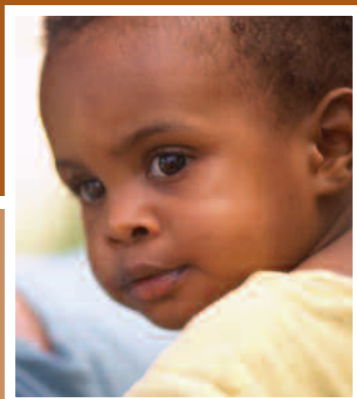


# Early Learning Coalition of Duval

Report 2007-08

Final Edition





Early Learning Coalition  
of Duval

## **EARLY LEARNING COALITION OF DUVAL REPORT**

**2007-08**  
**FINAL EDITION**

Written by:  
Stephanie Wehry, Ph.D.  
Assistant Director for Research  
Florida Institute of Education  
at the  
University of North Florida

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## Introduction

Recognition by parents, policymakers, business leaders, and the general public of the importance of children's first 5 years of life in promoting their healthy physical, emotional, social, and cognitive development is increasing. Research continues to document the importance of the quality of early learning opportunities to children's school readiness and later school success. Finally, cost-benefit studies report that the economic return for high-quality preschool interventions is higher than other youth-centered interventions.

The Early Learning Coalition of Duval, Inc. (ELC), working in collaboration with the Jacksonville Early Literacy Partnership (JELP), accepted the challenge of significantly improving the quality of the early care and learning services provided to Jacksonville's youngest citizens with special focus on programs serving the most vulnerable children. This community-wide collaboration resulted in designing and implementing a variety of strategies. Examples include improving the quality of early care and learning services by increasing community awareness and staff training; providing intensive center-based support and coaching to early care and learning teachers; providing mini-grants to improve the quality of classroom environments and instruction; providing centers with research-based curricula; distributing books to families; and providing instructional interventions to children in most need of additional help.

The combined efforts of ELC and JELP support the quality of early care and learning centers through the *Guiding Stars of Duval* initiative which offers three phases of support with the most intensive phase being the second phase. In this study we used data collected from samples of children and early care and learning centers participating in the

first two of the three support phases and also documented the commitment of the ELC and JELP to answering evaluation questions, monitoring progress, and using the results to inform decision making and guide future actions.

### **2007-2008 Participating Children and Centers**

In 2007-2008, ELC continued its leadership role in improving the quality of early care and learning services for Jacksonville's School Readiness children (children from low-income families receiving subsidized child care) and children attending child care centers affiliated with the *Guiding Stars of Duval* initiative. Two levels of *Guiding Stars of Duval* support, *Phase I: Quality Connections* (ELC/QC) and *Phase II: Quality Rating Improvement System* (QRIS), are included in this report. ELC/QC educational specialists are funded by ELC, and QRIS intensive support coaches are funded by the Mayor's Office and the City of Jacksonville through JELP. The Jacksonville Children's Commission (JCC) and Episcopal Children's Services (ECS) employ the JELP intensive support coaches. Both ELC educational specialists and JELP intensive support coaches work with participating teachers, staff, and directors.

The ELC/QC is the first level of support for centers committed to improving the quality of early learning opportunities for the enrolled children. This first level of support begins with an environmental assessment using the Infant/Toddler Environment Rating Scale-Revised Edition (infant or toddler classrooms) and the Early Childhood Environment Rating Scale-Revised (preschool classrooms). ELC/QC educational specialists meet with center directors and teachers in the two assessed classrooms at each center to discuss results and strategies for improving environmental quality. They facilitate teachers' ongoing professional development and improvement through one-on-one interactions and

provide the materials and resources that were found deficient by the pre-assessments. ELC/QC center directors and participating teachers share what they learn with other teachers and staff at the center.

During 2007-2008 academic year, seven ELC/QC educational specialists worked with 209 classrooms, 102 infant or toddler classes and 107 preschool classes. ELC/QC educational specialists began the year by visiting each classroom every week. They then moved to a differentiated level of support as specific needs were identified. The typical length of support for the two targeted classrooms at each center was about 6 months.

QRIS provides intensive embedded coaching and funds for classroom curriculum materials and resources. QRIS intensive support coaches (JELP: ECS/JCC) assist classroom teachers as they implement rich learning environments and use research-based, literacy-focused curricula designed to improve children’s readiness for school. In the 2007-2008 academic year, QRIS provided intensive coaching support to 229 preschool and 235 infant/toddler classrooms in 92 child care centers serving approximately 4,742 children, 2,119 infant/toddlers and 2,623 preschoolers. Table 1 presents the number of centers, classrooms, and children served by partner organizations in the *Guiding Stars of Duval* ELC/QC and QRIS phases.

Table 1  
*The Number of Centers, Teachers, and Children Served by Affiliated Partners (as of September 2007)*

Support Phase	Collaborative Partner	Centers	Number of Classes	Children
<b>Phase I:QC</b>	<b>Early Learning Coalition of Duval, Inc. (ELC)</b>	141	107 Preschool	1,721
			102 Infant/Toddler	605
<b>Phase II:QRIS</b>	<b>Episcopal Children’s Services (ECS)</b>	46	117 Preschool	1,264
			114 Infant/Toddler	1,001
<b>Phase II:QRIS</b>	<b>Jacksonville Children’s Commission (JCC)</b>	46	112 Preschool	1,359
			121 Infant/Toddler	1,118

## Measurement Instruments

The Test of Early Reading Ability—Third Edition (TERA-3) and the Alphabet Letter Recognition Inventory (ALRI) were used to assess important components of children’s early reading readiness. The Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R) served as the pretest and posttest assessment of children’s school readiness. FIE-trained assessors administered the TERA-3, BBCS-3:R, and ALRI in one-on-one settings. Responses to the three assessments were recorded on scannable forms and computer scored.

### *Test of Early Reading Achievement—Third Edition (TERA-3)*

The TERA-3 is a norm-referenced test that assesses components of early reading skills, including familiarity with the letters of the alphabet and numerals, discovery of the arbitrary conventions used in reading and writing English, and recognition that print conveys information, ideas, and thoughts. The test is composed of three scales: Alphabet, Conventions, and Meaning, each measuring one of the three components. In addition, a composite score, called the Reading Quotient, is the standardized sum of the three standardized scale scores.

- ◆ The *Alphabet* scale measures children’s recognition of different forms of printed letters; recognition of the names of letters; and distinction between beginning, middle, and ending sounds in words.
- ◆ The *Conventions* scale measures children’s familiarity with the way books are organized (front to back) and how text on a page is read (left to right and top to bottom).
- ◆ The *Meaning* scale measures children’s understanding of the meanings of printed words.

Children undergo rapid development over the age span covered by the TERA-3; therefore, raw scores are standardized relative to normative groups of children covering the age range of the test. This process adjusts standardized scores for natural maturation and allows detection of gains resulting from programs. (Reading Quotient standardized scores have a mean of 100 and a standard deviation of 15, and standardized TERA-3 scale scores have a mean of 10 and a standard deviation of 3.) Thus, a change or lack of change in standardized scores is always relative to the normative populations and does not represent an absolute gain in knowledge. Based on the normative populations, the performance of children assessed using the TERA-3 can be displayed in seven categories ranging from *Very Poor* to *Very Superior*. Table 2 shows the ranges of the TERA-3 Reading Quotient and the scale scores relative to the national normative population. The scores and their categories are used in this report to indicate the participating children's early reading ability.

Table 2  
*TERA-3 Reading Quotient and Scale Scores by Ability Categories*

Score	Categories						
	<i>Very Poor</i>	<i>Poor</i>	<i>Below Average</i>	<i>Average</i>	<i>Above Average</i>	<i>Superior</i>	<i>Very Superior</i>
<b>Reading Quotient Score Intervals</b>	Below 70	70-79	80-89	90-110	111-120	121-130	Above 130
<b>Scale Score Intervals</b>	Below 4	4-5	6-7	8-12	13-14	15-16	17-20
<b>Percentile Ranking</b>	2 <sup>nd</sup> or lower	3 <sup>rd</sup> to 9 <sup>th</sup>	10 <sup>th</sup> to 25 <sup>th</sup>	26 <sup>th</sup> to 75 <sup>th</sup>	76 <sup>th</sup> to 90 <sup>th</sup>	91 <sup>st</sup> to 97 <sup>th</sup>	98 <sup>th</sup> or higher

### *Alphabet Letter Recognition Inventory (ALRI)*

The ALRI is a locally developed inventory measuring children's ability to recognize and name the upper- and lowercase letters of the alphabet when presented in non-alphabetic order. Assessors use alphabet letter flashcards to administer the ALRI in one-on-one settings. The uppercase letters are presented first, followed by the lowercase letters. The score represents the number of correctly identified letters. ALRI scores are reported in four recognition categories: 0 to 13 letters, 14 to 26 letters, 27 to 39 letters, and 40 to 52 letters.

The *Early Childhood Longitudinal Study-Kindergarten (ECLS-K)* provided a national benchmark for alphabet letter recognition. In the ECLS-K study, a random sample of upper- and lowercase letters was presented to children. ECLS-K researchers classified letter recognition as *proficient* if children named at least 75% of the sampled letters.<sup>1</sup> Findings from ECLS-K data indicated that 66% of children entering kindergarten for the first time were *proficient* in letter recognition.<sup>2</sup>

### *Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R)*

The BBCS-3:R is a battery of 10 scales designed to measure understanding of concepts that have been traditionally thought relevant to the development of young children. The first five scales form the School Readiness Composite (SRC) and assess formal school readiness. Figure 1 presents a diagram of the components of the BBCS-3:R.

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<sup>1</sup> U.S. Department of Education, National Center for Education Statistics. *Early childhood longitudinal study, kindergarten class of 1998-1999: Data files and electronic codebook*. NCES2001-028 {CD ROM} On-line ordering at <http://www.ed.gov?pbus/edpubs.html>

<sup>2</sup> U.S. Department of Education, National Center for Education Statistics. *Entering kindergarten: A portrait of American children when they begin school: Findings from the condition of education*, Nickolas Zill and Jerry West, NCES2001-035, Washington DC: U.S. Government Print Office, 2001. Available at <http://nces.ed.gov/pubs2001/2001023.pdf>

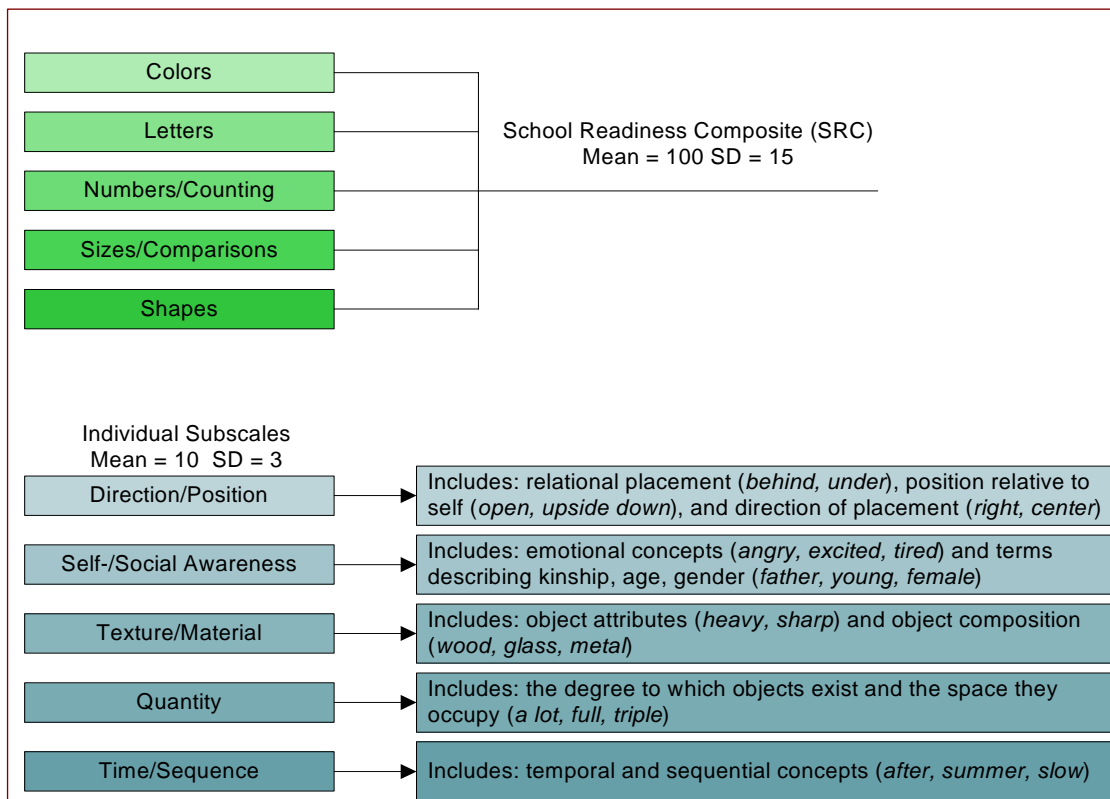


Figure 1. BBCS-3:R structural diagram and composition of the SRC.

The Direction/Position scale measures relational terms that describe position and placement of objects. The Self-/Social Awareness scale measures knowledge of concepts that describe emotional states and kinship. The Texture/Material scale measures knowledge of concepts that describe attributes of objects. The Quantity scale measures knowledge of concepts that describe quantity and how it can be manipulated. The Time/Sequence scale measures concepts that describe occurrences on a continuum and the degree of speed and/or order.

Standardized BBCS-3:R scores have a mean of 10 and a standard deviation of 3. Scores below 4 are classified *Very Delayed*, scores ranging from 4 to 6 are classified *Delayed*, scores ranging from 7 to 13 are classified *Average*, scores ranging from 14 to 16 are classified *Advanced*, and scores above 16 are classified *Very Advanced*.

## Assessing Participating Children

Data for this report were drawn from several populations: (a) JCC and ECS child care centers receiving QRIS intensive support services; (b) ELC Quality Connections child care centers receiving ELC/QC support services; (c) center-based School Readiness children including 4-year-old prekindergarteners and 3-year-old preschoolers who are eligible to attend public school kindergarten during the 2009-2010 academic year and School Readiness children who attended Family Child Care Homes (FCCHs); and (d) Duval County Public Schools fall 2007 Florida School Readiness Screener (FLKRS) data and spring 2008 *Reading First* schools second-grade data. Planned assessments by FIE involved assessing sampled children who were either 3- or 4-years-old by September 1, 2007. Hereafter, 3-year-old preschool and 4-year-old prekindergarten children will simply be called preschool and prekindergarten children and the terms *preschool* and *preschooler* will refer only to 3-year-old preschool children and preschool classes of children eligible to attend public school kindergarten in the 2009-2010 academic year. The 2007-2008 assessment plan, shown in Table 3, details the number of assessments given in fall of 2007.

