to be thinking about what kind of value we add above and beyond the infrastructure – how we can define our own niche in the market.” – Polytechnic e-Learning Manager

4.4 Innovation

To realise the full potential offered by e-learning, we need to think in creative ways about how learning outcomes can be achieved using the new tools we have available. Simply replicating existing models in an online environment will not achieve this:

“The online digital space offers another learning environment, which is potentially an open canvas. However, orthodox education has quickly been mapped into the digital space – the transformative potential of the new environment has not been realised.” – University Senior Teaching Fellow

However, innovative initiatives must be informed by good practice, and be linked to effective research and evaluation processes. In particular, potential impacts on learners must be carefully considered:

“‘Guinea-pig’ scenarios must be avoided, which is a real danger in new areas like e-learning.” – Student representative

³ There is now widespread acknowledgement of the design pitfalls that can affect e-learning: for example, simply converting large volumes of print-based information onto the web, without consideration of the different ways information might need to be structured and presented in a new medium.

4.5 Affordability/sustainability

It is acknowledged that initial establishment of e-learning involves an investment hump; however, in the longer term, e-learning initiatives need to be financially sustainable.

e-Learning presents challenges to traditional cost models within the tertiary sector. We may find ourselves needing to balance increased expenditure on network and systems infrastructure against possible future decrease in expenditure on physical infrastructure such as classrooms; or to justify investment in the design of a new and innovative e-learning tool in terms of improved learning outcomes.

At this point in time, we still require more reliable information on which to base such calculations. While the traditional distance education paradigm offers some useful pointers, the full costs of developing and maintaining quality e-learning provision – including appropriate levels of staff development and student support – still need to be made more transparent:

“There is insufficient information to do cost/benefit analyses of learning objects – more research is required.” – ITPNZ e-learning forum

For this reason, it is essential that tertiary organisations evaluate their e-learning initiatives not only in terms of *learning outcomes*, but in terms of *financial sustainability*. Innovation in e-learning should not be restricted to pedagogy; we also need innovative approaches to cost models for e-learning. These may include exploitation of the potential for adapting and reusing digital tools and content.

5 Key Action Areas

Many of our tertiary organisations are making steady progress in developing their e-learning capabilities. However, there are areas where co-ordinated effort is required at the national level, to address issues that might otherwise block or slow progress towards the e-learning vision.

This section identifies seven national e-learning action areas for the tertiary sector for the short to medium term, pending development of an integrated pan-sector e-learning strategy.

These areas have been identified through discussions with tertiary sector representatives, and other e-learning experts.

5.1 'Community of practice'

The first action area is the development of a vibrant, inclusive 'community of practice', through which practitioners are able to share e-learning information and experiences in a collegial manner. New Zealand's community of practice for e-learning must also have strong links to the international e-learning community.

On a limited scale, some forums already exist, and are providing benefits for participants. However, with a couple of exceptions, these forums tend to be restricted by region (e.g. regional collaborative networks) or type of organisation (e.g. polytechnics). The potential synergies across the sector as a whole, and beyond the sector to other e-learning practitioners within the schools sector, the business sector and the design and development industry, are relatively untapped. As a result we are failing to leverage our collective expertise at a national level:

"We need more connections between people - because many people are working in isolation, and their achievements aren't being made visible." – Director, University Electronic Education Centre

The mechanisms required to support this community need further analysis, but could include online forums, conferences, seminars and fellowships. The future development of the e-learning portal, www.e-learn.govt.nz, should also play a role.

During research for this framework, many tertiary organisations commented that they would benefit from better access to guidelines on e-learning pedagogy, and associated business planning. Where that information is not readily available, it should be developed:

"Education organisations need business advice to help them develop their e-learning capability (e.g. templates and guidelines) – similar to the approach the Ministry of Economic Development has taken with their Biz (Business Information Zone) material." – Wānanga CIO.

5.2 e-Learning research

While sharing experiences on an anecdotal basis is valuable, New Zealand also requires a robust core of e-learning research, to help drive future policy developments, and assist tertiary organisations in making wise decisions about their investment in e-learning:

"In terms of national priorities, we need more research into the effectiveness and theoretical base of e-learning." – University Director of Higher Education Development

While increasing amounts of international research is available, practitioners are finding their progress restricted by the lack of available research into e-learning in the New Zealand context:

"We need to recognise that New Zealand has its own specific needs, especially in relation to Māori and Pasifika." – Polytechnic Online Services Manager

A visible local e-learning research output is also important in demonstrating New Zealand's innovation and credibility on the world stage.

