Leadership enhanced by information and communication technologies responds to the expectations, challenges and possibilities of 21st century education in effective, integrated, transformative ways.
Contemporary learning – learning in an online world articulates national priorities, strategic directions and requirements to achieve the national vision of all schools confidently using information and communication technologies (ICT) in their everyday practices.

The Leadership Strategy highlights issues in the development and application of school-based and systemic leadership to support the seamless integration of ICT in 21st century learning environments.

Leadership capability

A broad range of leadership skills and attitudes is required. National and international research indicates that purposeful, effective system and school leadership incorporates and blends a range of leadership styles and strategies. These take into account vision, culture, context, constraints and possibilities.

Technologies enable new leadership strategies and practices. Contemporary leaders require knowledge, skills, and attitudes in:

- responding to student and community ICT engagement, expectation and expertise
- developing ICT dispositions and capacity in learning, pedagogy, and administration
- analysing and applying data to improve learning
- building workforce capability
- evaluating the educational soundness of ICT, software and systems
- building and sustaining quality content, infrastructure, and technical support.

Leadership responsibility

Effective leaders in an online world understand the transformative potential of ICT. They use their skills in the creation of new learning environments, in the appropriate and purposeful integration of ICT in learning, and in high-level management and communication processes. In these ways leaders are proactive in creating productive 21st century schools.

Leadership Priority

Jurisdictions are committed to shared leadership, professional learning and workforce-planning, in building the capability of using ICT to transform learning. They recognise the critical importance of educational leadership, investing in:

- developing required competencies
- equipping principals, teachers and support staff with the knowledge, skills, tools and experience to transform the use of ICT
- connecting and supporting leaders, in various roles, across schools and systems
- developing partnerships between the home, school and community.
Australian and New Zealand schools are progressively integrating ICT in teaching, learning, and administration. Teachers increasingly utilise ICT to:

- support experiential, constructivist learning in schools and across learning sites
- engage students in personalised, collaborative, connected and interactive learning
- broaden and use new pedagogies and assessment approaches.

School and system leadership that maximises the possibilities accessible through contemporary technologies can do more than enhance current practice. This leadership has the potential to transform learning, teaching, and management. It connects to student and community expectations of ICT integrated with learning.

School and system leadership uses the possibilities of ICT to:

- inspire a shared vision of the role of ICT in creating new learning possibilities
- model effective communication, and educational and management practices
- support leaders and leadership teams
- develop staff knowledge and capability
- improve learning using approaches appealing to and inclusive of all students
- personalise student and staff support
- obtain and analyse data that informs policy, management, and improvement
- collaborate beyond the school to extend learning opportunities and organisational growth.

Principals as pivotal leaders have a professional responsibility and accountability to ensure educationally sound, well-planned, and sustainable school-wide integration of ICT.

School leadership uses the possibilities of ICT to improve student outcomes by:

- establishing school goals focussed on high levels of student learning
- establishing safe, stimulating and sustainable learning environments
- providing easy and equitable access to learning and resources
- promoting online learning and blended learning.
In an online world

- providing quality content, services, infrastructure and technical support
- using achievement data to monitor, analyse, review and report.

In ensuring appropriate and effective pedagogies integrating ICT, school and system leaders:
- raise awareness of current educational theories, practices and technologies
- connect new knowledge and technologies to existing knowledge and pedagogies
- provide teachers with necessary resources and professional learning opportunities
- connect teachers to each other, and to experts and resources beyond the school
- engage teachers in curriculum, teaching and learning, assessment, reporting and decision-making
- leverage students’ expertise and willingness to embrace ICT.

In building learning communities, school and system leaders integrate ICT to:
- foster shared beliefs and a sense of community
- seek feedback and appraise the organisation
- recognise accomplishments and acknowledge problems
- connect the home and school
- build networks between parents, students and educators.

In administration, planning, management, resource provision and improvement, school and system leaders integrate ICT to:
- challenge the status quo and maintain a future thinking vision
- establish and support standard operating procedures and routines
- build strong communication among teachers, students and school communities
- procure and distribute resources, ensuring useability
- monitor, evaluate and report on the effectiveness of policies and practices
- plan for continuous improvement.

Leaders in an online world understand effectiveness depends on monitoring and improving their knowledge, skills and dispositions in leadership, education and ICT. They work with ambiguities and transitional difficulties, establishing a culture of inquiry and knowledge creation that supports clarity and directions in considering future possibilities.
The following principles provide a framework for transformative leadership that integrates information and communication technologies (ICT) to improve teaching and learning.

