



**Ready or Not:  
A Snapshot of Children Entering Kindergarten in Georgia**

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## **Chapter 1: Introduction**

Having all children start school ready to learn has been an important focus of the efforts to achieve national and state goals for student performance and educational attainment. School readiness is essential both for improving life chances for children and for raising their level of education. Georgia's commitment to school readiness, as evidenced primarily through the Georgia Prekindergarten (Pre-K) Program, places the state in the forefront of the nation. Georgia stands out among the states in providing full day, high quality prekindergarten services to 54 percent of the state's four-year-olds. In an earlier report, children enrolled in Georgia's Pre-K Program were shown to have gained significantly on national norms for assessments covering language, communication and cognitive skills during the time they spent in that program to the point of surpassing national norms on several assessments (Henry, Henderson, Ponder, Gordon, Mashburn, and Rickman, 2003).

In this report, we provide a statistical picture of school readiness covering nearly all Georgia's children at the beginning of kindergarten. For the first time, we include children who spent most of their time at home or in informal care rather than in preschool. We address several questions about children entering kindergarten in Georgia and their families, including:

- What skills do children typically bring with them as they begin kindergarten?
- How do family characteristics affect these skills?
- Among the options for parents to choose for their four-year-olds, what are the similarities and differences of the families choosing one option rather than another?

Moreover, since Georgia is a pioneer in providing universal prekindergarten services, this study provides a perspective on the choices parents make that may add to the information other states need in developing their own prekindergarten programs.

Research concerning the development of young children has increasingly emphasized the importance of their experiences, including interactions with other children and adults, in setting the stage for future development and success in school. Taken collectively, the skills and dispositions of children entering kindergarten influence how kindergarten teachers and other primary grade teachers work successfully with these children and what they can accomplish in their classrooms. Higher and more consistent levels of skills and positive behaviors among young children will raise and expand the instructional options for their elementary school teachers.

Children's acquisitions of these skills and their continued development during the early primary grades also contribute to their success in later school years (Reynolds, 2000). However, a national survey of approximately 19,000 kindergarteners indicated that 46 percent entered kindergarten with one or more risk factors associated with poor performance in school (U.S. Dept. of Education, 2001). Low levels of education in the

children's families and poverty are closely related to lower levels of development, even at the age of five, but risk factors are not exclusive to children living in poverty. Many children living in poverty beat the odds and develop on pace or ahead of their peers, and many children from more affluent households experience developmental delays. Therefore, this analysis was undertaken to examine levels of development of entering kindergarteners in Georgia and look at the relationships of their development with family stability, parental education, and household economics.

One of the ways that families may influence their child's development is in their choice of preschool experiences for their four-year-old. Universal prekindergarten programs, such as the Georgia Pre-K Program, offer parents more options for their four-year-olds at little or no cost to the families. In Georgia, 54 percent of the four-year-olds in the state are enrolled in the Georgia Pre-K Program and another 9 percent are enrolled in Head Start (Henry et al., 2003). Currently, we have little information about the parents who enroll their children in these publicly subsidized programs or those who select other options, such as private preschool or informal care for their four-year-olds. These parental decisions may affect not only their own children, but also what kindergarten teachers and other primary grade teachers are able to do and need to do in their classrooms (U.S. Dept. of Education, 2001). In this report, we describe and contrast the characteristics of families who have made these choices for their children.

## **Study Background**

In 2002, researchers with the Andrew Young School of Policy Studies at Georgia State University recruited a random sample of kindergarteners who had not participated in formal preschool to complement the children who had participated in the Early Childhood Study (ECS) during the previous year. For the first year of the ECS, three distinct groups of families and children who were enrolled in different types of early childhood programs for four-year-olds were selected for the study. For the second year of the study, these three groups were located in their kindergarten classrooms, and the additional sample of children who did not attend formal preschool was selected.

The experiences of many individual children who did not attend a formal preschool varied in some cases from day to day. For example, 44 percent of the sample attended an organized "mother's morning out" program, 60 percent spent some time during the normal school/work week at home or in family day care, and 4 percent attended a formal preschool for up to 3 days a week. As these percentages indicate, many children who are classified as receiving informal care had more than one type of child care experience during the week. For example, some parents reported that their children stayed at home, but they also attended preschool two or three mornings a week.

This report details differences among the four samples of children in terms of family background and child characteristics, and it examines their school readiness. Using our samples of children entering kindergarten, the following questions are addressed:

1. How similar and different are the children and families who participated in different preschool experiences? These experiences include: children who were not enrolled in a full-day, five-day a week formal preschool program and children who were

- enrolled in one of three types of early childhood programs: Georgia Pre-K, Head Start, or other full-day preschool program?
2. What are the typical skills and abilities that kindergarteners in Georgia bring with them to school?
  3. How do these skills and abilities vary based on the characteristics of the children and their families?

In the section below, we present the overview of the study and sampling procedures. It is important to note that the samples were drawn from four groups that collectively constitute the vast majority of four-year-olds in Georgia. However, children who did not participate in full-day preschool and were subsequently enrolled in private kindergarten were not included. Therefore, when we report aggregate estimates for Georgia's kindergarteners, readers should be mindful that a small percentage of the children in the state are not represented.

### **Study Sampling, Measures, and Data Collection**

The Early Childhood Study (ECS) began in 2001 as an examination of children's development and an evaluation of the impacts of Georgia's Pre-K Program on children's development. Georgia provides a unique opportunity to study the ways in which universal (non-means tested) prekindergarten may affect four-year-olds, since it was the first state in the country to offer universal prekindergarten (UPK) to all children whose parents chose to enroll them. In addition to Georgia Pre-K, two other types of preschool included in the study were Head Start, a national program that provides comprehensive developmental services for low-income preschool children and their families, and private preschool, a category that incorporates schools or child care centers offering educational and developmental programs for four-year-olds in exchange for tuition or fees for these services.

A probability sample of four-year-olds receiving instructional and supervisory services under the auspices of these three programs was selected. Children were sampled after obtaining parental consent. The total sample size for the first year was 630. This includes 353 children from Georgia Pre-K (56 percent of the sample), 134 children from Head Start (21 percent of the sample), and 143 children from private preschool (23 percent of the sample). Data was collected through parent surveys, teacher surveys, direct assessments of children by independent assessors, direct observations of classroom quality and teacher-child interactions, and teachers' ratings of children's social, communication, and pre-academic skills. This part of the study was designed to continue for at least three years, following these children from the beginning of their preschool year through the first grade.

At the beginning of the second year of the study, the focus of this report, these children were located in their kindergarten classrooms. Only those children who remained in their preschool program for the duration of the school year (approximately nine months) were included in the second year analysis. In addition, three children were removed from the study at their parents' requests. The total number of children eligible for continuing in the study was 571. Of the 571 children included in the study, 445 (78 percent) were located in a Georgia kindergarten classroom during the fall 2002. We found additional children who are not included in the second year analysis because they moved out of the state, were home-schooled, or their elementary school did not opt to participate.

Concurrent with locating the children from the first year, a sample of children who did not attend formal preschool was selected. These students were sampled from the kindergarten classrooms in which the first-year children were currently enrolled. Once a first-year child was located in a kindergarten classroom, consent forms that included four brief questions about the children’s previous schooling were mailed to the teacher and distributed among the remaining children in that particular class. Children were then sampled based upon confirmation of parental consent and responses indicating that the child had been eligible to enroll in Pre-K but had not enrolled in formal preschool the previous year. A total of 225 new children meeting these criteria were selected at the beginning of the second year.

The composition of the ECS sample for years one and two are presented by preschool experience in Table 1.1. It is important to note that all children who were sampled are included in the first year; however, in the second year only the children who attended their program for the full nine months are included. The first year of the study was designed so that the children participating in Georgia Pre-K would comprise at least half of the sample (56 percent). The remaining sample was evenly comprised of children from Head Start and the private sector. By adding the sample of children with no formal preschool in year two, the other percentages were reduced proportionately. As expected, the overall percentage of children from Georgia Pre-K fell to less than half of the sample (41 percent). A proportionate decrease occurred for children enrolled in Head Start (21 percent to 15 percent) and for children enrolled in private preschool (23 percent to 16 percent). Despite the reductions in the percentages of children represented in the study, the distribution of the first three cohorts of children remained similar to the first year’s distribution. By design, the children from the no formal preschool cohort were over-sampled and thus represented almost a third of the second year sample.

