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Measuring Working Memory with a Restaurant Game: A Pilot Validation Study

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To enhance the ecological validity of measuring working memory, we developed a new computer task – Restaurant Game (RG). As waitpersons, participants must remember the customers' mixed orders of drinks and dishes and place drinks on a tray first and dishes second. The number of items in the order increases if at least one of two trials is correct. The RG score is calculated as the square root of the number of items delivered correctly in all trials to normalize data for statistical analysis. In a pilot validation study, 64 undergraduate students participated in the RG and three PsyToolkit online tests: Backward Digit Span, Corsi Backward Block Test, and the Shape-Filling Switching Test. For each test, they rated their engagement and motivation. After approximately a month, 34 participants played the RG again. The correlation of the RG score with the Digit Span score was high ($r = .62$, $p < .001$), supporting the convergent validity of the RG, and negligible with the Corsi Test score ($r = .10$, $p = .47$) and the switching cost in the Shape-Filling Test ($r = .04$, $p = .75$), suggesting its divergent validity. Participants felt slightly more engaged and motivated when playing the RG than when doing the other tasks. Although the RG score showed a small practice effect and relatively poor retest reliability ($r = .40$, $p = .02$), the overall results indicate the potential for further developing the RG and using it in memory assessment and cognitive training.

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No

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