

# The Effect of Contextual Information on Reading Span

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Working memory plays an important role in school learning. This study using the reading span task investigated how contextual information provided by the processing component enhances the working memory storage. In Experiment 1, we found that the contextual information and the integration between the processing task and target words facilitated memory performance, while increasing cognitive load had an interference effect. Experiment 2 showed that in free recall, participants actively used the contextual information to reconstruct the target words of the storage task. Experiment 3 further used the sequence recognition test and found that the contextual information enhanced participants' recognition of both absolute and relative positions of the target words. Experiment 2 and 3 also found that participants' memory performance was only benefitted from conditions with a high level of contextual information. These findings demonstrated that participants actively made use of the contextual information provided by the processing task and that changing cognitive load in the processing task had an effect. More importantly, the sequential information from the contextual relationship between the sentences in the processing component was the basis for reconstructing the target words in a reading span task. These findings are discussed in terms of the mechanism underling the facilitation effect of the processing component in a working memory task. Some suggestions are also made regarding materials used in the reading span task to measure individual differences.

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