National research priorities need further analysis, but might include areas such as e-learning pedagogy, particularly in relation to the needs of specific groups of New Zealand learners; e-learning and Kaupapa Māori; and e-learning cost models in the New Zealand context.

The community of practice described above will provide an environment for sharing and discussing the implications of this research.

5.3 Professional development

e-Learning is bringing significant change to our tertiary organisations. New specialisations are emerging, and many organisations are implementing new team structures and processes:

“Successful e-learning requires a partnership of instructional designers, technologists, subject matter experts and skilled online tutors.... Each member of the overall team contributes an invaluable skill specialisation.” – ITPNZ e-learning forum

In this environment, many organisations have identified professional development as their most pressing issue:

“Academic staff development is a key issue – increasing their understanding of the principles of teaching and learning in general, and the role and place of e-learning within that.” – University Director of Higher Education Development

This is a particular issue for smaller organisations that do not have a centralised teaching support department:

“Involvement in e-learning is still down to individual staff members’ initiative and enthusiasm.” – Course Co-ordinator, College of Education

The most effective ways to support tertiary organisations and their staff through this process require further exploration. However, they could include centralised creation of staff development resources, incentive schemes for staff achievement in e-learning, and development of post-graduate teaching qualifications specific to e-learning.

5.4 Standards

Interoperability standards are required in order to develop the networked education system described in the e-learning vision – an environment in which digital tools and resources can be accessed and shared across the whole system.

In addition, design standards, such as standards for disabled accessibility, will help ensure quality and accessibility of e-learning systems and resources.⁴

Considerable work has already been carried out in these areas overseas; the priority for New Zealand is to determine which standards to adopt or adapt, and to decide on mechanisms for encouraging compliance with standards:

“A key issue to address is interoperability. Government needs to encourage the sector to look at this issue, particularly with regard to Learning Management Systems. We can learn a lot from the Australian example – there’s no need to reinvent the wheel.” – Learning System Developer, College of Education

This work needs to be co-ordinated centrally, but must have significant involvement and ownership from the sector. It should be noted that this priority area has significant overlaps with the *Tertiary Information Strategy*.

5.5 Electronic rights management

Mechanisms are required for managing rights and assigning costs for shared information resources, to help facilitate greater levels of collaboration between tertiary organisations. Developing relevant, flexible models at the national level will be more efficient than leaving tertiary organisations to deal with issues on an ad hoc basis as they occur.

⁴ For more about web accessibility for people with disabilities, see the W3C Web Accessibility Initiative at www.w3.org/WAI.

These models must be consistent with New Zealand's copyright legislation, which is currently being amended. At the time of publishing this *Framework*, drafting of the amended legislation is pending; policy recommendations for the amendments have been developed by the Ministry of Economic Development, in consultation with stakeholders including the education community.

During research for this *Framework*, many stakeholders commented that New Zealand's existing copyright legislation has hampered the development of e-learning. There is also a lack of clarity and confidence amongst academic staff on this issue:

"New Zealand's copyright legislation was written before the digital revolution, and doesn't deal effectively with digital copyright in a practical educational setting... There is not enough guidance for academic staff - which can and does make them reluctant to publish content online." – University librarian

It is essential that the implications of the amended legislation are fully communicated to and understood by our tertiary education organisations. The community of practice described above should provide a forum for discussing electronic copyright and related matters.

5.6 Recognition of flexible learning pathways

e-Learning has the potential to provide increased flexibility and customisation of learning pathways. For example, it makes it easier for learners to access components of study that are most relevant to their needs, regardless of their geographical distance from the provider institution; and it provides more options to learners in terms of mode of study.

However, this presents challenges when it comes to recognising the outcomes of this learning through qualifications – particularly where learners seek to build their learning pathways with components from multiple tertiary organisations.

There are a number of systems and initiatives already in place in New Zealand that will continue to help meet this challenge. These include the New Zealand Register of Quality Assured Qualifications, National and New Zealand qualifications, national credit transfer policies and agreements between provider consortiums and alliances.

Tertiary organisations and their quality assurance bodies must continue to work together to adapt and expand these systems and initiatives, to ensure the potential benefits of e-learning are realised.

5.7 Marginalised learners

The final action area, and perhaps the most challenging, is to explore options for developing e-learning opportunities for groups that currently have least access to tertiary education. This action area is strongly aligned with two specific objectives from the *Tertiary Education Strategy*; namely, a stronger system focus on teaching capability and learning environments to meet diverse learner needs (objective 5), and equity of access and opportunity for all learners (objective 20). Barriers to access include a range of personal, economic, social and cultural factors.

Promoting accessibility for such groups is not simply about providing people with formal access to existing opportunities – more fundamentally, it is about innovative development of e-learning options that are tailored to meet their needs.

