Assessing Computer Literacy using Simulated and Real World Tasks

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Definition of ICT literacy:

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

Three strands

A. Working with information (search and retrieval)
B. Creating and sharing information (adapting, manipulating, authoring)
C. Using ICT responsibly (understanding impact and consequences)
Computer-based assessment

- **Mini-labs of computers**
  - Six computers per lab (5 student, networked with 1 administrator)
  - Identically configured and loaded with all software
  - Loaded with student registration information

- **Purpose-developed software**
  - Simulation items (Skillcheck)
  - Native applications with products saved
  - Contained in a wrapper with seamless transition (SoNET)
  - ACER software for on-line marking and standard setting

- **Administration**
  - Trained administrators to each school
  - Results sent to ACER by CD (also saved on hard disk)

- **Development**
  - Small-scale pilots – in late 2004 and early 2005
  - Field trial (617 students / 66 schools) 4 weeks in early 2005
Assessment Items/Tasks

- MCQ – auto scored
- Short constructed response – marker scored
- Software simulation (skills) – auto scored
- **Live software applications**
  - some skills and some larger tasks
  - tagged file saved and marker scored
- Items grouped in modules (25 min).
- Narrative theme to each module.
Assessment modules

- General skills test
  - Simulated skills and MCQ
- Six hybrid assessment modules (HAM)
  - Seamless combinations of item/task types
    - Simulation skills and research tasks
    - MCQ & short constructed response tasks
    - Large live software application task
- Common and specific to year levels
  - One Y6 only HAM
  - One Y10 only HAM
  - Four Y6 and 10 HAMs
Assessment process

- Confirmation of registration details and test taking instructions (15 minutes)
- General Skills Test (15 minutes)
- Above GST cut-score
- Below GST cut-score
- Any two (grade appropriate) (50 minutes)
- HAM
- HAM
- Two least challenging
- HAM
- HAM
- Student Background Survey (10 minutes)
Sampling and Scaling

- Two-stage PPS cluster sample
  - 7,400 students
  - 520 schools

- 10 weeks in late 2005

- Rasch (item response theory)
  - 227 items
  - seven modules (different difficulty)

- Items/persons on a common scale

- Person separation index (reliability) = 0.93
Person-item location map
Person-item location by Year

<table>
<thead>
<tr>
<th>Level</th>
<th>No.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 6</td>
<td>3746</td>
<td>-0.295</td>
<td>1.05</td>
</tr>
<tr>
<td>Year 10</td>
<td>3647</td>
<td>1.294</td>
<td>0.91</td>
</tr>
</tbody>
</table>
Reporting ICT literacy

- Reporting scale
  - Year 6 mean = 400,
  - Year 6 standard deviation = 100

- Proficiency levels
  - Six proficiency levels of equal width (in difficulty)
  - Width is 125 scale points
  - Descriptors of each level based on items
  - Percentage of students in each level
Sample descriptions

• **Level 1:**
  Students working at level 1 perform basic tasks using computers and software. They implement the most commonly used file management and software commands when instructed. They recognise the most commonly used ICT terminology and functions.

• **Level 3:**
  Students working at level 3 generate simple general search questions and select the best information source to meet a specific purpose. They retrieve information from given electronic sources to answer specific, concrete questions. They assemble information in a provided simple linear order to create information products. They use conventionally recognised software commands to edit and reformat information products. They recognise common examples in which ICT misuse may occur and suggest ways of avoiding them.

• **Level 5:**
  Students working at level 5 evaluate the credibility of information from electronic sources and select the most relevant information to use for a specific communicative purpose. They create information products that show evidence of planning and technical competence. They use software features to reshape and present information graphically consistent with presentation conventions. They design information products that combine different elements and accurately represent their source data. They use available software features to enhance the appearance of their information products.
Finish
Computer use at home and school

Computer use at home

- Year 6: Never = 6, Less than monthly = 4, Weekly to monthly = 8, Few times per week = 27, Every day = 58
- Year 10: Never = 4, Less than monthly = 3, Weekly to monthly = 8, Few times per week = 1, Every day = 53

Computer use at school

- Year 6: Never = 2, Less than monthly = 14, Weekly to monthly = 14, Few times per week = 23, Every day = 59
- Year 10: Never = 2, Less than monthly = 25, Weekly to monthly = 14, Few times per week = 8, Every day = 47

Legend:
- Never
- Less than monthly
- Weekly to monthly
- Few times per week
- Every day
Selected applications

Use of Computer Applications: Days per Month

- **Games**
  - Year 6 Male: 13
  - Year 6 Female: 11
  - Year 10 Male: 12
  - Year 10 Female: 9

- **Internet for information**
  - Year 6 Male: 9
  - Year 6 Female: 9
  - Year 10 Male: 11
  - Year 10 Female: 13

- **E-mail or “chatting”**
  - Year 6 Male: 8
  - Year 6 Female: 9
  - Year 10 Male: 13
  - Year 10 Female: 11

- **Listen to music or watch DVDs**
  - Year 6 Male: 11
  - Year 6 Female: 8
  - Year 10 Male: 13
  - Year 10 Female: 8

Days per month: 0, 2, 4, 6, 8, 10, 12, 14, 16
ICT Literacy Assessment

Northern Territory

Click on the link to the symbols you will need for your flag.
ICT Literacy Assessment

Video Games and Violence

Tasks

Search Web

Web

View Results By Relevance Search Engine

Enter your Search Web Query.
Please enter a search term.

Search Web

Preferences
Advanced Search

About us | About Results | Contact Us | Terms of Use | Privacy Policy
Submit Your Site | Advertise Here | Help & Tips | Add Search to your Website
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I've finished

Click here to review details

'This activity encourages use of the search engine to find information related to the topic of video games and violence. The images of the search engine page illustrate the process of searching the web for relevant information.'
Grevilleas

It is difficult to grow grevilleas from seeds. It is easy to grow plants from cuttings. The cuttings should be about 75–100 mm long, with the lower leaves removed.

Tips

- The flowers attract nectar-feeding birds (e.g. honeyeaters).
- Best time of year to take cuttings: December to March.
- Grevilleas vary in size, shape and flower colour, and make excellent garden plants.

Use information from the website and spreadsheet to help you write your report.

Your report will be assessed on how well you:
- use the information and communicate your ideas;
- present the report; and
- explain your choice of plants.
Use information from the website and spreadsheet to help you write your report.

Your report will be assessed on how well you:
- use the information and communicate your ideas;
- present the report; and
- explain your choice of plants.
To: The Principal
From: 
Conservation Project Report
Set-up costs
Profits possible
Recommended plants for our school

Use information from the website and spreadsheet to help you write your report.

Your report will be assessed on how well you:
- use the information and communicate your ideas;
- present the report; and
- explain your choice of plants.