MCEETYA

National Assessment Program – ICT Literacy Years 6 & 10 School Assessment Exemplars

2005

Ministerial Council on Education, Employment, Training and Youth Affairs

Information and Communication Technologies Literacy

The information and assessment materials in these resources have been designed to assist teachers to gauge their own students' proficiency in Information and Communication Technologies (ICT) literacy. By examining modules from the National Year 6 and Year 10 ICT Literacy Assessment teachers may be able to design similar tasks and to judge their students' proficiency in relation to the national standards in ICT literacy.

It is anticipated that teachers will be able to reflect on this information to enhance teaching and monitoring programs in Australian schools.

Background

In 2005, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) conducted an assessment of Year 6 and Year 10 students across Australia to assess their proficiency in ICT literacy.

For the purposes of this assessment domain, the Performance Measurement and Reporting Taskforce (PMRT) has agreed to the following definition of ICT literacy:

the ability of individuals to use ICT appropriately to access, manage and evaluate information, develop new understandings, and communicate with others in order to participate effectively in society.

The assessment of ICT literacy is part of a national plan that is being put in place to monitor and report on student achievement progressively against the National Goals for Schooling in the Twenty-first Century. The National Goals and the importance of monitoring student achievement in relation to them were agreed to by all State, Territory and Federal Education Ministers in 1999.

As part of the national plan, student achievements in science, civics and citizenship, and ICT literacy are assessed in three-yearly cycles.

The first ICT literacy national assessment was conducted in 2005 and the Public Report of this assessment can be downloaded from the MCEETYA website at:

http://www.mceetya.edu.au/verve/_resources/NAP_ICTL_2005_Years_6_and_10_Report.pdf

ICT Literacy Assessment Domain

The ICT literacy assessment domain, which defines the scope of the National ICT Literacy Assessment materials, was developed in consultation with a number of national committees that were established to ensure the assessment domain was inclusive of the different State and Territory curricula and that the items in the assessments were fair for students, irrespective of where they attended school.

The ICT literacy assessment domain includes six processes:

- *Accessing information* — identifying the information needed and knowing how to find and retrieve information
- *Managing information* — organising and storing information for retrieval and re-use

- *Evaluating* — reflecting on the processes used to design and construct ICT solutions and making judgements regarding the integrity, relevance and usefulness of information
- *Developing new understandings* — creating information and knowledge by synthesising, adapting, applying, designing, inventing or authoring
- *Communicating with others* — exchanging information by sharing knowledge and creating information products to suit the audience, the context and the medium
- *Using ICT appropriately* — making critical, reflective and strategic ICT decisions and using ICT responsibly by considering social, legal and ethical issues.

The ICT literacy assessment domain also identifies three strands, which describe the contexts in which the ICT literacy processes can be demonstrated. The three ICT literacy strands are:

- *Strand A* – Working with information
- *Strand B* – Creating and sharing information
- *Strand C* – Using ICT responsibly.

The 2005 Assessment Modules

The 2005 ICT literacy assessment instrument consisted of seven discrete thematic modules. One module, the General Skills Test, included only simple software skills performance and multiple-choice assessment items. The remaining six modules, referred to as "Hybrid Assessment Modules" (HAMs), integrated skills simulations, performance and multiple choice items with large open ended tasks completed using live software applications on notebook computers.

All students first completed the General Skills Test and then two HAMs. Students who demonstrated at least basic proficiency on the General Skills Test were randomly allocated any two Grade level appropriate HAMs. In the 2005 national assessment approximately 90 per cent of Year 6 and 99 per cent of Year 10 students demonstrated basic proficiency on the General Skills Test. Students had a maximum of 15 minutes to complete the General Skills Test and 25 minutes to complete each HAM.

