

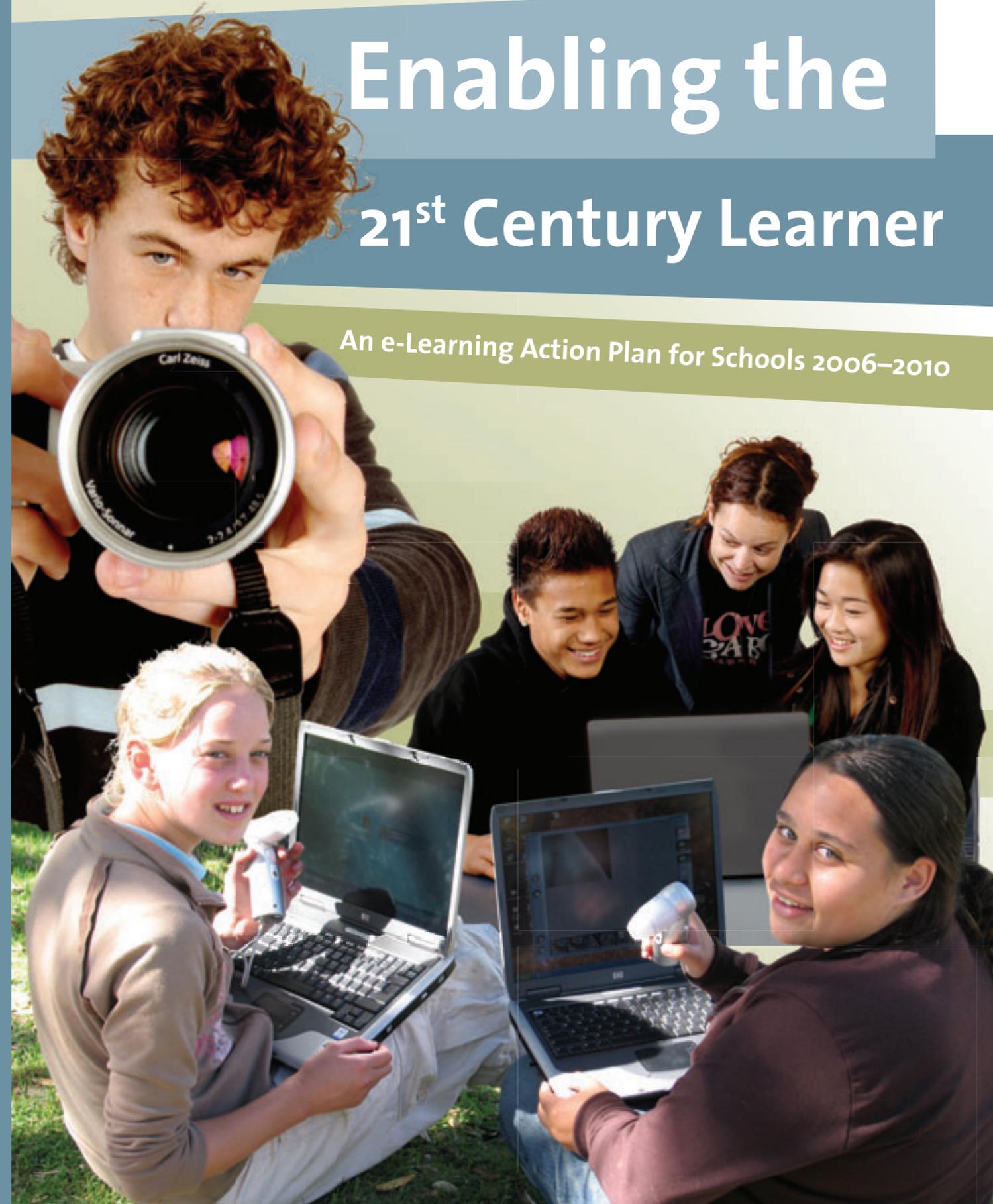


MINISTRY OF EDUCATION

*Te Tāhuhu o te Mātauranga*

# Enabling the 21<sup>st</sup> Century Learner

An e-Learning Action Plan for Schools 2006–2010



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## Explanation of Terms

<b>blended learning</b>	The combination of traditional and e-learning practices.
<b>digital literacy</b>	The ability to use digital technology, communication tools, or networks to locate, evaluate, use, and create information.*
<b>e-learning</b>	Learning and teaching that is facilitated by or supported through the smart use of information and communication technologies.
<b>ICT</b>	Information and communication technologies.
<b>ICT literacy</b>	The set of abilities that enables learners to access, manage, integrate, evaluate, communicate, and create diverse information in an ethical way, and to meaningfully engage with a range of ICT-mediated communities.
<b>information literacy</b>	The lifelong ability to locate, evaluate, use, and create information.*
<b>knowledge society</b>	A society that creates, shares, and uses knowledge for the prosperity and well-being of its people.*
<b>learning management system (LMS)</b>	A software package to manage and deliver learning content and resources to students, usually comprising a variety of applications amalgamated as an “integrated” package and used within an OLE.
<b>learning object</b>	A reusable digital resource used to support learning.
<b>MUSH networks</b>	High-speed local fibre-optic networks serving mainly public institutions (for example, municipal universities, schools, and hospitals).
<b>online learning environment (OLE)</b>	The complete online environment where a learner can access a range of applications or resources.
<b>virtual learning network (VLN)</b>	A web-based brokerage service that was established in 2002 by the Ministry of Education to facilitate the delivery of courses provided by education organisations (for example, schools) using a range of applications, including video conferencing (VC).

# Foreword

As a member of a Labour-led government, I trace my belief that education can and should make a difference back to the first Labour Government. As part of its commitment to a just and more equitable society, the Labour Government placed education at the centre of its plans for social, political, and economic transformation.

The intentions of Peter Fraser and Clarence Beeby were to give everyone access to the education they needed. Achieving that goal involved substantially changing the existing education system, and the system they established served New Zealand well.

The reforms of the late 1980s and 1990s were a specific response to the fact that this education system was not delivering the outcomes needed as New Zealand underwent substantial economic and social change. New Zealand's experience of these reforms has shown that the market approach to education is a dead end, but its critique, particularly of underachievement, has to be taken seriously.

