

# **Evaluation Findings from Georgia's 2011 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 2010-2011, the program served 82,608 children, approximately 59% of all four year olds in the state. The program is available in all 159 of Georgia's counties. Approximately 56% of classrooms are offered in private child care facilities and 43% 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.<sup>1</sup> All programs are required to use a preapproved 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 2010 STP significantly improved their skills during the six-week program (Maxwell, Kainz, Kraus, Hume, Ponder, & O'Callaghan, 2011). Based on these results, DECAL provided a Summer Transition Program again in 2011. The purpose of this report is to detail the evaluation findings from the 2011 STP and make general comparisons between the 2010 and 2011 results.

The 2011 program provided services to children for 6 weeks in June and July of 2011. Several specific components were put into place to meet the overall goal. First, class size

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

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 23 counties across the state. 51% percent of the classrooms were housed in private child care facilities and 49% were located in public schools. A total of 912 children participated in the program.

Enrollment and attendance varied. Of the 912 children who participated in the program, 74% (671) attended all six weeks. Average daily attendance per classroom was 12 students. Seventy-eight percent (78%) of the children enrolled all six weeks attended the program at least 85% of the time. The average daily attendance rate was 88.6%, and children attended for an average of 25 out of 28 days. Thirty-eight percent (38%) of participating children also received before/after school care.

This report describes findings from the evaluation of the 2011 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 FPG team helped train the data collectors and conducted all of the analyses. The pre-k consultants collected data for this project, but they did not collect data from the pre-k classrooms they served.

## **Study Description**

### **Purpose**

The purpose of the study was to evaluate the effectiveness of Georgia's Pre-K Summer Transition Program (STP). Similar measures and procedures were used in 2011, in an attempt to replicate the 2010 evaluation. 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. Teachers and transition coaches also rated various aspects of the program as part of the evaluation.

### **Participants and Procedures**

Information for this study was gathered from 235 children participating in 59 Georgia's Pre-K STP classrooms at 42 sites. A team of 16 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 235 children during the first week of the program. Post-test data were collected during the last two weeks of the program from 203 of the initial group of 235 participants. Of the 235 children in the STP, 179 (76%) participated in Georgia's Pre-K Program during the 2010-2011 school year; the remaining 56 (24%) were on a waiting list for Georgia's Pre-K or participated in Georgia's Pre-K for less than eight months. Of the 203 children who participated in pre- and post-test data collection, 151 (74%) participated in Georgia's Pre-K Program during the 2010-11 school year; the remaining 52 (26%) were on a waiting list or participated for less than eight months.

### **Information Collected**

Eight 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.

- *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 the child assessment, transition coaches working at the STP sites completed Child and Family Information Forms (CFIF) providing demographic information about children in the study. Attendance data were also collected weekly for each classroom. Finally, teachers and transition coaches rated various aspects of the program.

### **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 pre-test scores on the Letter Naming and Story and Print Concepts measures were significantly different for children who did not participate in the post-test data collection compared to children who remained in the program. This suggests that children who participated in both the pre- and post-test in the STP were different from those who participated in only the pre-test, at least in a few key skills. Thus, the analysis presented in this report was limited to only those children who remained in the pre-k program and had both pre-test and post-test measures. It is important to note, though, that there are two different reasons that children did not participate in the post-test assessment. Fifty-five percent (55%) of the children who did not participate in the post-test assessment had left the pre-k program, while the remaining 45% were still enrolled but absent on the day of post-test assessment.

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 sites. The reduced form equation for these models was:

$$Y_{tjk} = B_0 + B_1 \text{time}_{tjk} + u_k + u_{0j} + e_{tjk}$$

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  $B_1 \text{time}_{tjk}$  to

represent the magnitude and direction of average change from pre- to post-test. The hierarchical modeling and associated parsing of error terms ( $u_k + u_{0j} + e_{tjk}$ ) adjusted the standard error of the time coefficient to account for non-independence of the sample due to repeated measures and clustering of classes within program. 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. A d-type effect size was calculated by dividing the time coefficient by the square root of total variation in the model. 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 (e.g., means, percentages) were calculated.

## **Study Findings**

This section begins with a description of the children who participated in the study, followed by findings related to children's skills.

### **Participating Children**

Table 1 describes key characteristics of the 199 children who participated in pre- and post-test data collection and had a completed Child and Family Information Form. Only those children whose families earned 85% of the state median income (e.g., \$58,460 for a family of four) were eligible to participate in the program.

**Table 1. Characteristics of Participating Children**

<i>Characteristic</i>	<i>Percentage</i>
<b>Gender</b>	
Girls	45%
Boys	55%
<b>Ethnicity*</b>	
Asian or Pacific Islander	4%
African American	60%
Hispanic	16%
White, Non-Hispanic	14%
Multi-Racial or Other Ethnicity	7%
<b>Highest Education Level of Mother or Primary Guardian</b>	
Less than a high school diploma	16%
High school diploma or equivalent	27%
High school diploma, plus technical training or certificate	14%
Some college but no degree	18%
College degree (Associate's, Bachelor's, Master's or Doctoral)	25%
<b>Additional Characteristics</b>	
Children who participated in Georgia's Pre-K	84%
Children with a primary language other than English	17%
Children with disabilities	6%

*\*Percentages do not sum to 100 due to rounding.*

## Children’s Skills

Pre-test data were collected on 235 pre-k children. Of those children, 203 participated in the post-test data collection. Pre- and post-test means are provided in Table 2. The pre-literacy and school readiness skills of children participating in Georgia’s Pre-K Summer Transition Program improved during the program. Gains in all of the eight measures were statistically significant ( $p < .05$ ). Most gains were small but all were statistically significant ( $p < .05$ ). Two gains—for Alliteration and Story and Print Concepts—approached the “moderate” level of effect.

