

**Minimum
Standards
for Teachers —
Learning
Technology**



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Part A

Minimum Standards
for Teachers —
Learning Technology

Introduction

The Schooling 2001 project aims to improve student learning outcomes through the integration of computers into the curriculum by bringing worldwide information resources to Queensland state school classrooms. The achievement of this aim is dependent on the confidence and competence of teachers in the use of computers for learning and teaching.

Professional development funding

One of the key result areas of the Schooling 2001 project is staff development. As part of this initiative, professional development grants are distributed directly to schools. All schools will receive funds to develop, maintain and increase teachers' skills in the learning technology standards and the application of these to learning and teaching in all Key Learning Areas, P-12.

The formula for the allocation of professional development funding to schools is based on teacher numbers and is approximately \$500 to \$550 per teacher, but no school will receive less than \$600.

Funds may be expended on any service or resource that helps to achieve the Schooling 2001 target — for example, teacher release, laptops for teachers, registration fees for courses, payment of professional development providers, and professional development and training materials.

Successful professional development programs address the identified needs of staff. Decisions concerning the most effective use of the professional development funds should be made in consultation with teachers including, in larger schools, consideration by the local consultative committee.

Enterprise Bargaining Agreement 1997

The Department of Education Certified Agreement 1997 states:

4.6 Information Technology

- (3) The parties acknowledge the importance of integrating technology into classrooms to enhance quality teaching and learning in state schools. The development and use of new technologies which assist teaching and learning

require an increasingly skilled workforce. The parties acknowledge further that teachers as professionals have a commitment to professional development and training involving both schools and their own time.

As professional development and technology resources become available to schools through the Schooling 2001 Project, teachers will undertake the professional development and training necessary for each individual to acquire the appropriate competencies in a **combination of school time, student-free days and outside school hours** as determined at a school level.

4.7 Professional Development and Training

- (4) The parties are committed to the implementation of the comprehensive professional development and training agenda that have been developed. For teaching staff, the parties are committed to:
 - (b) *the involvement of teachers in an annual program of professional development and training. This may comprise activities scheduled for pupil free days, programs during rostered duty time (with appropriate relief arrangements) and activities voluntarily undertaken outside rostered duty time;*
 - (d) *the incorporation of information technology in the classroom teaching and learning program which will be the focus for professional development activity by teaching staff and the department.*

This priority should be reflected in staff access to professional development funds and time off for professional development.

Key areas

The minimum standards for teachers — learning technology have been divided into four key areas:

- information technology skills;

- curriculum application including classroom planning and management;
- school planning;
- student-centred learning.

The IT skills area focuses on the operation and use of both hardware and software. Curriculum application addresses the use of learning technology in Key Learning Areas and encompasses classroom management strategies. School planning looks at the processes and procedures that promote continuity and coordination of learning technology activity at the whole-school level. This section relates to the Management and Learning Technology (MALT) Plan. Student-centred learning deals with the application of effective learning and teaching processes to learning technology.

The systemic target for the year 2001 is *'all teachers with a minimum level of skill in the use of computers for learning'*. This means that teachers are expected to attain the minimum standards — learning technology in all four areas. Descriptors that appear in **bold** text are regarded as mandatory and teachers must achieve these. It is desirable that teachers also achieve the descriptors that are not in bold text, but they are not mandatory.

Process

There are several ways of using the learning technology standards in your school. A checklist of descriptors has been developed for teachers to use to assess their current level in each of the four key areas. Schools can gather data from staff to establish the current levels of teacher expertise to inform the design and development of professional development programs.

The following process has been trialled in a number of schools and proved to be effective:

- brainstorm issues relating to current learning technology programs within the school;
- collect data on the two main areas:
 - human resource audit (using the minimum learning technology standards checklist);
 - physical resource audit (hardware and software registers, location of resources etc.);
- collate data; establish a database;
- analyse data to inform future decision making about resourcing and professional development;
- design professional development programs for teachers;
- survey teachers for preferred professional development modes;

- implement professional development courses and training programs;
- apply skills and strategies from professional development to classroom practice and school planning.

This process has been carried out simultaneously with the task of developing a learning technology plan for the school, using the Management and Learning Technology (MALT) Plan framework. This framework incorporates the management area as well as the use of learning technology. Components of both the human and physical resource audits feed into the elements of this MALT Plan.

Schools are invited to develop and explore their own processes for implementation of the minimum learning technology standards for teachers.

Standards for the development and delivery of professional development and training

When developing a professional development and training program and planning such a program for teachers, schools should refer to the publication *Standards for the Development and Delivery of Professional Development and Training*, produced by the Centre for Teaching Excellence, Education Queensland, 1998.

This document details:

- eleven standards for the development of a professional development and training program;
- additional factors to be considered when developing a professional development and training program;
- six standards for the delivery of a professional development and training program; and
- additional factors applied specifically for face-to-face delivery of a professional development and training program.

Care must be taken when employing outside providers to ensure that the professional development and training is applied to education settings and is directly related to the resources and organisation of a particular school setting. It must be emphasised that the focus of all professional development and training should remain firmly on what teachers are actually going to do in their classroom with students.