The answer lies in reorienting the system. Our challenge, as we examine how to make a difference (that is, how to ensure equal opportunity in education) is to reorient our system away from the organisation to the learner.

Placing the learner at the centre of the education system (personalising) is as radical a notion as that conceived by the first Labour Government. It's about providing a flexible system where teachers, schools, communities, and other groups can identify the needs of their learners and be provided with the tools and support to meet those needs within the broader curriculum.

e-Learning with learners and teachers at the centre of their own communication and information networks, is the key idea in this new action plan for schools.

e-Learning has the potential to transform the way we learn. It's about exploiting technologies and using ICT effectively across the curriculum to connect schools and communities and to support evidence-based decision making and practices in schools.

This e-learning action plan builds on the previous two ICT strategies for schools – *Interactive Education* and *Digital Horizons*. It includes the work and priorities of schools, the Ministry of Education and other agencies. The action plan provides goals for e-learning for the next four years. It also reflects how school-focused initiatives fit in with and support the wider range of digital and ICT strategies being co-ordinated and supported by government.

For New Zealand, the development of a prosperous and confident knowledge society means the development of new skills and knowledge. It will require a culture of continuous enquiry, innovation and improvement, risk taking, and entrepreneurship. This can only come from the education system.

This is a radical vision. If it is to work, it will take leadership. Each of us has a role to play in achieving this vision for e-learning and its contribution to education.

We stand at the start of a new century, seeking to transform our nation. The power of education to drive that change is as potent as ever. But we can only exercise that power if education itself is transformed, and this e-learning action plan will make a substantial contribution to that transformation.

Steve Maharey  
MINISTER OF EDUCATION  
June 2006

## Introduction

The purpose of this action plan is to outline the key outcomes and actions for e-learning in the New Zealand school sector for 2006–2010. This document describes the goals for e-learning in schools and the projects, tools, and resources that are being developed to address those outcomes.

This e-learning action plan builds on the previous two ICT strategies for schools – *Interactive Education* (Ministry of Education, 1998) and *Digital Horizons* (Ministry of Education, 2002). It includes the work and priorities of schools and the Ministry of Education (the Ministry) as well as those of other agencies, in particular, the National Library of New Zealand (the National Library).

The action plan provides goals and a direction for e-learning in schools for the next four years. It describes the intended outcomes for each goal and the actions that are required to achieve the goals. It also identifies how school-focused initiatives fit in with and support the wider range of digital and ICT strategies being co-ordinated and supported by the Government.

*e-Learning can cover a spectrum of activities from supporting learning to blended learning (the combination of traditional and e-learning practices), to learning that is delivered entirely online. Whatever the technology, however, learning is the vital element. e-Learning is no longer simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning.*

JISC, 2004, page 10

The plan also demonstrates how e-learning can contribute to the Schooling Strategy (Ministry of Education, 2005c) and its priorities for the next five years, which are that:

- all students experience effective teaching;
- children's learning is nurtured by families and whānau;
- evidence-based practices are used by all involved in schooling.

e-Learning has the power to transform the way we learn. It is about exploiting technologies in everything we do and using ICT effectively across the curriculum to connect schools and communities and to support evidence-based decision making and practices in schools.

e-Learning can provide accessible, relevant, and high-quality learning opportunities so that every student is better able to achieve their full potential.

The goals of this action plan are ambitious and require the participation of all stakeholders. The achievements since the launch of the first strategy have occurred as a result of the shared contributions from the Government, schools, school communities, and businesses.

In looking to the future, all parties have a role to play in ensuring that schools are able to respond to the needs and concerns of their students and communities while meeting national objectives.

It is this shared commitment and open communication that will achieve our vision for e-learning.

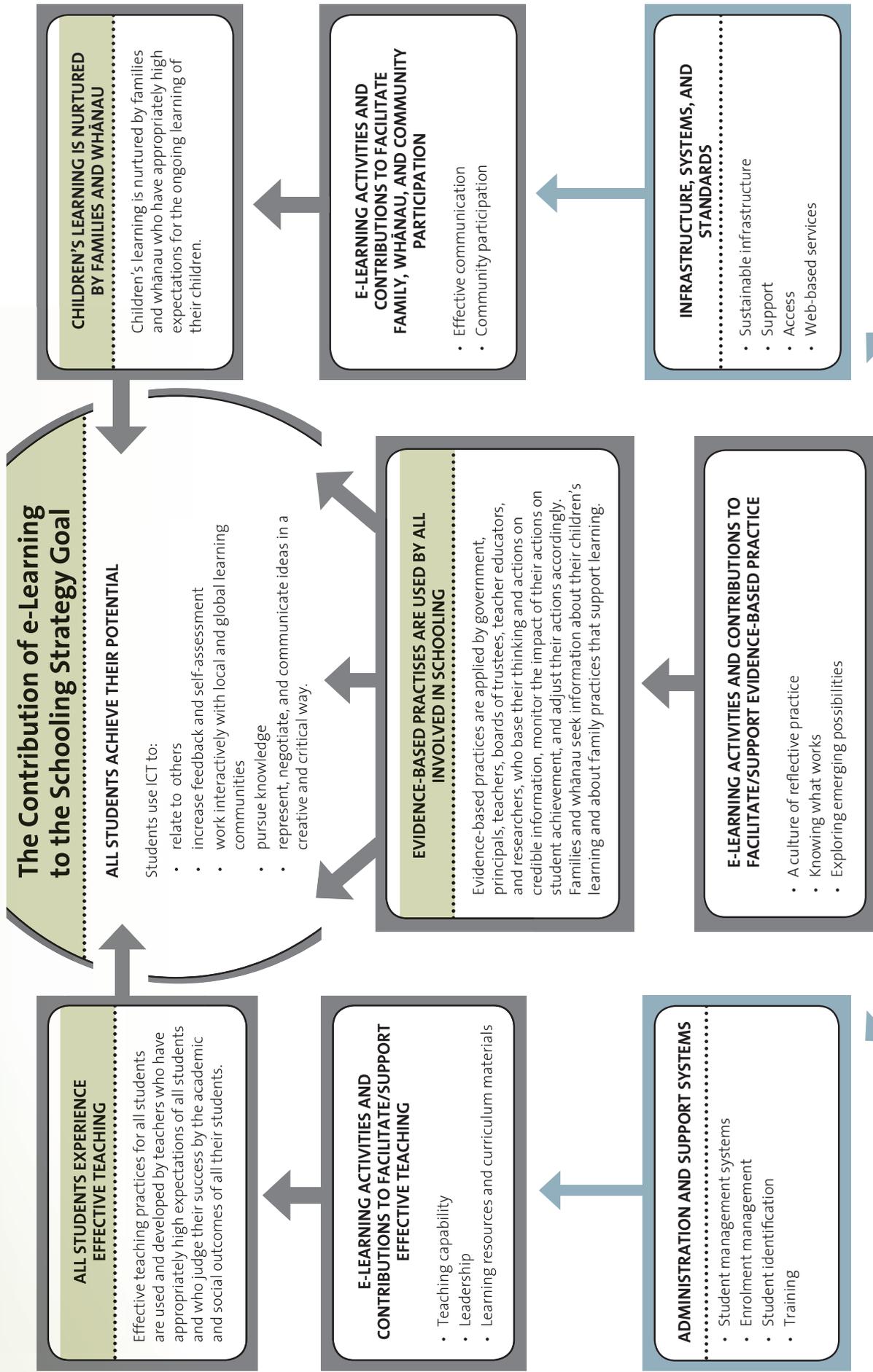
Nāu te rourou, nāku te rourou, ka ora ai te iwi.  
With my food basket and yours, there is nourishment  
for all the people.

