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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Language in Math Problem Solving

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 41(0)

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Publication Date

2019

Peer reviewed

Language in Math Problem Solving

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Abstract

Children enrolled in language-immersion programmes may be required to learn math in the immersion language. Following the framework of the Pathways Model (LeFevre et al., 2010; Sowinski et al., 2014), the goal of the present study was to understand how instructional language supports math learning by comparing patterns of performance of immersion and non-immersion students. Participants included 182 grade 2 students (Mean age= 7.8 years): 108 students were enrolled in French immersion programs and were learning math in French (their second language) and 74 were enrolled in non-immersion programs and were learning math in English (their home language). Participants were tested on a number of general cognitive measures as well as math specific outcome measures. Results show that overall, across both immersion and non-immersion students, linguistic, quantitative and working memory components contributed to math problem solving. However, within the linguistic component there were differences between the direct and indirect pathways.