Professional development models

Models for the design of professional development and training programs may include:

- key teacher model (train a small number of key teachers, and then those key teachers are responsible for training other members of staff in their area);
- buddy system;
- whole-staff training;
- peer tutoring, coaching or mentoring;
- self-identification of professional development needs and solutions;
- group training according to like needs;
- follow-up support for classroom integration, planning and implementation;
- observation of teaching practice by peers.

In the design of your professional development model, note that it is not sufficient for teachers to attend professional development and training courses to achieve the learning technology standards. It is necessary for teachers to apply the skills and strategies to the classroom and school settings to achieve the minimum standards.

Professional development modes of delivery

Various modes of delivery for professional development are available and may be appropriate for your teachers. Some suggestions are:

- self-paced tutorials using booklets, disks, the Internet, CD-ROM learning packages etc.;
- a trainer to lead professional development courses on site using the school's existing resource base;
- a trainer and training room at a cluster-based school venue;
- attendance at training courses offered by private providers (commercial businesses) or professional associations;
- peer tutoring and mentoring: pair teachers off with a critical friend;
- visits to best practice sites;
- participation in tertiary courses offering credit for particular modules.

1. IT skills — Minimum standards for teachers

Goal: A teacher will develop skills in the use of computers for his/her own personal ends, such as administration, preparation and presentation.

Standards: A teacher will produce documents for his/her own use, for example, timetables, mark books, certificates, worksheets and letters.

A teacher will be able to perform the following IT skills on the computer platform located in his/her own classroom or school setting.

	Descriptors	Checklist
Hardware	<ul style="list-style-type: none"> • recognises basic system components and connections (monitor, keyboard, CPU, printer) • operates a printer — changes ribbon or cartridge, loads paper or envelopes • recognises input devices (keyboard, mouse) • determines the configuration (knowledge of the memory capacity, e.g. 8 Mb, and the hard-drive capacity, e.g. 800 Mb) • starts up and shuts down system or software 	
Software: <ul style="list-style-type: none"> • applies software/hardware to complete practical tasks 	<ul style="list-style-type: none"> • understands basic operating system functions <ul style="list-style-type: none"> – files and directories or folders – menus and desktops – deleting, copying and moving files – backup systems – virus protection • performs basic word-processing operations <ul style="list-style-type: none"> – create new documents – open and close files – save and edit – cut and paste – basic formatting and printing of a document • is aware of categories of software: publishing, word processing, spreadsheet, database, multimedia, communications 	
Telecommunications	<ul style="list-style-type: none"> • uses basic functions of a WWW browser to search and locate information (e.g. activate link, move forward and back, print page, etc.) • sends and receives email messages 	

2. Curriculum applications including classroom planning and management — Minimum standards for teachers

Goals: A teacher will incorporate the use of computers as teaching/learning tools in achieving and extending curriculum goals. A teacher will ensure equitable access, participation and outcomes for students in his/her use of computers for learning.

Standards: A teacher has an awareness, knowledge and understanding of the use of learning technology across the curriculum. A teacher plans and implements computer-based activities with his/her students.

	Descriptors	Checklist
Selecting worthwhile activities	<ul style="list-style-type: none"> • is familiar with Education Queensland's Guidelines for the use of computers in learning and policy. • explores a range of software types and their possible applications: <ul style="list-style-type: none"> – content free (generic) – curriculum software – electronic information systems (CD-ROM and Internet) • identifies software appropriate for a variety of student needs within his/her class • uses prepared evaluations of software packages and matches software with curriculum goals 	
Organising worthwhile activities	<ul style="list-style-type: none"> • organises student access to CD-ROMs and Internet-based resources for research projects or for special education students, organises access to appropriate adaptive technologies • delivers and assesses student learning activities using at least one curriculum software package and one generic software package • designs computer-based learning tasks which have explicit links to curriculum goals and learning outcomes 	
Classroom management	<ul style="list-style-type: none"> • recognises the various models of computer access appropriate for student activities (e.g. whole class, small group, individual) • adjusts students' access to computers in response to the nature of the learning activity • implements procedures that: <ul style="list-style-type: none"> – provide students with flexible (vary duration) access; – provide students with regular access; and – meet the need/s of curriculum activities. • organises student use of computers as part of the planned learning activities given available resource base: e.g. <ul style="list-style-type: none"> – book computer lab – contracts – learning centres – rosters 	
Review and evaluation	<ul style="list-style-type: none"> • reflects on the planned learning activities which incorporate the use of computers • identifies the strengths and weaknesses of the activity and the resources • shares his/her learning experiences with colleagues 	

3. School planning — Minimum standards for teachers

Goals: A teacher will participate in ongoing discussions and experimentation related to the use of computers in the curriculum.

Standard: A teacher has an awareness, and knowledge of the learning technology elements of the school Management and Learning Technology (MALT) Plan.

Descriptors	Checklist
<ul style="list-style-type: none"> • is aware of and understands the learning, teaching and curriculum section of the school's MALT Plan. 	
<ul style="list-style-type: none"> • is aware of learning technology professional development programs for staff. 	
<ul style="list-style-type: none"> • is aware of learning technology funding and decision-making processes in the school. 	
<ul style="list-style-type: none"> • can identify the link between the learning, teaching and curriculum section of the MALT Plan and his/her planning and classroom practice. 	
<ul style="list-style-type: none"> • discusses continuity in the integration of learning technology with other staff across year levels and curriculum areas. 	