## Contribution to the Schooling Strategy

This e-learning action plan for the school sector will contribute directly to the goals and priorities of the Schooling Strategy. It will also contribute to the Government's overarching goal to build an education system that equips New Zealanders with 21<sup>st</sup> century skills, through the increased use of e-learning in schools.

The contribution of this e-learning action plan to the goals and priorities of the Schooling Strategy is illustrated on the next page.

# Schools' e-Learning Action Plan





The focus on the use of ICT in schools has been on encouraging and monitoring innovation and change by teachers in their classrooms, that is, a bottom-up model with support and guidance from the centre. It is an approach that encourages reflective practice and collaboration within schools and between clusters and across wider communities of practice.

Wherever possible, the emphasis has been on small, manageable innovations in individual practice that will be sustainable in the long term. This approach is one that will provide lasting change and benefits to the entire school system.

As a response to the challenge to change, this action plan proposes to:

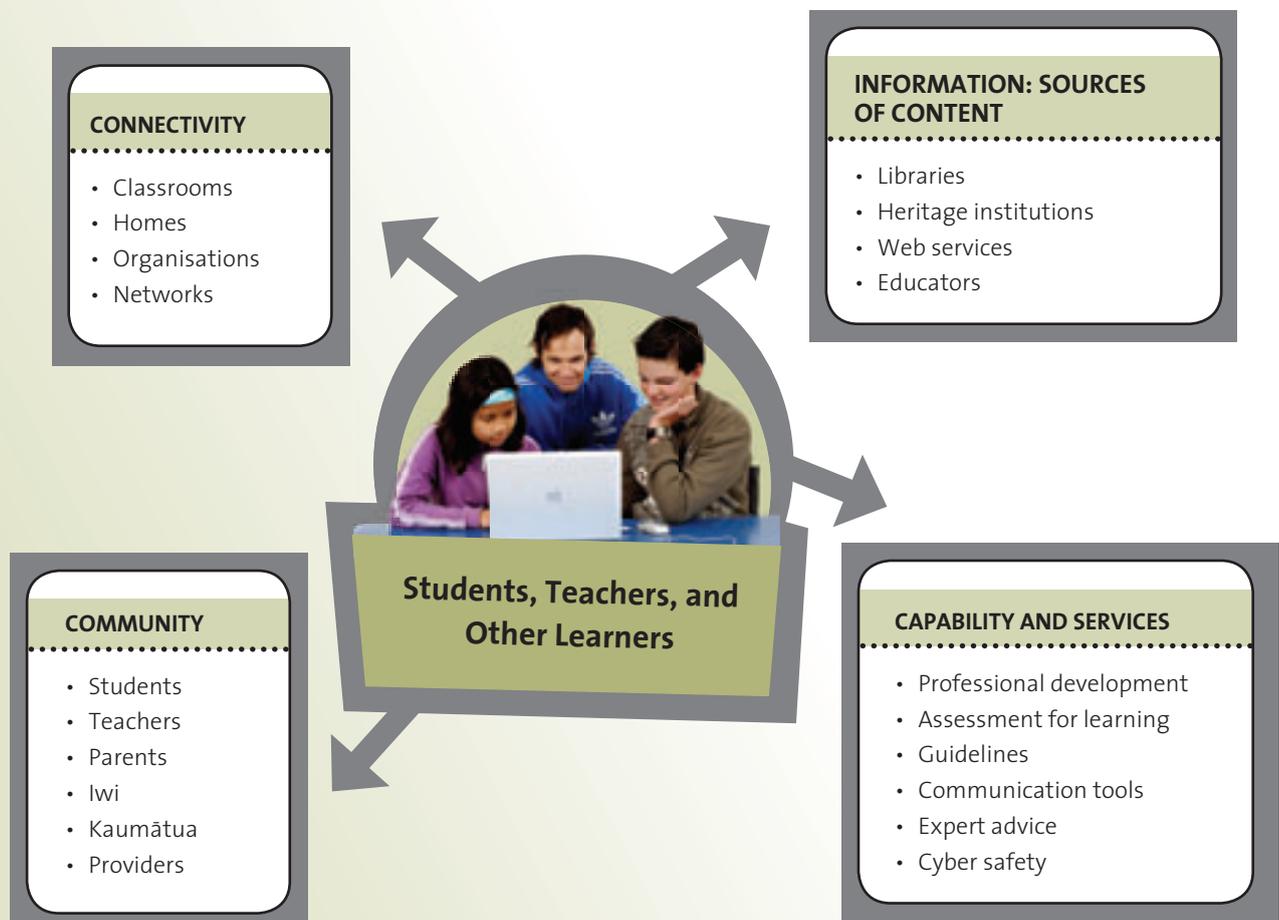
- provide teachers with relevant and timely information about effective e-learning teaching practice;
- use ICT to facilitate the spread of that information by teachers and for teachers.

