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Towards an improved readability on mobile devices: evaluating adaptive rapid serial visual presentation

Gustav Öquist[a], 📧, Mikael Goldstein[b, 1], 📧

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Abstract

Can readability on small screens be improved by using adaptive Rapid Serial Visual Presentation (RSVP) that adapts the presentation speed to the characteristics of the text instead of keeping it fixed? In this paper we introduce Adaptive RSVP, describe the design of a prototype on a mobile device, and report findings from a usability evaluation where the ability to read long and short texts was assessed. In a latin-square balanced repeated-measurement experiment, employing 16 subjects, two variants of Adaptive RSVP were benchmarked against Fixed RSVP and traditional text presentation. For short texts, all RSVP formats increased reading speed by 33% with no significant differences in comprehension or task load. For long texts, no differences were found in reading speed or comprehension, but all RSVP formats increased task load significantly. Nevertheless, Adaptive RSVP decreased task load ratings for most factors compared to Fixed RSVP. Causes, implications, and effects of these findings are discussed.

Keywords

Mobile usability; Small screens; Readability; Adaptive user interfaces; Dynamic text presentation; Rapid Serial Visual Presentation

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👤 Corresponding author. Tel.: +46-18-471-7006; fax: +46-18-471-1416

1 Tel.: +46-8-757-3679.

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