

Early Learning Coalition of Duval

Report 2008-09





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of Duval

EARLY LEARNING COALITION OF DUVAL REPORT

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

TABLE OF CONTENTS

Introduction	1
2008-2009 Participating Children and Centers	2
Measurement Instruments	3
Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R)	4
Test of Early Reading Ability—Third Edition (TERA-3)	5
Alphabet Letter Recognition Inventory (ALRI)	6
Assessing Participating Children	7
Attrition of Children	8
Evaluation Questions	10
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)?	12
School Readiness Summary	22
Question 2: School Readiness Children in Kindergarten	
To what extent do ELC School Readiness children demonstrate positive readiness outcomes as measured by the Florida Kindergarten Readiness Screener (FLKRS)?	23
School Readiness Children in Kindergarten Summary	28
Question 3: ELC/QC	
To what extent do children enrolled in continuing Quality Connections Support Services (ELC/QC) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness?	29
ELC/QC Summary	37

TABLE OF CONTENTS Continued

Question 4: QRIS

To what extent do children enrolled in Intensive Quality Support Services (QRIS) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness? 40

QRIS Summary 52

Question 5: Fall 2008 Kindergarten Readiness

To what extent do Jacksonville children who entered kindergarten in Duval County Public Schools during the 2008-2009 academic year demonstrate *kindergarten readiness* as measured by the fall 2008 Florida Kindergarten Readiness Screener (FLKRS)? 55

Fall 2008 Kindergarten Readiness Summary 55

Increasingly, parents, policymakers, business leaders, and the general public recognize the importance of children's first 5 years of life in promoting their healthy physical, emotional, social, and cognitive development. Research continues to document the importance of the quality of early learning opportunities to children's school readiness and later school success. In addition, 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.

2008-2009 Participating Children and Centers

In 2008-2009, 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 to discuss results and strategies for improving environmental quality. During 2008-2009 academic year, six ELC/QC

educational specialists worked with 264 classrooms, 147 infant or toddler classes, and 117 preschool classes. The 111 ELC/QC centers served approximate 872 infant/toddlers and 1,503 preschool children. ELC/QC educational specialists began the year by visiting each classroom every week. Centers then moved to a differentiated level of support as specific needs were identified.

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 2008-2009 academic year, QRIS provided intensive coaching support to 199 preschool and 296 infant/toddler classrooms in 88 child care centers serving approximately 5,164 children, 2,255 infant/toddlers and 2,909 preschoolers.

Measurement Instruments

The Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R) served as the pretest and posttest assessment of children's school readiness. 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. Florida Institute of Education (FIE)-trained assessors administered the BBCS-3:R, TERA-3, and ALRI in one-on-one settings. Responses to the three assessments were recorded on scannable forms and computer scored.

Children undergo rapid development over the age span covered by the assessments; 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. 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.

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 displays the components of the BBCS-3:R.