Carefully researched and evaluated pilot projects are recommended to establish how e-learning can be used to provide better outcomes for specific groups. Projects could include investigation of new models of learner support; design or adaptation of virtual learning environments to meet the needs of specific learner groups; and development of e-learning content in different languages. The results of any such projects should be summarised and circulated throughout the sector.

These initiatives must take account of the 'digital divide', which has a significant impact on the uptake of e-learning:

"The digital divide is a major issue, and ICT access is a major problem. It's a wealth issue, and levels of literacy are also an issue." – General Manager, ITO

To access e-learning, access to ICT infrastructure is required, along with basic levels of literacy and computer literacy. Where learners do not possess these, appropriate types of support (including community-based support) will be needed.

These issues are tackled in the Government's *Connecting Communities* strategy, which focuses on improving ICT access for Māori and Pacific peoples, those on low incomes, sole parents, older people, people with no or low qualifications or poor literacy, the unemployed, people with disabilities and those in locations lacking a sound telecommunications structure (such as those in rural areas).

Issues of e-learning access must therefore be tackled in tandem with the ICT access initiatives contained in the *Connecting Communities* strategy.

6 Moving Ahead: Next Steps

6.1 The *Tertiary e-Learning Action Plan*

This interim framework provides high level direction for the development of tertiary sector e-learning capabilities. It identifies seven key action areas where centrally co-ordinated national initiatives are required. To implement the framework, an action plan will be developed over the course of April to July 2004. This *Tertiary e-Learning Action Plan* will include objectives, details and success measures for initiatives under each of the following areas:

- Development of a vibrant, inclusive 'community of practice', through which practitioners are able to share e-learning information and experiences in a collegial manner
- Reliable research into e-learning in the New Zealand context
- Professional development for staff in tertiary organisations
- Adoption of relevant technical and design standards for e-learning developments
- Development of appropriate legal and policy frameworks for electronic rights management
- Development of qualifications and credentialing frameworks that recognise flexible learning pathways
- Exploration of new e-learning opportunities for marginalised learners

The Ministry of Education will co-ordinate the development and implementation of the action plan, in active partnership with the tertiary education sector, and in collaboration with government agencies and other stakeholders – including learners, iwi, community groups and businesses. A tertiary e-learning reference group will be set up for this purpose (see highlighted box).

The action plan will incorporate a number of existing e-learning initiatives, including the further development of the e-learning portal, www.e-learn.govt.nz, the establishment of a contestable fund for e-learning research, the determination of appropriate standards to govern e-learning developments in New Zealand, and various initiatives arising from the e-Learning Collaborative Development Fund.

The National Library will continue its role in co-sponsoring the work programme. Governance of the work programme will take place via existing interagency mechanisms and forums; in particular, the education agencies' ICT Standing Committee, and the Chief Information Officers' and Business Managers' Forum.

A reference group for tertiary e-learning

For this strategy to succeed, it is essential that tertiary education organisations play an active role in its ongoing development and implementation. Our universities, polytechnics, wānanga, colleges of education, private training establishments and industry training organisations all contribute expertise that as a nation we cannot afford to leave untapped.

To facilitate this partnership, a permanent reference group for e-learning will be put in place. At present, a number of forums and consortia exist, but none is able to claim sufficient breadth or buy-in to be truly representative of sector needs.

The Ministry of Education will consult with tertiary organisations regarding the establishment of this group. The group will be set up in April 2004.




It will be actively involved in the development of the *Tertiary e-Learning Action Plan*, and will provide specialist expertise to assist with various initiatives that arise from the action plan.

6.2 An integrated pan-sector e-learning strategy

In parallel with the development and implementation of the *Tertiary e-Learning Action Plan*, the Ministry of Education will commence the process of developing an integrated e-learning strategy to encompass our schools, early childhood and tertiary sectors.

The aim will be to develop one overarching vision and set of principles for e-learning in New Zealand, and to map dependencies and synergies between capability development initiatives within each of our three education sectors.

It is envisaged that the *Interim Tertiary e-Learning Framework* will provide a starting point for the development of the integrated strategy. Over the course of 2004, the Ministry of Education will produce a consultation document based on the vision and principles in the current *Framework*. A public consultation exercise will be held in 2005, inviting input from a wide range of stakeholders. This will lead to the development and release of the integrated strategy.