Table 3  
*2007-2008 ELC Assessment Plan and Counts as of October 2007*

Assessment	Children
<b>BBCS-3:R</b> A sample of eligible preschool and prekindergarten School Readiness children enrolled in child care centers and FCCHs; a sample of prekindergarten children with informed consent who attended ECS and JCC child care centers that received intensive support (QRIS); and a sample of prekindergarten children with informed consent who attended Quality Connection child care centers (ELC/QC)	1,068
<b>TERA-3</b> A sample of prekindergarten children with informed consent who attended ECS and JCC child care centers that received intensive support (QRIS) and a sample of prekindergarten children with informed consent who attended Quality Connection child care centers (ELC/QC)	770
<b>ALRI</b> A sample of prekindergarten children with informed consent who attended ECS and JCC child care centers that received intensive support (QRIS) and a sample of prekindergarten children with informed consent who attended Quality Connection child care centers (ELC/QC)	770

## Attrition of Children

The study of attrition of the participating children was based on the children's BBCS-3:R School Readiness Composite (SRC) scores. The largest number of sampled children was assessed using this measure as it was used across all research questions involving FIE-collected data. Table 4 presents mean fall and spring BBCS-3:R SRC scores for the preschool and prekindergarten children.

Table 4  
*Mean Fall and Spring BBCS-3:R School Readiness Composite Scores for Preschool and Prekindergarten Children*

	Preschool		Prekindergarten	
	<i>n</i>	Mean	<i>n</i>	Mean
Fall	158	7.13	910	8.53
Spring	126	8.07	725	9.27
Attrition	20%		20%	

The discrepancy between the number of BBCS-3:R fall and spring scores represents an attrition rate of 20.3% for both preschoolers and prekindergarteners. A determination of the importance of attrition involved investigating whether the attrition was random or systematic. Systematic attrition could result in the final sample of children being different from the original sample relative to initial school readiness and children's demographic characteristics. The BBCS-3:R SRC fall scores of the participating children who were not administered the BBCS-3:R SRC in the spring (incomplete) were compared to fall scores of children who were administered the BBCS-3:R SRC in the spring (complete). Table 5 presents the summary statistics and results of the analysis.

Table 5

Summary Statistics and ANOVA Results: BBCS-3:R School Readiness Composite Scores by Attrition Category

Preschool					Prekindergarten				
Complete		Incomplete		p-value	Complete		Incomplete		p-value
n	Mean	n	Mean		n	Mean	n	Mean	
126	7.40	32	6.06	.0080*	725	8.70	185	7.82	.0004*

Note: \*  $p < .01$

The analysis of the BBCS-3:R SRC scores indicated that the mean SRC fall score of children who did not complete the preschool or prekindergarten year in their original classes was lower than the mean SRC fall score of children who did complete the year. This finding limits the generalizability of the evaluation results to children with low initial status, as they were not necessarily represented in their true proportion in the study.

### Evaluation Questions

The remainder of this report is organized around five research questions developed by ELC. To form responses to the research questions, the Florida Institute of Education (FIE) trained assessors collected data in one-on-one settings with preschool and prekindergarten children using agreed upon measures and FIE additionally obtained data from routinely administered assessments conducted by Duval County Public Schools. This report responds to the following ELC research questions:

**◆ Question 1: School Readiness Children**

To what extent do ELC School Readiness children demonstrate positive school readiness outcomes as measured by the Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R)?

**◆ Question 2: QRIS**

To what extent do children enrolled in QRIS child care centers demonstrate significant and meaningful gains in early reading ability and school readiness?

◆ **Question 3: 1<sup>st</sup> and 2<sup>nd</sup> Year QRIS and ELC/QC Support**

Do prekindergarten children enrolled in child care centers experiencing their 1<sup>st</sup> year of participation in QRIS, their 2<sup>nd</sup> year of participation in QRIS, and experiencing ELC/QC support demonstrate differences in school readiness and early reading outcomes?

◆ **Question 4: Ongoing Longitudinal Study**

Are the vocabulary development and reading comprehension of 2007-2008 second-grade children who attended Duval County Public School *Reading First* schools different for the children who also attended ELC/JELP-supported prekindergarten in 2004-2005 than for their classmates who did not?

◆ **Question 5: Fall 2007 Kindergarten Readiness**

To what extent do Jacksonville children who entered kindergarten in Duval County Public Schools during the 2007-2008 academic year demonstrate *kindergarten readiness* as measured by the fall 2007 Florida Kindergarten Readiness Screener (FLKRS)?

The responses to these questions come from data obtained during the 2007-2008 academic year including the fall and spring FIE-collected scores from the TERA-3, ALRI, and BBCS-3:R child assessments and also data provided by Duval County Public Schools. Both summary statistics and statistical testing of mean fall and spring scores informed the responses to the research questions. To determine the importance of all statistically significant differences, effect sizes are reported. Cohen classified effect sizes of 20 to 49 percent of a standard deviation as small, between 50 and 79 percent of a standard deviation as medium, and 80 percent or more of a standard deviation as large.<sup>3</sup> Small, medium, and large effect sizes represent meaningful differences. However, Cohen himself and other

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<sup>3</sup> Cohen, J. (1988). *Statistical power analysis for behavioral sciences* (2<sup>nd</sup> ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

statisticians caution against interpreting effect sizes in such absolute terms. Moreover, researchers have demonstrated that small effect sizes can have important practical significance.<sup>4</sup> Kane found that a full year of elementary school resulted in an increase in children's achievement scores of 25% of a standard deviation; therefore, a 12.5% of a standard deviation increase represents the achievement of one half an elementary school year.<sup>5</sup> Bloom, Richburg-Hayes, and Black suggested that program effect sizes as small as 10% of a standard deviation can be important to educational policy.<sup>6</sup>

## Evaluation Results

### Question 1: School Readiness Children

To what extent do ELC School Readiness children demonstrate positive school readiness outcomes as measured by the Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R)?

The extent that ELC School Readiness children (children from low-income families receiving subsidized child care) demonstrated positive school readiness outcomes was determined by whether sampled children made statistically significant fall-to-spring gains on the BBCS-3:R School Readiness Composite and also whether the sampled prekindergarten children made statistically significant fall-to-spring gains on the remaining BBCS-3:R scales. Data used to support the response to this research question came from combining random samples of several groups of children. First, the sampling frame of all school readiness children was stratified by the children's class assignment, that is, as

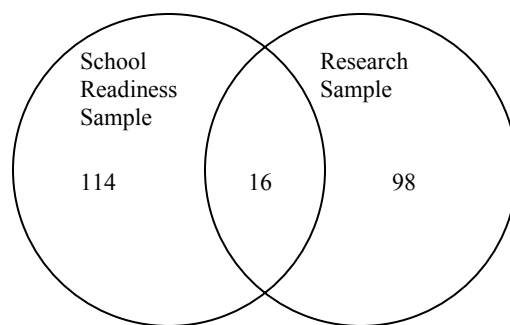
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<sup>4</sup> Borman, G. D., Slavin, R. E., Cheung, A. C. K., Chamberlain, A. M., Madden, N. A., & Chambers, B. (2005). The national randomized field trial of Success for All: Second-year outcomes. *American Educational Research Journal*, 42, 673-696 and Lipsey, M. W. (2003). Those confounded moderators in meta-analysis: Good, bad, and ugly. *Annals of the American Academy of Political and Social Science*, 587, 69-81. doi:10.1177/0002716202250791

<sup>5</sup> Kane, T. (2004). *The impact of after-school programs? Interpreting the results of four recent evaluations*. New York: William T. Grant Foundation. Retrieved from <http://www.afterschool.org/pdf/Grant%20afterschool.pdf>

<sup>6</sup> Bloom, H. S., Richburg-Hayes, L., & Black, A. R. (2007). Using covariates to improve precision for studies that randomize schools to evaluate educational interventions. *Educational Evaluation and Policy Analysis*, 29(1), 30-59. doi:10.3102/0162373707299550

preschoolers or prekindergarteners. A random sample of School Readiness children was then selected from the stratified sampling frame. This sampling resulted in complete BBCS-3:R SRC scores for 126 preschoolers and 114 uniquely sampled prekindergarteners. Additionally, a stratified random sample of prekindergarten children enrolled in ECS and JCC child care centers participating in QRIS and children enrolled in ELC/QC child care centers was selected to respond to ELC Research Questions 2 and 3, and that random sampling resulted in 98 uniquely sampled School Readiness prekindergarten children. Furthermore, 16 additional prekindergarten children were included as part of both random samples. Figure 2 graphically presents the data configuration for the 228 sampled prekindergarteners.



*Figure 2.*  
Data configuration for the combined sample of School Readiness prekindergarten children with complete BBCS-3:R School Readiness Composite scores.

Table 6 presents the child and child care center characteristics of the combined random sample of School Readiness children that contributed the data used in these analyses. Ethnicity data were collected across six categories; however, four categories (*Hispanic, Asian, Mixed, and Other*) were collapsed into one category, *Other*, because of their small representation in the sample.

Table 6

*Demographic Information Describing the Sample of Preschool and Prekindergarten School Readiness Children and Child Care Facilities*

Characteristic	Preschool <i>n</i> = 126	Prekindergarten <i>n</i> = 228
Gender		
Boys	57.1%	53.5%
Girls	42.9%	46.5%
Ethnicity		
Black	83.3%	71.0%
White	10.3%	20.2%
Other	6.4%	8.8%
Source Agency		
School Readiness Sample Only	100.0%	50.0%
Number of SR Only Centers	96	90
ECS Intensive Support Sample		22.8%
Number of ECS Centers		18
JCC Intensive Support Sample		11.4%
Number of JCC Centers		12
ELC/QC Sample		15.8%
Number of ELC/QC Centers		12

The samples of preschool and prekindergarten children included more boys than girls, and the largest ethnicity represented in the samples was Black children. Preschool children at 96 child care centers and prekindergarten children at 132 child care centers contributed data used in these analyses. Additionally, 8 preschoolers and 6 prekindergarteners attended family child care homes.

The categorization of the children as preschoolers or prekindergarteners does not indicate the distribution of their ages. Because of the birthday cut-off for children attending public school kindergarten in Florida, the typical preschool child is between 36 and 48 months old on September 1 of the school year, and the typical prekindergarten child is between 48 and 60 months old on September 1. Figure 3 displays participating preschool and prekindergarten children's ages in months at or above the minimum age for their class assignment relative to the kindergarten cut-off date.

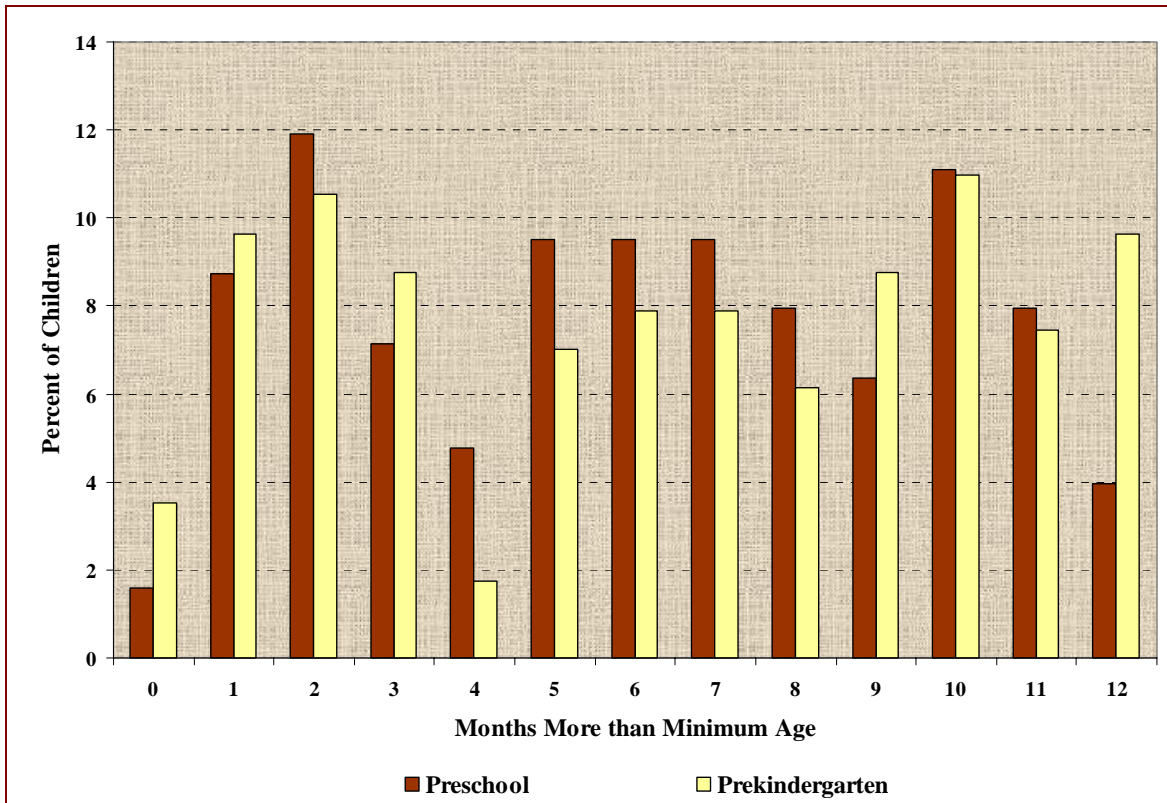


Figure 3. Age (in months at or above the minimum age for their class assignment) on September 1, 2007, of participating School Readiness children with complete BBCS-3:R School Readiness scores.

The ages of the participating children with complete BBCS-3:R SRC scores indicated that 43.7% of the preschool children were 6 months older than the minimum number of months to meet the cut-off age for their class assignment, and 49.1% of the prekindergarten children’s ages were 7 months older than the minimum number of months to meet the cut-off age for their class assignment. The ages of both groups of children reflected the typical age distribution for their class assignment.

Preschool children were assessed using the School Readiness Composite (SRC) portion of the BBCS-3:R while the prekindergarten children were also assessed using the SRC and the five additional BBCS-3:R scales. The analysis of the SRC data was first conducted as one statistical model that controlled for both gender and class assignment. The results of the analysis indicated with probability ( $p = .0478$ ) a time by gender by class

assignment interaction which indicates that children’s achievement over time was different by gender and by class assignment. Figure 4 shows this interaction.

