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Authors
Barry, Kevin
Wayne, Gray
Schoelles, Mike

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Kevin Barry
Rensselaer Polytechnic Institute, Troy, New York, United States

Gray Wayne
Rensselaer Polytechnic Institute, Troy, New York, United States

Mike Schoelles
Rensselaer Polytechnic Institute, Troy, New York, United States

Abstract: Performance on perceptual-motor (PM) tasks should not be affected by cognitive workload (CW). Subjects performed a novel task that combined a "recall" version of the n-back task and a PM distractor task. Subjects' performance was significantly worse on the PM task when CW was increased. As CW was manipulated, the perceptual and motor requirements of both the n-back task and the PM task remained the same, with only the working-memory requirement varying. The comparable perceptual and motor requirements across all levels of CW implies that increasing CW resulted in degraded PM performance; however, possible mediators still need to be examined, such as the higher level of negative feedback resulting from increased errors. A comparison between multiple causal models that include mediators is planned, to help determine if this apparent relationship between CW and PM performance degradation can be better explained by other variables that vary when increasing CW.