**PEDAGOGY**

*Effective use of ICT enables and requires leadership that:*

- affirms, utilises and extends student engagement with, and expertise in, ICT
- creates student-centred, constructivist, interactive and blended learning environments
- promotes pedagogies effectively integrating ICT in order to personalise learning and ensure higher order learning and meta-cognition
- monitors and manages the access to, and impact of, ICT on all groups of students.

**EDUCATIONAL SOUNDNESS**

*Effective use of ICT enables and requires leadership that:*

- makes judgements about the use of ICT adding value to the intended learning
- aligns and shares information, practices, knowledge and skills across the school, between schools and with education systems
- appraises the inclusiveness, appropriateness, effectiveness and ethics of using ICT in learning and communication
- engages all students with ICT in ethically, culturally sensitive and productive ways.

**PROFESSIONAL LEARNING**

*Effective use of ICT enables and requires leadership that:*

- engages teachers with the teaching and learning possibilities afforded by new and emerging technologies
- provides professional learning and connects staff with school and external professional expertise and experience
- recognises and utilises student ICT expertise and leadership in extending collective professional knowledge and capacity
- models purposeful and confident use of technologies, critically evaluating the use of ICT in their work.
ICT and leadership

EVIDENCE-BASED

Effective use of ICT enables and requires leadership that:

• undertakes new leadership roles, styles and actions uniquely afforded by ICT
• maintains a knowledge of current and emerging ICT, engaging in critical evaluations of their use
• generates, collects, analyses and acts on data in improving teaching and learning
• sustains a research culture using technologies to manage on-site research and to connect with expertise in schools, universities and other research centres.

MANAGEMENT

Effective use of ICT enables and requires leadership that:

• establishes a whole-school planned and sustained ICT integration program with quality technical support
• creates and encourages improvements and efficiencies in curriculum, pedagogy, assessment and reporting, with flexible management and learning programs
• establishes flexible and transparent systems for collective planning, sharing of resources, monitoring student progress, resource provision and administration
• establishes protocols and processes to manage ICT communication, interaction, priorities and workloads.

PARTNERSHIPS

Effective use of ICT enables and requires leadership that:

• creates new local and global education communities, extending learning opportunities beyond the classroom
• connects schools to each other, to education systems and communities, responding to requirements and priorities
• connects students and their families to learning programs, required tasks, student work, assessment and attendance
• draws on community expertise in planning and sustaining ICT innovation.
realising possibilities

The critical use of ICT provides new environments for leaders to extend their leadership, enhancing its quality and effectiveness. Teaching, learning and management practices incorporating current and emerging technologies create new responsibilities for leaders and provide new leadership possibilities.

Transforming learning environments

21st century technologies make the learning different. Students expect that their learning environments, in school, at home, socially, at worksites and on-line, will be technologically-rich, compatible and interconnected.

Leaders connect to the high levels of student interest, skills and needs. They ensure educationally sound provision of ICT, programs and activities in creating blended, synchronous and asynchronous access to learning. They provide connectivity, reliable systems, software and hardware, seamless access to content and services, and quality technical support.

Transforming teaching and learning

21st century education requires new pedagogies, different types of learning goals and educational worksites that personalise learning. New forms of conceptualisation and meta-cognition require students to digitise, represent and analyse information that develops higher order thinking skills.

Leaders provide teachers and support staff with technological tools to create efficiencies in managing planning, teaching, assessment and reporting.

Teacher time spent learning ICT processes and developing capabilities to integrate ICT in teaching and learning is seen as an investment. Leaders establish protocols and processes for communication, managing workload issues and ensuring the appropriate targeting of effort to achieve educational outcomes inclusive of all students.

Transforming management

21st century education requires a professional, streamlined and effective administration. ICT enable new efficiencies and an increased capacity to utilise data to inform system and school policies and processes. Leaders use ICT to connect administration, to priorities, strategic planning and transparent governance.

They work with their community to critically examine the practical allowances, constraints and opportunities for integrating ICT.
in an online world

Enhancing collaboration

Leaders utilise ICT to engage the community in school governance, management and decision-making, and in creating new models of schooling. They establish a culture and processes of knowledge exchange decision-making and planning based on innovation, evidence and information. They lead their communities in transforming research, including in-school data analysis, into action.

Creating new education communities

ICT allow students, teachers and community members to connect to broader educational and information communities. Leaders and their schools participate in new local and global educational communities, engaging with diverse knowledge and perspectives.