Table 1.1: Differences in the Sample by Preschool Experience (Year One and Year Two)

<b>Program Type</b>	<b>Georgia Pre-K</b>	<b>Head Start</b>	<b>Private</b>	<b>No Formal Preschool</b>	<b>Overall</b>
<b>Year One:</b>					
Sample (%)	353 (56%)	134 (21%)	143 (23%)	n/a	630
<b>Year Two:</b>					
Sample (%)	326 (41%)	119 (15%)	126 (16%)	225 (28%)	796
Children Located (%)	265 (40%)	91 (14%)	89 (13%)	225 (34%)	670

In an effort to gauge a comprehensive understanding of children’s readiness for school and overall development, data collection was multifaceted and included: 1) direct assessments with children, 2) teachers’ ratings of children’s social, communication, and academic skills, and 3) parents’ ratings of the health and well-being of their children (Table 1.2).

An assessment battery similar to that used in the first year of the ECS and comprised of carefully selected child development instruments was used to provide valid and reliable information about the kindergarten children’s cognitive and language skills. Georgia State University researchers were trained on each standardized instrument in the battery and were not allowed to assess any child in the study until they were observed and approved for independent testing on all measures. Once approved, these researchers individually administered the assessment battery to each child in the sample who was located in a kindergarten classroom during the first four months of school. Children were assessed using a variety of nationally norm-referenced tests including the Peabody Picture Vocabulary Test (PPVT-III; Dunn & Dunn, 1997), two subtests from the Woodcock Johnson Tests of Achievement-III (WJ-III; Woodcock, McGrew & Mather, 2001), and two subtests from the Comprehensive Test of Phonological Processing (CTOPP; Wagner, Torgesen & Rashotte, 1999). Other components of the battery included an informal assessment of children’s awareness of printed material and listening comprehension, as well as basic skills tests requiring children to identify numbers and colors.

Table 1.2: Assessment Measures Used for the Early Childhood Study (Fall 2002)

<b>Developmental Area</b>	<b>Instrument</b>	<b>Method</b>
<b>Cognition &amp; General Knowledge</b>	Color Bears (Zill & Resnick, 1988)	Direct Assessment
	Woodcock Johnson Tests of Achievement-III (Woodcock, McGrew & Mather, 2001; Applied Problems subtest)	Direct Assessment
	Number Naming & Name Writing (Bryant, 2001)	Direct Assessment
	Academic (math and language arts) skills	Teacher Ratings
<b>Language Development &amp; Communication</b>	Peabody Picture Vocabulary Test-III, Form B (Dunn & Dunn, 1997)	Direct Assessment
	Woodcock Johnson Tests of Achievement – III (Woodcock, McGrew & Mather, 2001; Letter-Word Identification subtest)	Direct Assessment
	Comprehensive Test of Phonological Processing (Wagner, Torgesen & Rashotte, 1999; Elision subtest; Sound Matching subtest)	Direct Assessment
	Story and Print Concepts (Zill & Resnick, 1998)	Direct Assessment
	Conversation, Communication, and Expressive Language	Teacher Ratings
	Referral to Language Assistance Services	Teacher Ratings
<b>Social and Emotional Development</b>	Classroom Behaviors	Teacher Ratings

<b>Health and Physical Well-Being</b>	Items adapted from Family and Child Experiences Survey (Zill and Resnick, 1998) and National Early Childhood Longitudinal Study (1999)	Teacher Ratings and Parent Survey
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In addition to the direct child assessments, the kindergarten teachers rated the children on academic, behavior, expressive and general health items. The Student Rating Form utilized a 7-point scale ranging from “extraordinarily poor” to “extraordinarily good”, where four is considered average. The third data source included information provided by the parents of the children in the study. Parents responded to questions on a parent survey regarding their child’s health and behavior. These various data sources combined to provide an overall picture of development for children in four domains: 1) Cognition and General Knowledge; 2) Language Development; 3) Social and Emotional Development; and 4) Health and Physical Well-Being.

All available data were included in the analyses reported here. Because some data were missing, depending on the surveys or instruments that were used to collect the data, the sample sizes are reported for each of the descriptive tables. Response rates vary across measures, such as an 84 percent response rate for direct assessments, 72 percent for the teacher rating form, and 52 percent for the parent survey. Since many of the children’s parents were surveyed in the first year of the study (84 percent of the first-year sample), general family characteristics reported from year one are included in this analysis for these children if a year two survey was not received. When data were missing on the predictor variables used in constructing analytic models, those data were imputed using maximum likelihood techniques in order to assess differences among the four groups at kindergarten entry. For purposes of the descriptive analyses, weights were used to combine the four groups in a way that represents their population total. The weights do not affect the estimates for the four groups separately; however, it should be considered when making generalizations about Georgia’s kindergarteners based on the sample characteristics.

The remainder of this report is divided into three chapters. Chapter 2 reports on family and child characteristics as the children enter kindergarten. Chapter 3 reports on the developmental status of kindergartners and patterns of systematic variation in the children’s development. This chapter draws from the direct assessments and teacher ratings. The fourth chapter concludes the report by offering alternatives that could improve kindergarten school readiness in Georgia. While the Georgia Pre-K Program along with other programs such as Head Start has improved school readiness in Georgia, additional efforts are needed to supplement these programs. In this report, no attempt is made to control for the differences in the children among the four groups or factors that influenced parents to select one of the four options for their children. Therefore, the descriptions presented in this report are not appropriate to use to judge the relative effectiveness of either Georgia’s Pre-K Program or Head Start in the state. We will address those issues in future reports.

## **Chapter 2: Family and Child Characteristics**

### **Introduction**

Child characteristics such as sex, age, race, and whether the child has special developmental needs, along with family characteristics such as family stability, educational level of the parents, socio-economic status, and parent-child interactions, influence children's development (U. S. Dept. of Education, 2001). In order to understand children's development and success in school, it is important to know about the children's home environments and the educational resources accessible to them within their homes.

In this chapter, we provide estimates of the characteristics of entering kindergarteners in Georgia as well as some differences between these children based on their experiences as four-year-olds.

### **Characteristics of Children Entering Kindergarten**

The overall average age of the children entering kindergarten was 5½ years (Table 2.1) and was similar for all four groups. For the overall sample, 52 percent of the children were male and 48 percent were females. Children who attended Georgia Pre-K were evenly split between male and female; however, more males than females attended Head Start and private preschool, although the difference is not statistically significant. The reverse was true for children who participated in informal care in that insignificantly more females than males were in that group.

Overall, a majority of the children (58 percent) were White, compared to Black (33 percent), Hispanic (3 percent), and other (5 percent). However, a majority of the children who had attended Head Start were Black (60 percent) and fewer were White (31 percent) than children from the other three groups. Pre-K enrolled more Black children and fewer White children than were found in private preschools or informal care. Much larger majorities of the children in private preschools and the children with no formal preschool were White.

Table 2.1: Characteristics of Children Participating in the Georgia Early Childhood Study at Kindergarten Entry (Fall 2002-*Weighted*)

Demographic Characteristic	Georgia Pre-K n=326	Head Start n=119	Private n=126	No Formal Preschool n=225	Overall n=796
Age upon kindergarten entry (SD)	5.5 (.29)	5.5 (.26)	5.5 (.29)	5.5 (.27)	5.5 (.29)
Sex					
% Male	50	59	58	47	52
% Female	50	41	42	53	48
Race					
% White <sup>a, b</sup>	53	31	66	80	58
% African American <sup>a, c</sup>	38	60	26	12	33
% Hispanic	3	4	1	6	3
% Other	6	7	6	2	5

<sup>a</sup> Children from Head Start differ significantly from children who attended Georgia Pre-K, private preschool, and no formal preschool.

<sup>b</sup> Children from Georgia Pre-K differ significantly from children who attended Head Start, private preschool, and no formal preschool.

<sup>c</sup> Children from Georgia Pre-K differ significantly from children who attended Head Start and no formal preschool.

### Family Characteristics of Children Entering Kindergarten

Research indicates that children's development can be adversely influenced by certain family characteristics that are often referred to as risk factors. The factor that has been most strongly associated with placing a child at risk of healthy development is having a mother with less than a high school education (U. S. Dept. of Education, 2001).

Fortunately, few of Georgia's entering kindergarteners have mothers who did not earn a high school degree. Mothers with less than a high school degree comprised 7 percent of the sample, compared to 59 percent of mothers with a high school diploma and 32 percent with a college degree or more (Table 2.2).

Similar results were found for fathers (8 percent with less than a high school degree, 62 percent with a high school diploma, and 29 percent with a college degree or more). More Head Start children have mothers and fathers with less than a high school education than children from the other three groups. Conversely, private preschool children were more likely than children from Georgia Pre-K and Head Start to have a mother with a bachelor's degree or more, and they were more likely than Head Start children to have a father with a bachelor's degree.