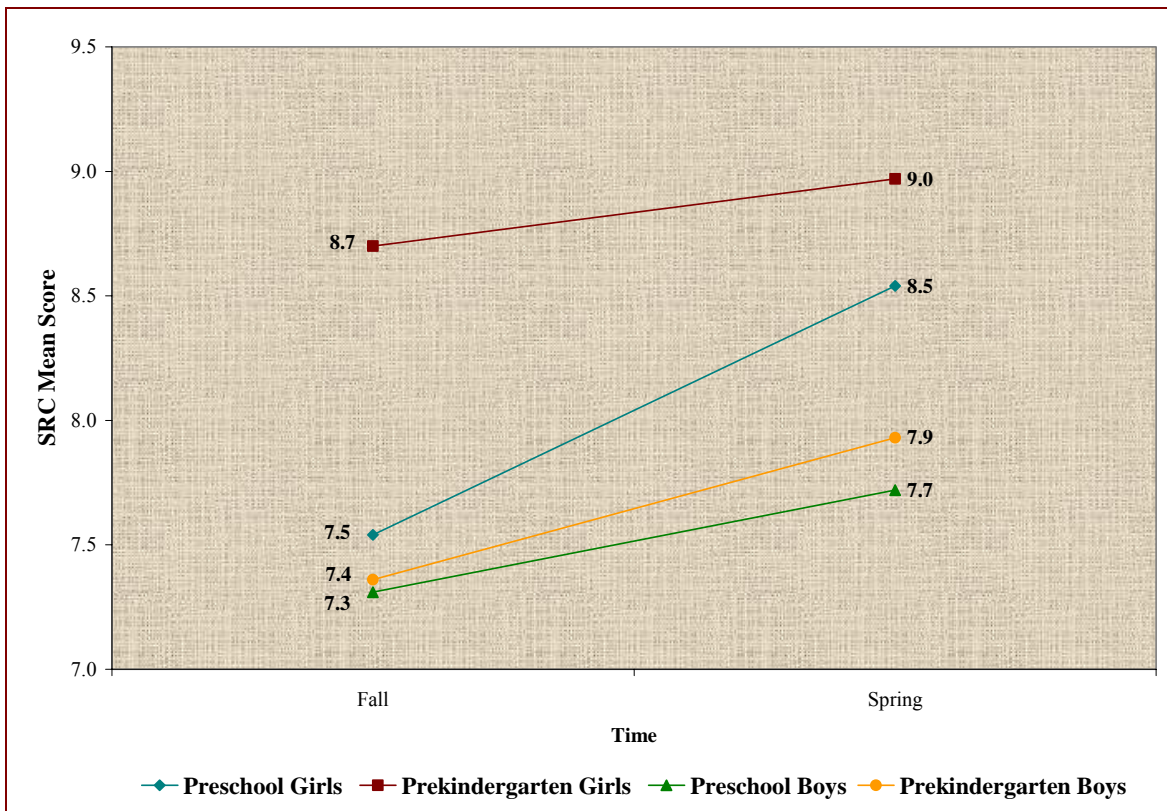


Figure 4. The time by gender by class assignment interaction of the BBSR-3:R School Readiness Composite scores.

The fall-to-spring achievement of the preschool girls clearly exceeded that of the preschool boys and the prekindergarten children. However, the fall-to-spring school readiness gain of the preschool boys and the prekindergarten children does not appear to differ. Table 7 presents summary statistics and separate results of fall and spring BBSR-3:R scores for the preschool and prekindergarten children using repeated-measures ANOVA analyses that controlled for the children’s gender.

Table 7

*BBCS-3:R Summary Statistics and ANOVA Results: School Readiness Sample*

BBCS-3:R Test	Preschool ( <i>n</i> = 126)			Prekindergarten ( <i>n</i> = 228)		
	Fall Mean	Spring Mean	<i>p</i> -value	Fall Mean	Spring Mean	<i>p</i> -value
SRC	7.40	8.07	.0003***	7.98	8.42	.0010***
Direction/Position				8.05	8.36	.0644*
Self-/Social Awareness				7.68	8.03	.0269**
Texture/Material				7.60	7.78	.1867
Quantity				7.57	7.81	.1219
Time/Sequence				8.57	8.44	.3475

Note: \**p* < .10, \*\**p* < .05; \*\*\**p* < .01

Both the preschool and prekindergarten children's mean scores indicated a statistically significant fall-to-spring gains in achievement on the BBCS-3:R SRC measure. The effect sizes associated with these gains were .22 and .15, respectively, for the preschool and prekindergarten children. The prekindergarten children also made statistically significant fall-to-spring gains on the BBCS-3:R Self-/Social Awareness (*p* < .05) and Direction/Position (*p* < .10) scales. The effect sizes associated with these gains were .10 and .12, respectively, for the Direction/Position and Self-/Social Awareness scales. Additionally, for all measures, prekindergarten gains made by girls and boys were not different but girls exhibited higher levels of fall and spring achievement. Table 8 highlights these gender differences.

Table 8

*BBCS-3:R Summary Statistics and ANOVA Results: Prekindergarten Achievement Differences by Gender in Sampled School Readiness Children*

Scale	Girls' Mean		Boys' Mean		<i>p</i> -value
	Fall	Spring	Fall	Spring	
Direction/Position	8.70	9.02	7.48	7.80	.0002*
Self-/Social Awareness	8.66	8.84	6.84	7.33	<.0001*
Texture/Material	8.22	8.32	7.07	7.30	<.0001*
Quantity	8.24	8.54	6.99	7.18	<.0001*
Time/Sequence	9.11	9.01	8.10	7.94	<.0001*

Note: \**p* < .01

The fall gender differences (the girls' mean score was higher than the boys') ranged from a low of 1.01 points on the Time/Sequence scale to a high of 2.18 points on the Self-/Social Awareness scale. Likewise, the spring gender differences (the girls' mean score was higher than the boys') ranged from a low of 1.02 (.34 effect size) on the Texture/Material to a high of 1.51 (.50 effect size) on the Self-/Social Awareness scales.

Another way to look at the ELC School Readiness children's level of school readiness is to look at the fall-to-spring differences in the percentage of scores ranked in the BBSC-3:R School Readiness achievement categories. (Scores below 4 are classified *Very Delayed*, from 4 to 6 are classified *Delayed*, from 7 to 13 are classified *Average*, from 14 to 16 are classified *Advanced*, and above 16 are classified *Very Advanced*.) Figure 5 shows the percentage of preschool scores in these categories in the fall and spring.

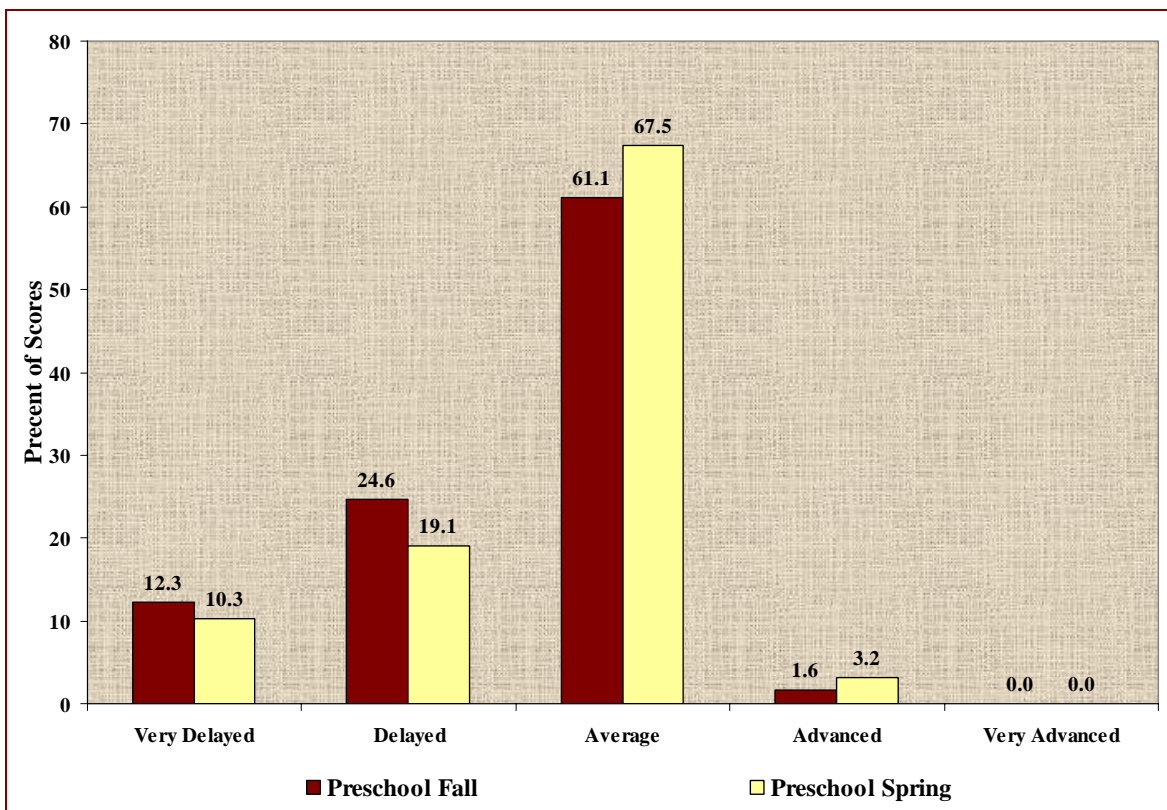


Figure 5. The percent of preschool children's BBSC-3:R School Readiness Composite scores ranked *Very Delayed* to *Very Advanced* in the fall and spring of the school year ( $n = 126$ ).

The preschool children’s BBCS-3:R School Readiness Composite scores showed a mean fall-to-spring gain and, as can be seen in Figure 5, the mean gain resulted in more spring scores categorized *Average* or higher. In the fall, the scores of 62.7% of the preschoolers were classified *Average* or higher and, in the spring, 70.7% of the scores were classified *Average* or higher. Figure 6 shows the percentage of prekindergarten BBCS-3:R School Readiness Composite scores in these categories in the fall and spring.

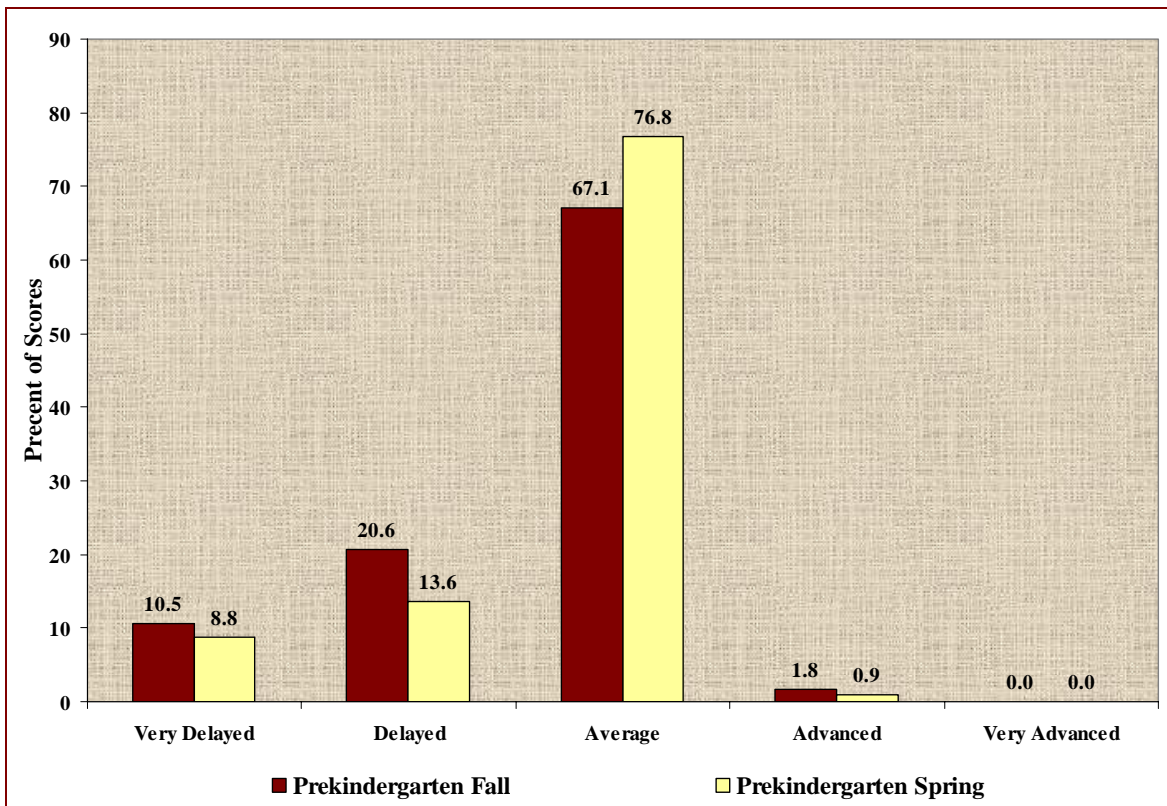


Figure 6. The percent of prekindergarten children’s BBCS-3:R School Readiness Composite scores ranked *Very Delayed* to *Very Advanced* in the fall and spring of the school year ( $n = 228$ ).

The prekindergarten children’s BBCS-3:R School Readiness Composite scores showed a mean fall-to-spring gain and, as can be seen in Figure 6, the mean gain resulted in more spring scores categorized *Average* or higher. In the fall, the scores of 68.9% of the prekindergarten children were classified *Average* or higher and, in the spring, 77.7% of the scores were classified *Average* or higher.

### *School Readiness Summary*

- ◆ The School Readiness sample included both preschool ( $n = 126$ ) and prekindergarten ( $n = 228$ ) children who attended child care centers and family child care homes.
- ◆ The sample included more boys than girls, and the largest percentage of children by ethnicity was Black children.
- ◆ The age range of both the sampled preschool and prekindergarten children was typical for Florida.
- ◆ Both sampled preschool and prekindergarten children demonstrated statistically significant and meaningful gains on the BBCS-3:R School Readiness Composite scale with effect sizes of .22 and .15 for the preschool and prekindergarten children, respectively.
- ◆ In spring, 70.7% of the sampled preschoolers' BBCS-3:R SRC scores and 77.7% of the sampled prekindergarteners' scores were classified as *Average* or higher.
- ◆ The sampled prekindergarten children demonstrated statistically significant gains on the BBCS-3:R Direction/Position and Self-/Social Awareness scales with effect sizes of .10 and .12, respectively.
- ◆ On all sampled prekindergarten BBCS-3:R measures, girls scored higher in the fall and spring than boys; however, boys and girls made the same gains over the school year.

## Question 2: QRIS

To what extent do children enrolled in QRIS child care centers demonstrate significant and meaningful gains in early reading ability and school readiness?

The extent to which children enrolled in QRIS child care centers demonstrated significant and meaningful gains in early reading ability and school readiness was determined by whether sampled children made statistically significant fall-to-spring gains on the BBCS-3:R, TERA-3, and ALRI. Data used to support the response to this research question came from a stratified random sample of children (with informed parental consent) enrolled in ECS and JCC centers receiving their 1<sup>st</sup> or 2<sup>nd</sup> year of QRIS intensive support. In the case of ECS centers, centers receiving their 2<sup>nd</sup> year of QRIS intensive support may have experienced the end of the support during the academic year as ECS centers exit QRIS in the fall rather than spring of the academic year. Table 9 presents information describing the participating children and child care centers. Ethnicity data were collected across six categories; however, four categories (*Hispanic, Asian, Mixed, and Other*) were collapsed into one category, *Other*, because of their small representation.

