

Text Simplification and Eye Tracking

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Abstract

In order to improve access to information for public, particularly for those with cognitive disabilities and limitations in literacy, all U.S. federal agencies are mandated to use plain language standards to develop text that can be easily understood. The effectiveness of plain language standards in developing easy to comprehend text for people with cognitive and/or reading challenges, to our knowledge, has not been tested. Our project addresses this gap. In particular, we are working on compiling a set of easy to follow plain language standards for developing simplified text for people with cognitive disabilities. We believe that such a set of plain language rules not only improves effective communication of information for people with cognitive disabilities but also for all users. It is reasonable to argue that in today's fast-paced digital world users would favor online information that is read and understood easily and quickly. Passages that are difficult to comprehend or take too long to read are likely to be off-putting, discouraging a user to complete the reading. This argument is supported by eye-tracking studies that show people read only about 20% of text that is provided on a webpage. Providing easy to follow plain language rules for developing online communication is likely to be even more important in engaging millennial, who tend to avoid reading textual information, find it boring to read long blocks of text, and prefer image based communication.

In order to test millennial' reactions to the simplified text developed with our compiled set of rules, we conducted a preliminary eye tracking experiment with 18 millennial users. We chose a health-related text passage from an actual blog post and simplified the text passage using our set of compiled plain language rules. Half of our participants saw the original and the other half saw the simplified version of the text. While not significantly different, our results showed that participants who read the simplified version of the text, provided more correct answers to questions about the text. Eye tracking data revealed that people had more intense fixation on the simplified text. This eye movement data, which indicates engagement, is particularly interesting because younger users tend to exhibit "impatient" viewing behavior. Our preliminary analysis of the eye tracking data indicating that simplified text was more engaging to the participants in our study is consistent with the observation that a prominent characteristics of popular books and blogs is that they typically use plain language to communicate with their readers. These preliminary results indicate that the benefits of text simplification may extend to populations other than people with cognitive disabilities. As such, the results can provide important insight for designing effective online communication for millennial users. We are in the process of collecting more data using different text passages. We plan to repeat the same experiment with people with cognitive disabilities. We are looking forward to comments and suggestions that can help us refine the analysis of our current data and we appreciate feedback that can strengthen the design of our future experiments