Overall, families' incomes averaged between \$50,000 and \$60,000. However, parents of private preschool children reported higher incomes (between \$60,000 and \$70,000), whereas parents of Head Start children reported lower incomes (between \$20,000 and \$30,000). Head Start children's parents reported lower incomes than parents of children in

the other three groups. The average income of families whose children attended Pre-K was less than the families whose children attended private preschool and less than the families who did not attend formal preschool.

Family risk can be indicated by characteristics such as receiving governmental subsidies, not having medical insurance, teenaged parents, and not having sufficient food at home. Approximately five percent of the families of entering kindergarteners reported to have received Temporary Assistance for Needy Families (TANF), 14 percent to have received food stamps, and 19 percent to have received Medicaid over the past five years (1997-2002). More families of Georgia Pre-K children received food stamps than children from private preschool, but otherwise the three groups who did not attend Head Start were similar. As expected, based on the goals of the Head Start program and its targeted population, parents of Head Start children were significantly more likely to report receiving TANF, food stamps, and Medicaid over the previous five years than the other three groups of parents.

Overall, 15 percent of mothers were teenagers when the children in this study were born. Children from Head Start were more likely to be born to a teenage mother (38 percent) than children from Georgia Pre-K (15 percent), private preschool (9 percent), and children with no formal preschool (8 percent). Most families of four-year-olds in Georgia rarely have too little food at home, but Head Start families are more likely than the others to encounter food shortages.

Again with respect to subsidized health insurance, we find that Head Start parents are most likely to receive subsidized insurance, for the most part from Medicaid. A minority of parents of children in Pre-K received subsidized health insurance, but this is more likely to be the case than with parents of children in private preschools or informal care.

Table 2.2: Economically-Related Family Risk Characteristics of Children Participating in the Georgia Early Childhood Study at Kindergarten Entry (Fall 2002-Weighted)

Family Characteristic	Georgia Pre-K n=326	Head Start N=119	Private n=126	No Formal Preschool n=223	Overall n=794
Mothers Education					
% Less than HS <sup>a</sup>	6	30	1	5	7
% HS Degree <sup>e</sup>	63	64	50	53	59
% BA or More <sup>a, b</sup>	29	4	48	40	32
Fathers Education					
% Less than HS <sup>a</sup>	8	21	3	6	8
% HS Degree	65	66	58	54	62
% BA or More <sup>g</sup>	27	9	38	38	29
Total Gross Income <sup>f</sup> (1-10 range) (Mean)	4.9	2.6	6.6	5.8	5.2
Means Tested Benefits					
% TANF <sup>a</sup>	4	21	2	4	5
% Food Stamps <sup>a, e</sup>	13	53	4	9	14
% SSI	4	4	1	1	3
Unemployment Insurance (%)	6	7	2	3	5
Currently Insured <sup>d</sup> (%)	98	93	98	99	98
Insurance Type					
% Medicaid <sup>a</sup>	18	64	8	11	19
% Peachcare	11	10	4	5	8
% Employer <sup>a, c</sup>	61	17	74	74	62
Teenage Mother <sup>a</sup> (%)	15	38	9	8	15
Sufficient Food <sup>a</sup> (1-4 range) (Mean)	2.9	2.8	3.0	2.9	2.9

<sup>a</sup> Children from Head Start differ significantly from children who attended Georgia Pre-K, private preschool, and no formal preschool.

<sup>b</sup> Children from private preschool differ significantly from children who attended Georgia Pre-K and Head Start.

<sup>c</sup> Children from Pre-K differ significantly from children who attended Head Start, private preschool and no formal preschool.

<sup>d</sup> Children from Head Start differ significantly from children who did not attend formal preschool.

<sup>e</sup> Children from Georgia Pre-K differ significantly from private preschool children.

<sup>f</sup> All groups differ significantly from each other except children from private preschool and children with no formal preschool.

<sup>g</sup> Children from Head Start differ significantly from children who attended private preschool and children who did not attend formal preschool.

An economic risk index was created for children participating in the Early Childhood Study. This index was created by computing the probability that each child experienced a number of economic risks within the home such as having a low combined family income, having a mother with less than a high school degree, and receiving means-tested benefits such as TANF and food stamps. Values range from 0 to 1; the higher the probability the child experiences economic risks, the closer the value is to 1.0. This economic risk index is useful in statistical analysis by providing a single measure of economic risk that can be used to explain, in part, children's development and kindergarten readiness.

The average scores and standard deviations for each group on the economic risk index are reported in Table 2.3. The average probability for the overall sample is .34, a value that is very similar to the values for Georgia Pre-K children (avg. =.32) and children with no formal preschool (avg. =.30). In contrast, Head Start children were significantly more likely to score higher on this index (avg. =.89) than children from the other three groups, while private preschool children rarely experience risks (avg. =.14).

Table 2.3: Economic Risk Index for Children Participating in the Georgia Early Childhood Study at Kindergarten Entry (Fall 2002-*Weighted*)

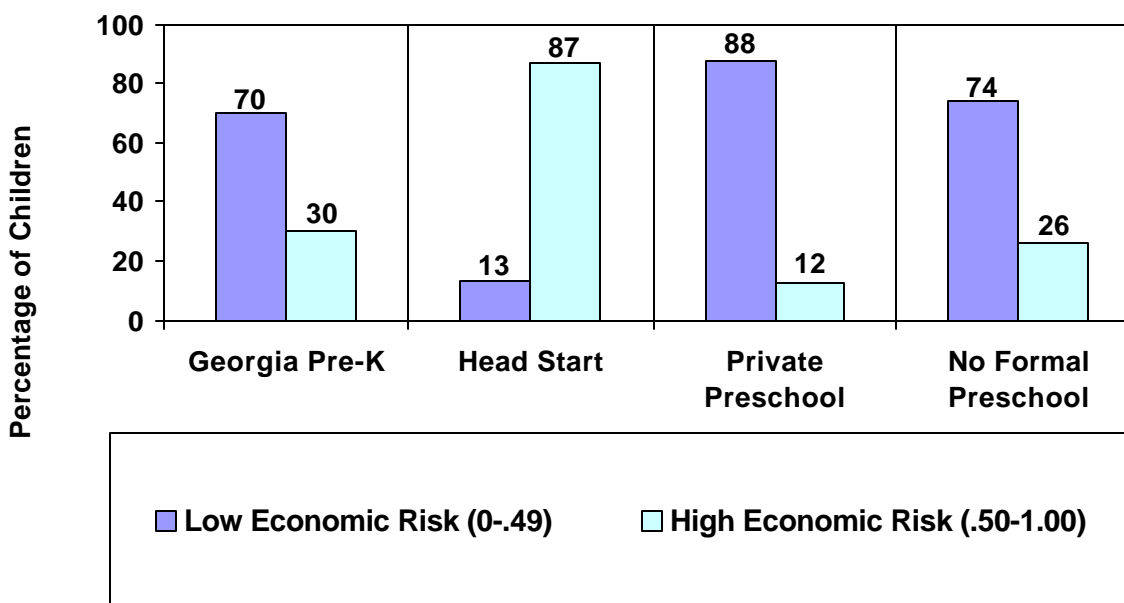
<b>Economic Risk Index</b>	<b>Georgia Pre-K n=317</b>	<b>Head Start n=118</b>	<b>Private n=136</b>	<b>No Formal Preschool n=225</b>	<b>Overall n=796</b>
Economic Risk Index <sup>a, b</sup> (range 0-1)					
Mean	.32	.89	.14	.30	.34
Standard Deviation	(.43)	(.29)	(.32)	(.33)	(.43)

<sup>a</sup> Children from Head Start differ significantly from children who attended Georgia Pre-K, private preschool, and no formal preschool.

<sup>b</sup> Children from private preschool differ significantly from children who attended Georgia Pre-K, Head Start, and no formal preschool.

For purposes of describing the similarities and differences among the four groups of children, the level of economic risk was divided into two groups: high and low (see Figure 2.1). Since most children entering kindergarten in Georgia fall in either the high economic risk or low economic risk category, too few children were in a moderate risk category to analyze accurately. The majority of children who attended Pre-K were represented in the low economic risk category (70 percent), but a very significant minority of Pre-K children experienced high economic risk (30 percent). Because the economic risk measure used for this study is more comprehensive (including education and TANF participation) than traditional income measures and represents a relatively greater risk than income measures, the levels of economic risk reported here are lower than those reported in other sources. The percentages of children from Head Start and children from private preschools that were in high and low risk were nearly reversed. Most Head Start children (87 percent) were at high economic risk, while most of the private preschool children (88 percent) were at low economic risk. Approximately three-quarters of the children who did not attend formal preschool were within the low economic risk category, with the remaining quarter of this cohort within the high-risk category.

Figure 2.1: Economic Risk Index for Children Participating in the Georgia Early Childhood Study at Kindergarten Entry by Preschool Type<sup>a, b, c, d</sup>



<sup>a</sup> Children from Georgia Pre-K differ significantly from children in Head Start and private preschool.

