Strategies and Best Practices for Data Literacy Education

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Data Literacy is the ability to collect, manage, evaluate, and apply data; in a critical manner.
Citizens
• Globalization and interconnectivity
• Evaluation of visualizations and infographics

Thinking
• Problem-solving, critical thinking, and computational thinking
• Much more complex not simply logic anymore

Problems
• Big Data explosion
• Lack of consistency in knowledge and training

Skills
• Shortage of data scientists & data-savvy professionals
• Essential survival skill
Public, Private, and Academic Sectors

- Inconsistent
- Misunderstood
- Disparities in talent
- Lacking proper resources, support, and training
Data Literacy Competencies

Key Ability/Knowledge Area
- Conceptual Competencies
- Core Competencies
- Advanced Competencies

Data Collection
- Data Discovery and Collection
- Evaluating and Ensuring Quality of Data and Sources

Data Management
- Data Organization
- Data Manipulation
- Data Conversion (from format to format)
- Metadata Creation and Use
- Data Curation, Security, and Re-Use
- Data Preservation

Data Evaluation
- Data Tools
- Basic Data Analysis
- Data Interpretation (Understanding Data)
- Identifying Problems Using Data
- Data Visualization
- Presenting Data (Verbally)
- Data Driven Decisions Making (Making decisions based on data)

Data Application
- Critical Thinking
- Data Culture
- Data Ethics
- Data Citation
- Data Sharing
- Evaluating Decisions Based on Data
Best Practices for Teaching Data Literacy
Emerging Delivery Methods

Project-based Learning

- Non-traditional Methods
- Hands-on with Real-world Data
- Iterative/Successive and Practical
Assessment and Evaluation

The Competencies Matrix, made up of 23 competencies and 64 related tasks/skills (Appendix 1), could be used to develop a self-assessment tool to help track success.

- Of students engaged in learning
  - Pre test/survey
  - Post test/survey

- Of data literacy education
  - Pre test/survey
  - Post test/survey
# Data Literacy Competencies Matrix

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<thead>
<tr>
<th>Conceptual Framework</th>
<th>Data Collection</th>
<th>Data Management</th>
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<tr>
<td><strong>Introduction to Data</strong></td>
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Further Information

For the full report and supplementary resources, please visit wwwdataliteracy.ca, or for more information, please contact Chantel Ridsdale at chantel.ridsdale@dal.ca

Thank you for your time and engagement!
Questions?