

# The LEAP and TEACCH Comprehensive Treatment Models: Comparing Outcomes for Preschoolers with Autism in High-Quality Classrooms

Do the common features of the models influence growth more than their differences?

In the first study designed to compare the LEAP and TEACCH comprehensive treatment models for children with autism spectrum disorders (ASD), researchers have found that preschoolers with ASD make gains during the school year regardless of whether teachers use TEACCH, LEAP, or a high-quality special education model.

Previous studies have shown that when children with autism spectrum disorders have access to high-quality early intervention, they experience improved developmental performance. However, debate persists over which approaches to use. Presently, there are two overarching categories of intervention from which practitioners or families can select treatments—focused interventions or comprehensive treatment models (CTMs). Focused interventions refer to treatments that are typically shorter term in duration and target discrete skills. CTMs employ focused intervention practices that are organized around a central theoretical or conceptual framework, are typically used with children for a longer period of time, and target multiple developmental domains.

The LEAP and TEACCH CTMs have long histories in the field and are used frequently. The TEACCH model is based on creating an environment that meets the characteristics and learning needs of young children with autism, often using visual schedules and work systems. By contrast, LEAP bases its treatment approach on making accommodations in regular early childhood education settings that include children who are typically developing.

Like most children, those with ASD spend a great deal of their time in schools; therefore, establishing the comparative efficacy of school-based CTMs is critical. FPG’s “Comparison of Two Comprehensive Treatment Models for Preschool-Aged Children with Autism” study examined the relative effects of LEAP and TEACCH when compared to each other and to non-model specific programs (NMS), as well as determining factors that moderate the effects of intervention.



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## The Teachers, the Students, and the Method

FPG's study took place *only* in high-quality classrooms and enrolled teachers and 3-5 year-olds in public school districts in North Carolina, Colorado, Florida and Minnesota.

Twenty-five TEACCH, 22 LEAP, and 27 NMS teachers all met the following criteria for inclusion in the study: (1) classrooms had to operate within the public school system; (2) teachers were certified to teach in their respective states; (3) TEACCH and LEAP teachers had attended a formal training, either conducted by personnel directly affiliated with those programs or conducted by others who had been formally trained; (4) teachers had taught in their respective classroom type for at least two years prior to study enrollment; and (5) teachers had met prior determined criteria on classroom fidelity and/or quality rating scales (an "average" rating on four subscales of an Autism Program Assessment).

The study purposefully enrolled high-quality classrooms to minimize pretest differences and provided booster training to LEAP and TEACCH teachers to increase and/or maintain their fidelity of implementation. Four times across the school year, researchers collected data on the fidelity of implementation and overall classroom quality. Based on the fidelity measures, classrooms maintained fidelity to their CTM or NMS.

The study enrolled 85 TEACCH, 54 LEAP, and 59 NMS children, all of whom met the following criteria: (1) they were 3-5 years of age at time of enrollment; (2) they had a previous clinical diagnosis or educational label consistent with ASD or developmental delay; (3) they met diagnostic criteria on Autism Diagnostic Observation Schedule and/or Social Communication Questionnaire; (4) they had not been previously exposed to the comparison CTM (e.g. a child enrolled in a TEACCH classroom previously could not have been in a LEAP classroom); and (5) they had a minimum of 6 months of exposure to the CTM or NMS. Data collection occurred at the beginning (N = 198) and end of the school year (N= 185), at least 6 months apart.

Measures included as outcomes or moderators were based in part on prior research on children with ASD and on the CTMs.

## Child Gains in High-Quality Classrooms and the Moderating Factors

Children made gains over the school year regardless of the classroom's use of TEACCH, LEAP, or no specific comprehensive treatment model. Each group of children showed significant positive change in autism severity, communication, and fine motor skills, and there were no statistically significant differences between models.

The study also found that children in TEACCH classrooms with higher scores on the Preschool Language Scales experienced a larger reduction of autism symptoms and larger gains in communication than children with lower scores on the measure. However, children with lower cognitive ability in TEACCH classrooms showed more improvement in autism severity than children with higher cognitive ability, suggesting that some of TEACCH's environmental and behavioral supports are more beneficial to preschoolers with greater cognitive impairments.

In addition, girls in LEAP classrooms showed less improvement than boys in communication, but the relatively few girls enrolled in the study means this finding is difficult to interpret.

## Conclusion

The overall findings—that each group of preschoolers showed significant positive change regardless of CTM or NMS—may shift the field's thinking about CMTs designed for young children with ASD. Perhaps the unique features of the models do not contribute most to child gains but *common* features of the models most influence growth. Early analysis does indicate that shared components of the intervention approaches may account for outcomes more so than their exclusive components.

Research has long demonstrated that classroom quality is an important predictor of typically developing children's social, language, and academic outcomes. This study may reflect the importance of general classroom quality in promoting the positive development of children with ASD, too. Moreover, because all of the classrooms in FPG's study were high quality, the findings also could reflect that teachers in high-quality classrooms are aware of and use similar practices to educate children with autism. ■

## To Learn More

Boyd, B. A., Hume, K., McBee, M. T., Alessandri, M., Gutierrez, A., Johnson, L., . . . Odom, S. L. (2013). Comparative efficacy of LEAP, TEACCH and non-model-specific special education programs for preschoolers with autism spectrum disorders. *Journal of Autism and Developmental Disorders*. Advance online publication. doi:10.1007/s10803-013-1877-9



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