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Title: Do illustrations help or harm metacomprehension accuracy?

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Strand of work: Basic Studies

Submitted Abstract

The present research examined the effect of illustrations on readers' metacomprehension accuracy for expository science text. In two experiments, students read non-illustrated texts, or the same texts illustrated with either conceptual or decorative images; were asked to judge how well they understood each text; and then took tests for each topic. Metacomprehension accuracy was computed as the intra-individual correlation between judgments and inference test performance. Results from both studies showed that the presence of decorative images can lead to poor metacomprehension accuracy. In the second study, an analysis of the cues that students reported using to make their judgments revealed that students who used comprehension-relevant cues showed more accurate metacomprehension. A self-explanation instruction did not alter either comprehension-relevant cue use or metacomprehension accuracy, although some advantages were seen when readers were prompted to self-explain from texts illustrated with conceptual images. These results suggest that students may need more explicit instruction or support to promote the use of valid cues when engaging in comprehension monitoring with illustrated text, and that seductive information such as decorative images may undermine comprehension monitoring.

Purpose and Questions Investigated, Assessments or Tools developed

A set of multimedia expository texts were developed to investigate whether the presence of illustrations might affect comprehension and metacomprehension in science.

Research Context or Methodology

Setting and Participants: Two hundred and fifty undergraduates participated in the study.

Research Design, Data Collection, and Analysis:

In two experiments, students read non-illustrated expository science texts, or the same texts illustrated with either conceptual or decorative images. Dependent measures include judgments of how well they understood each text, test performance, and cue-basis protocols. Metacomprehension accuracy was computed as the intra-individual correlation between judgments and inference test performance.

General statement of findings

Results from both studies showed that the presence of decorative images can lead to poor metacomprehension accuracy. In the second study, an analysis of the cues that students reported using to make their judgments revealed that students who used comprehension-relevant cues showed more accurate metacomprehension.

Implications

These results suggest that students may need more explicit instruction or support to promote the use of valid monitoring cues when learning science from multimedia sources, and that seductive information such as decorative images may undermine comprehension monitoring.

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