Our teachers need ongoing access to information about effective practice using ICT so they can support our 21<sup>st</sup> century students to achieve their full potential and become lifelong learners. One of the easiest and most effective ways to communicate what we know about best practice in e-learning is through the use of ICT. The development of infrastructure and networks, where teachers and schools share their knowledge and ideas, will facilitate the communication of effective teaching practice.

These innovation or communication networks, such as online learning environments (OLEs) and professional communities of practice, offer more choice for educators, schools, and communities as to how they engage in education and in learning activities.

Such networks provide teachers and students with new sources of information as well as new ways to access people, information, services, and ICT for learning. This approach has the potential to successfully meet the needs of diverse learners, whether they be teachers or students. In this kind of collaborative learning environment, all participants are at the centre of their own network, as illustrated below.

## Communication and Learning Networks



## All Students Achieving Their Potential

The New Zealand Curriculum project proposes that the following five key competencies will contribute to the Government's goal of supporting students to achieve their potential:

- managing self
- relating to others
- participating and contributing
- thinking
- using language, symbols, and texts (Ministry of Education, 2006, pages 11–12).

e-Learning can contribute directly to the development of all of these competencies, and increasingly, these competencies are applied in ICT-rich contexts for all students. Today's students have grown up with computers, video games, email, the Internet, and cell phones. Such technologies have always been a part of their lives (New Media Consortium, 2005). They are as comfortable with these kinds of technology as previous generations were with radio and television.

The further evolution of these technologies and the development of new technologies will play a key role in New Zealand's transformation into an innovative, knowledge society.

Consequently, today's students need to be confident and capable users of ICT and to understand how to use ICT effectively across the curriculum.

*The vision, principles, and values collectively guide and underpin curriculum decision-making. The key competencies are important generic capabilities needed by all young people, and the learning areas provide a structure and suggest contexts in which these competencies can be developed, using appropriate pedagogy.*

Ministry of Education, 2006, page 7

Just like the ability to read and write, ICT literacy will be an essential life skill – an economic and social necessity. “Without [ICT literacy], there is a risk that people will be cut off from job opportunities and unable to take part in the full life of the community” (New Zealand Government, 2005, page 18).

This e-learning action plan will also contribute to the Schooling Strategy goal of supporting students to achieve their full potential by:

- promoting e-learning to extend and enrich educational experiences across the curriculum;
- supporting students to become proficient in ICT literacy skills;
- supporting students in developing the sense of identity, the self-confidence, and key competencies that are prerequisites for independent, collaborative, and lifelong learning;
- supporting students who identify as Māori to use ICT to access high-quality learning, both of te reo Māori and, through the medium of te reo Māori, to participate as citizens of the world and to experience success in schooling;
- supporting Pasifika students to use ICT to embrace their unique Pasifika identities and to experience success in schooling, both academically and socially.

*Key competencies are the capabilities people need in order to live, learn, work and contribute as active members of their communities. Competencies are more complex than skills...*

*Competencies continue to develop over time, shaped by interactions with people, places, ideas, and things. Students need to be challenged to develop their competencies in contexts that are increasingly wide-ranging and complex.*

Ministry of Education, 2006, page 11

## e-Learning and Effective Teaching

Research identifies effective teaching as the most significant within-school factor that contributes to student achievement (Alton-Lee, 2003).

Effective teaching for all students through e-learning will depend on teachers:

- having the opportunity to explore ICT and to become confident and capable users of it;
- being supported by leaders at all levels of the system;
- having access to a wide range of relevant, high-quality educational content.



## Teacher Capability

Effective teaching for all students will depend on teachers becoming confident and capable users of ICT and understanding how to integrate ICT effectively into their teaching practice. Teachers make key decisions about how to integrate ICT effectively into the classroom, in order to achieve the desired learning outcomes for students. They evaluate the appropriateness and effectiveness of available technologies and digital resources and decide when and how to use them with students.

“It is the teacher’s strategic use of instruction that makes the difference. The teacher is continually making professional decisions, responding to instructional situations as a flexible problem solver, and monitoring their students’ progress. Effective teachers don’t follow predetermined programmes of ... instruction. They align the ... activities with their students’ progressions. (Ministry of Education, 2003b, page 79).

Teachers can transform their teaching role through the deliberate and considered use of ICT. For example, teachers may delegate more responsibility to the students to self-regulate their learning, and there are opportunities for students to collaborate effectively through peer learning and mentoring. However, it is the teacher’s strategic and deliberate planning of the learning and use of ICT that will ensure the desired learning takes place.

Effective teachers use e-learning to:

- create new learning environments based on a blended learning approach, which allows students to explore and experiment, think critically and work creatively, reflect and plan, use feedback and self-assessment, and create new knowledge;
- make teaching and learning more effective and efficient by using customised tools that aid preparation, programming, assessment, and reporting;
- customise learning experiences to recognise individual, cultural, and developmental differences;
- enhance communication and collaboration to build partnerships beyond the classroom, expanding the community of learners and enhancing the quality of learning;
- create new education communities by increasing the modes of teaching and learning and the range of people who can be involved (MCEETYA, 2005).

To achieve this, teachers must be supported in developing and enhancing their own ICT knowledge and skills, through professional learning and consistent ongoing support across the education sector.



**OUTCOME: Teachers have the confidence and capability to effectively integrate e-learning into their professional practice.**

**Actions**

- Work with the New Zealand Teachers Council and teacher education providers to include ICT literacy skills and pedagogies in pre-service training programmes.
- Support National Library professional development that is focused on information management, information literacy, and access.

