

Deciphering Syntactic Processing of Gifted Students with Working Memory and Creativity

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Language abilities are indispensable building blocks in all domains of learning. The current research focuses on reading comprehension at the sentence level with an emphasis on syntactic processes. The main purpose here is to investigate the reading ability of gifted high school students by adopting a reading comprehension test of garden-path sentences (GPS) (Study 1). To further decipher the mechanism underlying syntactic processes, participants' working memory span (Study 2) and creativity (Study 3) were measured. Results revealed that, in Study 1, gifted students proved to have an overall advantage over the students in the control group. The advantage shown by gifted students was larger in GPS than in the control ones. In Study 2, gifted students with a high working memory span performed better in reading comprehension tasks than those with a low working memory span. In Study 3, a correlation analysis showed that reading comprehension of the GPS correlated with both working memory span and creativity, respectively. However, no correlation was found between working memory span and creativity. In conclusion, our research found that the gifted students showed the advantage of reading comprehension at the sentence level. Both working memory and creativity are important for the reading comprehension of the GPS, but their contributions are mutually independent.

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