

TITLE: Little Mathematician Program: Exploring and Facilitating Children's Early Math Skills

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Introduction/Purpose:

Young children's number competence (e.g., counting) is a strong predictor of math performance in elementary school (Jordan et al., 2009; Manfra et al., 2014). They are also cognitively engaged and intrigued by math and naturally find mathematical concepts throughout their environment (Clements & Sarama, 2014). However, the current status of early childhood education does not accurately reflect those interests and lacks the encouragement of children's exploration in math. In order to provide appropriate intervention in preschool classrooms, exploring how young children learn math is important. Thus, this study investigates young children's number sense, focusing on counting, and ways to facilitate early math learning.

Method:

Forty-one preschool and pre-K children and their families in two university laboratory child development centers participated in the study. Children were assessed on various measures of math skills (e.g., Woodcock Johnson III; modified version of Counting Proficiency Assessment, Smith & Smith, 2011) and executive functioning (Head-Toes-Knees-Shoulders test, McClelland et al., 2007) by trained research staff. Parents provided demographic information.

Results & Discussion:

Children's counting skills and strategies vary. However, in general the majority of children (85.4%) was able to count to five without errors and had great understanding of cardinality (82.1%). More than half of the children were good at counting (67.3%), matching number and quantity (64.9%). Less than half of the children were able to count after 7 (33.8%) and compare and order numbers (39.1%) correctly. The children's math skills significantly differed by age. The differences were significant in counting ($p < .00$), comparing & ordering numbers ($p = .01$), and cardinality ($p < .05$). However, age difference of matching numbers & quantity and WJ score were not significant. There was no gender difference in children's number sense. We will also discuss ways to facilitate children's early learning skills for parents and teachers.