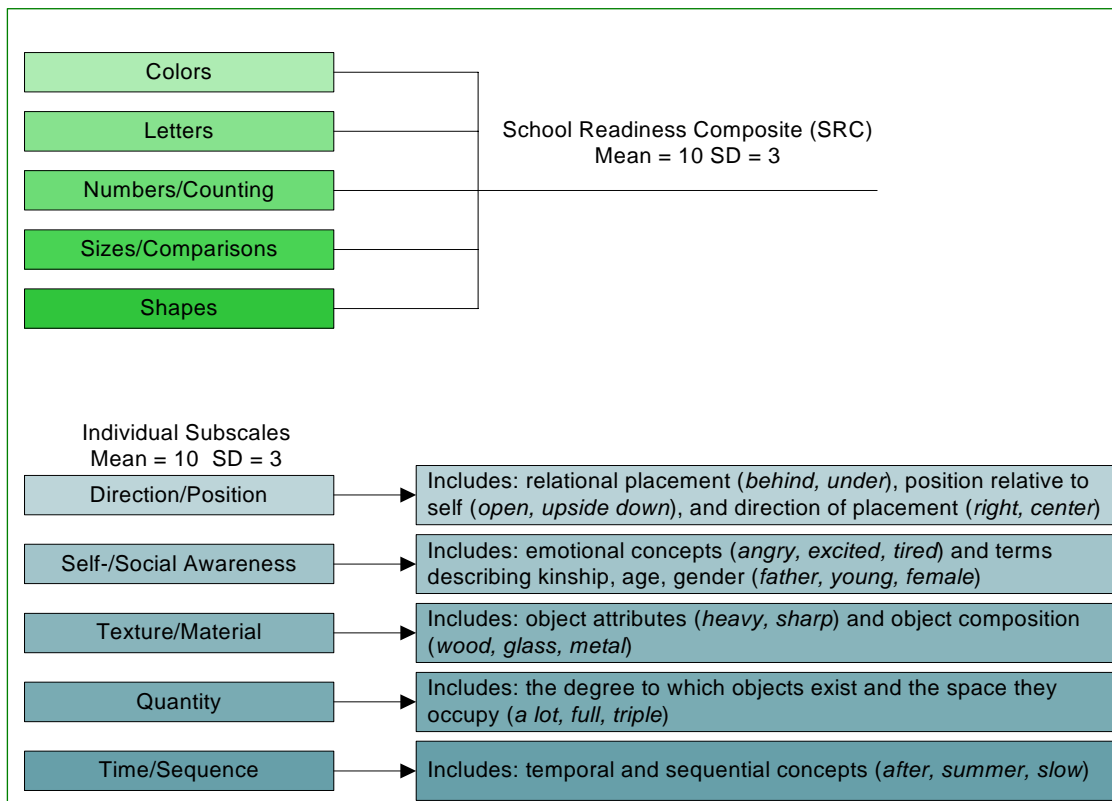


Figure 1. BBCS-3:R structural diagram and composition of the SRC.

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*.

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

The TERA-3 is a norm-referenced test that assesses components of early reading abilities, 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.

- 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.

In addition, a composite score, called the Reading Quotient, is the standardized sum of the three standardized scale scores. Reading Quotient 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. 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 1 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 1
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>
Reading Quotient Score Intervals	Below 70	70-79	80-89	90-110	111-120	121-130	Above 130
Scale Score Intervals	Below 4	4-5	6-7	8-12	13-14	15-16	17-20
Percentile Ranking	2 nd or lower	3 rd to 9 th	10 th to 25 th	26 th to 75 th	76 th to 90 th	91 st to 97 th	98 th 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.¹

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) child care centers and family child care homes (FCCHs) enrolling School Readiness children including 4-year old prekindergarteners and 3-year old preschoolers who are eligible to attend public school kindergarten during the 2010-2011 academic year; and (d) Duval County Public Schools (DCPS) fall 2008 Florida School Readiness Screener (FLKRS) data. Assessments conducted by FIE involved sampled children who were either 3- or 4-years old by September 1, 2008. Hereafter, 4-year old prekindergarten and 3-year old preschool children will simply be called *prekindergarten* and *preschool children* and the terms *prekindergarten* and *prekindergarteners* will only refer to 4-year old prekindergarten children and prekindergarten classes of children eligible to attend public school kindergarten in the 2009-2010 academic year. The terms *preschool* and *preschoolers* will

¹ U.S. Department of Education, National Center for Education Statistics (2001). *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?pubs/edpubs.html>

only refer to 3-year old preschool children and preschool classes of children eligible to attend public school kindergarten in the 2010-2011 academic year. The 2008-2009 assessment plan, shown in Table 2, details the number of assessments given in fall of 2008.

Table 2
2008-2009 ELC Assessment Plan and Counts as of Fall 2008

Assessment	Children
BBCS-3:R 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)	964
TERA-3 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)	471 ^a
ALRI 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)	471 ^a

Note. ^a This number includes the assessment of children in the three ELC/QC sites that became part of the Jacksonville Journey initiative in winter 2009.

Attrition of Children

The study of attrition of the participating children is 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 3 presents mean fall and spring BBCS-3:R SRC scores for the preschool and prekindergarten children.

Table 3
Mean Fall and Spring BBCS-3:R SRC Scores for Preschool and Prekindergarten Children

	Preschool		Prekindergarten	
	<i>n</i>	<i>M</i>	<i>n</i>	<i>M</i>
Fall	260	7.65	704	8.60
Spring	193	8.27	563	9.28

The discrepancy between the number of BBCS-3:R fall and spring SRC scores represents an attrition rate of 26% for preschoolers and 20% for prekindergarteners. Part of the prekindergarten attrition can be accounted for by the removal of three ELC/QC sites from the study when they became part of the Jacksonville Journey initiative in winter 2009. A determination of the importance of attrition involves investigating whether the attrition was random or systematic. Systematic attrition can 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 administered the BBCS-3:R SRC in the spring (complete). Table 4 presents the summary statistics and results of the analysis.

Table 4
Summary Statistics and ANOVA Results: BBCS-3:R SRC Scores by Attrition Category

		Preschool		<i>p</i> -value			Prekindergarten		<i>p</i> -value
		Complete	Incomplete		Complete	Incomplete			
<i>n</i>	<i>M</i>	<i>n</i>	<i>M</i>		<i>n</i>	<i>M</i>	<i>n</i>	<i>M</i>	
193	7.76	67	7.33	.281	563	8.80	141	7.82	<.001***

Note. *** *p* < .01.