*We will have achieved this when:*

- an increasing number of pre-service programmes include ICT literacy skills and effective e-learning pedagogies;
- an increasing number of programmes focusing on information management, information literacy, and access are delivered to schools.

**OUTCOME: All ICT professional development programmes in schools focus on effective teaching, ICT literacy, and understanding the potential of ICT to support learning across the curriculum.**

**Action**

- Continue to use the ICT PD cluster programme to support schools as they undertake whole-school change that is responsive to the needs of diverse learners.

*We will have achieved this when:*

- 80 percent of New Zealand schools have participated or are participating in the programme, within the 2010 time frame;
- an increased number of ICT PD clusters include relevant National Library participation.

**OUTCOME: Teachers use online communities of practice to strengthen collegial support, professional dialogue, and reflective practice.**

**Action**

- Support the exchange of knowledge and information between online communities of practice through Te Kete Ipurangi (TKI), subject associations, and the ICT professional development community.

*We will have achieved this when:*

- the number of active online communities supported by the Ministry has increased;
- the proportion of New Zealand teachers engaged in online communities has increased;
- all subject associations have access to a range of web-based tools to meet their communication and publishing needs.

**OUTCOME: There is a clear and consistent understanding of the literacies related to e-learning across schools and their relationship to the key competencies.**

**Action**

- The Ministry will convene a working group to clarify national understanding of multiple literacies (ICT literacy, information literacy, digital literacy, and so on) and the key competencies of the national curriculum.

*We will have achieved this when:*

- across the sector, there is a common understanding, agreement on, and support of the literacies, their relationships, and their contribution to the key competencies of the national curriculum.

**OUTCOME: Interventions are in place that relieve workload pressures on Māori teachers and explore and provide professional development opportunities.**

**Action**

- Continue to use ICT to strengthen and support Māori secondary school teachers through Te Hiringa i te Mahara (THM).

*We will have achieved this when:*

- work-related stress has been reduced for participating teachers and they have affirmed their identity as Māori, enhanced their professional capability, and improved their teaching practices.

## Leadership

Effective teaching through e-learning depends on the teacher being supported by leaders at all levels of the system. School leaders need to: understand how ICT can support learning, enable staff to explore innovative e-learning practice, and have the confidence and capability to lead and manage the change required to maximise the benefits of these technologies.

As education leaders, principals play a special role in promoting pedagogies that support the effective integration of ICT within schools. Whether it be collaborating with staff on ways ICT to extend learning within and beyond the classroom or using to communicate more effectively with families, whānau, and the community, or to support school improvement planning, the principal plays an integral and influential role (MCEETYA, 2005, page 12).

Boards of trustees must also understand their important role in facilitating the conditions in schools for ICT integration to thrive, and how the school community can support this integration.

The effective use of ICT in education also requires that school leaders have an awareness of the potential risks of the digital environment and have effective mechanisms in place to address these risks.

*The digital environment ... is often referred to as "cyberspace"... It is a workplace, a business arena, a social sphere for meeting new people and developing relationships, and a place for entertainment. However, it is a place where perpetrators of electronic crime can victimise the unsuspecting, and an environment which can facilitate anti-social behaviour like bullying and harassment.*

*Schools are fostering wonderful Internet learning skills in children but must also include in that education the practical skills needed to negotiate all aspects of cyberspace safely.*

Internet Safety Group, 2003, page 5



**OUTCOME: Leaders have the confidence and capability to effectively lead and manage ongoing e-learning development in schools.**

**Actions**

- Support ICT professional development and build the understanding of how ICT can support learning through the principal's leadership and ICT PD cluster programmes.
- Develop and provide access to strategic leadership tools that give a school's leadership team a practical framework to strengthen the quality of teaching and effectively manage the ICT infrastructure.
- Provide training and advice to guide the implementation and integration of e-admin systems (SMS) through e-admin training, School Support Services, and the ICT helpdesk.
- Provide a new range of web services and collaborative tools to support LeadSpace and the Principals' Electronic Network (PEN) through a new web platform.

*We will have achieved this when:*

- school leaders have increased confidence and capability to facilitate and manage e-learning effectively;
- a range of strategic tools is being used effectively by school leaders;
- all users of e-admin services have received appropriate training and support in the use of these services;
- a range of web services and collaborative tools is being used effectively by school leaders.

**OUTCOME: Boards of trustees' and the wider school communities' understanding of the role of e-learning in schools of the future is strengthened.**

**Action**

- Work with the New Zealand School Trustees Association (NZSTA) on disseminating the e-learning action plan for schools.

*We will have achieved this when:*

- there is increased understanding by boards of trustees, parents, and the wider community of the role and contribution of e-learning to living and learning in the 21<sup>st</sup> century.

**OUTCOME: School leaders and boards of trustees understand the need for and have implemented appropriate cyber security and safety policies in their school.**

**Action**

- Work with the Internet Safety Group to provide resources, training, and advice about cyber safety to the school sector.

*We will have achieved this when:*

- all New Zealand schools have established and are implementing effective cyber safety policies and processes.

## Learning Resources and Curriculum Materials

Effective teaching for all students through e-learning must be supported by access to a wide range of relevant, high-quality educational content. Furthermore, appropriate tools, such as online learning environments (OLEs) and learning management systems (LMSs), enable teachers and students to access, manage, use, create, and distribute content easily and efficiently.

The effective use of well-designed digital content across a broad range of learning activities has a positive effect on student engagement and student learning outcomes. Digital content can be deployed relatively quickly and can be readily revised in the light of new evidence. It can be a powerful mechanism to support consistency in core curriculum areas and improved teacher performance (TFG International, 2005).

**OUTCOME: Online learning environments are widely used to support effective learning and teaching in New Zealand schools.**

### Action

- Work across educational agencies to provide guidelines that will enable schools to consider how an online learning environment will:
  - contribute to their teaching and learning methodologies;
  - work within their school's existing technical infrastructure and resources;
  - connect to other systems in their school and in other schools;
  - support Māori language environments.

### *We will have achieved this when:*

- an increasing number of schools are using OLEs to contribute to teaching and learning.

