A tool for assessing documents

THE PMOSE/IKIRSCH DOCUMENT READABILITY FORMULA

Readability formulas offer a useful first step in assessing print materials. However, all such formulas to date focus on print material written in prose format – materials written in full sentences and paragraph structure. Many print materials are not in sentence and paragraph format. Many health materials such as medicine labels, directions, and dose charts – are in document format. Documents are print materials structured as lists, charts, or graphic displays.

Two well-known scholars and researchers in adult education, Peter Mosenthal and Irwin Kirsch, developed a formula that can be applied to documents.

> Mosenthal, Peter and Irwin Kirsch. (1998). "A new measure for assessing document complexity: The PMOSE/IKIRSCH document readability formula." Journal of Adolescent and Adult Literacy, 41, 638–657.

The PMOSE/IKIRSCH document readability formula offers a rating based on three different criteria:

1. Structure: the score is based levels of difficulty for either a list or a graphic display depending on the very design of the document. Question: What is the design of the document?

2. Density: the score is based on number of labels and on number of items. Question: How many titles and items are presented to the reader?

3. Dependency: the score is based on whether or not any important information is to be found outside the document. Question: Does the reader have to look outside the document for important information?

In order to assess a document, follow the three steps as described below. You will offer a score for each of the three criteria, sum the scores, and then use the chart at the end [page 5] to interpret the score.

Step 1. Examine the structure of the document

The PMOSE/IKIRSCH formula asks you to consider different kinds of structures and offers a score for each type. The score increases with the level of difficulty assigned to that structure. The authors divide documents into two types:

- Lists
- Display [such as pie charts, graphs, or maps]

Determine the type of document you want to assess. Part a focuses on lists and Part b focuses on graphic display [such as pie charts, maps, line or bar graphs].

If your document is in the form of a **list,** follow the directions for 1a:
1a. Lists: The authors provide you with 4 options in order of difficulty (simple lists, combined lists, intersected lists, nested lists)

Simple list structure: Score 1

This structure, as you might expect, resembles a single column with label or heading followed by a list of items. Here is a pictorial image. "L" stands for label and "i" stands for item:

__L__
__i__
__i__
__i__
__i__

Combined-list structure: Score 2

This structure resembles a more complex list of items with several columns and a label or title for each column. Here is a pictorial image. "L" stands for label and "i" stands for item:

__L___	___L___	___L___
__i__	__i__	__i__
__i__	__i__	__i__
__i__	__i__	__i__

Intersected-List Structure: Score 3

This structure resembles a more complex arrangement of items that has label along at the top as well as along the side. Here is a pictorial image. "L" stands for label and "i" stands for item:

	___L___	___L___	___L___
__L___	_i_	_i_	_i_
__L___	_i_	_i_	_i_
__L___	_i_	_i_	_i_
__L___	_i_	_i_	_i_

Nested-list structure: Score 4

This structure resembles an even more complex arrangement of items because each of the labels has more than one category. Here is a pictorial image. "L" stands for label and "i" stands for item:

	___L___		_ __L___		___L___
	L L		L L		L L
__L___	_i_ _i_		_i_ _i_		_i_ _i_
__L___	_i_ _i_		_i_ _i_		_i_ _i_

If your document is in the form of a **display** follow the directions for 1b:
1b. Display: The authors rank different kinds of graphic representation based on assigned level of difficulty and offer a score at each level. The scoring for a display is based on type:

- Pie charts and time lines: Score 2
- Bar charts, line graphs, and maps: Score 3
- Bar charts and line graphs with nested labels: Score 4

Step 2: Examine the density of the document

Document density is measured by two factors: the number of labels and the number of items.

2a. Count the number of labels within the document
Assign the following scores depending on the number of labels:

- Score 1 – if 15 or fewer labels
- Score 2 – if 16 to 25 labels
- Score 3 – if 26 to 35 labels
- Score 4 – if 36 to 46 labels
- Score 5 – if more than 46 labels

2b. Count the number of items within the document
Assign the following scores depending on the number of items:

- Score 1 – if 75 or fewer items
- Score 2 – if 76 to 125 items
- Score 3 – if 126 to 175 items
- Score 4 – if 176 to 225 items
- Score 5 – if there are more than 225 items

Step 3: Determine Dependency

Check to see if the document makes reference to information not included in the document

Sometimes readers need information not included in the document in order to use the document. The authors call this factor 'dependency'. If the document makes reference to information found elsewhere [outside the document], then Add 1 additional point to the score.

Record and Sum the scores:

- Document structure score [part a or part b] ____
- Number of labels score ____
- Number of items score ____
- Dependency score ____

TOTAL ____

Step 4: Determine the Document Complexity Level

Use the chart below. Circle the total score and read appropriate assessment information

Scores	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17
Complexity Level	Very Low	Low	Moderate	High	Very High
Proficiency Level	Level 1	Level 2	Level 3	Level 4	Level 5
Grade/ Schooling	Range including Grade 4 or equivalent to less than 8 years of schooling	Range including Grade 8 or equivalent to high school degree	Range including Grade 12 or equivalent to some education after high school	Range including 15 years of schooling or equivalent to college degree	Range including 16 years of schooling or equivalent to post college degree

Self Test: How would you assess the following label?

Chili with Beans

Nutrition Facts

Serving Size: 1 cup (253 g)
Servings per container: 2

Amount per Serving:

Calories 260	Calories from Fat 72
	% Daily Value
Total Fat 8g	13%
Saturated Fat 3g	17%
Cholesterol 130mg	44%
Sodium 1010mg	42%
Total Carbohydrate 22g	7%
Dietary Fiber 9g	36%
Sugars 4g	
Protein 25g	

Record and Sum the scores:

- Document structure score [part a or part b] ____
- Number of labels score ____
- Number of items score ____
- Dependency score ____

TOTAL ____

COMPLEXITY LEVEL: _____

SEE THE NEXT PAGE FOR THE ANALYSIS

ANALYSIS

- Document structure score [from part 1a]:
  This seemingly simple label really fits into the
  category of a nested list ___4__

- Number of labels score:
  There are fewer than 15 labels ___1__

- Number of items score:
  There are fewer than 75 items ___1__

- Dependency score:
  The reader does have all the needed
  Information within the chart ___0__

TOTAL ___6__

COMPLEXITY LEVEL:

Low, level 2,
Above 8th grade level but within the high school range.

This chart may be a bit difficult for many U.S. adults to use.

NOTE:

The PMOSE/IRIRSH tool does not consider the words themselves. We may immediately notice words such as cholesterol, carbohydrate, fiber, and protein. These are all technical terms. So too is the word sodium - a scientific term for salt that is not used in everyday talk. We do not ask a family member to 'pass the sodium please' at the dinner table.

Might someone on a salt-free diet feel free to buy this can of chili? There is no salt listed!