Screen Layout

In order to provide a consistent testing experience for all students the screen layout and test environment were predefined and uniform. The screen layout includes an outer static border that houses test information for students such as the name of the module they are completing, the time remaining and their progress through the tasks in that module. At the bottom of the screen there is a section containing the task instructions or questions for students to complete and a large central space in the screen contains the dynamic information or software that students use to answer questions and complete tasks. Students were not able to exit the test environment nor were they able to progress beyond the end of each individual module without the assistance of the test administrator.

Hybrid Assessment Modules

Each HAM had a single unifying theme. Five of the six HAMs began with a number of simulated performance tasks, multiple-choice and short-constructed response items and concluded with a single integrated task using at least one live software application. Typically the initial tasks require students to manage files; perform simple software functions (such as inserting pictures into files); search for information; collect and collate information; evaluate and analyse information; and perform some simple reshaping of information (such as drawing a chart to represent numerical data).

Within each module the questions and tasks followed a narrative sequence in which information was typically collected and developed in preparation for the final information product. As a consequence of this, many later items in each module contained information that could be used to answer or complete earlier items. For example, in one module students were asked to prepare a pie chart using a spreadsheet. Later in the same module students were allowed to use the pie chart as part of a presentation. In order not to punish students who had not correctly completed the original pie chart, an ideal pie chart was made available as a resource for students when they were to complete the presentation.

Clearly students could have seen the ideal pie chart as a model to complete the earlier question and so, in order to prevent students from correcting previous errors on the basis of information later in the test, students had to complete all tasks and questions in each module in a uniform narrative sequence. Students were not able to move back to previous tasks once they had completed them. Students were able to leave out tasks by simply not providing a response and pressing an "I've finished" button, but they were not at any time able to return to these tasks once they had moved on.

Question and Task Types

Multiple-choice and Short Constructed Response Questions

Each HAM contained a small number of multiple-choice and short constructed response questions. These questions are used to assess student knowledge and understanding of specific ICT literacy concepts and to allow students to provide analysis of information (such as to make a judgement about the apparent trustworthiness of information on a webpage). All multiple-choice questions were automatically scored and students' short constructed responses were stored as text for later marking by trained markers.

Software Application Skills Tasks

Conceptually the software application tasks can be divided into two categories – *skills tasks* and *integrated tasks*. Skills tasks were designed to capture data on whether students were able to complete a task *at that point in time* without support or assistance. In essence, these simulated tasks can be considered as assessing whether students "know" the function they are being asked to execute.

The skills tasks comprised software simulations that automatically capture and score student responses. The skills tasks simulate normal functionality up until the point at which a student executes a function. At this point students are presented with a screen stating that "An action has been recorded" with the option for students to "Try again" or go to the next item. For example, if a student is asked to *cut* a section of selected text, when the student executes a command the "An action has been recorded" screen

appears rather than the text disappearing from the screen where they have executed the command. In normal circumstances the student would know whether or not they have executed the *cut* command accurately by seeing the selected text disappear from the screen. As such, students would be able to use a trial-and-error approach to executing the desired skill. Because the skills tasks were designed to capture point-in-time knowledge, the simulations do not provide students with immediate feedback of their success. Students have the opportunity to select "Try again" once with each skills task (in case they are not sure whether they executed the function correctly) and after a second attempt are automatically moved to the next task. Students receive full credit on skills tasks for correctly executing them by any method (typically by using keyboard shortcuts, icons/buttons or dropdown menus).

Software Application Integrated Tasks

The second category of software application tasks comprised larger communication tasks that are completed using "live" software applications from the Microsoft Office 2003 suite, such as Word, Excel and PowerPoint as well as some adapted graphics and multimedia applications. Unlike the discrete skills tasks, the live tasks avail students of the full set of real-time feedback and functionality (including the *Help* function) of the live software applications. When completing the integrated tasks, students typically need to select, assimilate and synthesise the information they have been working with in the lead-up tasks and reframe the information to fulfil a specified communicative purpose. The audience and software related communicative context are specified to the students as part of the communicative purpose of each large task. Students spent between 40 per cent and 50 per cent of the time allocated for each module on the large task. The information products (such as documents, spreadsheets, presentations or graphics/multimedia files) were saved as complete files and scored by trained markers using criterion based scoring rubrics.

