

National Assessment Program – ICT Literacy Years 6 & 10

School Assessment Exemplars 2014



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Introduction

The information and assessment materials in these resources have been designed to assist teachers to gauge their own students' proficiency in information and communication technology literacy.

By examining modules from the National Year 6 and Year 10 NAP – Information and Communication Technology Literacy (NAP – 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

The National Assessment Program originated with the work of the MCEETYA National Education Performance Monitoring Taskforce (NEPMT), and later the Performance Measurement and Reporting Taskforce (PMRT). These bodies developed key performance measures to monitor and report on progress towards the achievement of goals for schooling on a nationally comparable basis. Sample-based assessment surveys were initiated in science literacy, civics and citizenship, and ICT literacy on a rolling triennial basis. The first of these was the sample assessment of science literacy in Year 6, conducted in 2003. The first national assessment in civics and citizenship was conducted in 2004 and the first national assessment in ICT literacy was conducted in 2005.

The information and assessment material in these resources have been taken from the fourth assessment cycle of NAP – ICT Literacy conducted in 2014.

The definition of ICT literacy adopted by The Education Council for use in the National Assessment Program is: *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* (MCEETYA, 2005).

This definition, together with an elaboration of six key processes and a broad description of progress according to three strands, forms the basis of the NAP – ICT Literacy Assessment Domain (MCEETYA, 2005), which consistently describes the foundation of the work across the four cycles of NAP – ICT Literacy.

The assessment of ICT literacy is part of a national plan 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 and have been reaffirmed in the Melbourne Declaration on the Educational Goals for Young Australians in 2008.

Public Reports from the four cycles of NAP – ICT Literacy can be downloaded from the National Assessment Program website at:

www.nap.edu.au/Test_Results/National_reports/index.html

NAP – ICT Literacy Assessment Framework

The NAP – ICT Literacy Assessment Framework, 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 framework 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 NAP – ICT Literacy Assessment Framework 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 NAP – ICT Literacy Assessment Framework 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 complete NAP – ICT Literacy Assessment Framework can be downloaded from the National Assessment Program website at:

www.nap.edu.au/NAP_Sample_Assessments/Assessment_frameworks/index.html

This framework and the NAP – ICT Literacy 2014 Public Report contain detailed discussions of the relationship between the NAP – ICT Literacy Assessment Domain and the Australian Curriculum ICT capability (ACARA, 2012).

The NAP – ICT Literacy 2014 Public Report can be downloaded from the National Assessment Program website at:

www.nap.edu.au/Test_Results/National_reports/index.html

The 2014 assessment modules

The 2014 NAP – ICT Literacy assessment instrument consisted of nine discrete thematic modules.

The modules, referred to as ‘Hybrid Assessment Modules’ (HAMs), integrate skills simulations, performance and multiple-choice items with large open-ended tasks using live software applications. Three of the HAMs were carried over from the previous assessment cycles and six new HAMs were developed for use in 2014.

Each student was administered two modules from previous cycles and two new modules appropriate to their year level. The modules were randomly assigned to the students.

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 has a single unifying theme. Typically the HAMs begin with a number of simulated performance tasks, multiple-choice and short constructed-response items and conclude 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 follow a narrative sequence in which information is typically collected and developed in preparation for the final information product. As a consequence of this, many later items in each module contain information that could be used to answer or complete earlier items. For example, in one module students are asked to prepare a pie chart using a spreadsheet. Later in the same module students are allowed to use the pie chart as part of a presentation. In order not to penalise students who had not correctly completed the original pie chart, an ideal pie chart is made available as a resource for students when they are required 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 types

Multiple-choice and short constructed-response questions

Each HAM contains 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 tasks

Conceptually the software application tasks can be divided into two categories – skills tasks and integrated tasks.

Skills 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 consist of 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).

Integrated tasks

The second category of software application tasks comprised larger communication tasks that are completed using 'live' software applications, such as: word processors, presentation software and spreadsheets; simple web-based databases and survey design software; and 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, graphics/multimedia) 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 2014 NAP – ICT Literacy assessment was purpose-built and customised for use in the assessment. Unfortunately it is not possible to provide live working versions of the software for use in schools.

Three of the 2014 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 demonstrations are designed to reflect typical rather than ideal student responses and as such do not always show the best possible response to each task. A scoring guide is also available for each module.

Instructions for viewing

For each exemplar module, you can click on the hyperlinks to:

- download the PowerPoint presentation which includes information about the questions and tasks and the way in which they were assessed
- play the demonstration video to see how students would answer the questions. Typical rather than ideal answers are shown.
- download a PDF scoring guide with example responses for an understanding of how student answers were scored (incorrect, partial correct, correct).

About the exemplar modules

Following are brief descriptions of the content of each of the three exemplar assessment modules with the corresponding hyperlinks.

Battle of the Bands

In this module, three students formed a music band, won a talent contest and have been invited to enter an interstate competition. In this task, students doing the test were asked to help the band by completing the online registration for the competition, promoting the band's next gig through social media and setting up a crowd-funding web page to raise money.

[Click here](#) to **view** the *Battle of the Bands* PowerPoint presentation

[Click here](#) to **play** the *Battle of the Bands* demonstration video (**Internet Explorer required**)

[Click here](#) to **download** the *Battle of the Bands* scoring guide

Computer Game

In this module, students were asked to work on a project to create an educational game for the class. In this task students use design software, create a survey to select the subject for the computer game, interpret the survey results and use purpose-built software to develop the game.

[Click here](#) to **view** the *Computer Game* PowerPoint presentation

[Click here](#) to **play** the *Computer Game* demonstration video (**Internet Explorer required**)

[Click here](#) to **download** the *Computer Game* scoring guide

Sports Picnic

In this module, students were asked to help plan a school sports picnic. The task requires students to use a blog website, a search engine and tailored graphics software to find a suitable venue, select sports equipment and create an invitation.

[Click here](#) to **view** the *Sports Picnic* PowerPoint presentation

[Click here](#) to **play** the *Sports Picnic* demonstration video (**Internet Explorer required**)

[Click here](#) to **download** the *Sports Picnic* scoring guide