Modeling Digital Literacy Skills
Living in the Information Age

❖ From an age of Content Scarcity…
❖ To an age of Content Abundance.
❖ Changes to Knowledge Ecosystem.
❖ Fundamental changes to the way we Think, Learn, and Work.
Accumulation of Knowledge by Mankind:
❖ 1 - 1500 CE: Doubled in 1500 years (x2)
❖ 1500 - 1750: Doubled in 250 years (x4)
❖ 1750 - 1900: Doubled in 150 years (x8)
❖ Today: The accumulated knowledge of mankind doubles every 1-2 years (x16, x32, x64, x128,…)
❖ Internet of Things: Doubling every 12 hours
Digital literacy skills relate to the use of digital technology tools in activities that locate, create, communicate, and evaluate information within a networked (online) environment, mediated by digital computing technologies.

Boileau, 2014
Digital literacies represent in whole the essential skills for managing information and communication in the rapidly changing and increasingly digital world that is the 21st century.

- Five Digital Literacies
  - Locating & Filtering
  - Sharing & Collaborating
  - Organizing & Curating
  - Creating & Generating
  - Reusing & Repurposing

Summey, 2013
## Digital Literacies & ICT

<table>
<thead>
<tr>
<th>Digital Literacies</th>
<th>Information &amp; Communication Technologies (and related tools)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locating and Filtering</td>
<td>Internet search, research, tagging</td>
</tr>
<tr>
<td></td>
<td><em>Wikipedia, Google Search, Google Scholar, Zotero, Diigo</em></td>
</tr>
<tr>
<td>Sharing and Collaborating</td>
<td>Social bookmarking, online document productivity, wikis, blogs, social networking, AR, MUVEs, identity and privacy management, Creative Commons</td>
</tr>
<tr>
<td></td>
<td><em>Diigo, Google Drive, Google Sites, Wikispaces, Blogger, Wordpress, Google+, Twitter, Facebook, Edmodo, Ning, Second Life, OpenSim, Gravatar</em></td>
</tr>
<tr>
<td>Organizing and Curating</td>
<td>E-portfolios, social bookmarking, wikis, blogs, microblogging, AR</td>
</tr>
<tr>
<td></td>
<td><em>LiveBinder, Diigo, Wordpress, Twitter, Tweeted Times, Scoop.IT, Paper.li</em></td>
</tr>
<tr>
<td>Creating and Generating</td>
<td>Wikis, blogs, podcasts, e-portfolios, MUVEs, Creative Commons</td>
</tr>
<tr>
<td></td>
<td><em>Google Sites, Wikispaces, Podbean, YouTube, SchoolTube, TeacherTube, iTunes U, WeVideo, Layar, Second Life, OpenSim</em></td>
</tr>
<tr>
<td>Reusing and Repurposing</td>
<td>Virtual globes, interactive time lines, mashups, remix, fan fiction</td>
</tr>
<tr>
<td></td>
<td><em>Google Earth, Google Maps, Dipity, Ficly, TimeGlider</em></td>
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</tbody>
</table>

*Summey, 2013*
# Digital Literacies Instructional Integration Plan

**Course(s):**

**Instructor:**

<table>
<thead>
<tr>
<th>Locating &amp; Filtering</th>
<th>Creating &amp; Generating</th>
<th>Sharing &amp; Collaborating</th>
<th>Organizing &amp; Curating</th>
<th>Reusing &amp; Repurposing</th>
<th>Technology Tools (ICT’s)</th>
<th>Instructional Strategies</th>
<th>Expected Outcomes</th>
<th>Relative Advantage</th>
</tr>
</thead>
</table>
### Figure 9  Learning Skills Linked to Information and Communication Technology (ICT) Literacy for Science

<table>
<thead>
<tr>
<th>Learning Skills</th>
<th>ICT Literacy for Science Is Developed When Students:</th>
</tr>
</thead>
</table>
| 1. Information and Media Literacy    | • Access and manage information using a variety of resources  
• Integrate and create information  
• Evaluate and analyze information |
| 2. Communication Skills              | • Understand, manage, and create effective communication in the following ways: (a) using oral communication, (b) using written communication, (c) using multimedia |
| 3. Critical Thinking and Systems Thinking | • Exercise sound reasoning  
• Make complex choices  
• Understand the interconnections among systems |
| 4. Problem Identification, Formulation, and Solutions | • Frame, analyze, and solve problems |
| 5. Creativity and Intellectual Curiosity | • Develop, implement, and communicate ideas to others |
| 6. Interpersonal and Collaborative Skills | • Demonstrate teamwork and work productively with others  
• Demonstrate ability to adapt to varied roles and responsibilities  
• Exercise empathy and respect diverse perspectives |
| 7. Self-Direction                     | • Monitor one's own understanding and learning needs  
• Locate resources  
• Transfer learning from one domain to another |

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Digital Literacy Across the Curriculum

- Functional skills
- Creativity
- Critical thinking and evaluation
- Cultural and social understanding
- Collaboration
- The ability to find and select information
- Effective communication
- E-safety
Teaching Digital Literacy (1 of 3)

❖ Functional Skills – hands-on, experiential learning to develop competency in basic ICT skills.

