

Evaluation Findings from Georgia's 2012 Pre-K Summer Transition Program

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Georgia is known nationally for its universal pre-kindergarten program (Georgia's Pre-K), available to all four-year-old children in the state from all income levels. Since the program's inception in 1993, over one million children have been served. In 2011-2012, the program served 82,868 children, approximately 59% of all four year olds in the state. Approximately 54% of classrooms are offered in private child care facilities and 45% through local school systems. Additional classes are found in Head Start centers, military bases, technical colleges, and charter schools. All Georgia's Pre-K classrooms operate for 6.5 hours a day, five days a week during the traditional "school year" 9-month calendar.¹ All programs are required to use a pre-approved curriculum and are monitored on site at least once a year.

Due to the success of Georgia's Pre-K and with funding from the American Recovery and Reinvestment Act in 2010, the Georgia Department of Early Care and Learning (DECAL) expanded its pre-k services by offering a Summer Transition Program (STP). The program was available to both children who did not attend Georgia's Pre-K during the preceding year and children who attended Georgia's Pre-K but may have needed additional instruction time. All children who attended the summer program had to meet certain family income requirements. The overall goal of the STP was to continue to support children's development and transition needs through the last few months prior to kindergarten. Children who participated in the STP in 2010 and 2011 significantly improved their skills during the six-week program (Maxwell et al., 2011, 2012). Based on these results, DECAL provided a Summer Transition Program again in 2012. The purpose of this report is to detail the evaluation findings from the 2012 STP and make general comparisons between the findings from these three years.

¹ Due to budget constraints, the program was reduced from 180 to 160 days for the 2011-2012 school year.

The 2012 Summer Transition Program provided services to pre-kindergarten children for six weeks in June and July of 2012. Several specific components were put into place to meet the overall goal. First, class size was limited to 16 per class, and each class was required to use a specific curriculum, Opening the World of Learning (OWL), to support language development and kindergarten readiness. Second, a transition coach was hired for every two classes to help families meet transition needs and to offer specific parent educational activities. Finally, DECAL partnered with the Woodruff Arts Center to offer art activities in every STP class and provide professional development to teachers regarding arts integration.

The program was offered in 59 classrooms in 18 counties across the state. Seventy-five percent (75%) of the classrooms were housed in private child care facilities, and 25% were located in public schools. A total of 945 children participated in the program.

Enrollment and attendance varied. Of the 945 children who participated in the program, 705 (75%) attended all six weeks. Eighty-two percent (82%) of the children enrolled all six weeks attended the program at least 85% of the time. For these children, the average daily attendance rate was 87.6%, and children attended for an average of 26 out of 29 or 30 days. Average daily attendance per classroom was 13. Forty-four percent (44%) of participating children also received before/after school care.

This report describes findings from the evaluation of the 2012 Summer Transition Program. This evaluation was conducted through a partnership between DECAL and researchers at the Frank Porter Graham Child Development Institute (FPG) at the University of North Carolina at Chapel Hill. The study design, measures, and procedures were developed jointly. Because programs are familiar with DECAL staff and to minimize costs, all data were collected by DECAL staff. The pre-k consultants who collected data for this project did not collect data in the pre-k classrooms they served. The FPG team conducted all of the analyses.

Study Description

Purpose

The purpose of the study was to evaluate the effectiveness of Georgia's Pre-K Summer Transition Program. In an attempt to replicate the previous evaluations, similar measures and procedures were used in 2012 than in 2010-11. Pre- and post-test measures were collected on a representative sample of children who participated in the program. The measures assessed the impact of participation in Georgia's Pre-K STP on children's pre-literacy skills, color knowledge, and counting.

Participants and Procedures

Information for this study was gathered from 233 children participating in 59 Georgia's Pre-K STP classrooms at 47 sites. A team of 24 data collectors was trained to conduct child assessments. Before being allowed to collect data, each data collector demonstrated his/her competency conducting the assessment with a young child.

Pre-test data were collected on 233 children during the first week of the program. Post-test data were collected during the last two weeks of the program from 195 of the initial group of 233 participants. Of the 233 children who participated in the pre-test, 160 (69%) had participated in Georgia's Pre-K Program during the 2011-2012 school year; the remaining 73 (31%) were on a waiting list or participated in Georgia's Pre-K for less than eight months. Of the 195 children who participated in pre- and post-test data collection, 131 (67%) participated in Georgia's Pre-K Program during the 2011-12 school year; the remaining 64 (33%) were on a waiting list or participated for less than eight months.