4. Student-centred learning — Minimum standards for teachers

Goal: A teacher will participate in ongoing discussions and experimentation related to the use of computers in the curriculum.

Standard: A teacher has an awareness of the principles of effective learning and teaching in his/her use of learning technology.

	Descriptors	Checklist
Understand the learner	<ul style="list-style-type: none"> Identifies students' prior experiences with and attitudes to computers at home and at school Adapts computer-based activities for students with special abilities, needs and interests Accommodates the learner as an individual and independent learner as well as a member of a group Provides a variety of computer-based learning activities to cater for diversity of learning styles 	
Understand the learning process	<ul style="list-style-type: none"> Is aware of how computers can support all elements of the learning process: perception, processing and (re) presentation Provides a clear focus and purpose for computer-based activities Balances guided and self-directed activities 	
Supportive and challenging environment	<ul style="list-style-type: none"> Creates a warm supportive atmosphere which fosters risk taking Uses open-ended software and open-ended tasks to promote problem solving Uses the technology to extend the learning environment beyond the walls of the classroom 	
Worthwhile partnerships	<ul style="list-style-type: none"> Facilitates peer tutoring and cooperative learning processes Utilises support staff, teacher aides, parents and community members Identifies and liaises with a more experienced teacher in the use of learning technology 	
Social and cultural contexts	<ul style="list-style-type: none"> Provides opportunities for learners to share their perceptions of technology in society Reflects on the impact of new technologies and cultural change on the curriculum, structure and organisation of schooling, and the nature of childhood 	

Part B

The Assessment and
Credentialling Process

Description

The assessment framework for the teacher minimum learning technology standards has been designed to cater for the variety of school settings across the State. Consistency is achieved by the non-negotiable nature of the descriptors for each of the four key areas, and the alignment of the framework with Centre for Teaching Excellence process for a credential.

Key elements

The key elements of the assessment and credentialing process are:

1. Responsibility for assessing the standards lies with the principal or his/her delegate.
2. The process used for assessment is a school-based decision. Determining the process requires consultation with staff and, in larger schools, consideration by the local Consultative Committee in accordance with the requirements of the Enterprise Bargaining Agreement.
3. To receive a learning technology credential, teachers must demonstrate the attainment of all descriptors in bold type in each of the four key areas. The emphasis must be on applying the standards to the teaching and learning process.
4. When a principal is satisfied that a teacher has achieved the standards in all four key areas, an Education Queensland credential should be sought by forwarding the form in Appendix A to the Centre for Teaching Excellence. (Principals have the capacity to recognise the prior learning of experienced teachers in each of the four key areas.)
5. An Education Queensland certificate will be issued for presentation to the teacher by the principal.
6. Teachers who wish to gain credit with a tertiary educational institution in Queensland present the Education Queensland certificate and the mandated contents of a portfolio (see Appendix B) to their course convenor.
7. Non-teaching staff may also seek a credential, using a similar process, by consulting either the principal of their base school or the line manager in their workplace.

The flexibility of this framework lies in the opportunity for schools to design an assessment process that suits their particular needs, taking into account factors such as size, geographical location, availability of resources, expertise of staff, sector, specialist personnel, timelines and organisational factors within the school.

Teaching principals, for example, have a range of options for managing the assessment process. They may:

- cluster with other schools either face to face or by teleconference in a collaborative assessment process;
- participate in the assessment process at a larger school;
- be assessed by an Education Adviser — Local Needs (Learning Technology) or other district office personnel.

On achieving the minimum standards, teaching principals will complete the form in Appendix A for themselves and forward it to the Centre for Teaching Excellence to receive their Education Queensland credential.

Funds provided in the Schooling 2001 Professional Development Grant may be used to defray costs associated with the process.

Successful assessment processes will ensure individual teachers have access to sufficient resources to demonstrate their achievement of the standards. Where teachers have limited access to computers for use with their students, the school assessment model should facilitate this access.

A range of support materials has been developed to assist schools in the design and implementation of a school-based assessment process:

Appendixes

- A Application for Credential
- B Tertiary Assessment Portfolio
- C Professional Development Register
- D IT Skills Audit
- E Software Evaluation

- F Learning Log — Reflection on Computer-based Activity
- G Learning Log — Effective Learning and Teaching Principles
- H Assessor's Checklist
- I Sample Strategies and Questions for the Assessment Process
- J Sample Letter for Course Convenor
- K Explanatory Notes for Teachers Supporting Students with Special Needs
- L Adaptive Technology Resources

School Assessment Framework

The School Assessment Framework consists of the following components:

- what — demonstrated evidence of all four key areas of the minimum standards;
- who — selection of personnel convening the assessment process;
- when — determining the time/s of assessment throughout the school year;
- how — process model to be used.

What + Who + When + How = Your school's assessment model

Personnel convening the assessment process at your school may use a set of assessor's checklists for each applicant. (See Appendix H.) Assessors could check off descriptors under each of the four key areas as they see demonstrated evidence of the standards.

Sample school assessment models

The following models of school-based assessment have been trialled in schools across the State and may assist you in the design and implementation of your school's assessment model. These models may be adapted for secondary, primary and special schools as well as for clusters of schools.

