



NAP Sample Assessment ICT Literacy

Years 6 and 10

School Release Materials 2017



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 (ICT) Literacy.

By examining modules from the National Assessment Program (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 the teaching and monitoring of ICT Literacy in Australian schools.

Background

The National Assessment Program (NAP) commenced as an initiative of ministers of education in Australia to monitor outcomes of schooling specified in the 1999 Adelaide Declaration on National Goals for Schooling in the 21st Century (Adelaide Declaration). The declaration highlights that 'successful learners' have the essential skills in literacy and numeracy and are creative and productive users of technology, especially ICT, as a foundation for success in all learning areas.

NAP was established to measure student achievement and to report this against key performance measures (KPMs) in relation to the national goals, using nationally comparable data in each of literacy, numeracy, science, information and communication technologies (ICT), and civics and citizenship.

Under NAP, literacy and numeracy achievements are measured and reported via the National Assessment Program – Literacy and Numeracy (NAPLAN), and achievement in science, civics and citizenship, and ICT literacy are assessed under the NAP – sample assessment program. These assessments are developed and managed by the Australian Curriculum, Assessment and Reporting Authority (ACARA) under the auspices of the Education Council.

The first collection of data from students in the National Assessment Program – ICT Literacy (NAP–ICT Literacy) was in 2005; subsequent cycles of assessment have been conducted in 2008, 2011, 2014 and 2017.

The information and assessment material in these resources have been taken from the fifth assessment cycle of NAP–ICT Literacy conducted in 2017.

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

<https://www.nap.edu.au/results-and-reports/national-reports>

NAP–ICT Literacy Assessment Framework

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.*

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 2017 Assessment Framework](#), which defines the scope of the NAP–ICT Literacy assessment materials.

ICT literacy strands

Student achievement in ICT literacy can only be demonstrated by taking into account the communicative context, purpose and consequences of the medium. These are described in the NAP–ICT Literacy Assessment Framework according to three strands: (a) Working with information, (b) Creating and sharing information and (c) Using ICT responsibly.

- (a) *Working with information* includes identifying the information needed; formulating and executing a strategy to find information; making judgements about the integrity of the source and content of the information; and organising and storing information for retrieval and re-use.
- (b) *Creating and sharing information* includes adapting and authoring information; analysing and making choices about the nature of the information product; reframing and expanding existing information to develop new understandings; and collaborating and communicating with others.
- (c) *Using ICT responsibly* includes understanding the capacity of ICT to impact on individuals and society and the consequent responsibility to use and communicate information legally and ethically.

ICT literacy processes

According to the NAP–ICT Literacy Assessment Framework, ICT literacy is demonstrated through the application of six integrated processes:

- i. *accessing information* (identifying the information needed and knowing how to find and retrieve information)
- ii. *managing information* (organising and storing information for retrieval and re-use)

- iii. *evaluating* (reflecting on the processes used to design and construct ICT solutions and making judgements regarding the integrity, relevance and usefulness of information)
- iv. *developing new understandings* (creating information and knowledge by synthesising, adapting, applying, designing, inventing or authoring)
- v. *communicating* (exchanging information by sharing knowledge and creating information products to suit the audience, the context and the medium)
- vi. *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 2017 Assessment Framework](#) and the [NAP–ICT Literacy 2017 Public Report](#) contain detailed discussions of the relationship between the ICT literacy content specified in the NAP–ICT Literacy Assessment Framework and each of the Australian Curriculum: ICT Capability and the Australian Curriculum: Digital Technologies.

The 2017 Assessment Modules

The 2017 NAP–ICT Literacy assessment instrument consisted of seven discrete thematic modules. The modules integrate skills simulations, performance and multiple-choice questions with large open-ended tasks using live software applications. Four of the modules were carried over from the previous assessment cycles and three new modules were developed for use in 2017.

Each student completed four modules appropriate to their year level. The module combinations 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.