**OUTCOME: High-quality digital content is easily accessible across the education sector.**

### Actions

- Continue to develop digital content, standards, distribution models, and a shared pool of effective practice documentation in partnership with Australia through The Le@rning Federation (TLF) project.
- Work with cultural and heritage institutions to develop educational digital content.
- Develop a policy framework, including the Digital Commons, for managing copyright and digital rights (print and digital media) for New Zealand schools.
- Work with the National Library and other agencies to develop cost-effective systems for schools to find and access online resources.

### *We will have achieved this when:*

- there is an increase in the amount of high-quality digital content available and it is being used more often and more effectively by New Zealand schools;
- there is an increase in the amount of digital content available from New Zealand cultural and heritage institutions;
- a policy framework for digital rights has been developed and is used to support e-learning across the sector;
- schools have access to and are using an increased number of quality online resources through federated search services.

**OUTCOME: There is increased availability of quality te reo Māori digital content that reflects localised dialects and idioms.**

### Actions

- Increase the adaptation and extension of TLF-developed digital content into te reo.
- Support the development of iwi-based digital content.

### *We will have achieved this when:*

- an increased number of TLF learning objects are customised for and are being used in Māori language learning environments;
- there is an increase in the number of iwi-based digital resources available for use by schools and the community.

**OUTCOME: Teacher-developed digital content and resources are available for use across the education sector.**

**Action**

- Increase access to web-based and collaborative tools that support content development and publishing by teachers.

*We will have achieved this when:*

- there is an increase in the number and use of teacher-for-teacher developed resources and information, available for use by schools over the web.

**OUTCOME: There is an increased number of relevant and engaging educational contexts provided through the medium of ICT.**

**Action**

- Increase the number of resources and web services that enable access to experiences, understandings, and taonga otherwise unavailable to many students.

*We will have achieved this when:*

- an increased number of users are accessing an increasing range of online services and resources for students.

**OUTCOME: There is an increased range of high-quality digital resources available in Pasifika languages.**

**Actions**

- Develop digital language resources to help build strong Pasifika language foundations.
- Explore the repurposing of existing learning objects into Pasifika languages.

*We will have achieved this when:*

- there is an increased number of digital language resources available and being used in Pasifika programmes;
- there is increased understanding of the role and contribution of digital content and web services in supporting learning in Pasifika languages.

**OUTCOME: The knowledge and availability of high-quality software for learning is increased.**

**Action**

- Provide schools with access to a bank of identified quality software, resources, and relevant information on which to base decisions related to meeting student learning needs.

*We will have achieved this when:*

- there is an increased awareness and use of quality software for learning resources.



## e-Learning and Family, Whānau, and Community Participation

Research shows that parents who are involved in their children's learning, and encourage their children to be the best they can be, make a real and positive difference to how their children learn. The influence and involvement of parents and whānau, in addition to effective teachers, has a significant positive impact on how well students achieve.

Parents and whānau are best able to help their children when they receive useful, focused, and timely information and support from government agencies and schools. Schools need to work with families, whānau, and their communities to foster understanding of how to use ICT effectively in learning. ICT provides new possibilities for following students' progress and engagement with teachers. Schools can also use ICT to strengthen communication with families and whānau as well as being able to provide community access to ICT facilities in their schools.

The Ministry will work with other agencies to help communities develop skills and provide support for their children to use ICT. This work is particularly important for children who do not have computer and Internet access at home.

### OUTCOME: All schools and communities have access to levels of bandwidth that meet their educational needs.

#### Actions

- Enable remote schools to continue to access affordable broadband services through ongoing support for the delivery of broadband over satellite.
- Facilitate the involvement of schools in the growth of high-speed (MUSH) networks in local communities.

#### *We will have achieved this when:*

- remote schools have access to affordable broadband services;
- schools are integrated within high-speed (MUSH) networks as they are established.

### OUTCOME: There is increased public understanding of the importance of ICT and information literacies – the 21<sup>st</sup> century skills that are important for participation in a knowledge society.

#### Actions

- Engage with the Team-up campaign on including information for parents about the nature of 21<sup>st</sup> century skills and about how they can support their children's learning through ICT.
- Encourage schools to celebrate good practice and their success stories of ICT use with their families and communities.

#### *We will have achieved this when:*

- the Team-up campaign includes information for parents on supporting their children's learning through ICT;
- schools are provided with models or examples of how to showcase their work and to celebrate successes with parents.

### OUTCOME: There is increased community participation in school ICT activities and the use of ICT facilities.

#### Actions

- Support and encourage schools to provide community access to school ICT facilities and expertise.
- Provide examples, strategies, and protocols for enabling online access by families and whānau to schools' websites and information.
- Improve the quality of information available to Pasifika parents, families, and communities through ICT.

#### *We will have achieved this when:*

- there is increased use of school ICT facilities by the wider community;
- all families and whānau have increased access to and use of web-based information;
- Pasifika communities have increased access to and use of educational information.

## e-Learning and Evidence-based Practice

Teachers, school leaders, and the Ministry all make important decisions about how e-learning takes shape in classrooms. Using evidence from a number of sources to inform these decisions makes a real difference to learning outcomes.

The development of an evidence-based approach to decision-making requires the sector to:

- embrace a culture of reflective practice;
- employ methodologies and tools to evaluate investment in e-learning so that we know what works;
- carry out research into the effectiveness of e-learning tools and into the difference that e-learning can make to student achievement and make the results of this research widely available.

## A Culture of Reflective Practice

Increasingly, today's students are living their lives online. As new technologies and media expand rapidly in students' lives outside the classroom and schools adopt new technologies and services, educators also need to stay abreast of the evidence on how to maximise these opportunities for learning in the classroom.

However, in this dynamic area, the possibilities for e-learning are expanding faster than the evidence of its impact on learning outcomes. Therefore, educators need to be able to create and share evidence through their own reflective practice and relationships, as well as draw on the evidence and sound decision-making frameworks that are already available.

The Ministry and schools can support teachers to research their practice and participate in research and related opportunities to create, use, and share evidence about how e-learning can promote effective learning for students. ICT can also facilitate and support educators to engage in creating, using, and sharing evidence within professional communities.