<sup>b</sup> Children in Head Start differ significantly from children in Georgia Pre-K, private preschool, and children with no formal preschool.

<sup>c</sup> Children in private preschool differ significantly from children in Georgia Pre-K and children in Head Start.

<sup>d</sup> Children with no formal preschool differ significantly from children in Head Start.

Family risk characteristics encompass family structure and stability variables that may have a negative influence on children's development (Table 2.4). Several questions gauging potential family risk characteristics were included on the parent survey. Every attempt was made to ask questions that could detail the type of family circumstances that may place the child at risk without being overly intrusive or insensitive to the child's parent(s) or guardian(s). These family risk characteristics included whether the child had lived with both parents since birth, the parent's or guardian's living arrangement (married, divorced, etc.), the number of adults living within the home, and the number of siblings (including half- and step-siblings) of the child.

On most of these characteristics, the families of children in Pre-K mirror the averages for families of entering kindergarteners on the whole in Georgia. Three-quarters of the children had lived with both parents continuously since birth. Head Start children differed significantly from the other three groups of children in that they were less likely to have lived with both parents since birth. Similarly, 80 percent of the sample's parents were likely to be married. Children from Head Start were less likely to live with married parents than children from the other groups. Conversely, parents of children with no formal preschool were significantly more likely to be married than parents of children from Georgia Pre-K and Head Start. However, there was no difference in the percentages of children living with two adults. Head Start children have slightly more siblings than children from the other three groups, but the differences were not significant.

Table 2.4: Family Risk Characteristics of Children Participating in the Georgia Early Childhood Study at Kindergarten Entry (Fall 2002-Weighted)

Family Characteristic	Georgia Pre-K n=326	Head Start n=119	Private n=126	No Formal Preschool n=225	Overall n=796
Child lived with both parents since birth <sup>a</sup> (%)	77	47	81	81	76
Family Arrangement					
% Married <sup>a, b</sup>	79	49	84	92	80
% Significant Other <sup>a</sup>	13	39	6	5	12
% Divorce	6	6	8	2	6
% Widow/separated	4	6	3	1	3
Number of Adults living at Home (1-3) (Mean/SD)	1.9 (.45)	1.9 (.52)	2.0 (.41)	2.0 (.35)	2.0 (.44)
Number of Siblings (0-12) (Mean/SD)	1.8 (1.3)	2.1 (1.2)	1.6 (1.2)	1.7 (.7)	1.7 (1.2)

<sup>a</sup> Children from Head Start differ significantly from children who attended Georgia Pre-K, private preschool, and no formal preschool.

<sup>b</sup> Children from Georgia Pre-K differ significantly from children with no formal preschool.

Similar to the economic risk index, an overall risk index score was created from the family risk variables (Table 2.5). Scores on the family risk index also represent a probability score and range from zero to one (0-1). Not surprisingly, Head Start children were more likely to score higher on the family risk index than children from the other programs. However, differences between Head Start families and the other three groups were less pronounced than were differences on the economic risk index. The average score for Head Start children was .54 compared to .23 for Georgia Pre-K children, .20 for children with no formal preschool, and .19 for children in private preschool.

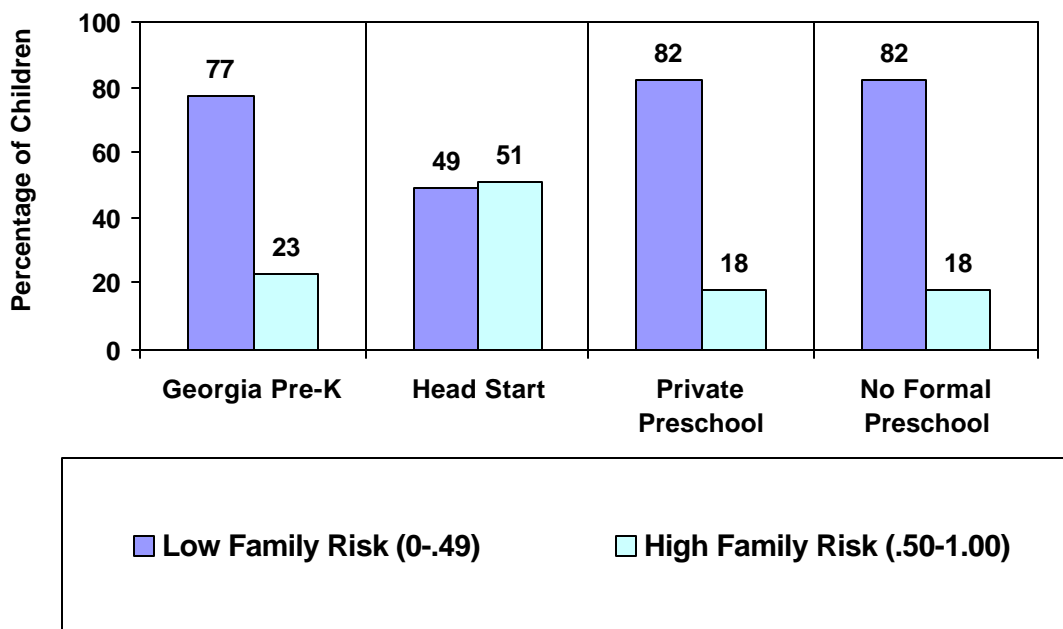
Table 2.5: Family Risk Index for Children Participating in the Georgia Early Childhood Study at Kindergarten Entry (Fall 2002-Weighted)

Family Risk Index	Georgia Pre-K n=326	Head Start n=119	Private n=126	No Formal Preschool n=225	Overall n=796
Family Risk Index <sup>a</sup> (range 0-1)					
Mean	.23	.54	.19	.20	.25
Standard Deviation	(.41)	(.49)	(.38)	(.29)	(.41)

<sup>a</sup> Children from Head Start differ significantly from children who attended Georgia Pre-K, private preschool, and no formal preschool.

Scores on the family risk index were divided into two levels of risk using the same procedure that was applied to the economic risk index (see Figure 2.2). More than three-quarters of all children who attended Pre-K, private preschool or had no formal preschool experience had risk index scores that fell within the low family risk category (77, 82 and 82 percents respectively). Furthermore, the Head Start children differed from the other three groups in that the majority of these children experienced high family risk (51 percent).

Figure 2.2: Family Risk Index for Children Participating in the Georgia Early Childhood Study at Kindergarten Entry by Preschool Type<sup>a</sup>



<sup>a</sup> Children from Head Start differ significantly from children in Georgia Pre-K, Private Preschool, and no formal preschool.

## Summary

Overall, Georgia’s children entered kindergarten exhibiting a wide range of family and child characteristics. Family and child characteristics play an important role in child development and school readiness. The largest differences were found between Head Start children and children from the other three groups in the sample. Children who had enrolled in a Head Start class the previous year were more likely to be in families at higher risk for negative influences on their development and school readiness. On average, these children entered kindergarten with substantially more economic and social risks, compared to children from the other groups, especially children with no formal preschool and private preschool. Head Start children were more likely to live households where the mother or father had less than a high school education, where the family had received either TANF or food stamps over the last five years, and the economic and family risk indices scores were higher. Any conclusion derived from the differences in developmental levels and readiness should take this information into account.

Subsequently, children with no formal preschool or children who attended private preschool were less likely to come from families at higher risk when they entered kindergarten. These children were more likely to be White and less likely to have parents with less than a high school education. They were also less likely to have higher scores on the economic and family risk indices. These children entered kindergarten with fewer disadvantages than their Head Start counterparts.

Children from Georgia Pre-K more closely resembled the composition of the state as a whole than any of the other groups. A number of these children came from families with large numbers of risk factors, but many experienced relatively few risks. Because Georgia Pre-K is free for any four-year-old in the state regardless of family economic status, the program serves four-year-olds who could qualify for Head Start but for whom there are no spaces in the federally funded program. In addition, Georgia's Pre-K serves children whose parents would be likely to pay for private preschool or keep their children at home, if the program was not available.

## **Chapter 3: Developmental Status at Kindergarten Entry**

### **Introduction**

Young children enter kindergarten at different points on their developmental paths. Some children enter kindergarten well prepared, cognitively and emotionally, for the rigors of the year. Other children begin the year lagging behind their peers. Moreover, the development of an individual child can be uneven, with some skills progressing on pace and others lagging. Since kindergarten has begun to take a more academic approach to encouraging children's development (Meisels, 1999), five-year-olds are increasingly expected to hit the ground running, educationally speaking, and to acquire skills rapidly in order to be successful in the school environment. These trends make it increasingly important to understand where children are developmentally as they enter their first year of formal schooling.