The assessment modules

Each module has a single unifying theme. The modules begin with a number of simulated performance tasks, multiple-choice and short constructed-response questions 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 tasks in each module contain information that could be used to answer or complete earlier tasks.

For example, in one module students are presented with a simple report on web traffic that shows the number of visits to a small set of webpages for two different time periods. Students are first required to use the information in the report to identify the webpage that has had a large reduction in visits across the two time periods. In the next task, students are asked to locate and examine the previously identified webpage to explain the reduction in visits. In this second task the webpage needing review (i.e. the one with a reduction in visits) is identified for the students so that they can evaluate its contents. This allows students who had not correctly identified the site from the website traffic report still to analyse the content of the site to explain why the traffic may have reduced. However, it also provides students with the correct answer to the previous task. In order to prevent students from returning to earlier tasks to correct errors they later realise they have made, students had to complete all tasks and questions in each module in the narrative sequence provided to them in the module. Students were not able to move back to previous tasks once they had completed them. If unable to respond to a particular task, students were able to ‘skip’ tasks by simply not providing a response and pressing the ‘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 module 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 Skills 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 ‘Your response has been recorded’ with the option for students to ‘Try again’ once or go to the next task. For example, if a student is asked to cut a section of selected text, when the student executes a command the ‘Your response 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 any 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 required to move to the next task. Students receive full credit on skills tasks for correctly executing them by any conventional 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 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 were free to manage their own time during each module. However, they were advised to allow 50 per cent of the time allocated for each module to complete 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 questions 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 demonstration materials

The software used in the 2017 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.

Demonstrations of two of the 2017 assessment modules are provided in viewable formats (video and Google Slide presentation). A separate video explains the test flow and user interface conventions.

Below is a brief description of each of the materials.

Test flow and user interface conventions – video

This demonstration video shows the flow and user interface conventions used by the assessment modules as described in the section Skills tasks. We recommended watching this demonstration first to gain an understanding of the mechanics common to all assessment modules.

Module demonstration – Google Slide presentation (one per module)

The presentation displays each task and includes information about the questions and the way in which they were assessed. For each module we recommended viewing the module demonstration presentation before viewing the module demonstration video.

Module demonstration – video (one per module)

The demonstration video for each task provides an explanation of some of the design decisions that reflect the assessment framework and shows how the tasks are typically completed by students. For the large task at the end of a module a typical example response is shown with an explanation of how the scoring criteria are applied. The level of achievement required for successfully completing each task is also included. The [NAP–ICT Literacy 2017 Public Report](#) provides an explanation of how student scores are reported on the NAP – ICT Literacy scale and how the achievement levels are derived from the scale.

Scoring guide – document (one per module)

The scoring guide contains the scoring criteria for tasks that require a constructed response and includes example responses for an understanding of how student answers were scored (no credit, partial credit, full credit).

Accessing the demonstration modules

Poetry and Pictures

Students were tasked with creating a digital photo book containing poetry and images that focused on a social justice context of raising awareness about homelessness. Students were asked to employ file management and storage practices on an online shared drive, prepare images for use in a digital photo book, and finally transfer content from the online drive to the digital photo book while using software features to control the design and layout of the content.

[Click here to **watch** the test flow and user interface conventions video](#)

[Click here to **view** the Poetry and Pictures Google Slide presentation](#)

[Click here to **watch** the Poetry and Pictures demonstration video](#)

[Click here to **download** Poetry and Pictures scoring guide](#)

Slide Show

Students completed a class project about the Tasmanian Devil Program on Maria Island. The module involved opening and saving files, searching websites for information on the topic, creating a short slide show about the Tasmanian Devil Program on Maria Island and scripting notes to go with the slide show.

[Click here to **watch** the Test flow and user interface conventions video](#)

[Click here to **view** the Slide Show Google Slides presentation](#)

[Click here to **watch** the Slide Show demonstration video](#)

[Click here to **download** the Slide Show scoring guide](#)