Table 9

*Demographic Information Describing the Sample of Children Enrolled in ECS or JCC Child Care Centers Receiving Either Their 1<sup>st</sup> or 2<sup>nd</sup> Year of QRIS*

Characteristic	<i>n</i> = 405
Gender	
Boys	52.8%
Girls	47.2%
Ethnicity	
Black	45.4%
White	38.5%
Other	16.1%
School Readiness	18.5%
Source Agency	
ECS QRIS	
Number of Centers	25
Number of Children	230
JCC QRIS	
Number of Centers	16
Number of Children	175

The sample of children with complete scores included more boys than girls, and the largest ethnicity represented in the sample was Black children. The distribution of the children's age was typical for prekindergarten children in Florida. Additionally, slightly less than one fifth of the sampled children were School Readiness children (children from low-income families receiving subsidized child care).

The children were assessed in the fall and spring of the academic year using the TERA-3, the ALRI, and all BBCS-3:R scales. Repeated measures ANOVA statistical models were analyzed to determine if the children made statistically significant and meaningful fall-to-spring gains in early reading ability and school readiness. Table 10 presents the summary statistics and results of the analyses of the scores of the participating children.

Table 10  
*TERA-3, ALRI, and BBCS-3:R Summary Statistics and ANOVA Results: QRIS Sample*

Assessment	Fall Mean	Spring Mean	p-value	Effect Size
TERA-3				
Reading Quotient	92.11	96.44	<.0001*	.289
Alphabet	9.84	11.49	<.0001*	.550
Conventions	8.25	8.43	.1234	
Meaning	8.22	8.41	.1022	
ALRI	26.66	41.78	<.0001*	.964
BBCS-3:R				
School Readiness Composite	8.75	9.38	<.0001*	.213
Direction/Position	8.61	9.22	<.0001*	.203
Self-/Social Awareness	8.35	8.90	<.0001*	.183
Texture/Material	8.68	8.72	.7166	
Quantity	8.29	8.63	.0066*	.113
Time/Sequence	8.74	9.16	.0010*	.140

Note: \* $p < .01$

The positive gains in the abilities measured on the TERA-3 Reading Quotient and Alphabet scale were statistically significant ( $p \leq .01$ ). The small, but meaningful, gain on the Reading Quotient was more than one fourth of a standard deviation. The Alphabet scale gain resulted in a medium effect of slightly more than one half of a standard

deviation, and the mean Alphabet spring score (11.5) ranked higher than the mean of the TERA-3 normative population (10.0). Unlike the 2006-2007 academic year, when ELC reported that QRIS children demonstrated statistically significant gains on the TERA-3 Conventions measure for the first time in five years, the 2007-2008 QRIS children did not achieve statistically significant gains on the Conventions or Meaning scales. Figure 7 shows the historic trend in the TERA-3 Meaning and Convention scale scores beginning with the 2002-2003 academic year. The mean scores shown are the mean of the percentage of correct scores computed by dividing the raw score (number of items correct) by the number of scale items.

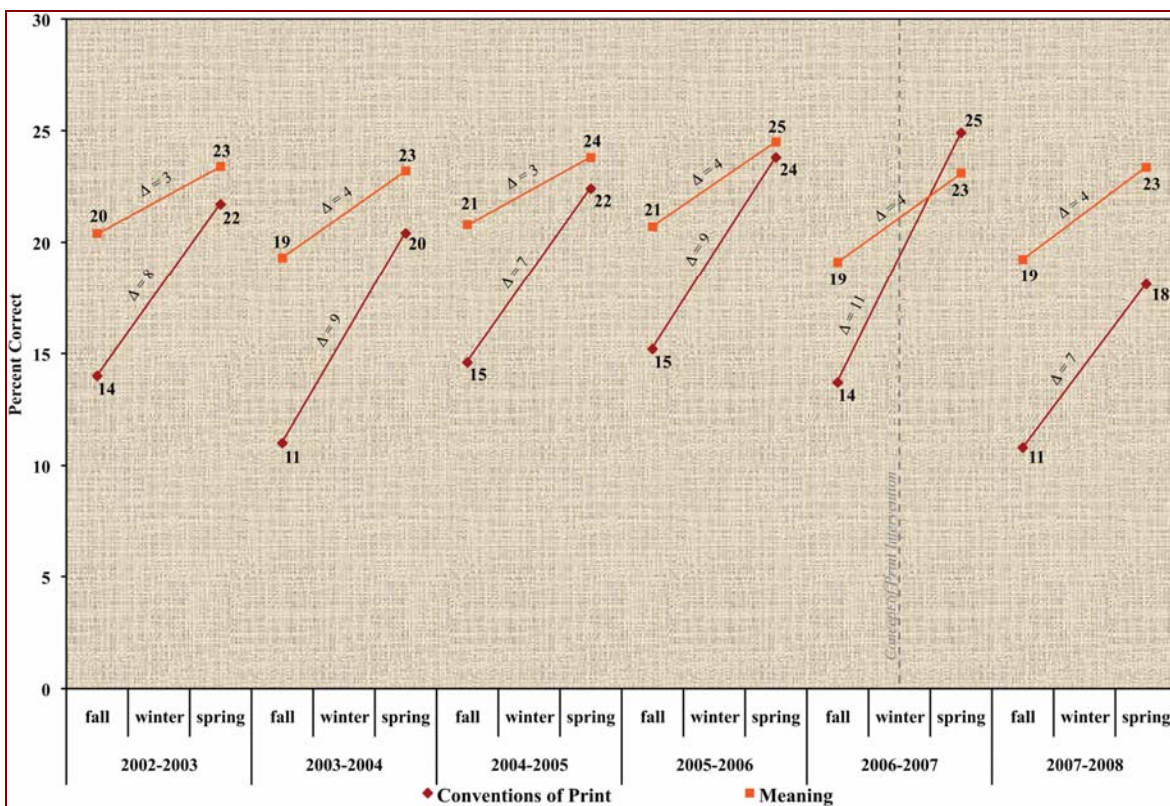


Figure 7. The historic trend (beginning with the 2002-2003 academic year) in TERA-3 Conventions and Meaning scores reported as the percentage of correct responses relative to the number of scale items.

The chart displayed in Figure 7 was originally developed to display the effect of the *Print Concept* initiative which was implemented in early winter 2007 and monitored through

spring 2008. As can be seen in the updated chart, during the 2007-2008 academic year the level of print concept achievement returned to the pre-intervention levels of the 2005-2006 academic year and before. After spring 2007, no information about program implementation or monitoring was available for this report.

The positive gains on the ALRI were statistically significant, and, in the spring, the typical child in QRIS child care centers recognized between 41 and 42 of the 52 letters presented. Furthermore in the spring, 73.6% of the children were *proficient* in letter recognition, recognizing at least 75% of the upper- and lowercase letters.

The positive gains on the BBSC-3:R school readiness scales resulted in statistically significant gains ( $p \leq .01$ ) on all scales except the Texture/Materials scale. The gains on the SRC, Direction/Position, and Self-/Social Awareness scales resulted in small but meaningful effect sizes of about one fifth of a standard deviation.

Another way to look at the early reading ability and school readiness achievement of the children enrolled in QRIS child care centers is to look at the fall-to-spring differences in the percentage of scores ranked in the TERA-3, ALRI, and BBSC-3:R achievement categories. (See page 5, Table 2 for the categories.) Figure 8 shows the percentage of scores in these categories in the fall and spring of the academic year for the TERA-3 Reading Quotient.

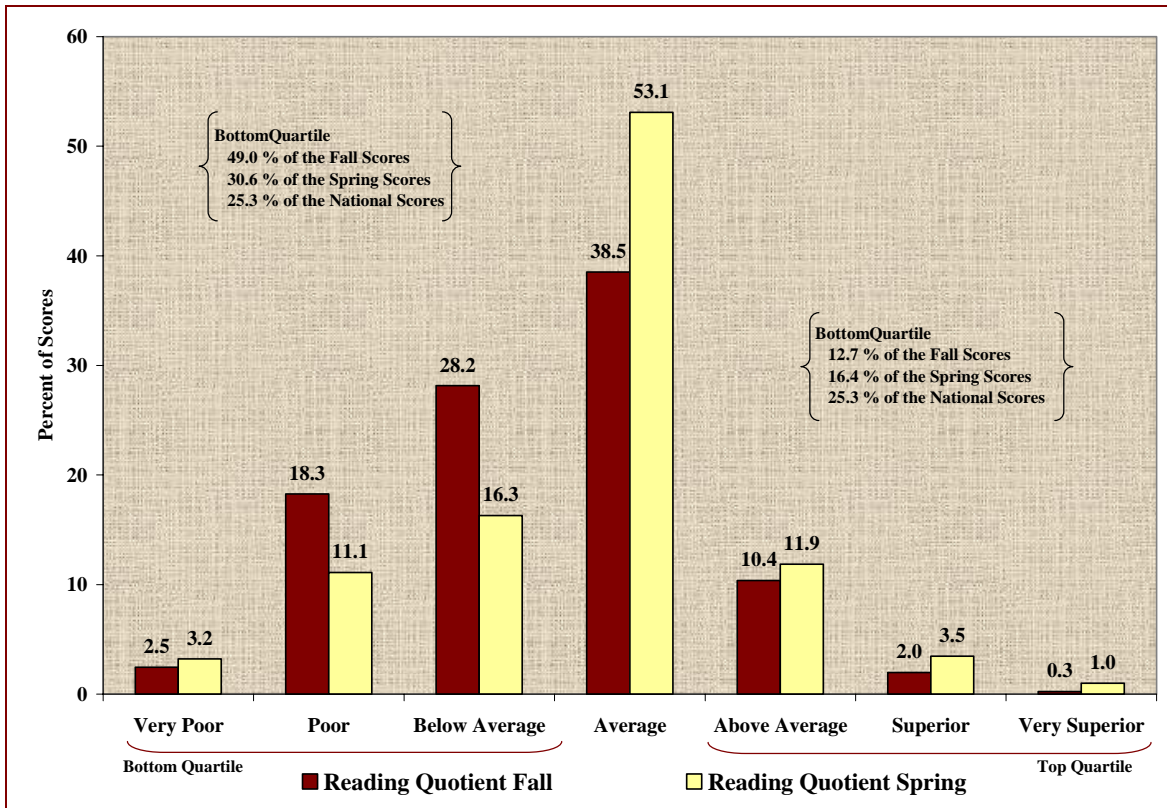


Figure 8. The distributions of TERA-3 Reading Quotient fall and spring scores ( $n = 405$ ).

At the end of the academic year, 30.6% of the TERA-3 Reading Quotient scores ranked no higher than *Below Average* (therefore, ranked in the bottom quartile of national scores), and 16.4% of the TERA-3 Reading Quotient scores ranked no lower than *Above Average* (therefore, ranked in the top quartile of national scores). The percentages represent about 90 fewer scores ranked in the bottom quartile in the spring than in the fall. Figure 9 shows the percentage of scores in these same categories in the fall and spring of the school year for the TERA-3 Alphabet scale.

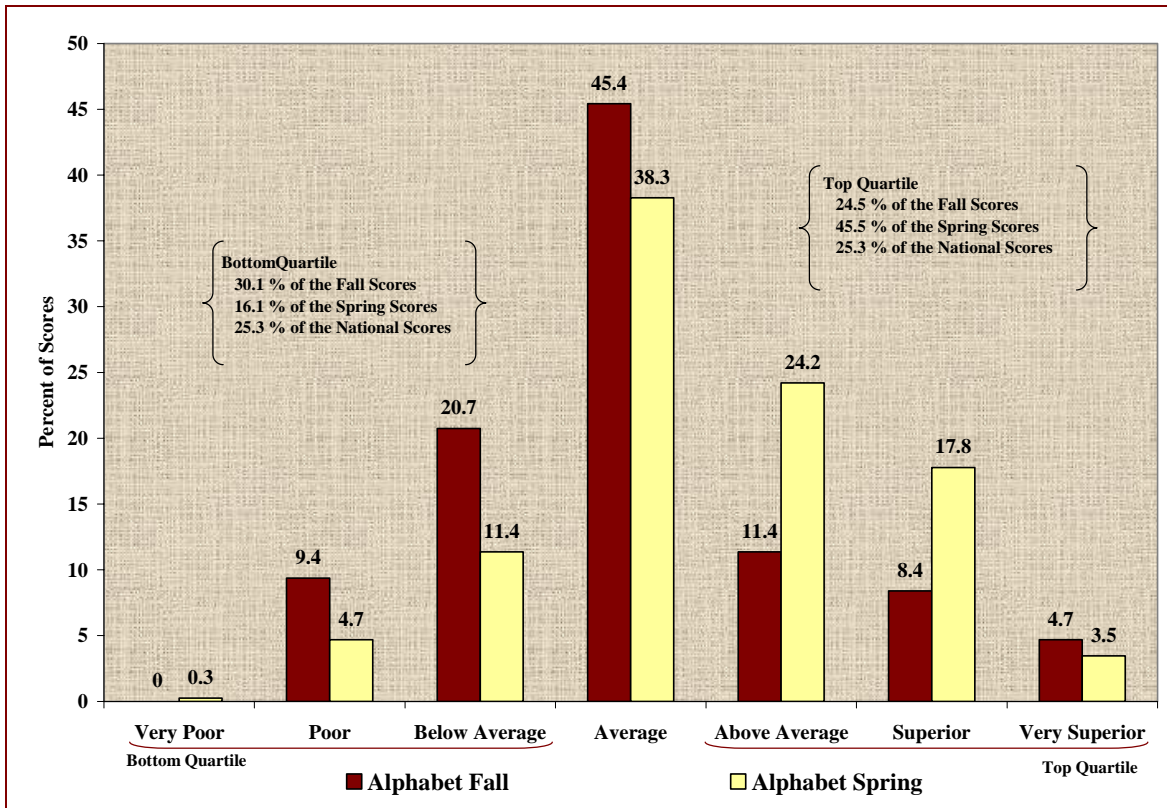


Figure 9. The distributions of TERA-3 Alphabet scale fall and spring scores ( $n = 405$ ).

At the end of the academic year, 16.1% of the TERA-3 Alphabet scores ranked no higher than *Below Average* (therefore, ranked in the bottom quartile of national scores), and 45.5% of the TERA-3 Alphabet scores ranked no lower than *Above Average* (therefore, ranked in the top quartile of national scores). The percentages represent about 57 fewer scores ranked in the bottom quartile in the spring than in the fall. At the end of the academic year, 21% of the Alphabet scale scores ranked above the 90<sup>th</sup> national percentile ranking.

Similarly, the BBCS-3:R SRC scale scores can be displayed in five categories ranging from *Very Delayed* to *Very Advanced*. Figure 10 presents the percentage of the BBCS-3:R SRC scale scores in each of the five categories.