**OUTCOME: There is increased knowledge and understanding of e-learning and emerging technologies in New Zealand contexts.**

**Actions**

- Continue with programmes where teachers are given the opportunity to research e-learning in their practice and share this learning with other educators.
- Promote and support practitioner research through the ICT PD cluster programme, online communities of practice, and other online environments.
- Initiate action research on ICT best practice in Māori-language-medium education and second-language acquisition (te reo Māori) through the range of existing research and evaluation programmes.
- Initiate action research into the impact of ICT and e-learning on the engagement and motivation of tamariki Māori, kōtiro/kōhine, tamaiti/tamatāne through the range of existing research and evaluation programmes.

*We will have achieved this when:*

- the research and understandings gained from teachers' research are freely available;
- an increased number of publications from practitioners are made available and used by teachers and educators;
- an increased number of action research publications are made available that influence teacher practice.

## Knowing What Works

e-Learning can require a major investment and professional commitment by educators. We need to know if these investments in e-learning are making a positive difference for all our students and how we can do better. This requires the ongoing development and implementation of appropriate monitoring, assessment,

and evaluation methodologies and tools that will enable educators to modify and improve their current practice and to design new directions for e-learning. Where appropriate, this includes synthesising and sharing the available evidence about e-learning in a New Zealand context.

**OUTCOME: There is increased knowledge and understanding of the effectiveness of e-learning on educational outcomes and school change.**

**Action**

- Use programme evaluation and research in key Ministry e-learning initiatives, including the Laptops for Teachers (TELA) programmes, the Digital Opportunities Project, The Le@rning Federation (TLF) learning objects, and the ICT professional development programme.

*We will have achieved this when:*

- research and evaluation from all key programmes and from international research is used to inform ongoing e-learning policy and activities.

**OUTCOME: The spread of knowledge and understanding of the impact of e-learning, both in New Zealand and overseas, is supported.**

**Actions**

- Integrate e-learning research in schools into existing portals profiling New Zealand research and evaluation projects and provide links to key international research.
- Use the ICT professional development network and National Library professional development programme activities to disseminate understandings about e-learning.

*We will have achieved this when:*

- there is increased access to New Zealand-based research through Education Counts on edCentre ([www.educationcounts.edcentre.govt.nz](http://www.educationcounts.edcentre.govt.nz));
- there is an increased number of participants in conferences, workshops, and online communities engaged in and reporting on e-learning research.

## Exploring Emerging Possibilities

Many of the new tools currently used to facilitate e-learning in schools (such as LMSs and OLEs) were not designed for educators and therefore enter schools with an uncertain evidence base. Research and purposeful experimentation with select, high-potential e-learning

tools is needed to strengthen what we know about the difference that e-learning can make to students' social and academic outcomes. Educators also need better means and opportunities for accessing and interpreting the growing national and international evidence base.

**OUTCOME:** There is increased knowledge and understanding of e-learning and emerging technologies in New Zealand contexts.

### Actions

- Continue projects that explore innovative e-learning practices and ensure the learning from these projects is available to practitioners and policy makers.
- Increase e-learning in schools' funding to research effective teaching in particular e-learning contexts.
- Evaluate emerging technologies, software, and web-based services and inform teachers of potential use.
- Carry out research on effective teacher practice with LMSs, including research into LMSs that are appropriate for Māori-, and Pasifika-language-medium education.

### *We will have achieved this when:*

- there is increased availability and use of school-based research;
- at least three new research projects are initiated each year;
- there is increased knowledge and understanding of effective practice and potential use for e-learning;
- there is increased understanding of LMSs and their contribution to effective teaching in mainstream, Māori, and Pasifika learning environments.



## e-Learning and Infrastructure, Systems, and Standards

While the Schooling Strategy focuses on the people involved in schooling, it also acknowledges the importance of having “strong systems in place and an infrastructure that can support those who work within, or interact with, schooling” (Ministry of Education, 2005c, page 11).

A sustainable and dependable ICT infrastructure in schools will enable teachers to manage their teaching programmes more effectively. Through school networks and links to the Internet, teachers can use a wealth of digital resources, content, and services to develop learning programmes that support the needs of their learners.

These resources include highly interactive digital learning objects, websites such as Te Ara: The Encyclopedia of New Zealand, video conferencing, CD-ROMs, DVD-ROMs, and virtual field trips. Teachers can also use networked assessment data and tools such as asTTle and the New Zealand Curriculum Exemplars.

Through the Ministry’s e-Admin Programme and initiatives from the New Zealand Qualifications Authority, schools are increasingly carrying out core business processes electronically. This requires a shift in schools’ business processes and an increase in the use of electronic student management systems. Providing teachers and support staff with access to these tools in their workspace is central to achieving the potential increases in productivity within schools and across the whole education system.

Access to sustainable and well-supported ICT infrastructure in schools and across the education system is becoming fundamental to the way in which schools operate. Effective ICT infrastructure in schools will support:

- access to information and resources that contribute to effective teaching and learning;
- improved management and planning systems;
- efficient business processes.



**OUTCOME: All schools have a sustainable and effective ICT infrastructure that meets their e-learning and e-administration needs.**

**Actions**

- Support schools in reaching established infrastructure standards through a range of initiatives, including:
  - developing guidelines on effective asset management for a sustainable ICT infrastructure;
  - investigating more cost-effective ways to procure ICT equipment and services for schools.
- Provide support to all New Zealand schools through Stage 2 of the Schools Network Upgrade Project.
- Support ongoing management of laptops under the Laptops for Teachers (TELA) and Principals schemes.
- Support and promulgate the appropriate standards for hardware and software to ensure dependable and user-friendly systems.

*We will have achieved this when:*

- within the 2010 time frame, an increased percentage of schools have an ICT infrastructure that reflects best practice and is sustainable;
- an increasing number of school networks meet the network standards;
- teachers, and principals, who have laptops show increased confidence and competence in the use of ICT in their professional lives;
- standards are established and used for the main systems and software in schools.