In this chapter, we detail some of the differences in children's development at the time that they enter kindergarten. This chapter is divided into several sections. First, we report findings for the overall sample on all standardized assessments and skill tests. Second, we briefly discuss differences in the standardized assessments and skills tests by various child characteristics and family risk factors. Specifically, we examine differences in the areas of sex, race, age upon kindergarten entry, mother's education, and income. The remaining results are reported among the groups of children divided by both economic and family risk characteristics (low risk and high risk). These sections are organized by type of assessment: standardized direct assessments; non-standardized direct assessments; teachers' ratings; and parents' health and well-being ratings. It is important to note that subsequent analyses and reports will examine the influence of preschool on children's kindergarten readiness; this report details the development of children as they enter kindergarten mediated by economic and family risk.

### **Findings for the Overall Sample**

On average, kindergarteners in Georgia began the school year with scores above national norms on two norm-referenced tests and slightly below national norms on the three other tests (Table 3.1). On letter-word recognition and pre-math skills, children scored higher than the national norm (106.9 for WJ-III Applied Problems and 101.7 for WJ-III Letter-Word). The average scores for receptive language and phonemic awareness were slightly below the national average (98.9 for PPVT-III, 9.1 for the CTOPP Elision Subtest, and 9.5 for the CTOPP Sound Matching Subtest).

Nearly all kindergarteners in Georgia had mastered three basic skills when they entered school, coming close to recognizing their colors (averaging 19.7 points out of 20) and their numbers (averaging 9 numbers out of 10), as well as counting to ten (averaging 4.5 points out of 5). In a test measuring recognition of printed material and pre-reading comprehension skills, the average score was 7.3, meaning that entering kindergarteners in Georgia were generally correct on about 50 percent of the items. These kindergarteners were not expected to achieve complete mastery on this assessment, since independent reading was required to answer correctly the most advanced questions. Consequently, while there were a number of children who scored high on this test, no child achieved a

perfect score. Finally, kindergarten teachers rated children, on average, as being well prepared for kindergarten. Scores on the subscales for communication skills, behavior, health and wellness, and kindergarten readiness averaged “good” (score of 5) to “very good” (score of 7). The overall sample rated slightly less than 5 for academic skills (4.89), but this was only barely below the other averages.

Table 3.1: Results from Direct Assessments for Overall Sample

	Mean	Standard Deviation
<b>Standardized Assessments</b>		
PPVT-III (mean=100; sd=15)	98.9	13.2
WJ-III (mean=100; sd=15)		
Letter-Word	106.9	12.4
Applied Problems	101.7	13.2
CTOPP (mean=10; sd=3)		
Elision	9.1	2.4
Sound Matching	9.5	2.2
<b>Skills Test</b>		
Color Bears (1-20)	19.7	1.2
% Mastery	86%	
Counting Bears (1-5)	4.5	.95
% Mastery	76%	
Number Naming (0-10)	9.01	2.06
% Mastery	73%	
Story and Print Concepts (0-14)	7.27	2.57
<b>Teacher Ratings (1-7)</b>		
Academic Skills	4.9	1.41
Communication Skills	5.0	1.28
Behavior Skills	5.0	1.23
Health and Wellness	5.7	1.05
Kindergarten Readiness	5.3	1.50

## **Developmental Differences related to Children’s Individual Characteristics**

Girls outscored boys on all of the direct assessments including the WJ-III subtests measuring letter word identification (Letter-Word) and math skills (Applied Problems), and the CTOPP subtest measuring children’s abilities to recognize beginning and ending sounds (Sound Matching) (Tables 3.2 and 3.3). Furthermore, females were also more likely to recognize all of their colors (Color Bears), identify numbers (Number Naming), and score higher on the test measuring pre-literacy skills (Story and Print Concepts).

In order to look at differences by age, the children were divided into four age groups upon kindergarten entry: 5 years, less than 3 months; 5 years, 3 to 5.9 months; 5 years, 6 to 8.9 months; and 5 years, 9 to 11.9 months. Younger children appear to perform better on many of the assessments than older kindergarteners, which is at least in part due to raising the bar for older children. For example, children from the youngest age group were more likely to have higher standardized scores for recognizing letters and words than older children; however, this does not translate to the younger children getting more items correct than the older age groups. Children from the lowest and second lowest age groups were more likely to have higher standardized scores in solving applied problems than children in the third age group. Finally, this difference is further reflected in the scores for the CTOPP Sound Matching subtest where the average for the lowest age group (10.1) was significantly higher than the average for the third age group (9.2) and fourth age group (9.2).

The non-standardized skills tests, which are not age-adjusted, reflect a more expected pattern. The averages for the youngest age group are significantly lower for Number Naming (8.6) and Story and Print Concepts (7.0) than the averages for the oldest age group (9.4 for Number Naming and 7.8 for Story and Print Concepts). Children from the oldest age group were more likely to score higher on the Story and Print Concepts than children from the second age group.

While race was recorded as White, Black, Hispanic and other, there were too few children from Hispanic households and children of other races to establish whether the apparent differences were accurate. On average, children who were identified as White scored higher on all of the standardized assessments than other children. However, these differences were not replicated for the skills tests. Significant differences were only found for the Story and Print concepts where the average number of correct responses was significantly higher for White children.

## **Developmental Differences related to Family Characteristics and Risk Factors**

Consistent with previous research (U. S. Dept. of Education, 2001), children with more educated mothers performed significantly better on all of the standardized assessments. Tests of two pre-reading skills (CTOPP Elision and Sound Matching) indicated that children whose mothers had received a bachelor’s degree were no different than children of mothers who had received an advanced degree. In most cases, each level of higher educational attainment by a child’s mother was related to increased levels of performance by the child. Illustrative of this relationship was children’s mastery of naming numbers; only 46 percent of children whose mothers had not finished high school mastered naming the numbers from 1 to 10 compared to 71 percent of children whose mothers had a high school diploma, 81

percent whose mothers had a bachelor's degree, and 93 percent of children whose mothers had a graduate or professional degree. While not all of the non-standardized assessments reflected such clear and significant distinctions, the pattern was consistent.

Three income categories were used to examine the differences in children's development associated with income: low (\$29,999 or less), medium (\$30,000 to 70,000) or high (greater than \$70,000). Children whose parents reported higher incomes were more likely to score higher on all five of the standardized assessments and the skills test Story and Print Concepts. The averages for children whose parents reported lower incomes were significantly lower than children from the other two income categories on counting and significantly lower than children from the medium income category on color naming.

Table 3.2: Results from Standardized Assessments by Individual Risk Factors

Child or Family Characteristic	PPVT-III (mean=100; sd=15) <sup>a</sup>	WJ-III Letter Word (mean=100; sd=15) <sup>b</sup>	WJ-III Applied Problems (mean=100; sd=15) <sup>c</sup>	CTOPP- Elision (mean=10; sd=3) <sup>d</sup>	CTOPP- Sound Matching (mean=10; sd=3) <sup>e</sup>
Sex:					
Female	98.5 (13.0)	108.9 (12.7)	102.9 (12.5)	9.3 (2.4)	9.8 (2.4)
Male	99.1 (13.4)	104.8 (11.9)	100.5 (13.9)	8.9 (2.5)	9.2 (2.0)
Age (K-Entry):					
5 years, < 3 months	100.7 (15.3)	112.0 (13.0)	104.5 (13.1)	9.4 (2.3)	10.1 (2.1)
5 years, 3 to 6 months	99.3 (11.9)	108.2 (11.8)	103.0 (14.3)	9.4 (2.4)	9.6 (2.2)
5 years, 6 to 9 months	97.5 (13.2)	105.0 (11.2)	98.8 (12.8)	8.9 (2.6)	9.2 (2.2)
5 years, 9 to 12 months	98.3 (12.2)	103.0 (12.0)	100.6 (12.2)	8.9 (2.4)	9.2 (2.3)
Race:					
White	103.0 (12.3)	108.2 (12.8)	105.7 (12.6)	9.6 (2.4)	9.8 (2.2)
Black	91.1 (11.3)	104.3 (10.8)	93.9 (11.1)	8.2 (2.3)	8.8 (2.2)
Hispanic	87.4 (11.0)	98.5 (8.8)	95.9 (9.4)	7.5 (1.9)	8.8 (1.9)
Other	102.0 (12.6)	112.7 (15.8)	103.5(13.8)	9.6 (2.6)	10.4 (2.4)
Mother's Education:					
Less than High School	88.1 (8.5)	98.5 (11.6)	92.6 (11.7)	7.6 (1.8)	8.2 (1.8)
High School Degree	97.5 (12.4)	105.7 (11.8)	99.9 (12.2)	8.7 (2.3)	9.2 (2.3)
Bachelor's Degree	102.4 (13.2)	110.0 (12.3)	105.4 (13.0)	10.2 (2.4)	10.3 (1.9)
Graduate or Professional	109.6 (11.3)	116.0 (9.9)	112.8 (12.0)	10.5 (2.4)	10.9 (2.0)
Income:					
Low (Less than 30K)	91.2 (10.8)	100.8 (10.6)	95.9 (11.9)	8.1 (2.0)	8.6 (2.0)
Medium (30K-70K)	100.1 (11.7)	108.9 (11.8)	101.7 (12.2)	9.2 (2.3)	9.6 (2.2)
High (More than 70K)	107.3 (13.2)	113.7 (12.0)	110.0 (12.6)	10.6 (2.4)	10.7 (2.1)

<sup>a</sup> Significant differences were found on the PPVT-III by race of child (between White children and Black or Hispanic children; between Hispanic and other children), education of mother (all groups), and income (all groups).

