



**PRESCHOOL AND COMMUNICATION THERAPY PROGRAM
UNIVERSITY OF MICHIGAN**



OUTCOMES FOR INTENSIVE LANGUAGE AND LITERACY INTERVENTION

The Preschool and Communication Therapy (PACT) program at the University of Michigan is one of a small number of clinical service programs around the country offering language and literacy therapy to very young children on an intensive intervention schedule. PACT was created in 2005. It is a small program, enrolling only 3-5 new children at a time. This paper provides program accountability data to inform potential clients and the public at large about the outcomes of this new program. Current outcome data are based on a limited sample and should be considered preliminary in nature.

PACT is committed to providing state-of-the-art, evidence-based, high-quality, intensive intervention for young children with language and literacy problems. We strive to accomplish the following:

- * build verbal and nonverbal communication, symbolic play, and joint attention skills
- * integrate parents into the intervention team to facilitate the child's use of emerging skills in natural environments
- * be respectful of home and cultural values and honor individual differences
- * teach age-appropriate preschool participation skills and emergent reading and writing abilities
- * decrease challenging behaviors by helping parents manage environmental stressors and by developing positive and effective alternative communication forms to replace inappropriate interactive behaviors

PACT is designed to present authentic classroom and naturalistic play contexts for the delivery of intervention services. The intervention schedule involves 2.5 hours of intervention per day, 4 days per week, for 6 weeks, resulting in a total of 60 hours of therapy. At least one parent is required to attend, participating in therapy observations of the intervention, and educational seminars.

Analytic Strategy

For our current purposes, we analyzed retrospectively the clinical records of the 8 children enrolled in PACT

since 2005. All children were diagnosed with oral language delays. The children ranged in chronological age from 28 to 42 months with a mean age of 33 months. Two measures, the Assessment of Play, Pragmatics, and Language Skills (APPLS, Wyche & Zinke, 2005) and the Preschool Language Scale (PLS-4, Zimmerman, Steiner, & Pond, 2002) are routinely collected pre- and post-intervention in PACT during Week 1 and Week 6 of the program. Performances on these two measures at these two points in time served as the basis for our program accountability analysis. The APPLS was developed in part because of the paucity of language tests available for children at such young ages. The APPLS measures a child's ability to make requests, to comment and respond to an adult, and engage in functional and symbolic play. The PLS is appropriate for children from birth to 7 years. For our accountability analysis, we asked the following questions.

1. Do children benefit from PACT?

This question was answered in two ways. First, we performed pairwise *t*-test statistical analyses on the pre- and post-test results for the APPLS and the PLS, as presented in Table 1.

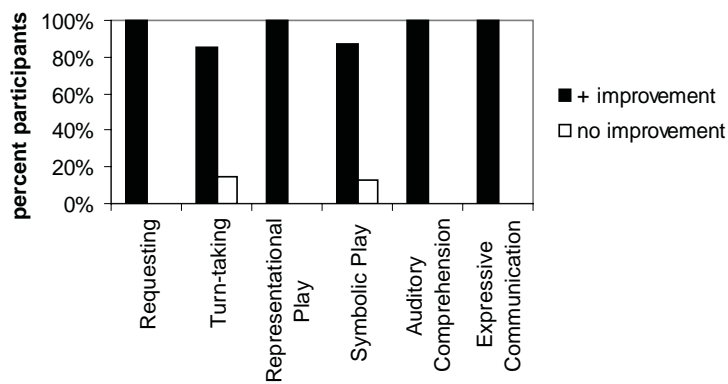
Table 1. Means (*M*) and standard deviations (*SD*) on the APPLS and PLS at pre- and post-testing.

Measure		Pre-test	Post-test	Amount of change
APPLS				
Requesting	<i>M</i>	1.8	7.1	5.3
	(<i>SD</i>)	(1.9)	(2.1)	
Turn-taking	<i>M</i>	1.4	5.1	3.7
	(<i>SD</i>)	(2.0)	(4.1)	
Representational Play	<i>M</i>	5.1	8.9	3.7
	(<i>SD</i>)	(2.4)	(1.5)	
Symbolic Play	<i>M</i>	3.0	6.0	3.0
	(<i>SD</i>)	(2.5)	(2.3)	
PLS				
Auditory Comprehension	<i>M</i>	50.7	67.0	16.3
	(<i>SD</i>)	(0.5)	(12.7)	
Expressive Communication	<i>M</i>	64.7	73.7	9.0
	(<i>SD</i>)	(6.7)	(4.2)	

* $p \leq .05$ and all *p* values were significant, except Auditory Comprehension

All but one of these changes in language and play skills from pre- to post-testing were statistically significant. The exception was PLS: Auditory Comprehension. Performance on this test approached statistical significance, and likely was influenced by the small number of children who were testable with this instrument. The treatment effects (Cohen's *d*, Cohen, 1965) were very strong (> 1.0) for all measures achieving statistical significance.

A second way of answering this question was to examine how many children were represented by the statistical improvements. Of the 8 clients, every child made measurable progress on most measures after the 6-week program. These relationships are displayed in the figure below.



2. How much improvement occurred on average at the end of the 6-week program?

The APPLS scores increased by 3.9 points on average across the four sub-score measures, representing a gain of 139%. In other words, after 6 weeks, the children's level of language and play functioning was more than double what it had been at program entry. Similarly, the mean total PLS standard score increased by 12.7 points, or by approximately 22% for the test as a whole, representing considerable improvement specifically in the area of oral language skills.

3. How satisfied were the families of children enrolled in PACT in the quality of the program?

At the completion of each PACT session, parents/caregivers are asked to complete and return a brief survey about their experiences in PACT. The PACT parent/caregiver satisfaction surveys have been overwhelmingly positive. When asked whether their child benefited from being enrolled in PACT, 97% of parents/caregivers responded yes.

Summary and Interpretation

Our accountability data show that young children with language and literacy problems who attended our intensive Preschool and Communication Therapy program demonstrated significant gains in their language and play skills. We believe that children with language and literacy problems can lead productive and happy lives. Through early, developmentally appropriate, intensive group and individual therapy children can make tremendous improvements in PACT.

References

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Zimmerman, I. L., Steiner, V. G., & Pond, R. E. (2002). *Preschool Language Scale* (4th ed.). San Antonio, TX: Harcourt Assessment, Inc.

Contact Information

University Center for the Development
of Language and Literacy
1111 East Catherine Street
Ann Arbor, MI 48109-2054
(734) 764-8440
ucll@umich.edu
Intensive Therapy. Innovative Research.
www.languageexperts.org

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