Leaders address social inequities, ensuring that in-school provision of technology-based learning is available to all students. They recognise the importance of access beyond the school, working with the community to develop sustainable programs that increase access for students and their families.

Taking advantage

Leadership is enhanced by, and responsive to, emerging technologies and systems. Leaders appraise the potential of and use:

- mentoring programs for students, staff and community
- defined standards and effectiveness measures for online and blended learning
- online teaching, learning and assessment resources, programs, tools and services
- online professional learning and leadership programs based in an audit of capabilities
- learning systems supporting online and blended learning
- video conferencing, pod-casting and audio-data conferencing for staff, students and the community
- data analysis in monitoring school achievement and setting targets
- electronic reporting to students, parents and systems
- explicit protocols and modelled ethical behaviours in relation to e-access, emails, internet use, and community engagement
- security and safety policies and procedures protecting students and staff
- governance and administration processes with transparent accountabilities.
Effective leadership across the school or organisation depends on:

- understanding the potential of ICT to extend and transform the school learning environment
- examining allowances and constraints created by technologies and their applications
- developing whole-school planned and sustained ICT integration programs
- providing adequate infrastructure, technical support and maintenance
- developing, recognising and utilising staff, students and community leadership
- ensuring quality professional learning.

Professional considerations

The social and economic changes created by technologies, together with student engagement and expertise in their use, create educational, management and ethical issues for leaders. The use of ICT in learning raises questions about purposes, roles, responsibilities and relationships to be considered by leaders in their professional learning and in the support they provide.

Principals, school technology leaders, system educators, and professional associations consulted through the national research project on leadership and ICT commissioned by Teaching Australia (2005) identified priorities for professional learning programs, including:

- team-based whole school change
- school community reviews of the role of ICT in learning outcomes
- a school culture valuing risk-taking and innovation
- analysis of ICT requirements and making judgements about future needs
- connecting new knowledge and technologies to current practice
- participation of principals and senior educators.

Leadership and professional learning

Leadership that builds the capability of all staff to integrate ICT in teaching, learning and administration is critical. This requires focussed pre-service and post-graduate university courses, school-based professional learning programs, jurisdiction leadership initiatives and national collaboration.
Ministers of Education in Australia and New Zealand require teacher education programs that align with system expectations and contemporary pedagogies.

*Australia’s teachers: Australia’s Future (2003)* recommends:

- all teacher education programs prepare prospective teachers for the digital age, and
- opportunities be created for teachers to upgrade their ICT knowledge and skills.

Pre-service and continuous in-service professional learning enables teachers and support staff to critically integrate ICT by:

- focussing on school improvement
- addressing the multiple, interactive elements of ICT use
- listening to and empowering students
- providing tools to evaluate levels of integration of ICT in learning
- developing collaborative networks.

**Developing leadership capability**

Professional activities supporting and developing leadership capability include:

- participating in professional learning provided by systems, agencies and universities
- relating professional learning to the work context
- engaging in, and establishing, mentoring relationships
- connecting in-school leaders with leaders and programs in other schools
- using and evaluating a range of technologies, programs and tools
- relating the professional work of educators to technological capacities
- integrating the work of technology support staff with teachers, students and the school community
- connecting student leaders, teachers and teacher educators in collaborative learning.
Leaders for the Future

Future leaders require the capacity to take account of visionary learning possibilities, evaluate and deploy appropriate technologies, and build the capability of all staff to confidently use ICT in their everyday practices to improve teaching, learning and administration. Government, school and system leaders, professional associations, researchers and universities have responsibilities to ensure current and future leaders utilise the educational possibilities afforded by ICT to improve access to learning, participation in relevant programs and achievement for all.

Promoting Leadership

Government and jurisdictions:
- identify opportunities for national and bi-lateral collaboration to improve breadth and depth of ICT penetration driving 21st century learning
- provide targeted professional learning and mentoring for leaders and potential future leaders
- ensure professional learning design is based in the appropriate use of current and emerging technologies
- provide local and national online networks for leaders.

Principals and teachers:
- ensure ICT leadership across all levels of the school community
- review their leadership and the possibilities that ICT affords to teaching, learning and management
- mentor potential leaders, providing leadership experiences within and beyond the school.

Professional and collegial associations:
- include ICT leadership knowledge and skills as a component of all professional learning programs
- inform professional understandings of effective leadership
- maintain online professional communities for leaders.

Universities and research associations:
- include ICT leadership as an integral component in pre-service and post-graduate professional learning programs
- engage the profession with research on effective leadership and ICT.