The analysis of the BBCS-3:R SRC scores indicate that the mean fall SRC score of preschool children who did not complete the school year in their original classes was not different than the mean fall SRC score of preschool children who did complete the year.

However, the results indicate that the mean fall SRC score of prekindergarten children who did not complete the school year in their original classes was lower than the mean fall SRC scores of the prekindergarten children who did. This finding limits the generalizability of the evaluation results to prekindergarten children with low initial status, as they were not represented in their true proportion in the study.

Evaluation Questions

The report is organized around five research questions developed by ELC. To form responses to the research questions, the 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 DCPS. 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: School Readiness Children in Kindergarten**

To what extent do ELC School Readiness children demonstrate positive readiness outcomes as measured by the Florida Kindergarten Readiness Screener (FLKRS)?

■ **Question 3: ELC/QC**

To what extent do children enrolled in continuing Quality Connections Support Services (ELC/QC) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness?

■ **Question 4: QRIS**

To what extent do children enrolled in Intensive Quality Support Services (QRIS) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness?

■ **Question 5: Kindergarten Readiness**

To what extent do Jacksonville children who entered kindergarten in Duval County Public Schools during the 2008-2009 academic year demonstrate *kindergarten readiness* as measured by the fall 2008 Florida Kindergarten Readiness Screener (FLKRS)?

The responses to these questions come from data obtained during the 2008-2009 academic year and include the fall and spring FIE-collected scores from the TERA-3, ALRI, and BBCS-3:R child assessments and also data provided by DCPS. Both summary statistics and statistical testing of mean fall and spring scores informed the responses to the research questions. Data used to support the responses to Questions 1, 3, and 4 were analyzed using repeated measures ANOVA models, and the results from those models are reported. However, because data to support responses to Questions 3 and 4 were collected from a stratified sample (children were nested in selected centers), hierarchical linear models (HLM) were also analyzed to support findings. When the results of the two procedures differ, the difference will be noted.

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.² Small, medium, and large effect sizes represent

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

meaningful differences. However, Cohen himself and other statisticians caution against interpreting effect sizes in such absolute terms. Moreover, researchers have demonstrated that small effect sizes can have important practical significance.³ 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.⁴ Bloom, Richburg-Hayes, and Black suggested that program effect sizes as small as 10% of a standard deviation can be important to educational policy.⁵

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 (SRC) and also whether the sampled prekindergarten children made statistically significant fall to spring gains on the remaining five BBCS-3:R scales. Data used to support the response to this research

³ 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; 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

⁴ 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>

⁵ 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

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 preschoolers or prekindergarteners. The random sample of School Readiness children was selected from the stratified sampling frame. This sampling resulted in complete BBCS-3:R SRC scores for 193 preschoolers and 181 prekindergarteners. Additionally, a stratified random sample of prekindergarten children enrolled in ECS and JCC child care centers participating in QRIS intensive support and children enrolled in ELC/QC child care centers was selected to respond to ELC Research Questions 3 and 4, and that sample included 71 additional School Readiness prekindergarten children.

Table 5 presents the child and child care center characteristics of the combined random sample of School Readiness children. 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 5
Demographic Information Describing the Sample of Preschool and Prekindergarten School Readiness Children and Child Care Facilities

Characteristic	Preschool		Prekindergarten	
	<i>n</i>	%	<i>n</i>	%
Sex				
Boys	110	57	135	54
Girls	83	43	117	46
Ethnicity				
Black	168	87	194	77
White	24	12	41	16
Other	1	1	17	7
Source Agency				
School Readiness Centers/FCCH	133	100	116	76
ECS Intensive Support Centers			13	9
JCC Intensive Support Centers			11	7
ELC/QC Centers			12 ^a	8

Note. ^aThree ELC/QC centers were subsequently selected to participate in the Jacksonville Journey initiative and no longer received the ELC/QC support.

The sample of preschool and prekindergarten children included more boys than girls, and the largest ethnicity represented in the sample was Black children. Preschool children at 133 locations including 14 family child care homes and prekindergarten children at 152 locations including 8 family child care homes contributed data.

The categorization of 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 2 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.