1. Peer mentoring and coaching model — large secondary school

The administrators and heads of departments (HODs) designed a model of assessment for their school in two phases. First, they themselves ran through an assessment process as participants, and second, they designed a model of assessment for the teachers in their areas and implemented this model.

Phase one

- What — Administrators and HODs prepare a portfolio similar to sample in Appendix B.
- Who — Participants assess peers. Principal delegates to administrators and HODs.
- When — Assessment date set allowing participants to work to timelines. No Teacher Release Scheme (TRS) days or school time required as assessment session is from 3.30 p.m. to 5.00 p.m.
- How — Peer mentoring and coaching. Each participant is assessor for one other participant. Participants sit around table, swap portfolios and complete assessor's checklists for the applicant they are reviewing. Portfolios are used to check off as much demonstrated evidence of descriptors as possible. Members of the group utilise informal interviewing, questioning and discussion to assess other descriptors.
A second assessment date is set for participants who are unable to demonstrate all descriptors. Principal is advised of outcomes and forwards credential form to Centre for Teaching Excellence.
Participants who achieve the minimum standards receive an Education Queensland certificate.

Phase two

Each HOD develops a faculty/department assessment model in consultation with the teachers in his/her area. These models range from peer mentoring to review panels. Strategies include questions, classroom observation, and review of work samples and portfolios.

Implementation of models occurs during school hours and after school. TRS days are provided to some participants and assessors.

Variations

This model has also been used in the following ways:

- In large primary schools one teacher from each year level participates in phase one of the process.
- When using phase one of this model, take care to ensure that groups are not too large.

- Clusters of schools use the model at various intervals throughout the school year. Usually the network meeting is the venue for the assessment process.
- Teaching principals use phase one, either face to face at a nearby school or through a teleconference with staff from a larger school in the area.

2. Portfolio and discussion model — suitable for all schools

Teachers demonstrate their achievement of the minimum standards — learning technology in the following way:

Key area 1 — IT skills

Teachers prepare a portfolio containing:

- a word-processed document;
- a document printed from the World Wide Web;
- a copy of one email message sent and one email message received;

Key area 2 — curriculum applications

Teachers prepare a portfolio containing two learning activities (either individually or collaboratively produced), which includes:

- one based on curriculum software;
- one based on generic software;
- consideration of classroom management issues;
- consideration of the *Guidelines for the use of computers in learning* and policy.

Key areas 3 and 4 — school planning and student-centred learning

As these key areas relate to awareness, the minimum standard can be achieved by:

- registered participation in an in-service session related to the school MALT Plan;
- registered participation in an in-service session on the use of learning technology and the principles of effective learning and teaching.

These in-service sessions may take place at a school staff meeting or on a student-free day.

Framework for designing a school assessment model

What	Who	When	How
<ul style="list-style-type: none"> Demonstrated evidence of achievement of standards in all four key areas <p><i>This element is compulsory.</i></p>	<ul style="list-style-type: none"> Possible options for who may be involved in management of the assessment process and model in your school 	<ul style="list-style-type: none"> Possible options for when the assessment may take place and how often (include release if applicable) 	<ul style="list-style-type: none"> Possible models for how the process may take place, given the nature of various school characteristics — size, geographical location, sector, non-mainstream schools, specialist teachers etc.
	<ul style="list-style-type: none"> Administrator (principal/DP/HOD) Computer coordinator Technology committee Experienced teacher Teacher already credentialled for achievement of minimum standards Panel Teacher with EQ credential from nearby school Personnel from within the cluster of schools District office personnel Nearby large school staff Network of teachers in like positions Local needs adviser — learning technology Visiting specialists Commercial provider Association personnel (QSITE) 	<ul style="list-style-type: none"> Various intervals throughout the school year determined by identified need of teachers CCT time for IT Coordinator Student-free day TRS release Subject area/faculty meetings Year-level meetings Teaching team meetings Staff meetings Set times on school calendar — e.g. mid-term Ad hoc, based on teacher readiness 	<ul style="list-style-type: none"> Peer mentoring Teleconferencing/video conferencing Observation MALT Plan register (read document and sign register) Subject area/faculty meetings Year-level meetings Teaching team meetings Staff meeting Interview informal Working in school cluster Self-reflection with evidence Network meetings Portfolio

Note: Your School Assessment Model = What (given) + Who + When + How

Appendix B Tertiary Assessment Portfolio

Teachers who wish to seek credit from a Queensland tertiary institution for their achievement of the minimum learning technology standards must complete the following process:

- achieve the Education Queensland credential for Minimum Standards for Teachers — Learning Technology;
- complete all elements of the learning technology portfolio;
- submit the Education Queensland certificate and portfolio to the course convenor or lecturer.

Mandated contents of learning technology portfolio for tertiary credit

IT skills

- Complete IT skills audit (see Appendix D);
- Work samples:
 - two examples of word-processed documents for personal or professional use;
 - printed copy of a World Wide Web page;
 - copy of an email message sent and received;
 - floppy disk demonstrating an understanding of personal folders or directories.

Curriculum applications

- Unit of work illustrating integration of learning technology
- Completed software evaluation (see Appendix E)

School planning

- This is demonstrated by achievement of Education Queensland credential.