❖ Creativity – in reference to how learners think, construct knowledge objects, and apply methods for sharing and distribution of knowledge.

❖ Collaboration – meaningful learning requires dialogue, discussion, and exchange of ideas with and in relation to others for socially constructed meaning-making to occur.

Hague & Payton, 2010
Communication – digital literacy requires additional higher order communication skills in a world where much communication is mediated by digital technology.

Ability to Find and Select Information – related pedagogy is inquiry-based learning; these are fundamental skills that are essential for knowledge development as learners learn how to learn.

*Critical Thinking and Evaluation – critical thinking is at the core of digital literacy; it includes analysis and transformation of information to create new knowledge; and requires reflection to evaluate and consider different interpretations.

Hague & Payton, 2010
Teaching Digital Literacy (3 of 3)

❖ Cultural and Social Understanding – provides learners with a language and context for digital literacy to promote broader understanding and interaction in the creation of meaning.

❖ E-safety – in teaching digital literacy, educators have an obligation to support learners in development of skills, knowledge, and understanding that will enable them to make informed decisions in order to protect themselves on an ongoing basis.

Hague & Payton, 2010
<table>
<thead>
<tr>
<th>Identified Need</th>
<th>Action Step</th>
<th>Rationale</th>
<th>Deadlines</th>
<th>Materials &amp; Resources</th>
<th>Stakeholders (People Involved)</th>
<th>Potential Challenges</th>
<th>Training Required (if any)</th>
<th>Communication Plans</th>
</tr>
</thead>
</table>

- **Need** - derived from need assessment; identify a problem / start with the end in mind.
- **Action Step** - what must be done in order to meet the need?
- **Rationale** - justify the action.
- **Deadlines** - in order to ensure actions are taken and progress is made.
- **Materials and resources required** - essential for budgeting and resource allocation.
- **Stakeholders/people involved and their roles** - get them involved up front in planning.
- **Likely Challenges** - face the facts
- **Training Required** - particularly for professional development leaders/trainers.
- **Communication Plans** - how will you communicate with faculty and other stakeholders?
Digital Literacy Standards for Education

- International Society for Technology in Education (ISTE)
  - NETS for Teachers, Students and Administrators
- American Association for School Librarians (AASL)
  - Standards for the 21st Century Learner
- Partnership for 21st Century Skills
  - Framework for 21st Century Learning
### Critical Thinking/Evaluation – CRAAP Test

<table>
<thead>
<tr>
<th>C</th>
<th>Currency: The timeliness of the information • Do you know when the information was published, posted, or last updated?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Is the information current for your topic and field of study?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>Relevance: The importance of the information for your needs • Is the information appropriate for a college-level course?</th>
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<tbody>
<tr>
<td></td>
<td>• Is this an adequately in-depth discussion of the topic?</td>
</tr>
<tr>
<td></td>
<td>• Has Canadian perspective or content been provided?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Authority: The source of the information • Have the author's credentials or organizational affiliations been identified?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Is the author (or authors) qualified to write on the topic?</td>
</tr>
<tr>
<td></td>
<td>• Has the piece been published by a well-known and respected publisher or organization?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Accuracy: The reliability and correctness of the informational content • Have the author's sources been clearly cited so that you can easily find (and verify) them?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Are there spelling, grammar, or other typographical errors?</td>
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</tbody>
</table>

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<tr>
<th>P</th>
<th>Purpose: The reason the information exists • Do the authors/sponsors make their intentions or purpose clear?</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>• Does the point of view appear objective, unbiased and impartial?</td>
</tr>
<tr>
<td></td>
<td>• Does the author acknowledge alternative versions of the issues or facts?</td>
</tr>
</tbody>
</table>

*http://rdc.libguides.com/content.php?pid=375119&sid=3685348*
CRAAP Test Exercise

http://nbarker.wikispaces.com/CRAAP+Test
Judging Content Credibility

1. Be skeptic
   - Before you believe a question, ask yourself: is it a point of view of the site? And the information present? Is the author impartial? Is the information designed to sway opinions?

2. Fact-checking
   - Always double check the facts you find through comparing them with other sources of information. Ask yourself: is the information reliable? Is it error-free? Does it include links to other resources?

3. About the author
   - Is the author qualified? Is there an expert in their field? Does the author describe what the information is about? Does the author have a link to the website? Is there any way to determine its origin?

4. Pay attention to URL domains
   - The URL domain is located at the end of a website's address. It can help identify the kind of website it is. For example, .org is for non-profits, and .edu is for educational institutions. These domains help users determine the type and credibility of the website.

5. Conduct multiple searches
   - Search for the same topic using various keywords and phrases. Compare the search results and evaluate the different perspectives.

6. Search Strategically
   - Use advanced search features to refine your searches. Think critically about your online searches and use specific and descriptive keywords.

7. About the page
   - Check if the page is dated and if so, is it current? What is the page's depth? How in-depth is the information? What about the writing, style, and arguments? How are these developed?
Questions?

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Methods for Teaching Digital Literacy Skills