<sup>b</sup> Significant differences were found on the WJ-LW by sex (females scored higher than males), age (the youngest children were significantly higher than the children in the other three groups; children in the second age groups were significantly higher than children in the oldest age group), race (between White and Black or Hispanic children; between Black or Hispanic children and other), mother's education (all groups), and income (all groups).

<sup>c</sup> Significant differences were found on the WJ-AP by sex (females scored higher than males), age (children in the lowest age group and children in the third age group; between children in the second age group and third age group), race (White

children and Black or Hispanic children; between Black and other children), mother’s education (all groups), and income (all groups).

<sup>d</sup> Significant differences were found on the CTOPP-Elision for race (between White and Black or Hispanic children; between Black or Hispanic children and other), mother’s education (all groups excluding children whose mothers had a Bachelor’s degree and children whose mothers had beyond a Bachelor’s degree), and income (all groups).

<sup>e</sup> Significant differences were found on the CTOPP-Sound Matching for age (females scored higher than males), age (between children in the first age group and children in the third and fourth age groups), race (between White children and Black children; between Black children and Hispanic children), mother’s education (all groups excluding children whose mothers had a Bachelor’s degree and children whose mothers had beyond a Bachelor’s degree), and income (all groups).

Table 3.3: Results from Skills Tests and Teacher Ratings for Kindergarten Readiness by Individual Risk Factors

Child or Family Characteristic	Color Bears (% Mastery) <sup>a</sup>	Counting Bears (% Mastery) <sup>b</sup>	Number Naming (% Mastery) <sup>c</sup>	Story and Print Concepts <sup>d</sup>	Kind. Readiness <sup>e</sup>
Sex:					
Female	19.8 (89)	4.6 (77)	9.2 (77)	7.6	5.6
Male	19.6 (82)	4.5 (76)	8.8 (70)	6.9	5.1
Age (K-Entry):					
5 years, < 3 months	19.6 (80)	4.3 (67)	8.6 (66)	7.0	4.9
5 years, 3 to 6 months	19.6 (83)	4.6 (79)	8.9 (72)	6.8	5.2
5 years, 6 to 9 months	19.8 (89)	4.5 (75)	9.1 (74)	7.4	5.5
5 years, 9 to 12 months	19.8 (90)	4.6 (81)	9.4 (80)	7.8	5.7
Race:					
White	19.8 (87)	4.6 (78)	9.1 (74)	7.7	5.4
Black	19.6 (82)	4.4 (70)	8.8 (69)	6.3	5.0
Hispanic	18.9 (87)	4.7 (87)	8.8 (75)	6.9	5.2
Other	19.9 (97)	4.4 (71)	9.5 (85)	7.6	5.7
Mother's Education:					
Less than High School	19.5 (84)	4.4 (72)	7.8 (46)	6.0	4.4
High School Degree	19.6 (84)	4.5 (74)	8.9 (71)	7.0	5.2
Bachelor's Degree	19.8 (87)	4.7 (82)	9.4 (81)	8.0	5.8
Graduate or Professional	19.9 (93)	4.6 (79)	9.8 (93)	8.6	5.8
Income:					
Low (Less than 30K)	19.5 (82)	4.3 (66)	8.3 (57)	6.2	4.8
Medium (30K-70K)	19.8 (87)	4.6 (78)	9.2 (78)	7.4	5.4
High (More than 70K)	19.8 (89)	4.8 (86)	9.6 (86)	8.5	5.8

<sup>a</sup> Significant differences were found on the Color Bears Skills Test for sex (females higher than males), and income (between the low and medium income groups.)

<sup>b</sup> Significant differences were found on the Counting Bears Skills Test for education (between children whose mothers had a high school diploma and children whose mothers had a Bachelors degree), and income (between children from the lower income groups and children from the medium and high income groups).

<sup>c</sup> Significant differences were found on the Number Naming Skills Test for sex (females higher than males), age (older children knew more numbers than younger children), education (between children whose mothers had less than a high school diploma and the other three groups; between children whose mother had a high school diploma and a graduate or professional degree), and income (between children from the lower income group and children from the medium and high income groups).

<sup>d</sup> Significant differences were found on the Story and Print Concepts Skills Test for sex (females higher than males), age (children from the older age group scored higher than children from the younger age group and children from the second youngest age group), race (between White and Black children), mother’s education (between children whose mothers had less than a high school diploma and children whose mothers had a Bachelor’s degree or post Bachelor’s degree; children

whose mothers had a high school diploma and children whose mothers had a Bachelor's degree or post Bachelor's degree), and income (all three groups).

<sup>e</sup> Significant differences were found on the kindergarten readiness item for sex (females rated higher than males), age (between children in the oldest group and children in the youngest group), mother's education (all groups differed significantly from each other excluding mothers with Bachelor's degrees and mothers with post Bachelor education), and income (children from the lowest income groups and children from the medium and high income groups).

### Differences by Economic and Family Risk: Standardized Direct Assessments

Children from families at low economic risk scored above the national norm (mean=104.6) on an assessment measuring math problem solving skills (WJ-III Applied Problems), while the children from families at high economic risk scored below the national norm (mean=95.38) (Table 3.4). Similarly, only children from families with low family risk scored above the national norm on this same test (mean=102.93). These children outperformed children from families with high levels of risk.

Table 3.4 reports the results from the standardized assessments comparing families at low and high economic and family risk. On all of the standardized assessments, children at low economic risk were significantly more likely to score higher than children at high economic risk. For example, on a test measuring receptive language (PPVT-III), children from the low economic risk group scored above the national average (102.1), while children from the high economic risk group scored below the national average (91.5). The differences between the two groups are most pronounced with the two subtests measuring phonemic awareness where the averages for children from high economic risk groups (8.1 and 8.4) are well below the national average (10) and approximately 1.5 points below children from low economic risk groups (9.6 and 10.0). Examining the sample by family risk categories yields similar results. On all of the standardized assessments, children from families with lower family risk categories scored, on average, significantly higher than children from families with higher family risk categories. For the tests measuring receptive vocabulary and pre-math skills, children from low family risk scored, on average, above the national norm while children from high family risk scored below the national norm. The greatest difference between the two groups of family risk is also for the tests measuring phonemic awareness.

**Table 3.4: Results from Standardized Assessments Fall 2002) by Economic and Family Risk Levels** <sup>a, b</sup>

	PPVT-III (mean=100; sd=15)	WJ-III Letter-Word (mean=100; sd=15)	WJ-III Applied Problems (mean=100; sd=15)	CTOPP - Elision (mean=10; sd=3)	CTOPP - Sound Matching (mean=10; sd=3)
<b>Economic Risk:</b>					
Low (n=452)	102.1 (12.7)	109.7 (12.1)	104.6 (12.8)	9.6 (2.4)	10.0 (2.2)
High (n=203)	91.5 (11.1)	100.7 (10.9)	95.4 (12.0)	8.1 (2.1)	8.4 (2.0)

<b>Family Risk:</b>					
Low (n=494)	100.9 (12.9)	107.6 (12.8)	102.9 (13.1)	9.4 (2.5)	9.7 (2.2)
High (n=161)	92.7 (12.1)	104.8 (10.9)	98.0 (12.9)	8.5 (2.2)	8.9 (2.1)
<b>Overall:</b> (n=655)	98.9 (13.2)	106.9 (12.4)	101.7 (13.2)	9.1 (2.4)	9.5 (2.2)

<sup>a</sup> Children from low economic risk families score significantly higher than children from high economic risk families on all of the standardized assessments.

<sup>b</sup> Children from low family risk score significantly higher than children from high family risk on all of the standardized assessments.

