The Influence of Graphic-Text Correspondence and Text Coherence on Comprehension and Attitude Toward Reading

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Background

Objectives
This study is designed to determine whether the coherence of text and the correspondence of graphics with a text influence readers’ comprehension and attitude toward reading in children (2nd, 3rd, and 4th grade). We are also interested in whether the potential effects on comprehension and reading attitude endure over time.

Theoretical Framework

  - Text structure can be divided into four categories: propositions, microstructure, macro-structure, and super-structure.
  - Text coherence can be manipulated at the macro-level to create a high-coherence version of the text.

  - Comprehension enhanced when text and relevant graphics are paired.

  - Learners construct mental models through inferential connections between text and the graphic.
  - Different graphics, paired with identical texts, should combine to create unique mental models of text content.

- Carney and Levin’s Graphical Taxonomy (Carney & Levin, 2002)
  - Graphics can be representational, organizational, interpretative, transformative, or decorative.

Research Questions

1. Will text comprehension for low prior-knowledge readers be higher with a high-coherent text (McNamara, Kintsch, Songer & Kintsch, 1996, McNamara, 2001, Ozuru, Dempsey, and McNamara, 2009)?

2. Will text comprehension vary with the type of accompanying graphic (Mayer, 2005, Schnotz and Bannert, 2003, Schnotz, 2005)?

Main Hypothesis:
A representational graphic with high correspondence with the text will enhance the comprehension of an explanatory text regardless of text coherence.

Method

Participants (expectations)
108 Elementary students
- 36 Second Graders
- 36 Third Graders
- 36 Fourth Graders

Design
Three factors, 'Text Coherence', 'Graphic-Text Correspondence', and 'Time' will be crossed to yield 6 experimental cells.

The resulting study design is 2-Text Coherence (High vs. Low) x 3-Graphic-Text Correspondence (High vs. Low vs. No Graphic) x 2-Time (Immediate vs. Delay).

Materials

Expected Results

Text type:
- Low Coherence
- High Coherence

Graphic-Text Correspondence

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