**OUTCOME: Schools' ICT infrastructures enable libraries to link learners with information and with each other within the virtual learning community.**

**Action**

- Encourage the development of standards-based integrated library systems with web access.

*We will have achieved this when:*

- standards for interoperability, integration, reliability, and accessibility are agreed and used for student management systems and library systems, and there is increased integration and interoperability between these two systems.

**OUTCOME: All schools have access to timely and effective ICT support.**

**Actions**

- Develop new models for technical support, based on improved asset management.
- Continue to provide a range of ICT consultancy and helpdesk services through the Ministry.
- Investigate best practice for how classroom and learning environments, including school libraries, can best support e-learning.

*We will have achieved this when:*

- an increasing percentage of schools are using new models of more cost-effective and sustainable technical support;
- schools receive timely, high-quality advice and support through Ministry of Education services;
- information and guidance on the most effective learning environments for e-learning are available and being used.

**OUTCOME: All schools have access to a reliable, high-speed Internet connection.**

**Actions**

- Monitor and maintain the regional and satellite contracts (Project PROBE) on an ongoing basis.
- Monitor broadband uptake by schools on an ongoing basis.

*We will have achieved this when:*

- within the 2010 time frame, all schools have access to and are using broadband capacity appropriate to their needs.

**OUTCOME: All schools have access to a dedicated educational network.**

**Actions**

- Support and shape initiatives that provide open-access networks for schools.
- Work with the Ministry of Research, Science, and Technology to ensure that all schools are able to link to the proposed Advanced Network, which will link New Zealand's research and higher education institutions.
- Develop open standards-based protocols to enable all school networks to interconnect efficiently across the sector (New Zealand Education Sector Architecture Framework – ESAF).
- Develop the governance and management for infrastructure across the education sector that addresses interoperability and integration.

*We will have achieved this when:*

- an open-access network that meets international standards, and includes a range of web services, is available for schools;
- the protocols and processes for schools' access to the Advanced Network are established;
- an increasing number of schools are using the Advanced Network for educational activities;
- there are clear interoperability standards, which meet international standards, established for all major school collaborative tools and environments;
- sector governance structures are established that enable users and providers of web services to schools to quickly address areas of mutual interest.

**OUTCOME: Appropriate security and privacy mechanisms are in place for education sector services and resources.**

**Action**

- Support a range of managed Internet services to enable schools to create a safe and secure web environment for users.

*We will have achieved this when:*

- all New Zealand schools are operating within a safe and secure web environment.

**OUTCOME: A wide range of web-based services and opportunities is available to schools.**

**Actions**

- Extend the range of services and support provided by the virtual learning network (VLN).
- Implement core shared services to support collaboration between agencies and education organisations.

*We will have achieved this when:*

- an increasing number of courses and services are being used by schools through the VLN;
- schools and educational agencies are using a range of sector-shared services, including authentication/authorisation and integration services.



## e-Learning and Administration and Support Systems

The e-Admin Programme was initiated to transform the information environment in schools according to the overall information goals of the education sector. To meet these goals, the e-Admin Programme has been structured as a portfolio of individual projects, with each project focusing on a different aspect of administration. It aims to develop systems and processes that support teachers, school administrators, and school managers to deliver improved educational outcomes in New Zealand schools.

The Government and education sector agencies are committed to ensuring that education policy, decision making, and finances are based on quality data, sound technology, and efficient processes. Good information is essential for effective school management. A well-run school is better able to support students to achieve their full potential.

Effective administration in schools relies on efficient and timely access to information, knowledge, and funding. Data is frequently collected, transferred, and analysed, using many processes to support a variety of information management and financial needs.

Reliable data and sound information management are the basis for determining school funding entitlements, teacher payroll, and related services. They also form the evidence base for student enrolment and performance. Access to information and information technology enables schools to be more self-sufficient in achieving education sector goals.

The key information and administration goals for the education sector are to:

- collect data once and make it widely accessible;
- reduce administrative compliance costs;
- improve the quality of, and access to, information;
- ensure that systems are responsive to changing needs;
- reinforce the wider use of ICT for administration;
- improve workplace professional development.



**OUTCOME: By 2008, teachers, school administrators and managers, and education agencies will have better student management and information systems to deliver improved education outcomes.**

**Actions**

- Encourage schools to use accredited student management systems.
- Enable data sharing: entering data once and sharing it between applications, schools, and agencies.
- Promote better use of accredited student management systems to improve school management and the development of curricula.
- Continue to develop asTTle services.

*We will have achieved this when:*

- 95 percent of state and state-integrated schools are using accredited student management systems by December 2008;
- the data sharing projects are completed by December 2008;
- schools are increasingly using student management and assessment systems to inform professional practice.

**OUTCOME: A central electronic register replaces the current paper-based exchange of enrolment data between schools, improves enrolment management, and reduces the need for non-enrolment intervention.**

**Actions**

- Ensure a system is in place in schools that provides the enrolment history of students.
- Establish consistent and accurate processes for enrolling and transitioning all students.

*We will have achieved this when:*

- students not enrolled in a school within twenty days of leaving their previous school are identified for the necessary attention;
- all schools in New Zealand are using the enrolment system within the 2008 time frame.

**OUTCOME: A national student identifier is introduced that allows students to be tracked through the whole school system, and this supports longitudinal analysis of student data.**

**Actions**

- Establish the legislation and policy required to support a national student identifier across the sector.
- Establish the infrastructure required to manage a national student identifier.

*We will have achieved this when:*

- legislation and policy to support a national student identifier are available;
- a student's enrolment and attendance are able to be assured electronically;
- students' educational records are accurately maintained;
- the Enrolment Management System has been completely integrated with a national student identifier, within the 2008 time frame.

**OUTCOME: Schools have increased capability to use IT software and systems for administration purposes.**

**Actions**

- Provide training to all schools in New Zealand to facilitate their use of e-admin systems.
- Use traditional training delivery methods alongside methods of delivery that support the use of IT, such as web conferences.

*We will have achieved this when:*

- school managers and administrators are confident and capable in their application of IT software tools;
- new Internet-enabled tools are supporting school business processes.