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**AT THE HEART OF COMMUNICATION**  
across disciplines and around the world



### ***Assessing the Complexity of Literacy Tasks:***

***A guide to analysis with  
examples and exercises***

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# SLIDE SHOW

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## ***Background***

- International Adult Literacy Survey (IALS),  
Statistics Canada 1995 - 2000
- Experimental model adapted and designed  
by Julian Evetts from source documents  
written by Irwin Kirsch and Peter Mosenthal  
(Kirsch and Mosenthal Properties)
  - model accounts for 85% of the variance of the test  
scores on IALS

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## ***Guide Content***

- IALS rating scale and proficiency levels
- Item analysis factors
- Rating Guide
- Exercises
- IALS benchmark examples

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***What is literacy?***

- New definition:  
“Using printed and written information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential.”

**Ability to find, read, understand, and use information**

*Source: Reading the Future: A Portrait of Literacy in Canada*  
<http://www.statcan.ca:80/english/freepub/89F0093XIE/free.htm>

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**Literacy is no longer measured in terms of an individual being literate or illiterate.** The IALS is not about whether people can read a sentence. Instead, it is first of all about what adults can measurably **do** with text as a result of the sum total of their formal schooling, their formal and informal training, and their application of reading practices and behaviors in daily life.

***Literacy Levels and Distribution of Canadians Aged 16 and Over***

- **Level 1 (22%):** Need intermediaries; can read simple and explicit text only
- **Level 2 (26%):** Can read straightforward simple text and do a single task; they also rely on others
- **Level 3 (33%):** Function well depending on context; it is considered the minimum level; the skill level for successful secondary school completion and college entry
- **Level 4&5 (20%):** Can do multiple tasks and process more complex material

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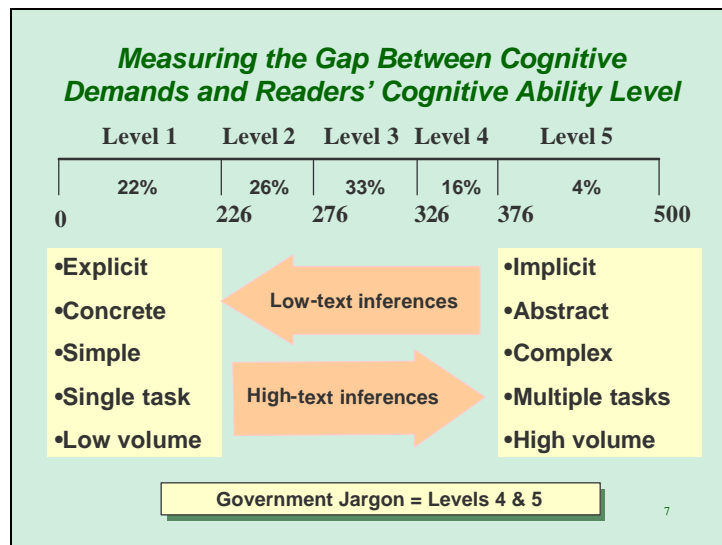
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### ***Why measure the complexity of literacy tasks?***

- Literacy is a major barrier to effective communication
- Most IALS test items are readable at grade 8 reading level
- Plain language is not enough

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Slide 7



**Average probability of responding correctly  
(RP 80)**

Proficiency level	1	2	3	4
People's Scores →	200 (0-225)	250 (226-275)	300 (276-325)	350 (326-375)
Task Complexity ↓	%			
1	<b>72</b>	94	99	100
2	50	<b>82</b>	95	99
3	20	49	<b>79</b>	94
4	12	31	60	<b>83</b>
5	1	3	13	41

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The IALS has developed a method of measuring the probability of successfully completing literacy tasks.

To get a level four, you would have to consistently perform level four tasks correctly 80% of the time. This means that individuals who have achieved a particular literacy level will consistently perform tasks at their level with an 80% probability of success. It also means they will have a greater than 80% chance of successfully performing lower level tasks. It does not mean, however, that individuals with low proficiency can never succeed at more difficult tasks. They may do so some of the time but their probability of success is relatively low. In other words, the more difficult a task relative to a proficiency level, the lower the likelihood of a correct response.

The above chart shows the probability of individuals with different literacy levels consistently responding correctly to tasks with various degrees of difficulty. For example, an individual with a proficiency score of 200 at level 1 on the document scale would only have a 20% chance of understanding and completing level 3 tasks and only a 12% chance of successfully understanding and completing level 4 tasks. On the other hand, a person performing at level 4 is expected to be able to perform level 1, 2, and 3 tasks with a high probability of success. However, the same person would only have 41% probability of successfully performing level 5 tasks.

