

Evaluation Findings from Georgia's 2010 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 2009-2010, the program served 82,000 children, approximately 58% of all four year olds in the state. The program is available in all 159 of Georgia's counties. Approximately 57% of classrooms are offered in private child care facilities and 42% 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. All programs are required to use a preapproved curriculum and are monitored on site twice 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. The program provided services to children for 6 weeks in June and July of 2010. Several specific components were put into place to meet the overall goal. First, class size was limited to 15 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. Third, DECAL partnered with the Woodruff Arts Center to offer art activities in every STP class and provide professional development to teachers regarding arts integration. Finally, with various partners around the state, children were given multiple books throughout the 6-week program.

The program was offered in 60 classrooms in 19 counties across the state. Seventy-three percent (73%) of the classrooms were housed in private child care facilities and 27% were located in public schools. A total of 891 children participated in the program. The average daily attendance rate was 88%, and children attended for an average of 25 days. Sixty-two percent (62%) of participating children also received before/after school care. The class size was 15, with a staff-to-child ratio of 1 to 7.5.

This report describes findings from the evaluation of the Summer Transition Program. This evaluation was conducted through a partnership between DECAL and researchers at the FPG Child Development Institute at the University of North Carolina at Chapel Hill (FPG). 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. The FPG team helped train the data collectors and 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 (STP). For the 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 240 children participating in 60 Georgia's Pre-K STP classrooms at 32 school sites. A team of 13 data collectors were trained to conduct child assessments. Before allowed to collect data, each data collector demonstrated his/her competency conducting the assessment with a young child.

Pre-test data were collected on 240 children during the first week of the program. Post-test data were collected during the last two weeks of the program from 197 of the initial group of 240 participants. Although a few children who spoke Spanish as their primary language were included in the study, this report presents findings from only those whose primary language was English. Of the 240 children in the STP, 200 participated in Georgia's Pre-K Program during the 2009-10 school year; the remaining 40 were on a waiting list for the Pre-K program or participated in Georgia's Pre-K 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 a brief Child and Family Demographic Information Form for each child in the study. Attendance data were also collected weekly for each classroom.

The study included classroom-level observations, using the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), which assesses the quality of teacher-child interactions. The CLASS provides scores in three domains: Emotional Support (positive climate, negative climate, teacher sensitivity and regard for student perspectives), Classroom Organization (behavior management, productivity, and instructional learning formats), and Instructional Support (concept development, quality of feedback, and language modeling). Scores can range from 1 to 7, with higher scores indicating higher quality.

Finally, teachers and transition coaches rated various aspects of the program.

Data Analysis

A visual examination of pre-test scores for children who remained in the program and those who left the program indicated no substantive difference in initial performance. Thus, all pre-and post-test data were included for analysis of change.

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 center 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 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. 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. Then, findings are presented for each type of data: children’s skills, classroom quality, and ratings from teachers and transition coaches.

Participating Children

Table 1 describes key characteristics of the 226 children for whom we have data. 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>
Gender	
Girls	41%
Boys	59%
Ethnicity*	
Asian or Pacific Islander	2%
African American	58%
Hispanic	16%
White, Non-Hispanic	18%
Multi-Racial or Other Ethnicity	4%
Highest Education Level of Mother or Primary Guardian	
Less than a high school diploma	14%
High school diploma or equivalent	18%
High school diploma, plus technical training or certificate	12%
Some college but no degree	19%
College degree (Associate’s, Bachelor’s, Master’s or Doctoral)	30%
Additional Characteristics	
Children who participated in Georgia’s Pre-K during the preceding school year	85%
Children with a primary language other than English	14%
Children with disabilities	4%

**The percentages do not sum to 100 because some data were missing.*

Children’s Skills

Pre-test data were collected on 240 pre-k children. Of those children, 197 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. Most gains were small but statistically significant ($p < .05$) for each of the eight child assessments. Two gains—for picture naming and story and print concepts—were near the “moderate” level.

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>
Letter Naming				
<i>Total letters named correctly (max = 26)</i>	16.98	18.71	<.001	.18
IGDI				
<i>Picture Naming Score</i>	18.98	21.64	<.001	.41
<i>Rhyming Score</i>	5.09	6.74	<.001	.27
<i>Alliteration Score</i>	2.40	3.51	<.001	.25
Story & Print Concepts				
<i>Total proportion correct</i>	0.42	0.52	<.001	.44
<i>Book knowledge sum (max = 5)</i>	2.87	3.55	<.001	.49
<i>Book comprehension sum (max = 2)</i>	0.90	1.06	<.001	.22
<i>Print awareness sum (max = 7)</i>	1.12	1.62	<.001	.27
Counting Bears				
<i>Highest number counted (max = 40)</i>	20.60	21.96	.02	.11
Number Naming				
<i>Total numbers named correctly (max = 10)</i>	6.69	7.25	<.001	.05
Color Bears				
<i>Number colors named (max = 10)</i>	8.76	9.26	<.001	.27

It is important to note that the study was not designed to determine causality. Thus, we cannot say 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 also not possible to determine whether children's gains were greater than they would have been if they had not participated in the summer program. The data, however, do provide preliminary evidence for the effectiveness of a summer pre-k program in strengthening children's school readiness skills.