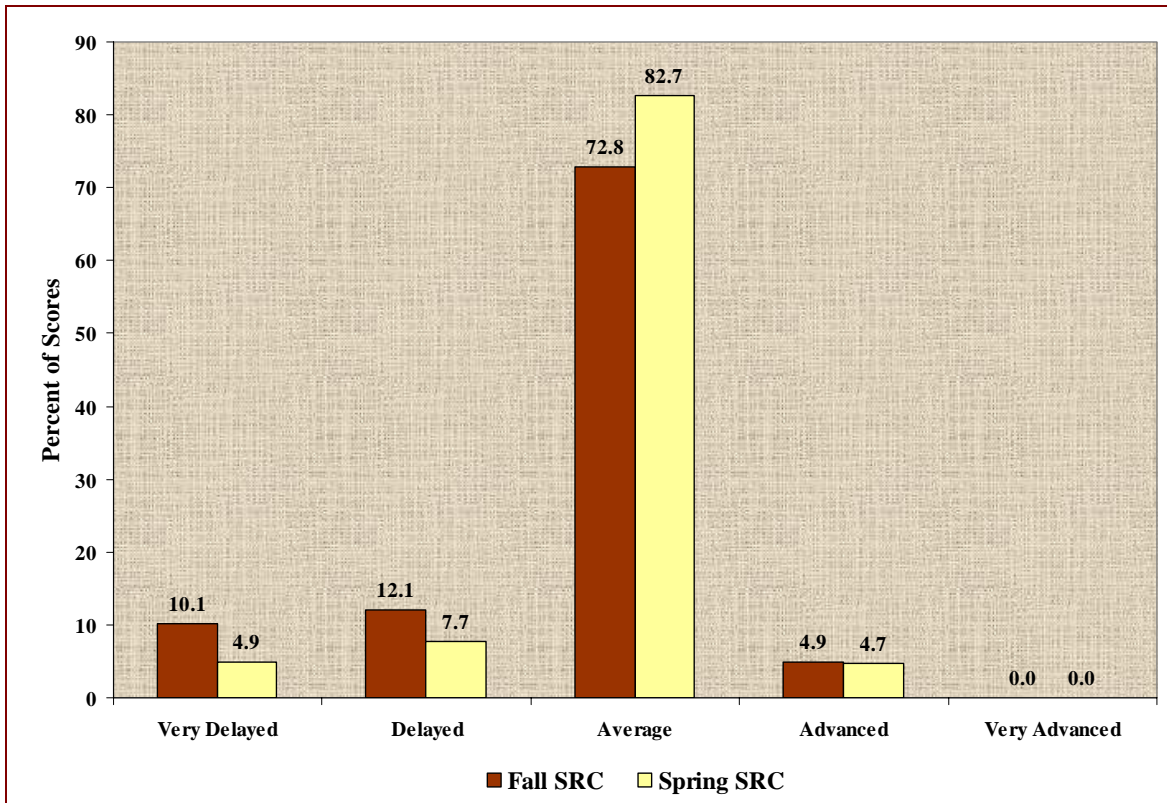


Figure 10. The distributions of fall and spring BBCS-3:R School Readiness Composite scale scores ( $n = 405$ ).

Figure 10 clearly shows that the children’s gains on the BBCS-3:R SRC measure resulted from more scores ranking in the broad *Average* category in the spring than in the fall. In the fall, 77.7% of the children’s scores ranked *Average* or higher, and in the spring, 87.4% of the children’s scores ranked *Average* or higher. No spring or fall School Readiness Composite scores ranked *Very Advanced* and fewer than 5% at each time ranked in the *Advanced* category.

ALRI scores are presented in Figure 11 in four recognition categories: 0 to 13 letters, 14 to 26 letters, 27 to 39 letters, and 40 to 52 letters. Recognition of 40 to 52 letters (75% of the sampled letters) was considered *proficient* for kindergarten children by the ECLS-K study in 1998.

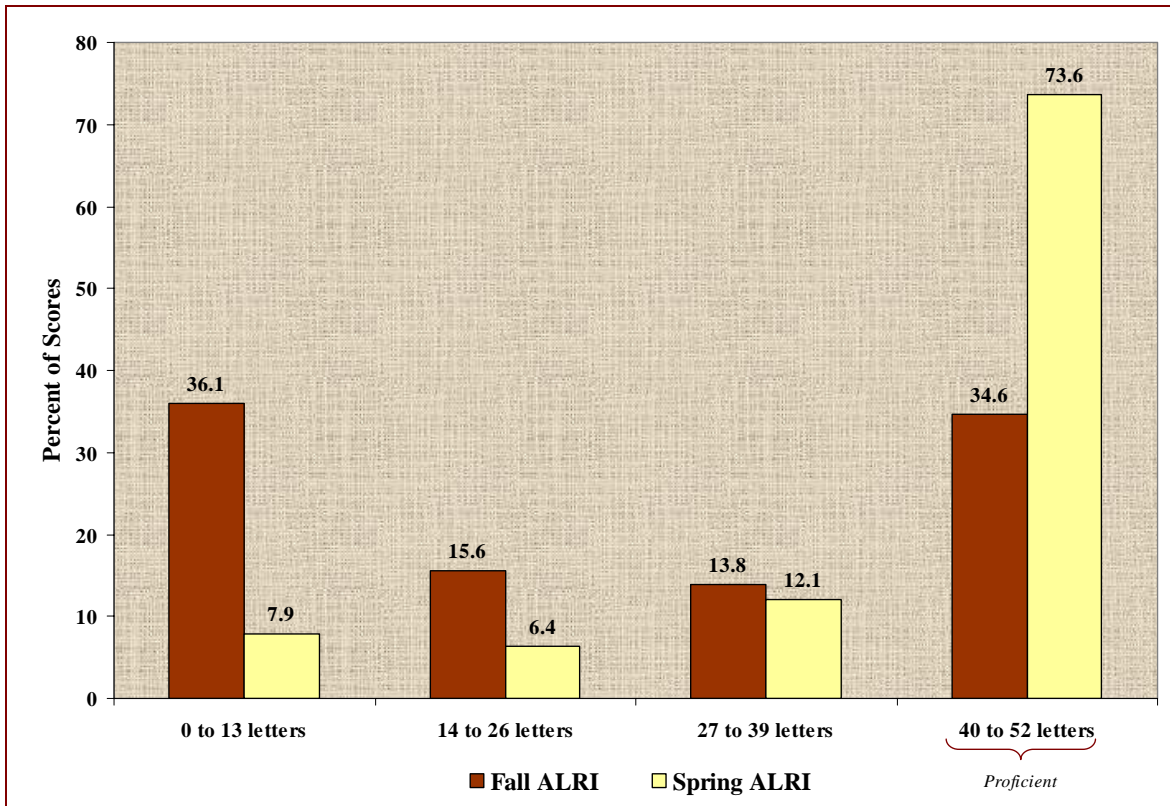


Figure 11. The Alphabet Letter Recognition Inventory scores of the sampled QRIS children ( $n = 405$ ).

Inspection of Figure 11 shows that, at year's end, 73.6% of the children were *proficient* in letter recognition, recognizing at least 75% of the letters. The end of the prekindergarten year is somewhat similar to entering kindergarten for the first time, and ECLS-K researchers reported that, in 1998, 66% of all children entering kindergarten for the first time were *proficient*. The QRIS children's letter recognition ability exceeded the achievement of the national ECLS-K sample of children entering kindergarten for the first time. Additionally, almost 16% of the children recognized all 52 letters presented, 35% recognized at least 50 of the letters, and less than 2% recognized fewer than 8 letters (the federal guideline for Head Start).

QRIS Summary

Figure 12 summarizes the fall-to-spring gains of the sampled children enrolled in QRIS child care centers in terms of the percentile ranking of the mean fall and spring emergent literacy and school readiness scores.

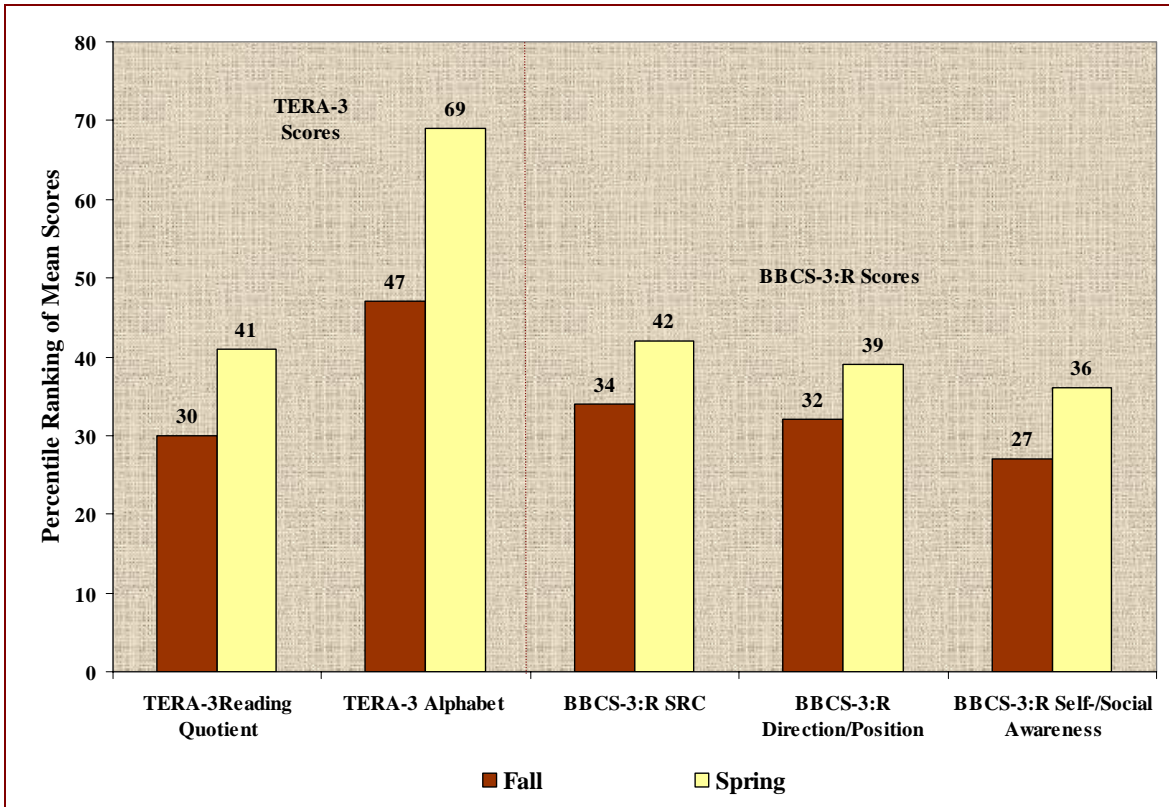


Figure 12. Summary of the statistically significant and meaningful gains made by the sampled QRIS children ( $n = 405$ ).

The mean percentile rankings of the sampled children's mean fall scores across all five measures were similar and above the bottom quartile (25<sup>th</sup> percentile). The percentile ranking of the mean spring score for the TERA-3 Alphabet scale was much higher than the rankings of the mean spring scores for the other four measures; however, the mean of all measures demonstrated the expected increases in percentile ranking. Larger changes of 11 and 22 percentile rankings were for the TERA-3 measures and smaller changes of 7, 8, and

9 percentile rankings resulted from statistically significant gains made on the BBCS-3:R measures.

### *QRIS Summary*

- ◆ The QRIS ECS and JCC sample included 405 children with complete TERA-3 scores.
- ◆ The sample included more boys than girls. The largest percentage of children by ethnicity was Black children (45%); however 39% of the children were White.
- ◆ The age range of the sampled prekindergarten children was typical for Florida.
- ◆ The sampled children demonstrated statistically significant, meaningful gains on the TERA-3 Reading Quotient and Alphabet scales with effect sizes of .29 and .55, respectively.
- ◆ In the spring, 45.4% of the sampled children's TERA-3 Alphabet scale scores ranked in the top quartile (75<sup>th</sup> percentile or higher) of the national population, and 21% of the children's scores ranked above the 90<sup>th</sup> percentile.
- ◆ The sampled children demonstrated statistically significant gains on the ALRI measure.
- ◆ In the spring, 73.6% of the sampled children's ALRI scores indicated *proficiency* at letter recognition, recognizing at least 75% of the upper- and lowercase letters.
- ◆ The sampled children demonstrated statistically significant, meaningful gains on the BBCS-3:R School Readiness Scale with an effect size of .21.
- ◆ The school readiness of 87% of the sampled QRIS children was *Average* or higher.
- ◆ The sampled children demonstrated statistically significant, meaningful gains on the BBCS-3:R Direction/Position, Self-/Social Awareness, Quantity, and Time/Sequence scales. Effect sizes were .20, .18, .11, and .14, respectively.

### **Question 3: 1<sup>st</sup> and 2<sup>nd</sup> Year QRIS and ELC/QC Support**

Do prekindergarten children enrolled in child care centers experiencing their 1<sup>st</sup> year of participation in QRIS, their 2<sup>nd</sup> year of participation in QRIS, and experiencing ELC/QC support demonstrate differences in school readiness and early reading outcomes?

Differences in early reading and school readiness outcomes of children who attended ECS and JCC child care centers experiencing their 1<sup>st</sup> and 2<sup>nd</sup> year of participation in QRIS and who attended child care centers experiencing ELC/QC support were determined by whether hierarchical linear modeling (HLM) indicated differences across the three types of centers' spring early reading and school readiness outcomes after controlling for the children's fall scores. HLM statistical models were necessary because participating children were nested in classes, that is, they received instruction together in classes in the randomly selected child care centers.<sup>7</sup> Because of nesting, the children's scores are not independent, a requirement for ordinary statistical methods.

ELC identified all QRIS centers by funding agency (ECS or JCC) and by year of participation in QRIS. The sampling plan first stratified child care centers by the amount of QRIS support received and then by sponsoring agency (ECS or JCC). Using this sampling frame, child care centers were randomly selected within the stratification and children were randomly selected from each center using a sampling frame of all children with informed consent within each center. The plan was not stratified by prekindergarten classes within centers; therefore, the effects of child care center and prekindergarten class are completely confounded. ELC/QC centers were also randomly selected from a sampling frame of all child care centers who received ELC/QC support beginning in fall 2007. Children were randomly selected from a sampling frame of all children with informed consent within

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<sup>7</sup> Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.

each center. Table 11 presents information describing the participating children and child care centers. Ethnicity data were collected across six categories; however four categories (*Hispanic, Asian, Mixed, and Other*) were collapsed into one category, *Other*, because of their small representation in the sample.

Table 11  
*Demographic Information Describing the Sample of Children Enrolled in ECS and JCC Child Care Centers Receiving Their 1<sup>st</sup> or 2<sup>nd</sup> Year of QRIS and in ELC/QC Child Care Centers*

Characteristic	2 <sup>nd</sup> Year <i>n</i> = 207	1 <sup>st</sup> Year <i>n</i> = 198	ELC/QC <i>n</i> = 200
Gender			
Boys	57.5%	48.0%	58.0%
Girls	42.5%	52.0%	42.0%
Ethnicity			
Black	64.7%	25.3%	39.0%
White	26.1%	51.5%	46.0%
Other	9.2%	23.2%	15.0%
Age			
25 <sup>th</sup> Quartile	51 months	51 months	51 months
50 <sup>th</sup> Quartile	54 months	54 months	54 months
75 <sup>th</sup> Quartile	58 months	57 months	57 months
School Readiness*	23.7%	13.1%	18.0%
Source Agency			
ECS QRIS			
Number of Children	139	91	
Number of Centers	14	10	
JCC QRIS			
Number of Children	68	107	
Number of Centers	6	10	
ELC/QC			
Number of Children			200
Number of Centers			12

*Note;* \* School Readiness indicates that the children are from low-income families receiving subsidized child care.

