

Background

- When purchasing text book material, the paper-based version is preferred over the computer-based version (Sheppard, Grace, & Koch, 2008).
- When identical tests were given, paper-based test scores were slightly greater than computer-based test scores (Mead & Drasgow, 1993).
- Reading from a computer requires more cognitive effort, including visual fatigue, inability to directly mark text, and the inability to see the entire text at one time (Noyes, Garland, & Robbins, 2004).
- The present study is the first known to systematically compare college-level material in terms of textual format.
- **Present Investigation:**
- Does reading college-level material from a traditional paper textbook differ from an electronic format of the text?

Method

Experiment 1: Read a excerpt from a common introductory psychology textbook and answered 20 questions directly after.

Experiment 2: Identical to Exp. 1, but participants were given the option to highlight and/or take notes. Experiment 2 Experiment 1 N = 54N = 30No highlighting Highlighting/notetaking

- In both conditions, half read from paper-based* text and half read from computer** text.
- Comprehension questions were selected from the publisher's test bank as an appropriate representation of the material read.

**Exploring Psychology* By David C. Myers (2011). **Publisher supplied e-text available through www.coursesmart.com

Electronic Versus Paper Text: Which is better? Samantha A. Ricker, Michael J. Stroud, and Raymond J. Shaw Department of Psychology, Merrimack College

- No significant difference in reading times (p = .124) or comprehension scores (p = .747) across conditions. Experiment 2
- No significant difference in reading times (p = .322) or comprehension (p = .245) across conditions.



between-subjects factors

- Significantly longer reading times when permitted to highlight and take notes (p < .001) • Marginal Format x Highlight/notes interaction for
- reading times (p = .078)
- No main effects or interaction for comprehension lacksquare

Results

Experiment 1

2 x 2 ANOVA with Format and Highlighting/Notetaking as

- readers.
- take notes.

Future Research

- 111-113.

Conclusions

Highlighting Behavior: Computer-based readers produced fewer total highlights, but more words per highlight compared to paper-based

In both formats, participants spent significantly longer reading the material when allowed to

The present study showed that there is no difference in the levels of comprehension between the two text formats. Results suggest that when allowed to take notes, reading via paper is best. Overall, comprehension was very low with the publisher's recommended question bank.

Interactive computer-based texts may increase immediate comprehension.

How much material is retained over time? Explore alternative formats (Touch screen tablets, smart phones, etc.).

Will common study techniques (self-quizzing, re-reading, etc.) interact with reading format? Is paper-based superior to computer based?

References

Mead & Grasgow, (1993). Equivalence of computerized and paper-and-pencil cognitive ability tests: A meta-analysis. *Psychological Bulletin, 114 (3),* 449 – 458.

Noyes, J., Garland, K., & Robbins, L. (2004). Paper-based versus computer based assessment: Is workload another test mode effect? British Journal of Educational Technology, 35(1),

Shepperd, J. A., Grace, J. L., & Koch, E. J. (2008). Evaluating the Electronic Textbook: Is It Time to Dispense With the Paper Text? Teaching of Psychology, 35(1), 2-5.