Student-centred learning

- Two learning logs:
 - reflections on computer-based activity (see Appendix F);
 - reflections on ELT principles (see Appendix G).

Optional — Teachers may also include student and/or teacher work samples.

Format — The portfolio may be presented in a format of the teacher's choice — e.g. on a disk or in a folder.

While the contents of this portfolio are mandatory for the purposes of tertiary credit, they may be adapted for use as part of a school's assessment process.

Appendix D

Minimum Standards for Teachers — Learning Technology IT Skills Audit
Computer platform: (e.g. IBM compatible, Macintosh)
Model: (manufacturer's designation or processor speed)
RAM:
Hard-drive size:
Operating system used: (e.g. Mac OS 7.5, Windows 95)
Does the computer have a CD-ROM? If yes, what type? (e.g. 3 spin)
Does the computer have a floppy drive? If yes, what size? Internal or external? (e.g. 5 $\frac{1}{4}$ " ; 3 $\frac{1}{2}$ ")
Monitor type and resolution:
What peripherals are attached to your computer? (mouse, printer, scanner)
If a printer is attached, what type is it? If no, how do you print documents? (e.g. dot matrix, ink jet, laser)
What virus protection software package is used in your school?
What is your school's policy relating to virus protection?
What is the location of your personal directory on the file server? (for networked schools only) (e.g. C:\SCHOOL\STAFF\BOB)

Appendix E

Minimum Standards for Teachers — Learning Technology Software Evaluation	
Name of software package	
Program type (content free, content specific)	
Hardware platform (e.g. Macintosh, Windows)	
System Requirements (e.g. memory, CD)	
Suggested year levels for use	
Curriculum applications	
Reference to key learning area/s	
Description/features	
Overall comments	
Recommended: Yes/No — Why?	

Appendix F

Minimum Standards for Teachers — Learning Technology Learning Log — Reflection on Computer-based Activity	
Name and description of activity	
Date of implementation	
Year level of client group	
Reflections of implementation of activity	
Suggested changes for reimplementation of activity	
Other comments	

Appendix G

Minimum Standards for Teachers — Learning Technology Learning Log — Effective Learning and Teaching Principles	
Name and description of activity	
Date of implementation	
Year level of client group	
Understand the learner (How did your classroom practice reflect this principle?)	
Understand the learning process (How did your use of computers support the learning process?)	
Supportive and challenging environment (How did your use of computers contribute to the learning environment?)	
Worthwhile partnerships (What partnerships did your use of computers support, promote or utilise?)	
Social and cultural contexts (How did your use of computers respond to or shape social and cultural contexts?)	



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Education Queensland
Education Services Directorate
Learning, Teaching and Technology Unit

Schooling 2001

**Minimum Standards for Teachers —
Learning Technology**

Assessor's Checklist

Name of applicant	
Date of assessment	
Name of assessor/s	
Signature of assessor/s	

1. IT skills — Minimum standards for teachers

Standards: A teacher will produce documents for his/her own use, for example, timetables, timetables, markbooks, certificates, worksheets and letters.

Goal: A teacher will be able to perform the following IT Skills on the computer platform located in his/her own classroom or school setting.

	Descriptors	Checklist	Strategies/Sample Questions
Hardware	<ul style="list-style-type: none"> recognises basic system components and connections (monitor, keyboard, CPU, printer) 		Refer to IT Skills Audit
	<ul style="list-style-type: none"> operates a printer — changes ribbon or cartridge, loads paper or envelopes 		Q
	<ul style="list-style-type: none"> recognises input devices (keyboard, mouse) 		Q
	<ul style="list-style-type: none"> determines the configuration (knowledge of the memory capacity, e.g. 8 Mb and the hard-drive capacity) 		Refer to IT Skills Audit (e.g. 800 Mb)
	<ul style="list-style-type: none"> starts up and shuts down system or software 		Q
	<ul style="list-style-type: none"> understands basic operating system functions <ul style="list-style-type: none"> files and directories or folders menus and desktops deleting, copying and moving files backup systems virus protection 		Refer to floppy disk in development portfolio
Software:	<ul style="list-style-type: none"> performs basic word-processing operations <ul style="list-style-type: none"> open and close files save and edit basic formatting and printing of a document cut and paste is aware of categories of software: publishing, word processing, spreadsheet, database, multimedia, communications 		Q Refer to IT Skills Audit
	<ul style="list-style-type: none"> uses basic functions of a WWW browser to search and locate information (example: activate link, move forward and back, print page, etc.) 		Refer to work samples in developmental portfolio.
	<ul style="list-style-type: none"> sends and receives email messages 		Q
			Q
			Refer to work samples — printed copy of a www page — copy of an email message sent and received
Telecommunications			

2. Curriculum applications including classroom planning and management — Minimum standards for teachers

Standards: A teacher has an awareness, knowledge and understanding of the use of learning technology across the curriculum.

Note: A teacher plans and implements computer-based activities with his/her students.