Implementation of the <i>Interim Tertiary e-Learning Framework</i>		Development of an integrated pan-sector e-learning strategy	
April 2004	Establish reference group for tertiary e-learning 	2004	Develop consultation document, based on vision and principles from the <i>Tertiary e-Learning Framework</i> 
April – July 2004	Develop <i>Tertiary e-Learning Action Plan</i> 	2005	Consult with stakeholders, including: <ul style="list-style-type: none"> ▪ Schools, early childhood and tertiary sectors ▪ Learners ▪ Community groups ▪ Iwi ▪ Businesses ▪ Library and information sector Commercial e-learning sector
July 2004 ->	Co-ordinate implementation of action plan		

6.3 Final word: the broader context...

While this interim framework focuses on the tertiary education sector, it is important to recognise that New Zealand's overall approach to e-learning needs to be developed in a holistic manner. e-Learning has the potential to break down barriers and improve the fluidity of interactions between and amongst learners and teachers at all levels of the education system. Development of the integrated e-learning strategy described above will help ensure this occurs.

Synergies with the commercial e-learning sector should also be explored. New Zealand's e-learning vendors and service providers, web and multimedia developers, educational publishers and corporate e-learning specialists are developing a growing track record in e-learning. This sector constitutes a significant national resource in terms of innovative thinking, technical expertise, and research and development capability. Increased dialogue and sharing of expertise between this sector and the education and government sectors is essential.

Meanwhile, the same technologies that are bringing changes to our education system are likewise bringing changes – and challenges – in other spheres. Development of our e-learning capabilities must therefore continue to keep pace with New Zealand's overall strategic

approach to information and communications technologies – in government and in commerce, as well as in education.⁵

And finally, New Zealand's e-learning landscape must not be viewed in isolation from its global context. Whether referencing international e-learning standards, contributing to international conferences or research journals, or developing international markets for e-learning export, our government, education and commercial e-learning sectors are increasingly players on a world-wide stage. New Zealand must continue to forge these international relationships, where-ever they are likely to deliver benefits in terms of e-learning practice, policy development, research or economic growth. And in showcasing our achievements internationally, we build on this country's reputation for innovation and educational excellence.

⁵ See, for example, the *e-Government Strategy*, the *Digital Strategy for the National Library of New Zealand*, the *Connecting Communities Strategy*, and Project Probe.

Appendix I: e-Learning and the *Tertiary Education Strategy*

“By 2007, global trends in e-learning will have enhanced both ‘richness’ (in terms of potential for individual customisation, and responsiveness to different learning modes) and ‘reach’ (in terms of remote, virtual or community-based provision) for learners and providers.” – Tertiary Education Strategy 2002-02

Change messages

The *Tertiary Education Strategy 2002/07 (TES)* lays out a series of proposed changes to New Zealand’s tertiary education system, to better support our national development goals, and respond to the challenges of globalisation, accelerating technological change, and the knowledge society.

The *TES* identifies nine specific changes that will be required within the tertiary education system, to increase its relevance, connectedness and quality.

Development of New Zealand’s e-learning capabilities will directly contribute to the following changes:

- Increased responsiveness to the needs of, and wider access for, learners
- Improved global linkages
- Greater collaboration and rationalisation within the system
- Increased quality, performance, effectiveness, efficiency and transparency

Six specific strategies

The *TES* aims to raise the skills levels of all New Zealanders to ensure they are adept at creating knowledge, transferring knowledge, and applying that knowledge through all parts of the economy and society. To achieve this, the *TES* contains six specific strategies, related to the development of skilled and knowledgeable people, the creation of research and scholarship, and the organisational capability to support this:

1. Strengthen system capability and quality
2. Te Rautaki Mātauranga Māori – Contribute to the achievement of Māori development aspirations
3. Raise foundation skills so that all people can participate in our knowledge society
4. Develop the skills New Zealanders need for our knowledge society
5. Educate for Pacific people’s development and success
6. Strengthen research, knowledge creation and uptake for our knowledge society

The development of New Zealand’s e-learning capabilities is mandated by strategy 1, the strengthening of system capability and quality. But e-learning also has a role in supporting the following specific objectives from the *TES*:

Objective	Role of e-learning
4 Sustainable growth of export education capability centred on a reputation for quality teaching and pastoral care	e-Learning will increase the reach and flexibility of New Zealand’s tertiary education provision beyond our national borders, opening new opportunities for export education
5 A stronger system focus on teaching capability and learning environments, to meet diverse learner needs	e-Learning will offer new and innovative pathways for learning, to complement existing pathways

12	Increased participation by Māori in both a broader range of disciplines and in programmes that lead to higher-level qualifications	e-Learning will help improve pathways for Māori from foundation education into higher levels of education by enhancing the flexibility of the system to meet individual learner needs
14	Significantly improved adult foundation skill levels, achieved through increased access to foundation education in a range of learning contexts	e-Learning will provide both the imperative and the opportunity for learners to develop ICT skills, and will increase the accessibility of educational opportunities available to people in the community
20	Equity of access and opportunity for all learners	e-Learning will provide learners with a greater choice of options as to where, when and how they learn

