Topics

- What is ICT literacy, and why measure it?
- The development of the ICT Literacy Assessment
- The current test design
- Sample tasks
- Score reports
ICT literacy is...

... the ability to use digital technology, communication tools, and/or networks to define access, manage, integrate, evaluate, create, and communicate information ethically and legally in order to function in a knowledge society.

Proficiency Model

- Define
- Access
- Manage
- Integrate
- Evaluate
- Create
- Communicate

Built on prior efforts

**ICT Literacy: a bridge between**

Information and Communication Literacy
- Can you find information on the web?
- Can you create a persuasive presentation?

Technical Literacy
- Can you hold a word?
- Can you open a database?

Information Literacy
- Can you find information?
- Can you evaluate authority?

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**Why measure ICT literacy?**

- The nature, value, and availability of information has changed enormously, and this change impacts the way we live, learn, and work.
- To succeed, it is not enough to master technical skills: you must know how to apply them within an information society.
- There is a lack of information about the ICT literacy of students, and debate about how best to address this issue in academic curriculum.

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**The development of the ICT Literacy Assessment**
It started with our higher education partners

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<thead>
<tr>
<th>Charter Clients</th>
<th>Expanded Consortium</th>
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<tr>
<td>• California Community Colleges</td>
<td>• Arkansas State University</td>
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<td>• California State University</td>
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<td>• University of Louisville</td>
<td>• Oklahoma State University/Defense Ammunition Center</td>
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Development timeline

- Spring/Summer 2003 – Higher education partners identified
- December, 2003 – Test development began with charter client institutions.
- July, 2004 – Field trials of tasks began.

Next 6 months

- January – April 2005: multiple institutions are testing; goal is to test 6,000-7,000 students
- April – May 2005: more market research
- May – June 2005: analysis and score reporting; score reports sent to institutions
- June 2005: use analysis to finalize decisions re:
  - Design for 2006 Large Scale Assessment and individual reporting version
  - Testing schedule (Fall and Spring? Just Spring?)
- Summer 2005: design “workforce version” of the test
The current test design

The ICT Literacy Assessment

- Two separate sets of results:
  - ICT Literacy Large Scale Assessment (2005)—institutional profile only
  - ICT Literacy Individual Assessment (2006)—option to receive feedback at individual student level
- Use in higher education
  - Institutions: accreditation, state accountability, curriculum guidance
  - Individuals: academic guidance, fulfillment of info. literacy or tech. literacy requirement, certification

Basic Design Features

- Interactive tasks using simulated software with look and feel of typical applications (databases, search engines, spreadsheets, email, etc.)
- 4-minute, 15-minute, and 30-minute tasks
- Real-life scenarios
- “Get back on track” mechanisms if test-taker gets really lost
- Multiple scorable elements per task
Assessment Content

- Length of tasks
  - Long (30 minute)
  - Medium (15 minutes)
  - Short (4 minute)
- Contexts
  - Academic
  - Business
  - Personal
- Subject Areas
  - Humanities
  - Social Sciences
  - Natural Science
  - Practical Affairs
  - Popular Culture

Delivery and Scoring

- Delivery
  - Two-hour assessment window
  - Web delivery at client institutions through secure browser
- Scoring
  - Automated scoring
  - Proficiency estimation via IRT analysis

Validity and reliability research

- Validity research:
  - "Chain of validity" method used during development to ensure content validity
  - Extensive questionnaire before the test, to see how results correlate with self-reported exposure to and confidence in specific proficiencies
  - Questionnaire after the test to check face validity among test-takers
  - Larger validity study in progress with charter clients
  - Ongoing research planned
- Reliability efforts:
  - Analysis of November field test
  - Analysis of current 6,000-7,000 test-takers
  - Ongoing scrutiny
Sample tasks

Sample Tasks

- Example 1: Comparing Information
- Example 2: Display Data

Comparing Information

- Simple task: Four-minute duration
- Purpose: Assess the test-takers’ proficiency in integrating information
  - Integrate: The ability to interpret and represent information in an ICT context. This includes the ability to synthesize, summarize, compare, and contrast information from multiple sources.
Within the task

- Summarize information from three different types of sources
- Compare the information to reach a conclusion

In this task, examinees summarize information from a variety of sources and then draw conclusions from their summary.

Examinees are presented with an information need and three different types of information sources:
Examinees are presented with an information need and three different types of information sources:

1. Webpage

2. Email

3. Advertisement

The three sources present information according to different conventions. A successful candidate must be able to locate the relevant information in each source.
Deciding how to compare the sources involves identifying the requirements of the stated information need. After filling in the table, examinees must interpret the summary to rank the three sources correctly.

**Display Data**

- Simple task: Four-minute duration
- Purpose: Assess test-takers’ proficiency in creating information
  - **Create**: The ability to generate information by adapting, applying, designing, or inventing information in ICT environments.
Within the task

- Visually represent data in a graph
- Interpret the graph to answer research questions

In this task, examinees create a visual representation of data to answer two research questions.

Examinees select which variables to display on each of the axes.
Identifying the correct time span involves considering the implicit requirements of the information need.

Identifying the correct dependent variable (y-axis) involves thinking about how best to reflect "popularity."

Examinees have the opportunity to try out different graphs before settling on their response, and this process is factored into their score.
Answering the research questions involves correctly interpreting the graph.

The two research questions require different degrees of analytic skill.
Score Reporting

- Score reporting will be online.
- Reports will come approximately eight weeks after close of testing window, with reporting time reduced for subsequent administrations.
- Group comparisons if adequate sampling provided.

Score Report Sample

- Performance levels by proficiency pairings
- Explanatory text to guide interpretation

Sample of explanatory text -

High

A High performance on ACCESS indicates that the students efficiently and effectively located information via browsing or searching. Students identified appropriate information resources (e.g., the correct database) for a particular research question or course assignment. At this level, examinees tended to use search terms and queries that yield useful results without a lot of irrelevant results (i.e., they conduct a precise search). Examinees executed their web or database search strategy carefully, going well beyond the specific words of the research statement or assignment. For example, examinees may have identified useful synonyms of key terms and constructed a search that takes into account both provided terms and these synonyms. At this level, examinees formulated an advanced search query that utilized Boolean operators and other syntactic elements . . .
Summary of plans for the future

- Individual student feedback in 2006
- Workforce version of the assessment by 2006, so that colleges can show employers that their students are ICT-ready.
- Considering assessments for international and/or K-12 markets

Questions?
Comments?