	Descriptors	Checklist	Strategies/Sample Questions
Selecting worthwhile activities to achieve curriculum goals and to address student needs	<ul style="list-style-type: none"> is familiar with Education Queensland's <i>Guidelines for the use of computers in learning and policy</i> 		Q
	<ul style="list-style-type: none"> explores a range of software types and their possible applications: <ul style="list-style-type: none"> content free (generic) curriculum software electronic information systems (CD-ROM and Internet) identifies software appropriate for a variety of student needs within his/her class uses prepared evaluations of software packages and matches software with curriculum goals 		Refer to software evaluation, unit of work and learning log
Organising worthwhile activities	<ul style="list-style-type: none"> organises student access to CD-ROM and Internet-based resources for research projects or for special education students, organises access to appropriate adaptive technologies 		Q
	<ul style="list-style-type: none"> delivers and assesses student learning activities using at least one curriculum software package and one generic software package designs computer-based learning tasks which have explicit links to curriculum goals and learning outcomes 		Q and refer to student worksheet, learning log and unit of work
Classroom Management	<ul style="list-style-type: none"> recognises the various models of computer access appropriate for student activities (e.g. whole class, small group, individual) 		Informal Discussion
	<ul style="list-style-type: none"> adjusts student access to computers in response to the nature of the learning activity 		
	<ul style="list-style-type: none"> implements procedures that: <ul style="list-style-type: none"> provide students with flexible (vary duration) access; provide students with regular access; and meet the need/s of curriculum activities. 		
	<ul style="list-style-type: none"> organises student use of computers as part of the planned learning activities given the available resource base (e.g. book computer lab, contracts, learning centres, rosters) 		
Review and Evaluation	<ul style="list-style-type: none"> reflects on the learning activities which incorporate the use of computer 		Refer to learning logs
	<ul style="list-style-type: none"> identifies the strengths and weaknesses of the activity and the resources 		
	<ul style="list-style-type: none"> shares his/her learning experiences with colleagues 		

3. School planning — Minimum standards for teachers

Standard: A teacher has an awareness of and knowledge of the learning technology elements of the school Management and Learning Technology (MALT) Plan.

Descriptors	Checklist	Strategies/Sample Questions
<ul style="list-style-type: none"> • is aware of and understands the learning, teaching and curriculum section of the school's MALT Plan 		Q and Informal Discussion
<ul style="list-style-type: none"> • is aware of learning technology professional development programs for staff 		
<ul style="list-style-type: none"> • is aware of learning technology funding and decision-making processes in the school 		Refer to unit of work
<ul style="list-style-type: none"> • identifies the links between the learning, teaching and curriculum section of the MALT Plan and his/her planning and classroom practice. 		Q and Informal Discussion
<ul style="list-style-type: none"> • discusses continuity in the integration of learning technology with other staff across year levels and curriculum areas. 		

4. Student-centred learning — Minimum standards for teachers

Goal: A teacher will participate in ongoing discussions and experimentation related to the use of computers in the curriculum.

Standard: A teacher has an awareness of the principles of effective learning and teaching in his/her use of learning technology.

	Descriptors	Checklist	Strategies/Sample Questions
Understand the learner	<ul style="list-style-type: none"> Identifies students' prior experience with and attitudes to computers at home and at school 		Informal discussion
	<ul style="list-style-type: none"> Adapts computer-based activities for students with special abilities, needs and interests 		Refer to unit of work
	<ul style="list-style-type: none"> Accommodates the learner as an individual and independent learner as well as a member of a group 		Refer to sample questions
	<ul style="list-style-type: none"> Provides a variety of computer-based learning activities to cater for diversity of learning styles 		Rephrase the pointers as questions
Understand the learning process	<ul style="list-style-type: none"> Is aware of how computers can support all elements of the learning process: perception, processing and (re) presentation 		
	<ul style="list-style-type: none"> Provides a clear focus and purpose for computer-based activities 		
	<ul style="list-style-type: none"> Balances guided and self-directed activities 		
	<ul style="list-style-type: none"> Creates a warm supportive atmosphere which fosters risk taking 		
Supportive and challenging environment	<ul style="list-style-type: none"> Uses open-ended software and open-ended tasks to promote problem solving 		
	<ul style="list-style-type: none"> Uses the technology to extend the learning environment beyond the walls of the classroom 		
	<ul style="list-style-type: none"> Facilitates peer tutoring and cooperative learning processes 		
	<ul style="list-style-type: none"> Utilises support staff, teacher aides, parents and community members 		
Worthwhile partnerships	<ul style="list-style-type: none"> Identifies and liaises with a more experienced teacher in the use of learning technology 		
	<ul style="list-style-type: none"> Provides opportunities for students to share their perceptions of technology in society 		
Social and cultural contexts	<ul style="list-style-type: none"> Reflects on the impact of new technologies and cultural change on the curriculum, structure and organisation of schooling, and the nature of childhood 		

Appendix I Sample Strategies and Questions for the Assessment Process

IT skills — minimum standards

(Have the computer nearby.)

Hardware:	Did you complete all the work in this portfolio yourself?
Printer:	How do you print an envelope on an inkjet printer? Show me where you load the ink cartridge.
Input devices:	Demonstrate use of keyboard and mouse.
Start up/Shut down:	Demonstrate starting up and shutting down this computer.
Backup:	How do you back up files?
Cut and paste:	Explain how you cut and paste in a word-processing document.
Categories:	Can you give an example of what you can do on each of the categories of software listed?

