

The unique contributions of the facilitation of procedural memory and working memory to individual differences in intelligence

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Individual differences in working memory account for a substantial portion of individual differences in intelligence. Specifically, individual differences in working memory account for 31.2% of individual differences in intelligence, with procedural memory contributing 29.8% and working memory contributing 29.9%.

2.2.5. ALTM tasks

To assess facilitation of procedural memory, we modified the task used by [Woltz and Was \(2006\)](#) that was illustrated in [Fig. 1](#). The purpose of the modifications was to enhance the sensitivity of the task to capture individual differences in the facilitation of procedural memory. Three measures of facilitation were used: Category Task, Synonym task, and Attribute Task, with each task having the same structure (see [Fig. 2](#)). In each of the three tasks, each of nine trials began with a memory load of five words presented visually at a rate of 2.25 s per word. The fi

2.2.7. Measures of comprehension

The three standard tests of comprehension were as follows:

(a) the reading comprehension task from the Air Force Officer Qualifying Test (AFOQT; see [Kane et al., 2004](#)), (b) the Shipley Vocabulary

the direct effects of the latent factors facilitation of procedural memory and WM on gF and comprehension. The estimated standardized total effects of facilitation of procedural memory on gF were $\beta = .23$ and of facilitation of procedural memory on comprehension were $\beta = .21$, whereas the estimated standardized total effects of WM on gF were $\beta = .53$ and of WM on comprehension were $\beta = .45$. WM and facilitation of procedural memory together accounted for 43.2% of the variance in gF

secondary memory, respectively. The capacity of working memory,

facilitation of procedural memory accounts for unique variance in

