

Spatial and numeracy skills at the beginning of preschool: A large-scale, nationally representative study

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Early numeracy skills and spatial reasoning skills are both key predictors of later mathematics learning (e.g., Nguyen et al., 2016; Verdine et al., 2017), highlighting the critical role of preschool mathematics education in supporting mathematics achievement through the primary and secondary years. The current observational study engaged a nationally representative sample of 1,770 preschool children at the beginning of the academic year using a game-based digital activity to capture their patterning, spatial language, perspective-taking (a kind of spatial reasoning skill), and a range of numeracy skills. This talk will present on the findings, which informs preschool mathematics education.

References

- Nguyen, T., Watts, T. W., Duncan, G. J., Clements, D. H., Sarama, J. S., Wolfe, C., & Spitler, M. E. (2016). Which preschool mathematics competencies are most predictive of fifth grade achievement? *Early Childhood Research Quarterly*, 36(3), 550-560. <https://doi.org/10.1016/j.ecresq.2016.02.003>
- Verdine, B., Golinkoff, R. M., Hirsh-Pasek, K., & Newcombe, N. (2017). Links between spatial and mathematical skills across the preschool years. *Society for Research in Child Development Monographs*, 82, 1–150.

2021. In Y. H. Leong, B. Kaur, B. H. Choy, J. B. W. Yeo, & S. L. Chin (Eds.), *Excellence in Mathematics Education: Foundations and Pathways (Proceedings of the 43rd annual conference of the Mathematics Education Research Group of Australasia)*, p. 442. Singapore: MERGA.