The majority of the sampled children from the 2<sup>nd</sup> year QRIS and ELC/QC centers were boys. The percent of boys and girls was much closer for the 1<sup>st</sup> year QRIS child care sample. The distribution of the age of the sampled children was similar across the three types of centers. The distribution of ethnicity across the three types differed: two thirds of the children enrolled in QRIS 2<sup>nd</sup> year child care centers were Black; Black and Other

children were almost equally represented in the QRIS 1<sup>st</sup> year child care centers; and the percentages of Black and White children were different by 6 percentage points in the ELC/QC centers. The percentage of School Readiness children was also different across the three types of centers. The QRIS 2<sup>nd</sup> year centers enrolled the largest percent of School Readiness children (23.7%), and the QRIS 1<sup>st</sup> year centers enrolled the smallest percent of School Readiness children (13.1%).

### *HLM Models*

The HLM models are expressed mathematically by the following equations:

$$\text{Child-Level: } Y_{ij} = \beta_{0j} + \beta_{1j} (X_{ij} - \bar{X}_{..}) + r_{ij}, \quad (1)$$

where  $Y_{ij}$  represents the outcome score of the  $i^{\text{th}}$  child in the  $j^{\text{th}}$  child care center,

$\beta_{0j}$  is the mean score of the  $j^{\text{th}}$  child care center,

$\beta_{1j}$  expresses the relationship between the outcome score of the  $i^{\text{th}}$  child in the  $j^{\text{th}}$  child care center and their grand mean-centered pretest score,  $(X_{ij} - \bar{X}_{..})$ , where  $X_{ij}$  is the pretest score of the  $i^{\text{th}}$  child in the  $j^{\text{th}}$  child care center, and  $r_{ij}$  is the random effect of the  $i^{\text{th}}$  child in the  $j^{\text{th}}$  child care center.

$$\text{Center Level: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Center Type}) + u_{0j} \quad (2)$$

where  $\gamma_{00}$  is the grand mean of the outcome score,  $\gamma_{01}$  expresses the average relationship between the effect of group across the child care centers, and  $u_{0j}$  is the random effect of child care center  $j$ .

$$\text{Combined Model: } Y_{ij} = \gamma_{00} + \gamma_{01} (\text{Center Type}) + \beta_{1j} (X_{ij} - \bar{X}_{..}) + r_{ij} + u_{0j}. \quad (3)$$

Table 12 presents the early reading and school readiness mean fall and spring scores classified by the three types of child care centers: 2<sup>nd</sup> year of QRIS participation, 1<sup>st</sup> year of QRIS participation, and ELC/QC participation. The fall scores were statistically tested using a simple HLM analysis to investigate possible differences in the initial status of the children. Table 12 also presents the results of the statistical analyses of the differences in children’s mean fall scores.

Table 12  
*Summary Statistics and Results of the HLM Analyses of Fall Scores*

Test	Subtest	Time	2 <sup>nd</sup> Year Mean	1 <sup>st</sup> Year Mean	ELC/QC Mean	p-value
TERA-3	RQ	fall	91.00	93.27	<b>93.31</b>	.7734
		spring	94.61	98.35	97.56	
	Alphabet	fall	9.77	9.92	<b>9.97</b>	.9619
		spring	11.25	11.74	11.58	
	Conventions	fall	8.20	8.31	<b>8.65</b>	.6991
		spring	8.14	8.74	8.65	
Meaning	fall	7.84	<b>8.62</b>	8.25	.0547*	
	spring	8.10	8.74	8.63		
ALRI	SRC	fall	25.60	25.71	<b>26.78</b>	.9931
		spring	41.62	41.95	40.92	
Bracken	SRC	fall	8.46	9.05	<b>9.22</b>	.5928
		spring	8.98	9.82	9.66	
	Direction/Position	fall	8.10	<b>9.15</b>	9.04	.0765*
		spring	8.64	9.83	9.56	
	Self-/Social Awareness	fall	7.85	<b>8.88</b>	8.78	.0262**
		spring	8.31	9.52	9.33	
	Texture/Material	fall	8.29	9.09	<b>9.23</b>	.0437**
		spring	8.16	9.31	9.26	
	Quantity	fall	7.63	<b>8.97</b>	8.49	.0029***
		spring	8.15	9.13	9.14	
	Time/Sequence	fall	8.40	<b>9.15</b>	9.05	.1478
		spring	8.69	9.83	9.47	

Note: \* $p < .10$ , \*\* $p < .05$ ; \*\*\* $p < .01$ , bolded mean fall scores represent the highest mean fall score across the three types of centers (2<sup>nd</sup> year  $n = 207$ , 1<sup>st</sup> year  $n = 198$ , and ELC/QC  $n = 200$ ).

As can be seen, the children enrolled in the QRIS centers receiving their 2<sup>nd</sup> year of support consistently had the lowest initial status across all 11 measures. The highest initial status across the measures was evenly split between the QRIS centers receiving their 1<sup>st</sup> year of support and the ELC/QC centers. Statistically significant differences in the fall

scores are reported for the TERA-3 Meaning scale and the BBCS-3:R Direction/Position, Self-/Social Awareness, Texture/Materials, and Quantity scales. Analyses of the differences across the three types of child care centers are reported in Table 13.

Table 13  
*Statistically Significant Differences in Children’s Initial Status Across the Three Types of Child Care Centers*

Test	Fall Mean Score			2 <sup>nd</sup> vs 1 <sup>st</sup>	p-value	
	2 <sup>nd</sup> Year	1 <sup>st</sup> Year	ELC/QC		2 <sup>nd</sup> vs ELC/QC	1 <sup>st</sup> vs ELC/QC
TERA-3						
Meaning	7.84	8.62	8.25	<b>.0158</b>	.2381	.2530
BBCS-3:R						
Direction/Position	8.10	9.15	9.04	<b>.0390</b>	<i>.0743</i>	.9006
Self-/Social Awareness	7.85	8.88	8.78	<b>.0122</b>	<b>.0362</b>	.7799
Texture/Material	8.29	9.09	9.23	<b>.0123</b>	<b>.0195</b>	.5145
Quantity	7.63	8.97	8.49	<b>.0007</b>	<b>.0331</b>	.2314

*Note:* Bolded *p*-values represent statistically significant differences at  $p < .05$ , italicized *p*-values represent statistically significant differences at  $p < .10$ .

All differences between the mean fall scores of the 2<sup>nd</sup> and 1<sup>st</sup> year QRIS participants were statistically significant, none of the differences between the 1<sup>st</sup> year QRIS participants and the ELC/QC participants were statistically significant, and some of the differences between the 2<sup>nd</sup> year QRIS participants’ and ELC/QC participants’ fall scores were statistically significant. As important as it is to note these differences in fall achievement across the children enrolled in the three types of centers, it is also important to note that the HLM analyses described in Equation 3, page 33 is an ANCOVA model that controls for just such differences in initial status. Table 14 presents the results of the HLM ANCOVA analyses of the early reading and school readiness spring outcomes.

Table 14  
*HLM Results for Early Reading Ability and School Readiness Outcomes*

Test		Intercept	Pretest	2 <sup>nd</sup> Year	1 <sup>st</sup> Year	ELC/QC	ICC
TERA-3 RQ	Estimate	95.85	0.66	-1.20	1.06	0	16.9%
	<i>p</i> -value	<.0001	<.0001	.3969	.4597		
TERA-3 Alphabet	Estimate	11.32	0.57	-0.21	0.19	0	14.9%
	<i>p</i> -value	<.0001	<.0001	.5549	.6046		
TERA-3 Conventions	Estimate	11.22	0.66	0.04	0.38	0	13.3%
	<i>p</i> -value	<.0001	<.0001	.9396	.4431		
TERA-3 Meaning	Estimate	8.50	0.43	-0.35	-0.03	0	10.9%
	<i>p</i> -value	<.0001	<.0001	.2063	.9053		
ALRI	Estimate	27.45	0.49	1.46	1.16	0	17.9%
	<i>p</i> -value	<.0001	<.0001	.3228	.4383		
BBCS-3:R SRC	Estimate	8.98	0.62	-0.10	0.26	0	18.9%
	<i>p</i> -value	<.0001	<.0001	.6886	.2890		
BBCS-3:R Direction/Position	Estimate	9.17	0.66	-0.29	0.19	0	8.6%
	<i>p</i> -value	<.0001	<.0001	.2235	.4182		
BBCS-3:R Self-/Social Awareness	Estimate	9.01	0.54	-0.50	0.14	0	9.7%
	<i>p</i> -value	<.0001	<.0001	.0442**	0.5607		
BBCS-3:R Texture/Materials	Estimate	8.75	0.59	-0.41	0.19	0	16.0%
	<i>p</i> -value	<.0001	<.0001	.1539	.5187		
BBCS-3:R Quantity	Estimate	8.89	0.58	-0.45	-0.36	0	9.9%
	<i>p</i> -value	<.0001	<.0001	.1042	.1942		
BBCS-3:R Time/Sequence	Estimate	9.27	0.50	-0.43	0.18	0	6.0%
	<i>p</i> -value	<.0001	<.0001	.0722*	.4450		

Note: \**p* < .10; \*\**p* < .05; ICC is the intraclass correlation.

The results indicated that after controlling for initial status (fall scores) no statistically significant differences were found in the early reading ability and school readiness mean spring scores of the children enrolled in their 1<sup>st</sup> year of QRIS, 2<sup>nd</sup> year of QRIS, and ELC/QC child care centers with the exception of the adjusted mean spring scores of the BBCS-3:R Self-/Social Awareness and Time/Sequence scales. For these measures, the adjusted mean spring scores of children enrolled in ELC/QC child care centers were greater than the adjusted mean spring scores of children enrolled in 2<sup>nd</sup> year QRIS child care centers. The ICC estimates ranged from a high of 18.9% to a low of 6.0% confirming the need for HLM analyses. The largest ICC, 18.9%, indicated that 18.9% of the variance in the children’s BBCS-3:R SRC scores was accounted for by the child care center in which they were enrolled.

## *Discussion of Results*

The findings that support the response to the third ELC research question are counter-intuitive and thus merit careful and thorough discussion of alternative explanations of the findings and limits to the generalizability of the findings. The results of the analyses are representative of the sampled child care centers and the children assessed and may be an idiosyncrasy of the sample and thus only applicable to this sample. A discussion of limitations to the findings, therefore, begins with demographic differences across the centers receiving their 2<sup>nd</sup> year of QRIS participation, their first year of QRIS participation, and participation in ELC/QC.

As noted, the sampled children enrolled in the three types of child care centers differed by gender, ethnicity, and School Readiness status (an indicator of poverty). Table 15 describes the ethnicity and poverty differences in detail.

Table 15

*The Percentage of Children Enrolled in the Three Types of Child Care Centers by Family Poverty Status and Ethnicity*

Poverty	Ethnicity	2 <sup>nd</sup> Year %	1 <sup>st</sup> Year %	ELC/QC %
No	Black	47.8	16.7	27.0
	White	21.3	48.0	41.5
	Other	7.3	22.2	13.5
Yes	Black	16.9	8.6	12.0
	White	4.8	3.5	4.5
	Other	1.9	1.0	1.5

As can be seen, the percentage of White and Other children living in poverty was comparable across the three types of child care centers; however, the percentage of Black children living in poverty differed across center types with the smallest percent, 8.6%, enrolled in centers in their 1<sup>st</sup> QRIS year, and the largest percent, 16.9%, enrolled in centers in their 2<sup>nd</sup> QRIS year. This finding suggested that the effects of poverty and ethnicity are confounded which was not totally unexpected as a study of the 2006 Duval

County Florida Kindergarten Readiness Screener (FLKRS) scores reported that three fourths of the Black public school kindergarten children in Jacksonville were eligible to receive free or reduced-price lunch.<sup>8</sup> Additionally, the achievement gap between children who live in poverty and children who do not is well-known. However, new research in cognitive neuroscience investigating the causes of the children's achievement gap posited as a potential explanation that being raised in poverty affects the way the brain works.<sup>9</sup> Some cognitive functions such as memory are affected more by nurturing while other cognitive functions such as language are more affected by the environment of poverty regardless of nurturing. These new findings from brain research indicated that the effects of poverty result in more differences than we previously recognized, thus making it more difficult to statistically control for the effects of poverty when these effects are not controlled for through the use of random assignment.

Center-level limitations may also have contributed to the counter-intuitive results. The first center-level limitation is the delineation of the sample by their 1<sup>st</sup> and 2<sup>nd</sup> years of QRIS support. Because ECS terminates QRIS participation in the fall of the academic year, 1<sup>st</sup> year centers were actually beginning their 2<sup>nd</sup> year of support by mid-fall and 2<sup>nd</sup> year centers terminated their QRIS participation after completing 2 years of QRIS support in mid-fall. Thus, spring data were collected from ECS 2<sup>nd</sup> year centers that were no longer receiving QRIS support. On the other hand, JCC terminates QRIS support in the spring so their 1<sup>st</sup> year centers were actually beginning QRIS support in the fall, and the JCC 2<sup>nd</sup>

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<sup>8</sup> Wehry, S., Kasten, K., & Fountain, C. (2008, April). *Using Florida School Readiness Measures at the Classroom, Neighborhood, and Community Levels*. Paper presented at the American Educational Research Association 2008 Annual Meeting, New York.

<sup>9</sup> Farah, M. J., Betancourt, L., Shera, D. M., Savage, J. H., Giannetta, J. M. Brodsky, N. L., Malmud, E. K., & Hurt, H. (in press). Environmental Stimulation, parental nurturance and cognitive development in humans. *Developmental Science*.

*year* centers received support during the entire academic year. The different strategies for determining the beginning and ending of QRIS support actually organize the centers by five rather than three levels of support, and, in the process, confound the effects of level of support with funding agency (ECS or JCC). The three levels of support used in this study have fuzzy boundaries but do allow averaging the possible effects of ECS and JCC funding across the samples within the two center types. Furthermore, the sample of centers for each type of support was too small to tease out the effects of all possible support levels provided to the child care centers.

Another confounding center-level limitation is the lack of data collected at the center-level. The interpretation of the results of the study assumed that quality of instruction, fidelity of curriculum implementation, and delivery of support through QRIS or ELC/QC participation were not relevant due to randomization. However, randomization only provides equality across factor levels if the sample is sufficiently large and the sample results from random assignment rather than random selection. With the child-level data, we could investigate confounding issues such as initial status and then statistically control for these differences. With the center-level data, we could not investigate the confounding issues of quality and fidelity because no center-level data were available to us.