**Table 2. Child Assessment Pre- and Post-Test Means**

	<i>Pre- Test Mean</i>	<i>Post- Test Mean</i>	<i>p</i>	<i>Effect Size</i>
<b>Letter Naming</b>				
<i>Total letters named correctly (max = 26)</i>	17.00	18.53	<.001	.16
<b>IGDI</b>				
<i>Picture Naming Score</i>	19.33	21.37	<.001	.28
<i>Rhyming Score</i>	4.83	6.71	<.001	.38
<i>Alliteration Score</i>	2.19	3.67	<.001	.46
<b>Story &amp; Print Concepts</b>				
<i>Total proportion correct</i>	0.42	0.52	<.001	.47
<i>Book knowledge sum (max = 5)</i>	3.03	3.62	<.001	.43
<i>Book comprehension sum (max = 2)</i>	0.94	1.17	<.001	.29
<i>Print awareness sum (max = 7)</i>	1.09	1.51	<.001	.35
<b>Counting Bears</b>				
<i>Highest number counted (max = 40)</i>	20.68	23.22	<.001	.22
<b>Number Naming</b>				
<i>Total numbers named correctly (max = 10)</i>	6.95	7.47	<.001	.14
<b>Color Bears</b>				
<i>Number colors named (max = 10)</i>	8.68	9.21	<.001	.24

### Perceptions of Teachers and Transition Coaches

Finally, 33 (56%) of the 59 STP teachers and 19 (54%) of the 35 STP transition coaches completed surveys to rate the quality of various components of the STP. Teachers and transition coaches rated some similar components and some different components, based on their different roles in the program. The data from these surveys are summarized in Tables 3 and 4. Scores could range from 1 to 7, with higher scores indicating higher quality. Although there was individual variability in the perceived quality of each component, the average ratings for both teachers and transition coaches were high.

**Table 3. Georgia’s Pre-K STP Teacher Survey Results**

	Mean	Range
OWL Curriculum	5.6	1 - 7
Woodruff Arts Center Activities	6.7	5 - 7
Transition Coaches	5.7	1 - 7
Program Administration	5.7	3 - 7
Teacher Training	5.5	2 - 7
Overall Program Impact	6.1	2 - 7

\*1=poor, 3=adequate, 5=good, and 7=excellent

**Table 4. Georgia’s Pre-K STP Transition Coach Survey Results**

	Mean	Range
Enrollment	5.2	2 - 7
Documentation	6.3	5 - 7
Transition Coach Training	5.8	1 - 7
Woodruff Arts Center Activities	6.3	3 - 7
BFTS Administration	6.7	5 - 7
Evaluation Procedures – Child Assessment	6.3	5 - 7

\*1=poor, 3=adequate, 5=good, and 7=excellent

## Comparison with 2010 Findings

Table 5 compares the effect sizes for the 2010 Summer Transition Program to those for the 2011 Summer Transition Program. The 2011 STP evaluation findings replicate some of the findings from the 2010 STP evaluation. Specifically, children’s skills improved statistically significantly on most outcome measures. While most of the gains were small for both years, many of them 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 year provides stronger evidence of the effectiveness of Georgia’s Pre-K Summer Transition Program.

**Table 5. 2010 and 2011 Effect Sizes**

	<i>2010 Effect Size</i>	<i>2011 Effect Size</i>
<b>Letter Naming</b>		
<i>Total letters named correctly (max = 26)</i>	.18	.16
<b>IGDI</b>		
<i>Picture Naming Score</i>	.41	.28
<i>Rhyming Score</i>	.27	.38
<i>Alliteration Score</i>	.25	.46
<b>Story &amp; Print Concepts</b>		
<i>Total proportion correct</i>	.44	.47
<i>Book knowledge sum (max = 5)</i>	.49	.43
<i>Book comprehension sum (max = 2)</i>	.22	.29
<i>Print awareness sum (max = 7)</i>	.27	.35
<b>Counting Bears</b>		
<i>Highest number counted (max = 40)</i>	.11	.22
<b>Number Naming</b>		
<i>Total numbers named correctly (max = 10)</i>	.05	.14
<b>Color Bears</b>		
<i>Number colors named (max = 10)</i>	.27	.24

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.

Almost all 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 6 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 6-week program would yield statistically significant gains in children's pre-literacy skills.

## **Conclusion**

Data from the 2011 Summer Transition Program replicate findings from a previous evaluation and provide additional support for extending Georgia's Pre-K Program through the summer. Further research is needed to better understand the effectiveness of Georgia's Pre-K Summer Transition Program and to help guide policy decisions regarding a widespread summer extension of Georgia's Pre-K Program for children at risk for school failure.

Finally, the following lessons were learned from this project.

- Children who did not participate in the STP post-test data collection had lower skills on Letter Naming and Story and Print Concepts at the beginning of the program, compared to children who participated in the post-test assessment. For the 55% of children (n=18) who left the program, this suggests that special efforts may be needed not only to *recruit* children into the summer program but also to help *keep* them enrolled throughout the duration of the program. For the 45% of children (n=15) who did not participate in the post-test assessment because they were absent, this suggests that post-test data collection may require multiple visits to programs to ensure that all children still enrolled in the program participate in the post-test assessment.
- Future evaluations should, if at all possible, include a comparison group to provide a stronger test of the effectiveness of the summer program.

- The collaborative partnership between DECAL and FPG worked well because roles and responsibilities were clearly delineated and a regular form of communication was established and maintained throughout the project.

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