Critical success factors

The *TES* also identifies a number of critical success factors for our tertiary organisations in New Zealand's knowledge society of tomorrow. The *Interim Tertiary e-Learning Framework* will support them in the following:

- Prioritise continued investment in technology and teaching/research capability
- Demonstrate and embrace new teaching modes that recognise different styles of learning
- Have staff who are experimenting with discovery-based and inquiry-based approaches, in institutional and in workplace or community settings
- Have students and staff who are making innovative use of new learning technologies
- View technology as a way to achieve strategic goals rather than as a general resource
- Be continually evolving to meet the challenges of a global educational community transformed by technology in a new global economy

Appendix II: Glossary

Bandwidth	The transmission capacity of a network connection or interface. The bandwidth determines the rate at which information can be sent - the greater the bandwidth, the more information that can be sent in a given amount of time
Broadband	A transmission facility having a bandwidth sufficient to carry multiple voice, video or data channels simultaneously
Community	A group of people linked by shared location, identity, circumstances or interests; also, such a group in which a person may feel a sense of identity or belonging
Community of practice	A community that provides support and opportunities for interaction between people with a common involvement in a particular area (such as e-learning)
Digital literacy	The ability to use digital technology, communication tools, and/or networks to locate, evaluate, use and create information (see also: information literacy)
Digital divide	The disparity between those people or groups that have the access to, and capability to use, modern information and communications technologies, and those who do not
Interactive learning object	A virtual simulation or activity that is responsive to learner input, and which can be used to facilitate or enhance learning
Distance education	Education in which the majority of the instruction occurs when student and instructor are not in the same place. Distance education may employ correspondence study and/or audio, video, or computer technologies
Educational value chain	Process consisting of market analysis, curriculum design, course development, marketing and sales, course delivery, and assessment and credentialling
e-Learning	Learning that is enabled or supported by the use of digital tools and content; typically involves some form of interactivity, which may include online interaction between the learner and their teacher or peers
Electronic rights management	Systems for identifying content, protecting copyright and tracking usage of electronic information
Flexible learning	The provision of a range of learning modes or methods, giving learners greater choice of when, where and how they learn
ICT	Information and communications technologies
Information literacy	The life-long ability to locate, evaluate, use and create information (see also: digital literacy)
Instructional design	The systematic process of translating principles of learning and instruction into plans for instructional materials and activities
Interoperability	The ability of information systems to operate in conjunction with each other encompassing communication protocols, hardware, software, application, and data compatibility layers
Kaupapa Māori	Reflecting Māori cultural perspectives, and affirming the importance of Māori self-determinations and self-valuations
Knowledge society	A society in which creating, sharing and using knowledge are key factors in the prosperity and wellbeing of its people

Learning Management System (LMS)	A software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance.
Multimedia	Seamless integration of text, sound and images within a single information environment
Networked learner	A person who is able to access, share and exchange information with others via computer networks, in such a way that their learning is facilitated or enhanced
Online chat	A discussion between two or more participants carried out by sending messages over the internet; may be synchronous (participants interacting in real time), or asynchronous (participants posting and replying to messages on a staggered or intermittent basis)
Tertiary education	All of the learning that takes place in the field of post-school education and training
Tertiary education institutions (TEIs)	Public tertiary education providers, such as universities, wānanga, polytechnics and colleges of education
Tertiary education organisations (TEOs)	All the organisations that provide tertiary education. These include public tertiary education institutions (TEIs), private training establishments (PTEs) and industry training organisations (ITOs)
Tertiary education sector	The sector comprising all tertiary education organisations
Web accessibility	Access to the web by everyone, regardless of disability. It includes: <ul style="list-style-type: none">▪ Websites and applications that people with disabilities can perceive, understand, navigate, and interact with▪ Web browsers and media players that can be used effectively by people with disabilities, and that work well with assertive technologies that some people with disabilities use to access the web▪ Web authoring tools, and evolving web technologies that support production of accessible web content and websites, and that can be used effectively by people with disabilities.
Web accessibility standards	Standards that promote web accessibility

Appendix III: References

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Statement of Tertiary Education Priorities 2003/04, Ministry of Education, August 2003

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Towards a Unified e-Learning Strategy (Consultation Document), Department for Education and Skills, UK, July 2003

For a general list of resources relevant to e-learning, visit New Zealand's e-learning portal at www.e-learn.govt.nz.