Hardware

1. Arrive with IT Skills Audit Sheet completed and discuss.
2. Question teacher on ability to change ribbon and/or cartridge, load paper or envelopes, and possibly ask for a demonstration if unsure.
3. Where do you find out how much memory and hard-drive capacity your machine has?
4. Discussion from the Audit sheet and from the start-up screen.
5. How do you save files to disk? Hard drive? Server?

1. Observation of teacher at a computer.
2. Describe your workstation and its components.
3. Demonstrate.
4. Why do you need to back up files and documents? How do you do it?
5. What is cut and paste? Explain an instance when you would want to cut and paste.

Curriculum applications including classroom planning and management

- Are you aware of the policy document *The use of computers in learning*? List some aims, goals and objectives.
- How did you use a particular software package in a unit of work?
- Name/discuss any activities you and your students have used with CD-ROM and Internet access.
- Have you delivered and assessed any student learning activities using a curriculum and generic software package? Show me or describe the unit/activity plan.

1. Name some of the aims and objectives.

'One of the goals is...'

Discuss one section of the document that has had an impact on your classroom practices.

How have you integrated any of the KLA information in your classroom planning?

Tell me some of the differences between groups of students in how, and how much, they use learning technologies (e.g. boys, girls, non-English-speaking-background students, low socioeconomic background students).

2. When selecting software for class use, what did you base your choice of software on (e.g. higher reading level expectations, diverse needs and experiences of your students)?
3. How would you or do you organise student access to computers (e.g. library time, classroom computers etc.)?
How do you ensure that all groups of students have access?
4. How do you ensure access to computers for individuals and groups of students according to their needs and abilities?
5. Reflection on activities undertaken:
 - Did it work? Why or why not?
 - How did you group your students? Why?
 - Do you take advantage of peer tutoring and how do you organise it?
 - Would/do you use the library access to computers?
 - What are your restrictions in gaining access for planning and teaching activities?
 - How do you share your learning experiences with colleagues?
 - Are some groups of students being marginalised or missing out?

School planning

1. What are the explicit outcomes of learning, teaching and curriculum in your school's MALT Plan?
2. What procedures would you follow to acquire technology resources for your classroom?
3. How do your school's MALT outcomes align with your classroom practice?
4. How do you find out what is available for professional development in your school?
How do you use the professional development register?
5. Discuss suggestions for planning for continuity across year levels.

1. Strategy:

MALT Plan register — signed by staff.

Attendance at meeting when MALT Plan is discussed.

What areas of the MALT Plan need improvement?

2. You want to buy a new piece of software for your classroom. What process would you go through to purchase this?
3. Professional Development: show PD register of attendance at school activities.
4. Which PD sessions will you be attending this term?

1. Do you know how the school is providing access to computers for students?
2. Do you know where software is kept?
3. Do you know the procedures for accessing funding for software or hardware?
4. What professional development activities have you accessed?
5. Are you aware of the extent of PD opportunities for staff in your school?
6. Explain how continuity works across the grades at this school.

Student-centred learning

1. How do the diverse backgrounds of students impact on your classroom environment?
 - Discuss your students' background in computers.
 - How many students in your class have access to a computer outside school?
 - How do their diverse backgrounds impact on your students?
2. What would you do to cater for the special needs of a gifted student?
3. Show in your unit of work how you have catered for 'target' students.

How have you valued and worked effectively with the knowledge and experience of all groups of students, including target students?
4. List the different ways in which you have provided a variety of computer-based learning activities.

Explain through your unit of work *or* through other learning activities how you:

 - provide a clear focus and purpose for computer-based activities;
 - balance guided and self-directed learning.
5. What would you do with a student who ...? (Give a scenario and have the teacher answer in relation to a supportive school environment).
6. What software do you know that allows for open-ended tasks?
7. How have you extended the learning environment?
8. How have you used support staff?
9. How have you enabled all students to take a leadership role in the classroom with reference to learning technology?
10. Discuss the practices of other teachers you know who are effective in the use of learning technology.
11. Reflect on an activity you have implemented in your classroom this week.
12. What assistance have you sought to develop learning technology in your classroom?

1. What strategies do you use to identify prior experience?
2. Give an example of how you have adjusted a computer-based learning activity for students with special needs.
3. Give an example of how your students worked as individuals and an example of when students worked in groups and why.

Appendix J

Minimum Standards for Teachers — Learning Technology **Sample Letter for Course Convenor**

Course Convenor/Lecturer
Blank University
Address
City Postcode

Dear

Re: Application for credit for Achievement of Education Queensland Minimum Standards — Learning Technology

I wish to apply for credit for Semester _____, (year) _____ towards the subject
_____, course code: _____.

I currently hold the Education Queensland credential for the Minimum Standards — Learning Technology, and a photocopy of the certificate is attached for your reference.

In addition to this credential, I have also completed the Tertiary Assessment Portfolio. The contents of this portfolio are as follows:

- IT skills
 - IT skills audit
 - work samples:
 - two examples of word-processed documents for personal or professional use;
 - printed copy of a World Wide Web page;
 - copy of an email message sent and received;
 - floppy disk demonstrating an understanding of personal folders or directories.
- Curriculum applications
 - unit of work illustrating integration of learning technology
 - software evaluation
- Student-centred learning
 - learning log — reflections on computer-based activity
 - learning log — reflections on ELT principles

A copy of this portfolio is enclosed for your information. I will contact your office to arrange an interview to present my portfolio.

