Let Me Show You What I Read: Exploring Referencing Strategies for E-Books

Dongwook Yoon, Huaisu Peng, Bin Xu
Cornell University
dy252, hp356, bx55@cornell.edu

Introduction

As reading behavior is towards digital and social, how to share book content appropriately is becoming an emerging and crucial question. In this paper, we explored two different E-book content reference strategies: the traditional page-number-based reference and an off-the-shelf highlight-based reference. A comparative laboratory study was conducted to test the speed and workload of referencing behaviors for both reference generator and receiver. The results present that highlight is easier and faster for reference receiver, while page-number for reference generator. We also found out that page-number provides better overall comprehension over book contents. We conclude with implications of future E-book interface design to enhance share-ability.

Hypotheses

H1. For reference generator, page-number reference provides easier and faster generations than highlight reference; our basis for this hypothesis is that the one who generate highlight has more burdens to locate precise position of the referenced contents.

H2. For reference receiver, highlight-based reference provides easier and faster mode of finding and reading referenced contents; this came out from the fact that a highlight can pinpoint more detailed location of contents than page number.

H3. For reference receiver, page-number reference provides better comprehension of overall contents; as described in the hypothesis 2, since the highlight-based references localizes information very specifically, the reader would not attend to the overall contents.

Method

To test the three hypotheses, we conducted laboratory study using within-subject 2 x 2 factorial design. Independent variables include the types of referencing (page-number and highlight) and the practices on references (receiving and generating). Dependent variables, such as task completion times, accuracy, and participant’s workload, are measured and analyzed for hypotheses testing.

Results

Our results suggest that for reference generator, page-number reference is more efficient with less physical and psychological demands; while for reference receiver, page-number reference tend to be less efficient with higher cognitive loads, but may provide better comprehension of the overall context.

Implication and Future Work

Our findings have several design implications. First, the findings suggest that a reader’s performance and workload can differ by their roles — generator or receiver — in the referencing activities. Thus, E-book designer should consider employing appropriate referencing interfaces when targeted users are known. Second, even though page-number does not promote efficient reading, it still helps users with better comprehension of the content. This indicates the necessity of page-number in E-book interface, but also encourages its integration with other referencing methods to promote reading speed without the loss of comprehension.

The limitations of our study present opportunity for future investigation. First, only one type of reading material was used in our testing. Second, all of our participants were from a university in United States, and are well-educated people with a limited age range. Future study should cover all variety of reader population so as to generalize our findings. And lastly, we do not consider other variety of referencing methods like the percentage interface in Amazon Kindle. For future work, we will try various novel referencing techniques other than the commercial-off-the-shelf methods. Another promising line of research is to use social network services that can promote sharing and recommendation of E-book contents.