The findings of the study are an important beginning, if for no other reason than they express the need for future investigation of the levels of support provided to child care centers. The findings also strongly suggest the need to collect more complete data at the child care center level of analysis. A strong study examining the effects of the support provided to child care centers should include random assignment of centers to levels of support which would require, in our case, a 2-year study with staggered start of support.

Such a study would also require a commitment from sponsoring agencies to concurrently begin and end the provided support.

*1<sup>st</sup> and 2<sup>nd</sup> Year QRIS and ELC/QC Support Summary*

◆ No differences were found in the spring early reading and school readiness outcomes of the sampled children enrolled in child care centers experiencing their 1<sup>st</sup> year of QRIS, their 2<sup>nd</sup> year of QRIS, or participation in ELC/QC with the following exceptions:

1. BBCS-3:R Self-/Social Awareness scale where the sampled children enrolled in ELC/QC centers had higher spring scores than sampled children enrolled in 2<sup>nd</sup> year QRIS centers.
2. BBCS-3:R Time/Sequence scale where the sampled children enrolled in ELC/QC centers had higher spring scores than sampled children enrolled in 2<sup>nd</sup> year QRIS centers.

◆ Child-level limitations to the study include:

1. The distribution of sampled children living in poverty across the three types of centers was not the same.
2. New neuroscience research on the effects of poverty on the brain indicates that the environment of poverty may cause more differences affecting cognition than were previously known.

◆ Center-level limitations to the study include:

1. The lack of consistency across JCC and ESC in determining the beginning and ending of QRIS support.
2. The lack of data indicating the quality of instruction, the fidelity of curriculum implementation, the implementation of the provided support, and the initial status of the center's quality.

#### **Question 4: Ongoing Longitudinal Study**

Are the vocabulary development and reading comprehension of 2007-2008 second-grade children who attended Duval County Public School *Reading First* schools different for the children who also attended ELC/JELP-supported prekindergarten in 2004-2005 than for their classmates who did not?

In the first component of the longitudinal study of the children who participated in prekindergarten classes supported by ELC/JELP during the 2004-2005 academic year, we located the ELC/JELP children in the Duval County Public Schools (DCPS) fall 2005 school readiness data (See *Early Learning Coalition of Duval Report 2005-06*). In the 2005-2006 DCPS kindergarten data limited to the children with valid DIBELS Letter Naming Fluency scores (part of the school readiness measures), 6,166 children did not participate in ELC/JELP-supported prekindergarten during the 2004-2005 academic year and 1,581 did. Propensity score matching indicated that the ELC/JELP children had higher levels of school readiness across the three kindergarten readiness measures than similar children who did not participate in ELC/JELP prekindergarten classes. Additionally, 26.1% of the kindergarten children who participated in ELC/JELP-supported prekindergarten and 12.7% of the kindergarten comparison children attended DCPS *Reading First* schools during the 2005-2006 school year.

The only large set of cognitive achievement data available from DCPS first-grade children in 2006-2007 was collected as part of the *Reading First* initiative. Thus, the second component of the longitudinal study involved children attending the DCPS *Reading First* schools as first graders during the 2006-2007 academic year. (See *Early Learning Coalition of Duval Report 2006-07*.) The first-grade DIBELS Letter Naming Fluency scores included 630 children who attended ELC/JELP prekindergarten classes during the 2004-2005 academic year and 956 children who did not.

Likewise, for the 2007-2008 academic year, the only large set of cognitive achievement data available from second-grade children in DCPS was again collected as part of the *Reading First* initiative. Therefore, the third component of the longitudinal study involved children attending the DCPS *Reading First* schools as second graders during the 2007-2008 academic year.

Data supporting the response to this research question were provided by Duval County Public Schools (DCPS) and included 1,280 children who had a score on at least one of the two *Reading First* outcomes. The process of forming the data set for the response to this research question began by merging the DCPS 2006-2007 *Reading First* data ( $n = 1,586$ ) with the DCPS 2007-2008 second-grade data ( $n = 1,280$ ). The first-grade data provided an indicator of ELC/JELP prekindergarten participation during the 2004-2005 academic year. Merging the data resulted in identifying 731 non-ELC/JELP and 549 ELC/JELP second graders.

Second-grade children enrolled in the county's *Reading First* schools were assessed in spring 2008 using the Peabody Picture Vocabulary Test-Third Edition (PPVT-III)<sup>10</sup> and the Stanford Achievement Test-Tenth Edition (SAT 10).<sup>11</sup> The PPVT-III is a measure of children's receptive vocabulary and listening ability. The PPVT-III was selected to assess the vocabulary of the children attending *Reading First* schools because it assesses vocabulary independently of the children's word reading ability. The assessment takes approximately 15 minutes and is administered in one-on-one settings by the school's trained assessment team. The SAT 10 is a measure of the children's reading comprehension and can be used in longitudinal studies in Florida as the SAT 10 is part of

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<sup>10</sup> Dunn, L. M., & Dunn, L. M. (1997). *The Peabody Picture Vocabulary Test, Third Edition*. Circle Pines, MN: American Guidance Service

<sup>11</sup> Information available at: <http://pearson.com/HAIWEB/Curltures/en-us/Productdetail.html?Pod=SAT10C>

the Florida Comprehensive Achievement Tests (FCAT) used in all Florida public schools. The SAT 10 is administered in group settings and takes approximately 30 minutes to complete. It is administered by trained teachers during FCAT week.

The Florida Center for Reading Research at Florida State University trains assessors, collects district data for scoring, maintains the integrity of the data, and provides reports at the child-, class-, school-, and district-level. The DCPS *Reading First* data included PPVT-III scores for 1,265 children and SAT 10 scores for 1,263 children.

The Florida standard for grade-level performance for second grade is scores ranked at the 40<sup>th</sup> national percentile or above on the SAT 10 and PPVT-III. *Reading First* schools are encouraged to display the SAT 10 and PPVT-III data in risk categories with scores ranked between the 20<sup>th</sup> and 39<sup>th</sup> percentiles, inclusive, classified at *Moderate Risk* and scores ranked at the 19<sup>th</sup> percentile or below classified at *High Risk*. The DCPS second-grade data included scale scores, national percentiles, stanine scores, and natural curve equivalent scores. The PPVT-III scale scores have a mean of 100 and a standard deviation of 15 similar to the TERA-3 Reading Quotient scale scores discussed on page 5 and displayed in Table 2.

First, we examined the national percentile ranking risk categories for the entire sample of 1,280 *Reading First* children. Table 16 presents the risk categories for the DCPS *Reading First* children's PPVT-III scores ( $n = 1,265$ ) disaggregated by gender and poverty status.

Table 16

*The Percent of Children at ‘Grade Level,’ at ‘Moderate Risk,’ and at ‘High Risk’ Based on the Percentile Ranking of Their PPVT-III Scores*

	Percent of Children		
	At Grade Level or Better	Moderate Risk	High Risk
All Children	30.2	21.8	48.0
Girls ( <i>n</i> = 612)	29.4	20.3	50.3
Boys ( <i>n</i> = 653)	30.9	23.3	45.8
Poor ( <i>n</i> = 1,077)	27.9	21.8	50.3
Not Poor ( <i>n</i> = 188)	43.6	21.8	34.6

Across the 21 DCPS *Reading First* elementary schools, 30.2% of the children exhibited at least grade-level performance on the PPVT-III. Counter to typical findings, the percentage of boys exhibiting at least grade-level performance slightly exceeded girls and the difference between the percentage of girls and boys scores indicated 4.5% fewer boys’ scores were classified at *High Risk*. As expected, more children who did not live in poverty exhibited grade-level performance than did the 1,007 who did live in poverty.

Table 17 presents the risk categories for the DCPS *Reading First* children’s SAT 10 scores (*n* = 1,263) disaggregated by gender and poverty status.

Table 17

*The Percent of Children at ‘Grade Level,’ at ‘Moderate Risk,’ and at ‘High Risk’ Based on the Percentile Ranking of Their SAT 10 Scores*

	Percent of Children		
	At Grade Level or Better	Moderate Risk	High Risk
All Children	48.8	29.1	22.1
Girls ( <i>n</i> = 615)	55.9	27.8	16.3
Boys ( <i>n</i> = 648)	42.0	30.4	27.6
Poor ( <i>n</i> = 1,076)	48.9	28.4	22.7
Not Poor ( <i>n</i> = 187)	48.0	33.2	18.7

The first observation when viewing this table is that 48.8% of the children exhibited at least grade-level performance on the SAT 10 which is 18 more percentage points than for the PPVT-III. More in line with typical findings, the percentage of girls who exhibited at least grade-level performance was higher by 14 percentage points than

boys. However, the children who lived in poverty exhibited almost the same percentage of scores ranked at grade level or better as the children who did not live in poverty.

The 1,280 children included in the DCPS second-grade *Reading First* elementary schools data were further classified as children who possibly participated in ELC/JELP prekindergarten during the 2004-2005 academic year and those who did not. The children who possibly participated in ELC/JELP prekindergarten classes were further classified as having confirmed participation based on assessments collected as part of the evaluation of the ELC/JELP-provided support (ELC/JELP) and those whose participation cannot be confirmed as no scores were collected (ELC/JELP/?).

Table 18 presents demographic information for the three groups of children, ELC/JELP, ELC/JELP/?, and non-ELC/JELP. Ethnicity data were collected by DCPS across six categories, *Asian, Black, Hispanic, Indian, Mixed, and White*, but these categories were collapsed into three categories, *Black, White, and Other* because of small representation in the *Asian, Hispanic, Indian, and Mixed* categories.

Table 18  
*Demographic Information of the ELC/JELP, ELC/JELP/?, and Non-ELC/JELP Children*

Characteristic	ELC/JELP	ELC/JELP/?	Non-ELC/JELP
Gender			
Boys	48.9%	52.3%	52.7%
Girls	51.1%	47.7%	47.3%
Ethnicity			
Black	94.4%	96.4%	79.5%
White	2.8%	1.0%	9.9%
Other	2.8%	2.6%	10.6%
Poor			
Yes	84.5%	91.2%	84.1%
No	15.5%	8.8%	15.9%

Inspection of Table 18 shows that the demographic information across the two ELC/JELP populations was very similar with the exception of gender where the percentage

of boys in the ELC/JELP group is very similar to the percentage of girls in the ELC/JELP/? group. Both groups of ELC/JELP children were also similar to their non-ELC/JELP classmates; however, their non-ELC/JELP classmates were more ethnically diverse and a smaller percentage was classified as *poor* based on their eligibility for free or reduced-price lunch. Figure 13 shows the distributions of the three groups of children's ages.

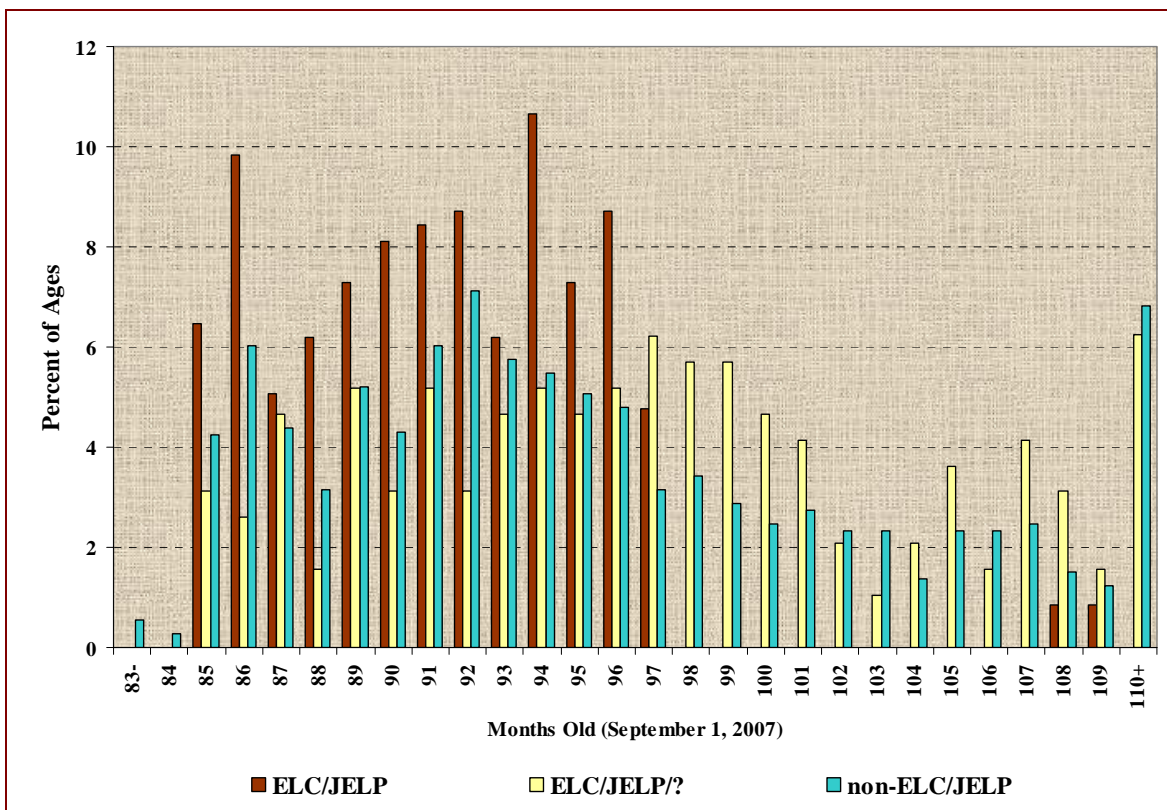


Figure 13. Age (in months on September 1, 2007) of ELC/JELP ( $n = 356$ ), ELC/JELP/? ( $n = 193$ ), and non-ELC/JELP ( $n = 731$ ) participating DCPS second grade *Reading First* children.

The ELC/JELP children's age distribution was not as broad as the ELC/JELP/? and non-ELC/JELP children's age distributions. More over-aged children were represented in both of these distributions than in the distribution of the ELC/JELP children's ages. When looking at the percentage of ages 90 months or younger (the theoretical median of the typical age distribution), 43.5%, 20.2%, and 28.1% of the ELC/JELP, ELC/JELP/?, and

non-ELC/JELP children, respectively, were no more than 90 months old on September 1, 2007.

Based on the demographic information and uncertainty of ELC/JELP participation, we decided to remove the 193 ELC/JELP/? children from the sample and truncated the remaining data to include only the children whose age on September 1, 2007, was no greater than 100 months. Table 19 presents the demographic information of the remaining sample, 350 ELC/JELP children and 543 non-ELC/JELP children. Ethnicity data were collected by DCPS across six categories, *Asian, Black, Hispanic, Indian, Mixed, and White*, but these categories were collapsed into three categories, *Black, White, and Other* because of small representation of the *Asian, Hispanic, Indian, and Mixed* categories.