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.

Classroom Quality

DECAL staff trained to use the CLASS observed 58 of the 60 STP classrooms. The CLASS measures the teacher-child interactions and yields scores for Emotional Support, Classroom Organization, and Instructional Support. The mean score for the CLASS Emotional Support was 5.32 (range = 3.75 to 6.44). The mean score for Classroom Organization was 5.04 (range = 2.92 to 6.33). The mean score for Instructional Support was 2.51 (range = 1.25 to 5.5).

Additional analyses were conducted to examine the relationship between classroom quality, as measured by the CLASS, and children's change in early literacy and numeracy skills across the six-week summer pre-kindergarten program. There was no evidence for reliable associations between CLASS scores and change in literacy and numeracy. In other words, children who attended higher quality classrooms as measured by the CLASS did not demonstrate greater gains in skills. The CLASS does not measure the quality of the literacy environment or literacy instruction. It is possible that children's gains in skills would be related to a more literacy-focused measure of quality such as the Early Language and Literacy Classroom Observation: Pre-K (ELLCO; Smith, Brady, & Anastasopoulos, 2008). It is also possible that the study design (e.g., small sample size, short period between pre- and post-assessments) limited the ability to adequately test the role of teacher-child interactions.

Perceptions of Teachers and Transition Coaches

Finally, 37 of the 60 SPT teachers and 28 of the 31 SPT transition coaches completed surveys to rate the quality of various components of the SPT. 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. For teachers, the ratings were highest for the arts integration activities (i.e., Woodruff Arts Center Activities) and for the transition coaches, suggesting the teachers valued the additional services offered through this program. In many programs, the transition coaches were the link between central administration and the actual program. They helped schedule the child assessments and enrolled children in the program. The arts integration activities were also rated highest by transition coaches. The enrollment process received the lowest ratings from transition coaches, possibly because there was little time between the announcement of the program and the time the program began.

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

	Mean	Range
OWL Curriculum	5.1	1 - 7
Woodruff Arts Center Activities	6.4	3 - 7
Parent Education Classes	5.5	2 - 7
Transition Coaches	6.0	2 - 7
Evaluation Procedures – Child Assessment	5.1	1 - 7
Evaluation Procedures – Classroom Observation	5.3	1 - 7
Overall Program Administration	5.1	2 - 7
Overall Program Impact	5.6	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	4.8	2 - 7
Parent Education Activities	5.7	1 - 7
Woodruff Arts Center Activities	6.6	4 - 7
BFTS Administration	6.4	3 - 7
Evaluation Procedures – Child Assessment	6.3	2 - 7

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

Conclusion

Data from this small pilot summer pre-k program provide preliminary 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.

- Ideally, more time would be allocated to prepare for a summer program. For this project, the contract was awarded in late March and classes started two months later.
- It was easier to recruit children who had previously been enrolled in Georgia's Pre-K Program than to find and recruit children who had not participated in the pre-k program. In the future, special publicity and recruitment strategies may be needed to recruit children not enrolled in Georgia's Pre-K Program. A longer preparation time may also make it easier to recruit children who had and had not participated in the pre-k program.
- 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 BftS and FPG worked well because roles and responsibilities were clearly delineated and a regular form of communication was established and maintained throughout the project.

References

- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 115-159.
- Early Childhood Research Institute on Measuring Growth and Development (1998). *Research and development of individual growth and development indicators for children between birth and age eight*. (Tech. Rep. No. 4). Minneapolis, MN: Center for Early Education and Development, University of Minnesota.
- Pianta, R. C., La Paro, K. M., & Hamre, B. (2008). *Classroom Assessment Scoring System (CLASS): Pre-K Version*. Baltimore, MD: Paul H. Brookes, Inc.
- Smith, M. W., Brady, J. P., & Anastasopoulos, L. (2008). *Early Language & Literacy Classroom Observation: Pre-K Tool (ELLCO)*. Baltimore, MD: Paul H. Brookes, Inc.
- Zill, N., & Resnick, G. (1998). *Head Start Family and Child Experiences Survey*. Rockville, MD: Westat.