Information Collected

Nine different child assessment measures were used in this study.

- *Letter Naming*: In this activity, children are asked to identify as many letters of the alphabet as they can. Letters are printed in random order on an 8 ½ by 11 sheet.
- *Picture Naming* (part of the Individual Growth and Development Indicators (IGDI) from the Early Childhood Research Institute on Measuring Growth and Development, 1998): In this one-minute timed activity, children are presented with photographs or line drawings of common objects (e.g., apple, chair, fish) and asked to name them as fast as possible. Categories of objects used in the subtest included animals, food, people, household things, games and sports materials, vehicles, tools, and clothing.

- *Alliteration* (part of the Individual Growth and Development Indicators (IGDI) from the Early Childhood Research Institute on Measuring Growth and Development, 1998): In this two-minute timed activity, children are shown cards with an image (e.g., teeth) at the top and a set of three images at the bottom (e.g., phone, tire, fish) and asked to point to a picture at the bottom that starts with the same sound as the picture at the top.
- *Rhyming* (part of the Individual Growth and Development Indicators (IGDI) from the Early Childhood Research Institute on Measuring Growth and Development, 1998): In this two-minute timed activity, children are shown cards with an image (e.g., mouse) at the top and a set of three images at the bottom (e.g., house, apple, cheese) and asked to point to a picture at the bottom that rhymes with the picture at the top.
- *Story and Print Concepts* (Zill & Resnick, 1998): This activity measures children's early literacy skills using the book *Where's My Teddy?* Children are asked to respond to 14 questions that measure book knowledge, comprehension, and print awareness.
- *Get Ready to Read* (Whitehurst & Lonigan, 2001): This activity measures early literacy skills in the areas of print knowledge, linguistic awareness and emergent writing. Children use pictures to respond to 20 multiple choice questions.
- *Counting Bears*: This activity measures children's ability to count with one-to-one correspondence. Children are asked to point and count using pictures of 40 teddy bears (using two sets of cards with 20 bears on each card).
- *Number Naming*: In this activity, children are asked to identify numbers 1-10, printed in random order on an 8 ½ by 11 sheet.
- *Color Bears* (Zill & Resnick, 1998): This activity measures children's ability to identify 10 basic colors.

In addition to child assessments, attendance data were collected weekly for each classroom.

Data Analysis

Preliminary analyses were conducted to compare pre-test scores for children who remained in the program to those who left the program. The children who did not participate in the post-program data collection did not have significantly lower scores on any of the pre-program outcomes. Researchers have evidence that leavers and stayers were not significantly different from each other at baseline on the measured outcomes. However, to be consistent with previous years' analyses, this report presents findings for children who completed both the pre- and post-test measures.

Hierarchical linear models were used to assess change from pre- to post-test. More specifically, three level models were estimated using PROC MIXED in SAS v 9.2, accounting for multiple measurements within child (pre and post) and multiple children within programs. The reduced form equation for these models was:

$$y_{tjk} = \beta_0 + \beta_1 \times Time_{tjk} + u_k + u_{0j} + \epsilon_{tjk}$$

In the equation above, the outcome at time t for child j in program k is a function of an overall intercept and the effect of time. The coding of time (0 = pre, 1 = post) allowed for the intercept to represent average pre-test scores and the coefficient for β_1 to represent the magnitude and direction of average change from pre- to post-test. The hierarchical modeling and associated parsing of error terms ($u_k + u_{0j} + \epsilon_{tjk}$) adjusted the standard error of the time coefficient to account for non-independence of the sample due to repeated measures and clustering within center. The statistical test of the time coefficient was a formal test of whether the change from pre- to post-test was significantly different from zero. The d-type effect size was calculated by dividing the time coefficient by the sample standard deviation of the corresponding pre-program outcome score. (In this dataset, standard deviations of pre-program outcomes are in general larger than those of post-program outcomes. As a result, the first set of sample standard deviations was used to calculate effect size estimates more conservatively.) A d-type effect size of .20 is considered "small," an effect size of .50 is considered "moderate," and an effect size of .80 is considered "large" (Cohen, 1992).

For the other information presented in this report, basic descriptive statistics were calculated.

