

Preschoolers' Use of Quantitative Math Language in Picture Descriptions Predicts Early Numeracy Skills

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Abstract

Early numeracy is foundational for children's future mathematics achievement (Duncan et al., 2007), and research shows that math-related language plays a role in its development (Purpura et al., 2017). However, the specific ways in which different types of math-related language contribute to numeracy remain unclear. This study examined if preschoolers' spontaneous use of math language during picture description predicts numeracy skills. A sample of 321 preschoolers (ages 3-5) completed picture description, print awareness, and numeracy tasks, including a measure of cardinality. Children's picture descriptions were coded for cardinal labels (e.g., "three birds"), spatial prepositions (e.g., "in", "on"), and other math-related language (e.g., "more", "some"). Results showed general numeracy and cardinality were significantly predicted by math language use ($p=.002$) and print awareness ($p<.001$). Spatial prepositions and cardinal labels were not consistent predictors. These findings provide further evidence for the link between numeracy and language.