Motivation Effect of Illustrations in Text Comprehension: An Eye-Tracking Study

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Experiment 1: How to Evaluate Motivation Effect


- **Method**
  - **Materials**
    - Illustrated Pages: Revised disaster evacuation manual provided by Kawagoe city, Japan (http://www.city.kawagoe.saitama.jp/bousai/).
    - The manual consists of eight Web pages.
    - Each page includes two to seven headings with explanatory text.
    - Each heading corresponds to some evacuation rule and has an associated illustration.
  - **Unillustrated Pages**: Illustrations removed from the illustrated pages.
  - **Participants**: Thirty-four adults (6 females and 28 males; age 18 to 28)
  - **Procedure**: The participants were allowed to glance at the presented Web page for two seconds and were then asked to answer the two questions; motivation to read and understandability.

- **Results**
  - The mean motivation-to-read score for illustrated pages was significantly higher than that for unillustrated pages (p<.01).
  - The illustrated pages did motivate the participants more to read them within the mere two-second glancing period than the unillustrated pages did.

- **Conclusion**
  - We proposed how to evaluate motivation effect of illustrations (Shimada & Kitajima, 2006). But, the process was not clear. In this study, we further investigate the process that causes the motivation effect of illustrations by analyzing eye-tracking data.

- **References**

Experiment 2: Eye-Tracking Study

- **Method**
  - **Materials**
    - Same as experiment 1
  - **Participants**
    - 19 adults (10 females and 9 males; age 18 to 28)
  - **Procedure**
    - Eye-tracking was added. Participants’ eye-movements were recorded using a Tobii x50 eye-tracker.

- **Results & Discussion**
  - **Checking the Motivation Effect**
    - The mean motivation-to-read score for illustrated pages were significantly higher than that for unillustrated pages (p<.01).
    - This result is consistent with experiment 1.
  - **Structural Equation Modeling**
    - We examined the relationship among the variables by structural equation modeling.
    - We found two routes to enhance motivation.

- **Conclusion**
  - We investigated the process that causes motivation effect of illustrations by analyzing eye-tracking data.
  - We found two routes that illustrations enhance motivation to read.
  - The other is the effect of the size of the illustrated area.
    - The illustration size significantly affected the motivation-to-read score due to enhanced understandability.
    - In contrast, the illustration size did not affect the number of gazes of illustrations.
  - The results suggest that large illustrations enhance motivation, and the route is distinguished from that of the number of gazes on illustrations.
  - The effect may be caused by improvement of the overall impression of pages, which includes large illustrations.

- **References**