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Does a head-mounted display worsen inattentive blindness?

Stas Simon Krupenia and Penelope Sanderson
Key Centre for Human Factors and School of ITEE
The University of Queensland
St Lucia, Qld Australia 4072

Abstract

Head mounted displays (HMDs) can present visual information to operators at times when it would otherwise be difficult or impossible using standard visual displays. Evidence suggests HMDs can help anesthetists in simulated medical environments. Operators, however, may have trouble extracting information from the HMD in dynamic environments. Operators may also fail to notice visual events that are important, meaningful, or bizarre if attending to other aspects of the visual scene. Using an inattentive blindness procedure we investigated how attention manipulations (Focused, Divided, Just Watch) and display type (HMD, Standard Display) affect participants' ability to notice an unexpected event. Participants were less likely to detect unexpected events using the HMD. We also found that unexpected event detection decreased from the Just Watch to Divided to Focused attention conditions. Further tests are needed to ensure that HMDs do not lead anesthetists to miss unexpected events while monitoring.