

Mid-Study Report
Fall 2012

Peabody Research Institute
Vanderbilt University
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Experimental Evaluation of the *Tools of the Mind* Pre-K Curriculum



From 2010-2012, you participated with us in a research study in Tennessee and North Carolina to examine the effectiveness of the *Tools of the Mind* (*Tools*) Pre-K Curriculum. (Pre-K teachers began training on the curriculum in 2009.) We tested the same group of students in the fall and spring of Pre-K and then again at the end of their kindergarten year. We will be following the children into 1st grade in 2013. This report to parents and teachers details our findings thus far. (A report for the parents and teachers in the Alamance Burlington School System will be produced next year.)

Introduction to the Project

This study measured the effects of the *Tools of the Mind* curriculum on children's self-regulation skills and their academic readiness for kindergarten, compared to the instructional approaches (curricula) the school system was currently using. Children in both the *Tools* and comparison classrooms were tested at the beginning and end of Pre-K, and end of Kindergarten using a variety of self-regulation tasks and academic achievement measures. We also observed each Pre-K classroom three times during the school year to collect information about differences between the classrooms. In the spring of 2013, we will test this group of students again at the end of 1st grade.



About the Curriculum

Tools of the Mind is a comprehensive, full-day early childhood curriculum designed to equip children with self-regulation "tools" for learning. These tools may enable children to attend, remember, and think better. Once mastered, these skills can be used to gain academic knowledge as well as social skills. However, this approach to learning had not been examined with a rigorous research study. Our project evaluated the *Tools* curriculum as compared to other alternatives currently used in Pre-K classrooms.

What is Self-Regulation?

When a young child begins school, there are a number of skills that are needed to transition to formal learning and to succeed academically. Early literacy and counting skills provide an important foundation for later reading and mathematics. Also, social skills enable children to interact appropriately with peers and adults at school. There is an additional set of learning skills that allows children to engage in and benefit from the learning tasks and activities they encounter at school. These skills are called **self-regulation**, and research has shown that they have an important influence on a child's success in school.

Self-regulation skills include:

- Attending to instruction and classroom activities
- Remembering instructions and carrying them out
- Problem solving
- Asking for help when needed
- Controlling impulses

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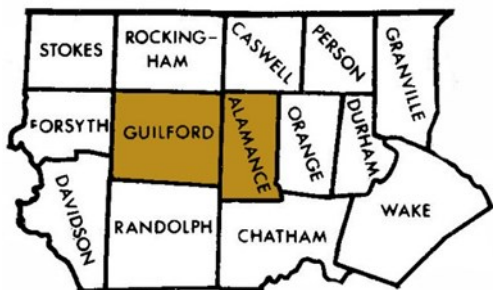


About the participating counties:

The *Experimental Evaluation of the Tools of the Mind Pre-K Curriculum* is fortunate to have participants from Franklin Special School District, Lebanon Special School District, Wilson County School District, and Cannon County School District in Tennessee as well as Guilford County School System in North Carolina and (coming in a year later and not included in this report) Alamance Burlington School System in North Carolina.

STATE	DISTRICT	NUMBER OF CHILDREN
Tennessee	Cannon	59
	Franklin	67
	Lebanon	150
	Wilson	118
North Carolina	Guilford	434
TOTAL		828

North Carolina



About the participating children:



- 828 children participated during their pre-kindergarten year.
- 810 of those children were tested at the end of kindergarten.
- The children were four and a half years old when the study began.
- About half the children are boys, and half are girls.
- About 29% of students were English-language learners.

Children were assessed on the following skills:

Self-Regulation

- ◆ Inhibitory control— the ability to control behavior to remember instructions and do the opposite
- ◆ Attention— the ability to attend to and sustain focus on a learning task
- ◆ Pattern Memory— the ability to temporarily store and manage information required to carry out tasks

Academic Skills

- ◆ Literacy— letter word identification and spelling
- ◆ Language— vocabulary, finishing sentences, and knowledge of academic content
- ◆ Mathematics— counting, mathematical concepts, and early math problems

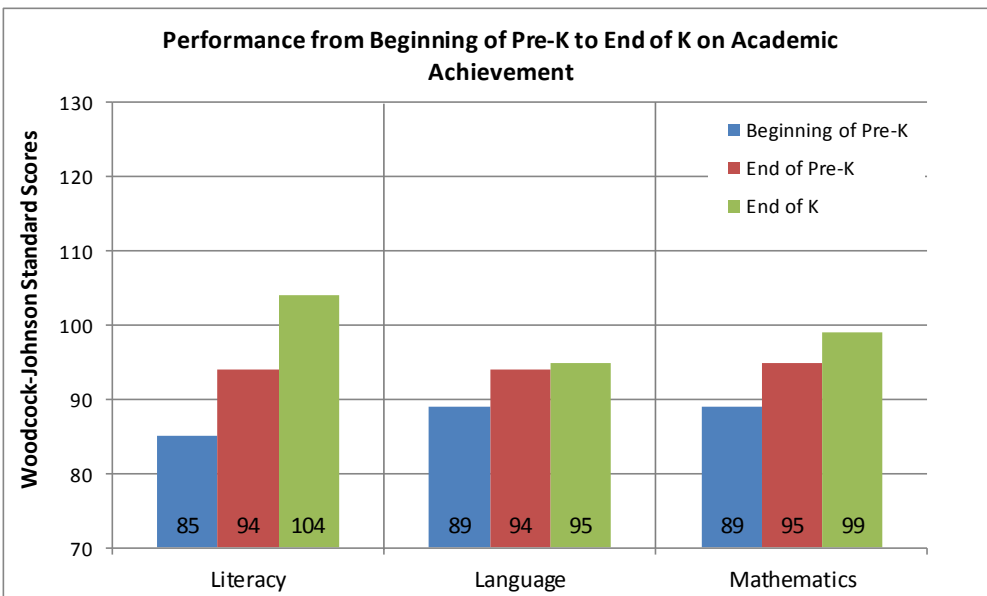


Children's Progress in Pre-K and Kindergarten

Summary of Results:

There were no differences between children in *Tools* classrooms and comparison classrooms on any measure of achievement, self-regulation or teacher ratings in Pre-K and kindergarten. Consequently, in the next two charts we are presenting the results for the group as a whole. Children in both groups made gains in both achievement and self-regulation over the course of the prekindergarten and kindergarten years. The *Tools* curriculum was no better for children than the alternative approaches. School systems, however, may want to adopt *Tools* for philosophical reasons as their preferred way of working with young children.

Across all classrooms, children made the most gains in early literacy measures related to the alphabet and learning to write letters and words. They made less gain in areas of vocabulary and growth slowed in this area in kindergarten. Gains in math skills were in the middle. Children appeared ready to learn kindergarten material as their rate of learning continued to increase in literacy and math after Pre-K. Children who were English Language Learners (ELL) gained the most from their Pre-K experience.



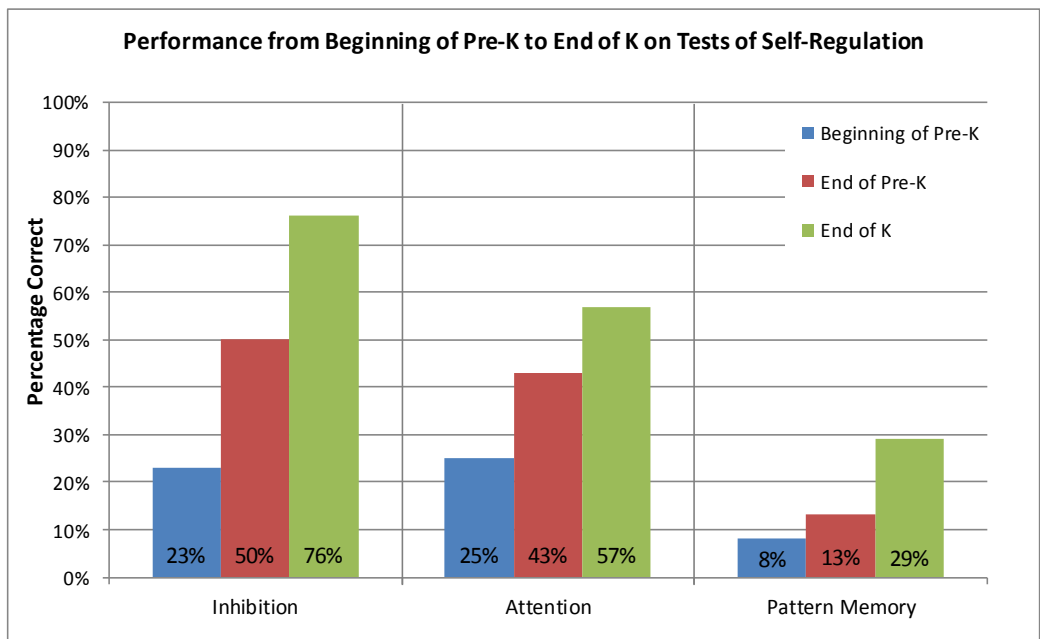
Note on Achievement Scores:

Literacy, Language, and Math scores are presented in standard scores which are adjusted for a child's age. The average score is 100 at each time point.

Because scores are adjusted for age, a higher score means children had a faster rate of growth than they had in the previous year.

Teachers rated children's behavior in the classroom:

- ◆ In Kindergarten, 71% of children were rated as having the skills to work independently, comply with and remember instructions, and complete activities
- ◆ 44% of children were rated as above average in preparedness for kindergarten



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Pre-K is Important for Improving Self-Regulation and Achievement:

Although children made gains in general and those gains were not affected by their curriculum, Pre-K classrooms differed in how much they helped children develop. We observed the classrooms for three full days across the school year and collected detailed information on the behaviors of teachers and children. Classrooms where children were actually in the room more often (not leaving for “Specials” or extended times in the lunchrooms) made more achievement gains than classrooms with a lot of “out” time. Both achievement and self-regulation were improved more in classrooms that spent more time on math instruction and with more math materials around to engage children. Both achievement and self-regulation were improved if teachers were more positive generally and if they spent less time redirecting children’s behavior and more time approving them. More time in centers (free exploration of interesting materials) was related to more achievement gains. It is clear that classroom organization matters, but not on the basis of the curriculum used. Teacher behaviors and the class schedule are important and can be improved by the teacher no matter which curriculum is being used. This is good news for Pre-K!



About Our Organization:

The mission of the Peabody Research Institute is to conduct research aimed at improving the effectiveness of programs for children, youth, and families.

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