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Auditory and visual effects on visual attention and on comprehension of electronic magazines. Study with eye tracker technology.

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Abstract

We are in a digital society where new technologies are constantly emerging and old technologies are being upgraded faster than we can blink. Digital reading has become an important means of reading. The aim of this study is to know how visual and auditory stimuli influence the visual attention of the electronic magazines and to study if this kind of stimuli influences the comprehension of the text. With the eye tracking technique, orthogonal design and regression model, this paper, analyzed the audience's eye movement when reading Chinese e-magazine under visual and auditory stimulations. The comprehension of the text is analyzed too. An experimental e-magazine was created and 80 graduate students were randomly selected. Attention to electronic magazine (in terms of eye movements and eye fixations) is recorded using the eye tracker technology. All participants underwent the same setup but under different visual and auditory stimuli; they read short sentences while an eye tracker records their attention behavior; after completion, participants answer a comprehension questionnaire. The most important results show that speed of the rhythm of the background music and the special visual effect doesn't affect the fixation times. Reading voice has a significant effect on the average gaze duration. Only dubbing and background colors have a significant effect on reading comprehension. The findings obtained in this study reveal a better knowledge of the e-magazine reading behavior. However, it is necessary to perform specific cross-cultural studies comparing efficacy results of reading in different languages. Finally, we consider that some of the differences between studies with eye tracker are due to the measure used to analyze the visual attention process from the results of eye movement that occurs, and also by the differences in the kind of experimental tasks done.

Keywords

Attention, audiovisuals codes, digital communication, digital context, reading, multimedia resources, magazines, quantitative techniques.

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