## ***Benefits***

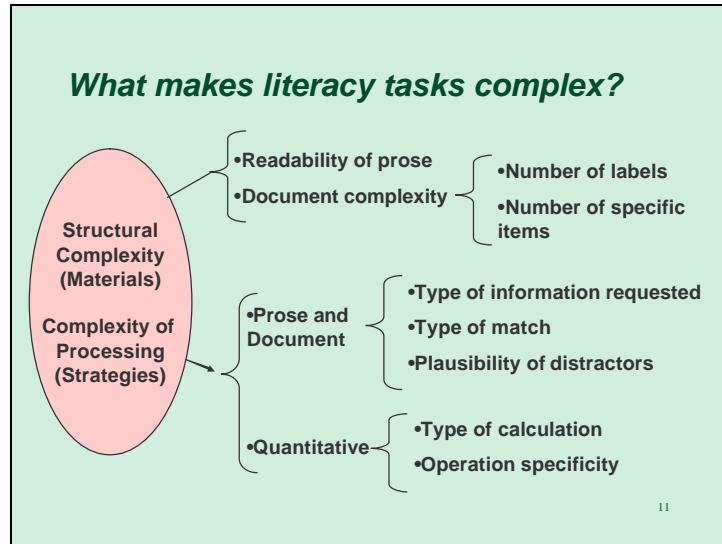
- Provides a tool to:
  - manage the level of complexity of public documents (**predictive tool**); and
  - match it to the ability of the target population (**profile approach**)
- Complements plain language
- Fills a gap in assessing readability and usability

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## ***Limits***

- Not for informational reading materials
- Learning curve depends on:
  - writing skills
  - linguistic knowledge
  - plain language experience
- Provides only an estimate

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- ### Type of Information
- Determines the kind of thinking required
  - Cognitive processing of tasks:
    - easier when requested information is concrete
    - more difficult for abstract information
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## *Type of Match*

- Matching given and requested information
  - degree of correspondence (congruence)
  
- Matching strategies:
  - locating
  - cycling
  - integrating
  - generating

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## *Locating*

- The process of **matching given information** in a question or directive to **features** in the document to **find** the requested information.

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## ***Cycling***

- The process of making several locate matches within or between paragraphs or cells to identify two or more pieces of information (locate to find another locate).
  
- Two types:
  - independent
  - sequential or dependent

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## ***Integrating***

- The process of **comparing** and **contrasting** information once it has been identified through cycling.
  
- The most basic integrating task is to identify similarities.

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## ***Generating***

- The process of using background knowledge to relate information in the question or directive to the text, or to select one plausible answer over another:
  - when there is no match (given to requested information)
  - coping without cues or clues

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## ***Factors influencing the “type of match”***

- Number of phrases or features to search on and the meaning of these features
- Number of items in the response
- Inference needed to match given or requested information
  - low text-based inference
  - high text-based inference
- Plausibility of distracting information

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## ***Plausibility of distractors***

- A “distractor” is when information in the text meets some, but not all, of the conditions specified in the question or directive to obtain the requested information:
  - “distractor” for the given information
  - “distractor” for the requested information
  
- Three complexity factors:
  - Number of shared conditions
  - Number of “distractors”
  - Proximity of “distractors”

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<b>Rating</b>	<b>Type of Operation</b>
1	Single addition
2	Single subtraction
3	Single multiplication
4	Single division
5	Combination of two of more operations

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### ***Factors of complexity for operational specificity***

- Obvious numbers
- Presentation (row, column, text, etc.)
- Math symbols
- Explicit terms (add, subtract, total, etc.)
- Implicit statements (calculate the difference, what amount, etc.)
- Number of math operations
- Ratios
- Transformation of data

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### ***Rating Guide***

- Step 1 - Identify the task
- Step 2 - Decide on the type of task
  - > Prose
  - > Document
  - > Quantitative
- Step 3 - Rate each complexity factor
- Step 4 - Compare results of combined ratings to IALS level

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## ***Achievement***

- Guaranteed Income Supplement Application
  - 70% take-up rate after simplifying the tasks (100,000 mailouts)

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## ***Beyond simple words***

- Literacy research tells us to accommodate readers we must
  - evaluate the task
  - break it down into its component parts
  - organize the parts in a logical progression
  - express the task using plain language

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## ***Conclusion***

- Don't ask yourself "Will the reader have difficulty reading this information?"
- Ask yourself "How complex is the task of getting this piece of information from this particular written source and can the reader take action?"

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## ***Useful References***

- IALS - literacy, Economy and Society, Statistics Canada 1995
- IALS - Literacy in the Information Age, Statistics Canada 2000 (data for 20 countries)
- TOWES Web site (Test of Workplace Essential Skills)
  - <http://www.towes.com/>

IALS information is available at [www.statcan.ca](http://www.statcan.ca) or [www.nald.ca](http://www.nald.ca)

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### ***Getting a Copy and Providing Feedback***

- Guide posted at  
<http://www.ibd.ab.ca/Literacy-task.html>
  
- For comments/suggestions, please contact:  
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Plain Language: The International Pilgrimage

## **Michel Gauthier**

[www.hrdc-drhc.gc.ca/common/home.shtml](http://www.hrdc-drhc.gc.ca/common/home.shtml)

Michel Gauthier managed client service programs for Revenue Canada from 1974 to 1999. In 1993, he received the top award from the Governor General of Canada for developing and implementing Revenue Canada's correspondence system. In 1999, he joined Human Resources Development Canada, where he is responsible for making the Income Security Program's communications easier to read. He has delivered more than 175 literacy and plain language presentations across Canada. He received the 2002 award for Staff Service Excellence in the field of plain language.