Study Findings

Pre-test data were collected on 233 pre-k children. Of those children, 195 participated in the post-test data collection. Pre- and post-test means are provided in Table 1 for those children who had both pre- and post-test data. The pre-literacy and school readiness skills of children participating in Georgia's Pre-K Summer Transition Program improved

during the program. Gains in eight of the nine measures were small but statistically significant ($p < .05$).

Table 1. Child Assessment Pre- and Post-Test Means

	<i>Pre- Test Mean</i>	<i>Post- Test Mean</i>	<i>p</i>	<i>Effect Size</i>
Letter Naming				
<i>Total letters named correctly (max = 26)</i>	14.36	16.72	<.001	0.22
IGDI				
<i>Picture Naming Score</i>	17.02	19.58	<.001	0.36
<i>Rhyming Score</i>	3.92	5.79	<.001	0.41
<i>Alliteration Score</i>	2.03	3.14	<.001	0.34
Story & Print Concepts				
<i>Total proportion correct</i>	0.34	0.43	<.001	0.42
<i>Book knowledge sum (max = 5)</i>	2.50	3.05	<.001	0.36
<i>Book comprehension sum (max = 2)</i>	0.65	0.99	<.001	0.47
<i>Print awareness sum (max = 7)</i>	0.92	1.19	<.001	0.24
Get Ready to Read				
<i>Total proportion correct</i>	0.62	0.70	<.001	0.36
Counting Bears				
<i>Highest number counted (max = 40)</i>	19.91	20.48	ns	0.08
Number Naming				
<i>Total numbers named correctly (max = 10)</i>	6.02	6.54	<.001	0.13
Color Bears				
<i>Number colors named (max = 10)</i>	8.37	8.89	<.001	0.20

ns=non significant

Comparison with Previous Findings

Table 2 compares the effect sizes for the 2012 Summer Transition Program to those for the 2010 and 2011 Summer Transition Programs. The 2012 STP evaluation findings replicate some of the findings from the earlier evaluations. Specifically, children's skills improved statistically significantly on all but one outcome measure. While most of the gains were small for all years, a few were close to moderate in size. For a six-week program to have gains close to moderate is somewhat unexpected and implies a successful implementation. Furthermore, replication of the findings from the first two years provides stronger evidence of the effectiveness of Georgia's Pre-K Summer Transition Program.

It is important to note, though, that the study was not designed to determine causality. Thus, we cannot conclude that children's skills improved because they participated in Georgia's Summer Transition Program. Random assignment of children to intervention and control groups would be needed to determine causality. No data were gathered on children who did not participate in Georgia's Summer Transition Program, so it is not possible to determine whether children's gains were greater than they would have been if they had not participated in the summer program.

Most of the children in Georgia's Summer Transition Program had participated in Georgia's Pre-K Program during the previous year. Thus, these data provide preliminary evidence for the effectiveness of an additional six weeks of Georgia's Pre-K. It is not possible from this study to determine the effectiveness of this summer pre-k program on improving the skills for children who had either not experienced any center-based program or experienced a low-quality program. One cannot conclude, for instance, that participating only in a six-week program would yield statistically significant gains in children's pre-literacy skills.

Table 2. Effect Sizes, 2010-2012

	2010 Effect Size	2011 Effect Size	2012 Effect Size
Letter Naming			
Total letters named correctly (max = 26)	.18	.16	0.22
IGDI			
Picture Naming Score	.41	.28	0.36
Rhyming Score	.27	.38	0.41
Alliteration Score	.25	.46	0.34
Story & Print Concepts			
Total proportion correct	.44	.47	0.42
Book knowledge sum (max = 5)	.49	.43	0.36
Book comprehension sum (max = 2)	.22	.29	0.47
Print awareness sum (max = 7)	.27	.35	0.24
Get Ready to Read			
Total proportion correct	NA	NA	0.36
Counting Bears			
Highest number counted (max = 40)	.11	.22	0.08
Number Naming			
Total numbers named correctly (max = 10)	.05	.14	0.13
Color Bears			
Number colors named (max = 10)	.27	.24	0.20

Conclusions

Data from the 2012 Summer Transition Program replicate findings from previous evaluations and provide additional support for extending Georgia's Pre-K Program through the summer. Further research would help Georgia's Pre-K leaders better understand the effectiveness of Georgia's Pre-K Summer Transition Program and help guide policy decisions regarding a possible widespread summer extension of Georgia's Pre-K Program for children at risk for school failure.

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