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Visual working memory, attentional sustainability and shifting in digital versus non-digital environment: the role of perceptual feedback

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Abstract

The digital environment has a significant impact on our everyday lives, but there is a lack of studies on how it affects cognitive processes like attention and working memory (WM). This study aims to compare attention and WM in digital and non-digital environments. In Experiment 1, we compared attention and working memory under paper and computer-based environment tasks. The findings showed that under non-digital condition attentional sustainability and visual working memory were better. In Experiment 2, we examined attentional shifting and sustainability at different levels of digital saturation (the presence of perceptual feedback on a website). Attentional sustainability was better in a saturated condition, but attentional shifting was not affected. Thus, the real environment is suggested to be superior due to lower saturation and higher motor-visual coherence. Digital saturation, along with the ACD idea, can guide attention. These results have applications for enhancing the user experience with interfaces.