Table 19  
*Demographic Information of the ELC/JELP and Non-ELC/JELP Children in the Final Data*

Characteristic	ELC/JELP	Non-ELC/JELP
Gender		
Boys	48.9%	49.5%
Girls	51.1%	50.5%
Ethnicity		
Black	94.3%	79.0%
White	2.7%	10.1%
Other	3.0%	10.9%
Poor		
Yes	84.6%	82.0%
No	15.4%	18.0%

The characteristics of the two groups of children were similar across gender and poverty indicators, but the non-ELC/JELP children were more ethnically diverse than the ELC/JELP children. Figure 14 shows the comparison the age distributions for the ELC/JELP and non-ELC/JELP children.

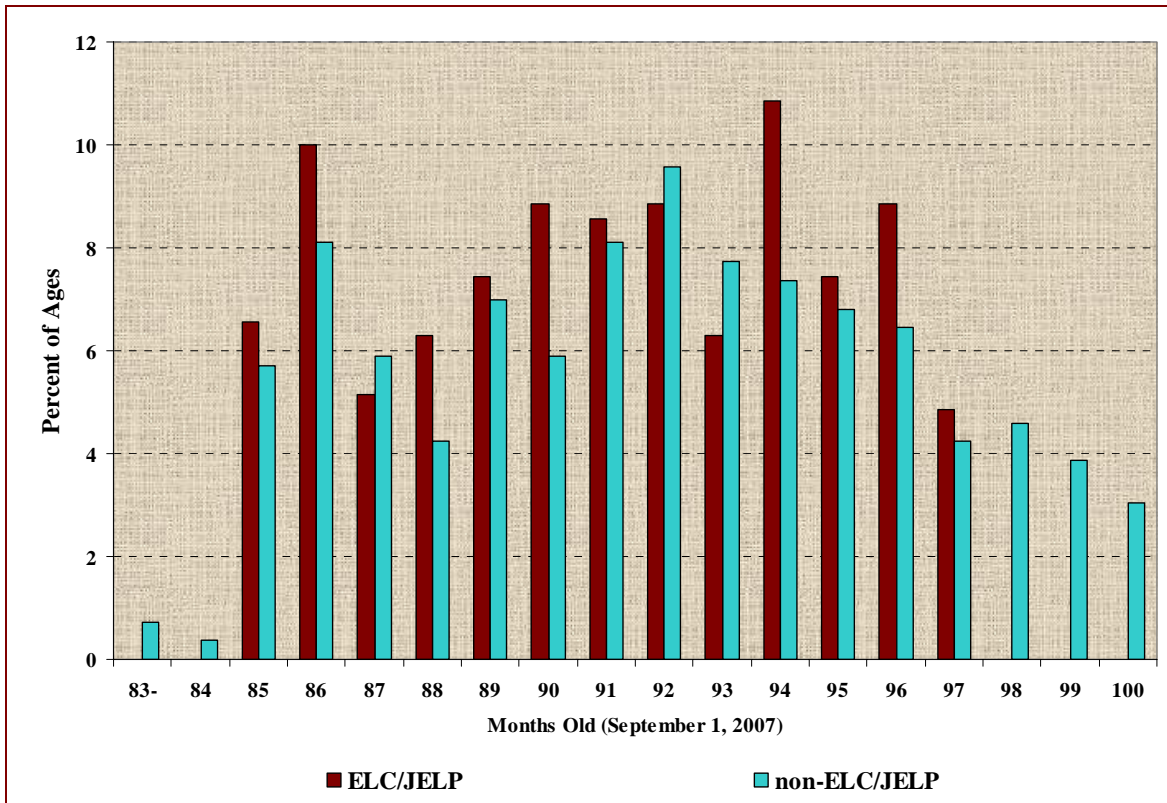


Figure 14. Distributions of age of ELC/JELP and non- ELC/JELP second-grade children ( $n = 350$  for ELC/JELP and  $n = 543$  non-ELC/JELP children).

The non-ELC/JELP second-grade children were considerably older than the ELC/JELP children. When looking at the percentage of ages 90 months or younger (the theoretical median of the typical age distribution), 44.3% and 37.9% of the ELC/JELP and non-ELC/JELP children, respectively, were no more than 90 months old.

Table 20 presents the number of ELC/JELP and non-ELC/JELP children attending each of the 21 DCPS *Reading First* elementary schools included in the data.

Table 20  
*DCPS Elementary Schools Represented in the Data*

Elementary School	Number of Children	
	ELC/JELP	Non ELC/JELP
Biltmore	7	31
George W. Carver	10	26
Saint Clair Evans Academy	21	21
S. A. Hull	13	17
Hyde Grove	21	31
Martin Luther King, Jr.	33	38
Lake Forest	13	27
Smart Pope Livingston	18	15
Long Branch	12	17
Sallye B. Mathis	11	16
Annie R. Morgan	15	24
North Shore	14	14
Rufus E. Payne	20	18
Rutledge H. Pearson	16	11
Reynolds Lane	9	22
Andrew Robinson	37	50
San Jose	20	51
Wayman Academy of Arts	22	31
West Jacksonville	13	8
Woodland Acres	10	43
Carter G. Woodson	15	32
<b>Total</b>	<b>350</b>	<b>543</b>

The largest school group of ELC/JELP children was enrolled in Andrew Robinson Elementary School but 13 fewer ELC/JELP than non-ELC/JELP children were represented in the Andrew Robinson in the data. The fewest number of ELC/JELP children were enrolled at Biltmore Elementary School where the ratio of ELC/JELP to non-ELC/JELP children was 7:31 and at Reynolds Lane Elementary School where the ratio of ELC/JELP to non-ELC/JELP children was 9:22. The same number of ELC/JELP and non-ELC/JELP were enrolled at Saint Clair Evans Academy and at North Shore Elementary School. More ELC/JELP than non-ELC/JELP children represented Smart Pope Livingston Elementary School in the data.

The percentile rankings of the children's scores were used to place the children's scores in the risk categories described on page 43, and the resulting risk table for the

PPVT-III and SAT 10 scores for the ELC/JELP and non-ELC/JELP children is presented in Table 21

Table 21  
*Risk Categories for the PPVT-III and SAT 10 Scores of the ELC/JELP and Non-ELC/JELP Children*

Measure & Group	Percent of Scores		
	At Grade Level or Better	Moderate Risk	High Risk
PPVT-III			
ELC/JELP (345)	38.0	22.0	40.0
Non- ELC/JELP (537)	32.4	22.7	44.9
SAT 10			
ELC/JELP (350)	53.1	29.2	17.7
Non-ELC/JELP (533)	50.3	31.7	18.0

Similar to the results found when using all of the *Reading First* children’s scores, the percentage of children who exhibited grade-level or higher performance was larger for the SAT 10 than the PPVT-III. The percentages in the risk table were also slightly better for the ELC/JELP children than for the non-ELC/JELP children. The scores were further collapsed into two categories, at risk and at grade level or higher, and tested to determine if a true difference associated with ELC/JELP prekindergarten participation existed across the risk categories. For the PPVT-III, there was a difference associated with ELC/JELP prekindergarten participation ( $p = .0897$ ) and for the SAT 10 there was not ( $p = .4053$ ). Thus, the ELC/JELP children out-performed non-ELC/JELP classmates on the PPVT-III but not on the SAT 10.

The PPVT-111 and SAT 10 scale scores and natural curve equivalent scores were tested in HLM analyses (see page 33 of this report) that controlled for gender and poverty while testing differences between the outcome scores of ELC/JELP and non-ELC/JELP children. Table 22 presents summary statistics for the PPVT-III and SAT 10 for the two groups of children.

Table 22

*The Mean Scale Scores and Natural Curve Equivalent Scores for the PPVT-III and SAT 10 Achievement Scores for ELC/JELP and Non-ELC/JELP*

PPVT-3	Mean Scores	
	ELC/JELP	Non-ELC/JELP
Scale Scores	91.33	89.81
Natural Curve Equivalent	379.39	358.49
SAT10		
Scale Scores	589.63	587.56
Natural Curve Equivalent	466.90	457.70

As can be seen across all measures, the children who participated in ELC/JELP prekindergarten classes scored slightly higher than their non-ELC/JELP classmates.

Table 23 presents the results of the HLM analyses of the PPVT-III scale scores and natural curve equivalent scores.

Table 23

*HLM Results: PPVT-III*

Effect	Natural Curve Equivalent			Scale Scores		
	Estimate	<i>t</i>	<i>p</i> -value	Estimate	<i>t</i>	<i>p</i> -value
Intercept	384.1	26.4	<.0001***	91.6	87.2	<.0001***
Gender		2.2	.0285**		2.2	.0477**
ELC/JELP (No)	-24.8	-2.0	.0460**	-3.19	-2.0	.0497*
Poverty			.3623		1.0	.3121
Gender*Poverty			.0458**		2.0	.0645*
ICC	4.2%			4.1%		
Effect Size	.13			.13		

Note: \*\*\*  $p < .01$ , \*\*  $p < .05$ , and \*  $p < .10$ .

The ELC/JELP children’s adjusted mean PPVT-III scale and natural curve equivalent scores were statistically higher than the non-ELC/JELP children’s ( $p = .0458$  and  $.0645$ ). The difference represented an effect size of 13.3% of a standard deviation. The low ICC, 4.2%, indicated that 4.2% of the variance in the children’s PPVT-III scores was accounted for by the *Reading First* schools in which they learned. The analyses also detected a gender by poverty interaction. The sampled children’s adjusted mean scale scores for *poor* and *non-poor* boys and girls were 90.7 (*poor boys*), 92.3 (*non-poor boys*),

88.8 (*poor girls*), and 94.7 (*non-poor girls*). These findings were not expected and showed that in this reduced sample of DCPS *Reading First* second-grade children, *poor* boys outscored *poor* girls ( $p = .0477$ ) and that *non-poor* girls scored the same as *non-poor* boys ( $p = .2595$ ).

Table 24 presents the results of the HLM analyses of the SAT 10 scale scores and natural curve equivalent scores.

Table 24  
HLM Results: SAT 10

Effect	Natural Curve Equivalent			Scale Scores		
	Estimate	<i>t</i>	<i>p</i> -value	Estimate	<i>t</i>	<i>p</i> -value
Intercept	439.5	35.3	<.0001**	583.0	199.4	<.0001**
Gender (Girls)	45.5	4.6	<.0001**	11.0	4.9	<.0001**
ELC/JELP (No)	-14.3	-1.4	.1615	-3.2	-1.4	.1725
Poverty (No)	32.1	2.4	.0184*	7.5	2.4	.0158*
ICC	5.8%			6.7%		
Effect Size	.09			.09		

Note: \*\*  $p < .01$  and \*  $p < .05$ .

The ELC/JELP children's mean SAT 10 scale score and natural curve equivalent scores were not statistically different from the non-ELC/JELP children's ( $p = .1615$  and  $.1725$ ). The non-statistically significant difference represented an effect size of 9.0% of a standard deviation. The low ICC, 5.8% (6.7%), indicated that about 6% of the variance in the children's scores was accounted for by the *Reading First* schools in which they learned. The analyses also detected differences in the children's scores by gender and by poverty. The difference between the SAT 10 scale scores and the resulting effect sizes indicated that in this reduced sample of the DCPS *Reading First* children, the second-grade girls scored, on average, 35.6% of a standard deviation higher than the boys. The effect of gender was larger than the effect of poverty where the effect sizes indicated that *non-poor* children, on average, scored 21.5% of a standard deviation higher than the *poor* children.

### *Ongoing Longitudinal Study Summary*

- ◆ DCPS *Reading First* second-grade data used in the ongoing longitudinal study included 350 children who participated in 2004-2005 ELC/JELP-supported prekindergarten and 543 classmates who did not (non-ELC/JELP).
- ◆ In both groups of children, girls slightly outnumbered boys, most of the children were Black, and most lived in poverty. The non-ELC/JELP children were more ethnically diverse.
- ◆ The non-ELC/JELP group included more over-aged children.
- ◆ 38% of the ELC/JELP children exhibited vocabulary development at or above the 40<sup>th</sup> national percentile—the Florida *Reading First* benchmark for grade-level achievement.
- ◆ The percentage of ELC/JELP children who exhibited grade-level vocabulary achievement was statistically larger than the percentage of non-ELC/JELP children ( $p = .0897$ ).
- ◆ 53% of the ELC/JELP children exhibited reading comprehension at or above the 40<sup>th</sup> national percentile—the Florida *Reading First* benchmark for grade-level achievement
- ◆ The percentage of ELC/JELP children who exhibited grade-level reading comprehension was not statistically different from the percentage of non-ELC/JELP children ( $p = .4053$ ).
- ◆ The vocabulary achievement of boys who lived in poverty was greater than that of girls who lived in poverty.
- ◆ The vocabulary achievement of girls who did not live in poverty was the same as boys who did not live in poverty.
- ◆ The reading comprehension of girls was greater than that of boys (effect size = 36% of a standard deviation).
- ◆ The reading comprehension of children who did not live in poverty was greater than that of children who did live in poverty (effect size = 22% of a standard deviation).

### Question 5: Fall 2007 Kindergarten Readiness

To what extent do Jacksonville children who entered kindergarten in Duval County Public Schools during the 2007-2008 academic year demonstrate *kindergarten readiness* as measured by the fall 2007 Florida Kindergarten Readiness Screener (FLKRS)?

A detailed report on fall 2007 kindergarten readiness is available as a separate document.

#### *Fall 2007 Kindergarten Readiness*

- ◆ Three measures comprise the FLKRS: 19 items from the Early Childhood Observation System (ECHOS), Dynamic Indicators Basic Early Literacy Skills (DIBELS) Letter Naming Fluency, and DIBELS Initial Sounds Fluency scales.
- ◆ The kindergarten readiness rate is determined by calculating the percentage of *Ready* scores from each measure.
- ◆ Data consisted of scores from children in 106 DCPS settings and assessments were administered during the first 30 days of school.
- ◆ Duval County kindergarten readiness was compared to Florida and Broward, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas counties.
- ◆ On the ECHOS/FLKRS, the Duval County *Ready* rate (85%) fell short of the Florida rate and Broward, Miami-Dade, Orange, Palm Beach, and Pinellas counties' *Ready* rate.
- ◆ On the DIBELS Letter Naming Fluency measure, the Duval *Ready* rate (77%) exceeded the Florida rate, and only Broward County exceeded the Duval County rate.
- ◆ Across the comparison counties and Florida, the *Ready* rate of the DIBELS Letter Naming Fluency measure was about 14 percentage points lower than the *Ready* rate for the FLKRS/ECHOS measure.
- ◆ On the DIBELS Initial Sound Fluency measure, the Duval *Ready* rate (64%) equaled the Florida rate, and the *Ready* rates of Broward and Pinellas counties exceeded the Duval County rate.

- ◆ Across the comparison counties and Florida, the *Ready* rate of the DIBELS Initial Sound Fluency measure was about 9 percentage points lower than the *Ready* rate for the DIBELS Letter Naming Fluency measure.
  
- ◆ The Duval County kindergarten children demonstrated the highest readiness on the Fitness and Social Problem Solving ECHOS items and demonstrate the lowest readiness on the Visual Art and Scientific Inquiry items.