### Differences by Economic and Family Risk: Non-standardized Direct Assessments

Children whose families are more likely to be affluent perform better than other children in naming numbers, naming colors, and counting to ten (Table 3.5). Overall, 73 percent of children in the sample could recognize all of the printed numbers. However, 81 percent of the children from families with low economic risk groups could correctly name the numbers 1 to 10 compared to 57 percent of the children from families with high economic risk. Children from the low economic risk group were more likely to score higher than children in the high economic risk group on the test measuring early literacy skills (Story and Print). Differences between the two economic risk groups are significant for all of the skills tests. Results are not as conclusive when examining the results by family risk categories. For example, significant differences were only found for the early literacy tests and the test measuring the children's ability to count to ten. Children from families with low family risk were more likely to score higher on these tests than children from families with high family risk.

**Table 3.5: Results from Skills Test (Fall 2002) for Economic and Family Risk Levels<sup>a, b</sup>**

	<b>Color Bears</b> 0-20 (% Mastery)	<b>Counting Bears</b> 1-5 (% Mastery)	<b>Number Naming</b> 0-10 (% Mastery)	<b>Story and Print Concepts</b>
<b>Economic Risk:</b>				
Low (n=451)	19.8 (88%)	4.6 (80%)	9.4 (81%)	7.7
High (n=203)	19.4 (80%)	4.3 (67%)	8.2 (57%)	6.2

<b>Family Risk:</b>				
Low (n=493)	19.7 (87%)	4.6 (78%)	9.1 (75%)	7.4
High (n=161)	19.6 (83%)	4.4 (69%)	8.8 (68%)	6.8
<b>Overall:</b> (n=654)	19.7 (86%)	4.5 (76%)	9.0 (73%)	7.3

<sup>a</sup> Children from low economic risk families score significantly higher than children from high economic risk families on all of the skill tests.

<sup>b</sup> Children from low family risk score significantly higher than children from high family risk on the Counting Bears and Story and Print Concepts skills tests.

### Differences by Economic and Family Risk: Ratings by Teachers

Teachers' ratings of the children upon entry into kindergarten were assessed using items on the beginning of the year Student Rating Form. Specifically, teachers rated children using a seven point scale on a variety of items measuring cognition and general knowledge, communication, behavior, health and wellness, and overall kindergarten readiness. Table 3.6 details the results of the teachers' ratings by economic and family risk. The measure "academic skills" is a composite variable of teacher ratings of math and language arts abilities such as reading and counting. The average for the overall sample was 4.9. Teachers rated children with low economic risk (mean=5.1) significantly higher than children with high economic risk (4.3). Similarly, children from families at lower family risk were rated significantly higher on academic skills than children from families at high family risk (5.0 and 4.6 respectively). Communication skills reflect the teacher's ratings of the child's ability to make conversation, communicate with others, and express him or herself positively. Overall, teachers rated children in the sample as "good" for their communication skills (average=5.0). Children in both the low risk groups received significantly higher ratings than those of the children in the high risk groups.

Kindergarten teachers provided ratings of children on a number of items measuring their perceptions of the children's social and emotional development. Three of these items were combined to compare children's general behavior in the area of social and emotional development; these items related to the children's respect for authority, ethical behavior, and refusal skills. Teachers considered Georgia's children to begin kindergarten with good social and behavioral skills (average=5.1). However, similar to academic and communication skills, teachers also rated children from low economic risk families higher than children at high economic risk (5.2 and 4.8). When comparing group average ratings using family risk status, children at low family risk were rated higher than the children considered at high family risk (also 5.2 and 4.8).

Three items on the Student Rating Form combined to create a composite health rating reflecting the teacher's perception of a child's general health, overall appearance, and the extent to which the child seemed well-rested. According to their kindergarten teachers,

children in the low economic risk group were significantly better off health-wise than children in the high economic risk group (5.9 and 5.3), even though both groups were considered by their teachers to be in good health. Children in the low family risk group were also more likely to be rated higher than children at high family risk, yet both groups were rated as being between good and very good health.

Kindergarten readiness was measured using one item that required the teacher to gauge how ready each child was for kindergarten. Overall, the kindergarteners' readiness was judged to be good by their teachers. Even though children from families at high economic risk and high family risk were rated significantly lower on this item than children from families at low economic and family risk, respectively, all groups were rated above average. Even Georgia's children from families considered at high risk economically speaking were judged ready for kindergarten.

**Table 3.6: Teacher Ratings (Fall 2002) by Economic and Family Risk<sup>a, b</sup>**

	<b>Academic Skills</b> Mean/(sd)	<b>Communication Skills</b> Mean/(sd)	<b>Social and Behavior Skills</b> Mean/(sd)	<b>Health and Wellness</b> Mean/(sd)	<b>Kindergarten Readiness</b> Mean/(sd)
<b>Economic Risk:</b>					
Low (n=391)	5.1 (1.3)	5.2 (1.2)	5.2 (1.2)	5.9 (1.0)	5.6 (1.4)
High (n=173)	4.3 (1.4)	4.8 (1.2)	4.8 (1.2)	5.3 (1.1)	4.8 (1.6)
<b>Family Risk:</b>					
Low (n=424)	5.0 (1.4)	5.1 (1.3)	5.2 (1.2)	5.8 (1.0)	5.4 (1.4)
High (n=139)	4.6 (1.4)	4.7 (1.3)	4.8 (1.2)	5.6 (1.1)	5.1 (1.7)
<b>Overall:</b> (n=564)	4.9 (1.4)	5.0 (1.3)	5.1 (1.2)	5.7 (1.1)	5.3 (1.5)

<sup>a</sup> Children from low economic risk families are rated significantly higher than children from high economic risk families on all domains.

<sup>b</sup> Children from low family risk are rated significantly higher than children from high family risk on all domains.

On the student rating form, each teacher also indicated: a) whether or not the child was eligible for language assistance services, b) was or would be discussed at a student support team meeting (SST) during the school year, and c) whether or not the child was currently receiving special services prescribed by an Individualized Education Plan (IEP). Table 3.7 reports the percentage of students receiving these services. Overall, eight percent of the total sample was reported as receiving English as a Second or Other Language (ESOL)

services, 20 percent would be discussed at a student support team meeting, and 10 percent was receiving special services prescribed by an IEP plan. For language assistance services, significant differences were noted between the low economic risk and high economic risk groups, with 14 percent of the latter group eligible for language assistance services compared to only 4 percent of the low economic group. There were no significant differences by family risk status on eligibility for ESOL services. Children from both high economic and high family risk were more likely to be discussed at a student support team meeting than students from the other group. Significant differences were not found for special services prescribed by an IEP.

**Table 3.7: Percentage of Children Receiving Special Services by Economic and Family Risk Categories**<sup>a, b</sup>

	<b>% Eligible for Language Assistance Service</b>	<b>% SST</b>	<b>% IEP</b>
<b>Economic Risk:</b>			
Low (n=391)	4	15	10
High (n=173)	14	31	12
<b>Family Risk:</b>			
Low (n=424)	6	7	10
High (n=139)	10	28	11
<b>Overall:</b> (n=550)	7	20	10

<sup>a</sup> Children from high economic risk families are significantly more likely to be eligible for language assistance services than children from low economic risk families and to be discussed at a student support team meeting. Differences were not found between the two groups for IEP.

<sup>b</sup> Significant differences are not found between children from low family risk and high family risk.

### **Differences by Economic and Family Risk: Parent Ratings of Health**

Parents responded to a survey item rating their children's general health on a five-point scale where the lower the rating, the better the child's perceived health. By the beginning of kindergarten, parents of children in the low economic risk group were more likely to rate their children's health better than that of the parents of children in the high economic risk group, 1.5 compared to 1.8 (Table 3.8). There were no significant differences on parents' ratings of children's health when comparing across family risk status.

**Table 3.8: Results of Parent Survey for General Health at Kindergarten Entry (Fall 2002) by Economic and Family Risk Categories<sup>a, b</sup>**

	General Health Rating Mean/(SD)
<b>Economic Risk:</b>	
Low (n=301)	1.5 (.65)
High (n=104)	1.8 (.78)
<b>Family Risk:</b>	
Low (n=310)	1.6 (.68)
High (n=95)	1.6 (.73)
<b>Overall:</b> (n=405)	1.6 (.70)

<sup>a</sup> Children from low economic risk groups were significantly rated higher by their parents than children from high economic risk groups

<sup>b</sup> Significant differences were not found between the two groups.

## Summary

Most of the significant differences between the children's developmental status on the standardized assessments, when broken down by individual risk factors, are in line with previous research. Girls outperformed boys on standardized assessments measuring pre-reading and pre-math skills, as well as phonological awareness. In addition, girls are more likely to know basic colors, basic numbers and pre-reading concepts related to story and print.