Yours sincerely

Explanatory Notes for Teachers Supporting Students with Special Needs in Mainstream and Special Education Settings

1. IT skills	
Standards	Examples/Explanations
<p>Teachers will produce documents for their own use — for example, timetables, mark books, certificates, worksheets and letters.</p> <p><i>Teachers will be able to perform the following IT skills on the computer platform located in their own classroom or school setting.</i></p>	<ul style="list-style-type: none"> Includes Individual Education Plans (IEPs), ascertainment reports and resources such as overlays for alternative keyboards or communication displays
Descriptors	Examples/Explanations
<p>Hardware</p>	<ul style="list-style-type: none"> For teachers of special needs students, demonstrate an awareness of the range of adaptive hardware.
<p>Software</p> <ul style="list-style-type: none"> is aware of categories of software: publishing, word processing, spreadsheet, database, multimedia, communications 	<ul style="list-style-type: none"> Includes overlay design, symbol system publishing software and framework programs

2. Curriculum applications including classroom planning and management	
Descriptors	Examples/Explanations
<p>Selecting worthwhile activities</p>	<ul style="list-style-type: none"> • Explore a range of adaptive hardware to support students with special needs — for example, alternative input and output devices such as switches, keyboards and mouse emulators. • Identify hardware appropriate for a variety of students' needs within their class.
<p>Organising worthwhile activities</p> <ul style="list-style-type: none"> • organise student access to CD-ROMs and Internet-based resources for research projects or for special education students; organise access to appropriate adaptive technologies • deliver and assess student learning activities using at least one curriculum software package and one generic software package • design computer-based learning tasks that have explicit links to curriculum goals and learning outcomes 	<ul style="list-style-type: none"> • AAC systems, alternative keyboards, mice, switch access and OCR, braille printers etc. to be considered. • Curriculum software for some students may include programs such as cause/effect, which support basic foundations of language and concept acquisition. • Explicit links to curriculum goals and/or IEP goals and learning outcomes
<p>Classroom management</p> <ul style="list-style-type: none"> • implement procedures that: <ul style="list-style-type: none"> – provide students with flexible (vary duration) access; – provide students with regular access; – meet the need/s of curriculum activities. 	<ul style="list-style-type: none"> • Meet the needs of curriculum and/or IEP activities. • Organise use of AAC systems and other adaptive technology where applicable
<p>Review and evaluation</p> <ul style="list-style-type: none"> • reflect on the planned learning activities which incorporate the use of computers 	<ul style="list-style-type: none"> • Reflects on the planned learning activities which incorporate the use of computers and adaptive technology

3. School planning	
Descriptor	Examples/Explanations
<ul style="list-style-type: none"> Teachers are aware of learning technology professional development programs for staff. 	<ul style="list-style-type: none"> Participation in professional development programs by teachers.
4. Student-centred learning	
Standard	Examples/Explanations
Teachers have an awareness of the principles of effective learning and teaching in their use of learning technology.	<ul style="list-style-type: none"> For teachers of special needs students this would also relate to adaptive technology in the curriculum.
Descriptors	Examples/Explanations
Supportive and challenging environment <ul style="list-style-type: none"> use open-ended software and open-ended tasks to promote problem solving 	<ul style="list-style-type: none"> May include basic cause/effect or choice-making software and AAC devices that promote skills necessary for meaningful interaction in the environment.
Worthwhile partnerships <ul style="list-style-type: none"> facilitate peer tutoring and cooperative learning processes identify and liaise with more experienced teachers in the use of learning technology 	<ul style="list-style-type: none"> Includes turn taking, multiple switch access and interaction using AAC systems. Includes liaising with specialist support staff — e.g. speech-language pathologists, occupational therapists, advisory visiting teachers, education advisers.
Social and cultural contexts <ul style="list-style-type: none"> Provide opportunities for learners to share their perceptions of technology in society 	<ul style="list-style-type: none"> Learners may demonstrate perceptions and attitudes through positive behavioural changes and choice making.

Appendix L

Minimum Standards for Teachers — Learning Technology **Adaptive Technology Resources**

Adaptive technology refers to hardware, software and devices designed to support computer access and communication for individuals with special needs. The following list includes some of the adaptive technologies currently available.

Alternative and assistive input:

- Membrane keyboards
- Virtual (on-screen) keyboards and arrays
- Voice recognition
- Mouse emulators (trackballs, pads, infra-red, joy stick, touch screen)
- Scanning software with switch control
- Rate enhancement programs (include word prediction)

Alternative and assistive output:

- Large monitors
- Text enlargement software
- Optical character recognition systems (OCR)
- Closed-circuit television (CCTV)
- Braille printers
- Refreshable (paperless) braille displays
- Screen readers
- Text-to-speech

Alternative augmentative communication (AAC) devices:

- Electronic communication devices

Utility software programs:

- Specific design programs for creating overlays for membrane keyboards and arrays for communication devices.
- Symbol system publishing software complementary to communication and literacy

Framework programs:

- Special programs offering learning activities and providing a framework and tools to design customised interactive activities within the software program