華人兒童的筆順、工作記憶和漢語閱讀能力
Stroke Sequence, Working Memory and Chinese Reading Ability in Chinese Children

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A Chinese reader will need to memorize approximately 3000 unique logographs to cater everyday reading. These words are learned through extensive copying. Learners are taught a specific sequence that has been present for thousands of years. However, the relationship between stroke sequence and Chinese reading ability has yet to be thoroughly studied.

Theoretically speaking, a reader only needs to identify the words and this could be done without learning the correct sequences. Brain imaging studies suggested that Chinese reading ability might be related to visualspatial processing in the working memory.   Therefore this study aims to investigate the relationship between visualspatial memory based on Chinese related stimulus and to find out if stroke sequence is really needed in reading Chinese.

40 grade 1 students were recruited from a primary school in Beijing. Subjects are tested for their Nonverbal IQ, reading performance, stroke and constituent memory span, as well as their stroke sequence accuracy on familiar and unfamiliar words. Results indicated that stroke span is significantly correlated with reading performance, and is also predictive for stroke sequence scores. Constituent span however has nothing to do with reading performance but are predictive of the stroke sequence accuracy for unfamiliar words. Stroke sequence, on the other hand, is robustly correlated with reading performance. The overall stroke sequence accuracy is a significant predictor in reading performance.   Stroke sequence accuracy for familiar words is also a significant predictor in stroke sequence accuracy for unfamiliar words.

In short, stroke span proves to be more important than constituent span. Also, accurate stroke sequence is a very important factor affecting Chinese reading ability.