Older children outperform the younger children in terms of number naming and pre-reading, which were measured by non-standardized instruments. While younger children appear to outperform the older age groups on standardized assessments, these differences may be explained by the thresholds established in the norming process. Younger children on average did not answer more questions correctly than the older children, but because their standardized scores were based on a lower threshold, they may score higher relative to national norms.

Consistent with other research, children with more educated mothers performed better across the board. Overall, children with mothers having less than a high school degree tended to score significantly lower than the other children when identifying basic numbers from one to ten. When counting using one-to-one correspondence, these children also scored significantly lower than children whose mothers had a Bachelor's degree.

Children who were identified as White were more likely to score higher on the standardized assessments and on the measure of story and print concepts, but not on basic skills when compared with minority children. In addition, children whose parents reported higher family incomes were more likely to outperform the children represented in the other income groups.

Differences by economic and family risk status were evident on measures of children's cognition and general knowledge, language development and communication skills, social and emotional development, and to some extent on their health and well-being. Overall, children in the low economic risk group tended to do better than children in the high economic risk group. Conversely, the children categorized as high risk for economic factors were more likely to do less well than children with low risk.

Similar but slightly less pronounced differences were seen with regard to the impact of family risk status on children's performance on standardized assessments measuring cognition and general knowledge, as well as skills tests measuring basic color and counting awareness, and familiarity with printed material. Children in the low family risk group tended to outperform children in the high family risk group. Teachers' ratings of children's academic skills and kindergarten readiness tended to reflect these same findings. However, differences among the children when looking at family risk status were not as clear when considering teachers' ratings on communication and language development, social and emotional development, and general health.

As expected, the skills and knowledge possessed by children entering kindergarten are strongly related to family and economic risk factors. Though this report does not specifically delve into differences related to preschool experience, evidence has shown that the same family and economic risk factors are strongly related to parental preschool choice. Children with high family and economic risk factors were more likely to attend a Head Start or Georgia Pre-K Program, whereas children with low family and economic risk factors were more likely to attend private preschool or a variety of less formal preschool programs. These findings are not surprising. However, as the kindergarten curriculum becomes increasingly tilted toward academics, the impact that these risk factors have on preschool selection and subsequent readiness begs for further research.

## Chapter 4: Conclusions

This report presents a multi-faceted picture of children entering kindergarten in Georgia. On average, children begin their kindergarten year equipped with essential basic skills and scoring close to or higher than the national average on standardized assessments. For example, 86 percent of the children were able to identify their basic colors, and 73 percent were able to identify numbers one to ten. When compared to national norms, Georgia's children scored above average on measures of letter-word recognition and knowledge of general mathematical concepts. These children approached national norms on their receptive vocabulary skills and phonemic awareness.

Although these scores, on average, appear promising, there are a substantial number of children in Georgia who are at a significant disadvantage due to economic and family circumstances. Most of the children in our sample had parents with at least a high school degree, but only a third of the mothers and fathers had completed a Bachelor's degree or more. Furthermore, 15 percent of the children were born to a teenage mother, 14 percent received Food Stamps, and 27 percent had publicly subsidized health insurance.

Publicly subsidized preschools, Head Start and Pre-K, serve two-thirds of Georgia's four-year-olds and a disproportionately high percentage of the children who are most at risk of later school failure. Thirty percent of children who attended Georgia Pre-K and 87 percent of children who attended Head Start were classified at high economic risk, using a comprehensive measure of risk that combines parental education, participation in means tested federal programs, and income. These figures compare to 12 percent of children who attended private preschool and 26 percent of children with no formal preschool.

The differences in the economic risk factors translate into substantial differences regarding the skills and knowledge necessary for children to do well as they begin kindergarten. In general, children from families with high economic risk scored lower on the skills tests and standardized assessments. For example, on a measure of receptive vocabulary, the average score for children at high economic risk was 91.5, which differed significantly from the average scores for children at low economic risk (102.1). Teachers also rated children at high economic risk significantly lower on their academic and communication skills, behavior, and overall kindergarten readiness, than children from low economic risk.

The averages presented in this report reveal a picture of children in Georgia entering kindergarten well-prepared for their upcoming school year. During the regular school year, parents have a wide range of subsidized choices for their four-year-olds. The high quality of these subsidized choices (Henry et al., 2003) reflects an impact of the universal approach that Georgia uses to deal with problems in the preschool market that occur elsewhere in the nation. That is, many parents, including those who could afford high quality preschool, may not be able to find a high quality preschool or may be unwilling to pay the cost for it, even though it might be the preschool that best meets the needs of their children.

In Georgia, parents have more high quality spaces for four-year-olds available to them. And, because of Georgia Pre-K and Head Start, the parents do not bear the additional cost for the higher quality places for their children. The Georgia Pre-K Program actively monitors and reports on the quality of their sites and has subsequently raised the floor of acceptable

quality for most four-year-olds (Henderson, Rickman, Gordon, Herk, Stone, and Devivo, 2003). This is particularly important given research that shows that quality is more influential as children get older (NICHD Early Child Care Research Network, 2002). However, other research strongly suggests that children not in the Georgia Pre-K Program, including those too young for the program, receive distinctly lower quality experiences in child care settings than are available to four-year-olds (Henderson, et al., 2003).

Still, with all of the positive indicators, looking at averages leaves part of the story untold. Many children in Georgia enter kindergarten at significant economic and family risk. Many of these children do not have essential basic skills: 43 percent cannot count, and 33 percent cannot name ten colors. In addition, nearly one-third of the children were formally considered for some type of intervention when they began kindergarten.

Having laid the groundwork for school success through programs for four-year-olds, Georgia is now in a position to consider how to raise the readiness of its most economically disadvantaged children who, as a group, lag their peers developmentally. A first step could be to build a more integrated partnership with other publicly funded programs, in particular with Head Start. Expanded cooperation between Georgia's Pre-K Program and Head Start may lead to refinements that could benefit children in poverty. For example, Head Start may be able to shift some resources to provide more economically disadvantaged three-year-olds with comprehensive services, including preschool. These children could receive medical, dental, and sight and hearing screenings at an earlier age than many of them do now. Moreover, they could receive developmentally oriented preschool services from Head Start providers that have been shown to be effective in studies of Early Head Start (Love, Kisker, Ross, Schochet, Brooks-Gunn, Paulsell, Boller, Constantine, Vogel, Fuligni, and Brady-Smith, 2002).

However, if Head Start begins to serve proportionately more three-year-olds, there are many potential consequences. First, to serve younger children, class sizes may need to be reduced in Head Start classes. Compared to four-year-olds can participate in appropriate developmental activities with less intensive teacher supervision and are more independent since they have more self-care skills. Second, because many Head Start classes operate with multi-age groupings, the younger children may have less developmentally rich experiences if they are not interacting with as many four-year-olds. Together, these issues would need to be carefully addressed with willing Head Start providers to see if increasing the numbers of three-year-olds receiving services is feasible.

Furthermore, if Head Start spaces for this age group declined as a result of concentrating on three-year olds, the Georgia Pre-K Program would need to offer more subsidized spaces for four-year-olds. Clearly, any movement toward serving more three-year-olds through Head Start would need to ensure that the four-year-olds who are being served through that program would find spaces in a Georgia Pre-K Program site. One option is to focus any expected growth of Pre-K in areas where Head Start providers are willing to concentrate their services on three-year-olds. In addition, Head Start administrators may wish to consider allocating any growth in the number of slots authorized by the federal government to Georgia to programs willing to recruit and serve three-year-olds.

It may also be possible to improve school readiness by using existing Pre-K classes during the summer for lower income children. These classes are already well equipped, although additional wear-and-tear could result in more costs for equipment and materials. But summer use of these classrooms on a publicly subsidized or unsubsidized basis could reduce the substantial summer learning loss that was documented in an earlier study (Henry et al., 2003).

Finally, it may be possible to explore alternative funding streams for these complementary programs. All sources of funding – federal, state, local, and private -- should be scrutinized as possible means for operating summer enrichment classes in Pre-K sites for lower income families. Support from private foundations and business partners may be cultivated locally for providing enriched developmental activities to bridge Pre-K and Head Start with kindergarten. Summer bridge programs may be encouraged by having the state authorize the use of the classrooms for children from high poverty families, if local organizations develop additional resources needed to operate the programs.

In many respects, Georgia leads the nation in providing programs to increase school readiness. The first comprehensive study of kindergarten readiness shows that eight years after Pre-K, most children start school ready to learn and with the skills needed for success. However, persistent patterns that link poverty and low levels of school readiness continue in Georgia as they do throughout the nation. Georgia is well poised to continue its progress in addressing these problems. Through creativity, cooperation, and collaboration, Georgia can make further strides in breaking historical relationships between poverty and school failure in creating a bright future for all of its young children.

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