In comparison to the point-in-time knowledge information provided by the skills tasks, the live software tasks provide information on students' capacities to select, evaluate and transform and communicate information using real software. As indicated previously, additional ICT literacy achievement information was collected using a range of multiple-choice and short answer questions that were integrated into each module.

The scoring guides for the constructed response items and the criterion based assessment rubrics for the large tasks used in the assessment have been included for reference as part of the module demonstrations.

Module Demonstrations

The software used in the 2005 ICT literacy test was purpose-built and customised to the laptop computers on which the tests were delivered. Unfortunately it is not possible to provide live working versions of the software for use in schools.

Three of the 2005 assessment modules have been made available for schools to view. These demonstration modules can be viewed either as PowerPoint presentations or as animated videos. The PowerPoint presentations are static screens of each of the assessment tasks and questions in each module. The videos show each module being completed. The responses in the video demonstration are designed to reflect typical rather than ideal student responses and as such do not always show the best possible response to each task.

Instructions for Viewing

Each module presentation or demonstration video can either be:

1. **viewed online** directly by clicking on the 'Click here to play online' hyperlink; **or**

2. **downloaded and played** by clicking on the 'Click here to download and play' hyperlink.

If you wish to download the PowerPoint **presentation** of a module follow the instructions below:

1. Click on the 'Click here to download and play presentation' hyperlink for a module.

2. Choose or create a folder in which to save the ZIP archive.

3. Open the ZIP archive (download Winzip if required).

4. Extract the contents of the ZIP archive to a new folder.

5. Open the new folder.

6. Open PowerPoint presentation file.

If you wish to download the **demonstration video** of a module follow the instructions provided below:

1. Click on the 'Click here to download and play video' hyperlink for a module.

2. Choose or create a folder in which to save the ZIP archive.

3. Open the ZIP archive (download Winzip if required).

4. Extract the contents of the ZIP archive to a new folder (please note that the video files will not play if this step is omitted).

5. Open the new folder.

6. Open the file: 'Play [module title]'.

About the Exemplar Modules

Following is a brief description of the content of each of the three exemplar assessment modules with hyperlinks to play, or download and play, each module.

Conservation Project

This module emulates a school-based research project by asking students to read and evaluate information from a range of sources and re-present the information in a report. Spreadsheet and word processing software are used in this module.

Click here to **play online** the 'Conservation Project' presentation

Click here to **download and play** the 'Conservation Project' presentation (Winzip required)

Click here to **play online** the 'Conservation Project' video

Click here to **download and play** the 'Conservation Project' video (Winzip required)

Click here to **download** the 'Conservation Project' scoring guide (Winzip required)

Flag Design

This module requires students to employ basic research and graphic design skills using an 'unfamiliar' piece of graphics software. The tasks are structured so that the research component informs the graphic design component.

Click here to **play online** the 'Flag Design' presentation

Click here to **download and play** the 'Flag Design' presentation (Winzip required)

Click here to **play online** the 'Flag Design' video

Click here to **download and play** the 'Flag Design' video (Winzip required)

Click here to **download** the 'Flag Design' scoring guide (Winzip required)

Video Games and Violence

This module requires students to research a specific topic from a set of websites, analyse the information located and present an argument in the form of a presentation using presentation software.

Click here to **play online** the 'Video Games and Violence' presentation

Click here to **download and play** the 'Video Games and Violence' presentation (Winzip required)

Click here to **play online** the 'Video Games and Violence' video

Click here to **download and play** the 'Video Games and Violence' video (Winzip required)

Click here to **download** the 'Video Games and Violence' scoring guide (Winzip required)