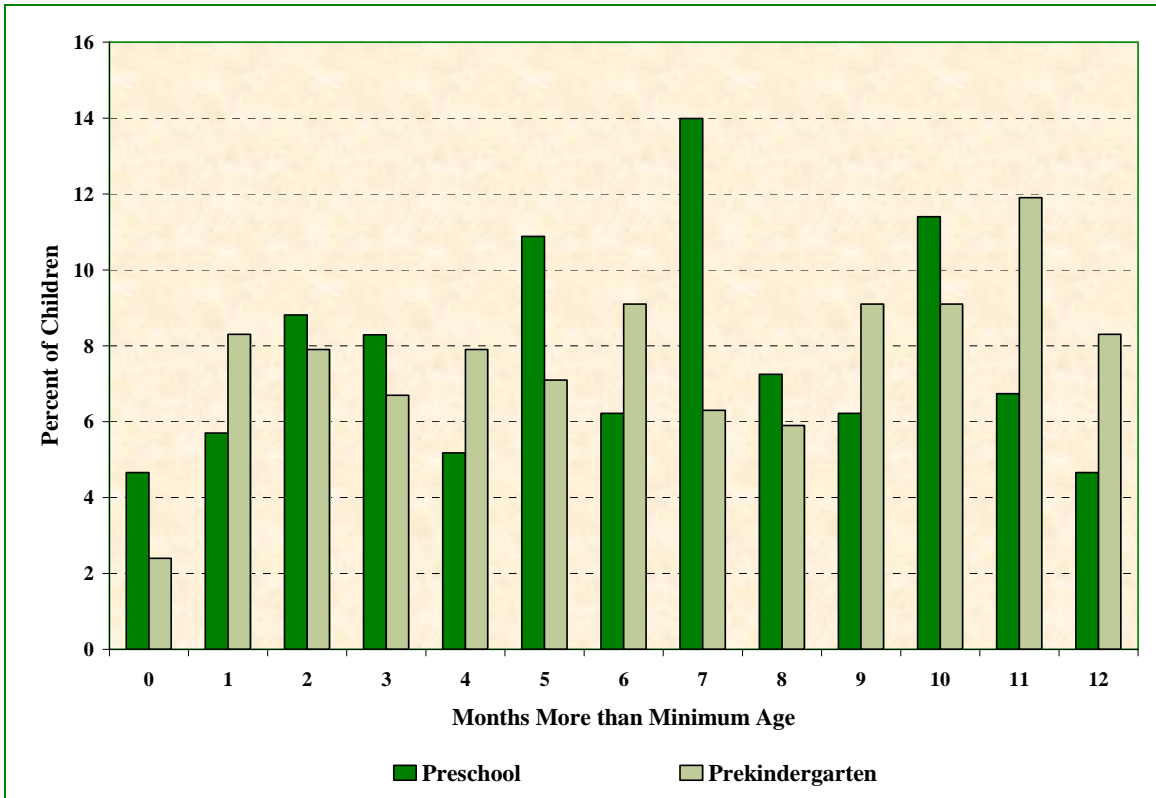


Figure 2. Age (in months above the minimum age for their class assignment) on September 1, 2008, of participating School Readiness children with complete BBCS-3:R SRC scores.

The ages of the participating children with complete BBCS-3:R SRC scores indicate that 50% of the preschool and prekindergarten children were at least 6 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 SRC portion of the BBCS-3:R while the prekindergarten children were assessed using the SRC and the additional BBCS-3:R scales. Table 6 presents summary statistics for the BBCS-3:R SRC scores by the children’s status as preschoolers or prekindergarteners.

Table 6
BBCS-3:R SRC Summary Statistics

Sample	Fall		Spring	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Preschool (<i>n</i> = 193)	7.76	2.89	8.27	3.04
Prekindergarten (<i>n</i> = 252)	8.38	2.46	8.74	2.47
Combined (<i>n</i> = 445)	8.11	2.67	8.54	2.74

Preschool mean scores were lower than prekindergarten mean scores in the fall and spring. The preschool mean scores were also more varied than the prekindergarten mean scores. Additionally, fall and spring mean scores for preschool and prekindergarten children were below the national mean, 10.

Data were analyzed using a repeated measures ANOVA model that controlled for the children’s class assignment (preschool or prekindergarten) and for possible differences in the achievement of boys and girls. Table 7 presents the results of the analysis.

Table 7
ANOVA Results: BBCS-3:R SRC Data

Source	F	p-value
Time	25.23	<.001***
Time*Sex	0.21	.651
Time*Class Assignment	0.83	.363
Sex	4.72	.030**
Class Assignment	4.69	.030**

Note. ** Indicates statistical significance at $p < .05$, and *** indicates statistical significance at $p < .01$.

The mean spring SRC score was greater than mean fall score ($p < .001$) resulting in an effect size of 0.14 indicating the School Readiness children made statistically significant gains from fall to spring. The results also indicate that gains made by preschoolers were not different from those of prekindergarteners. Furthermore, gains were not statistically different for boys and girls. However, girls' mean scores were statistically higher than boys' mean scores, and prekindergarteners' mean scores were statistically higher than preschoolers' mean scores. Figure 3 displays these different outcomes that represent similar growth.

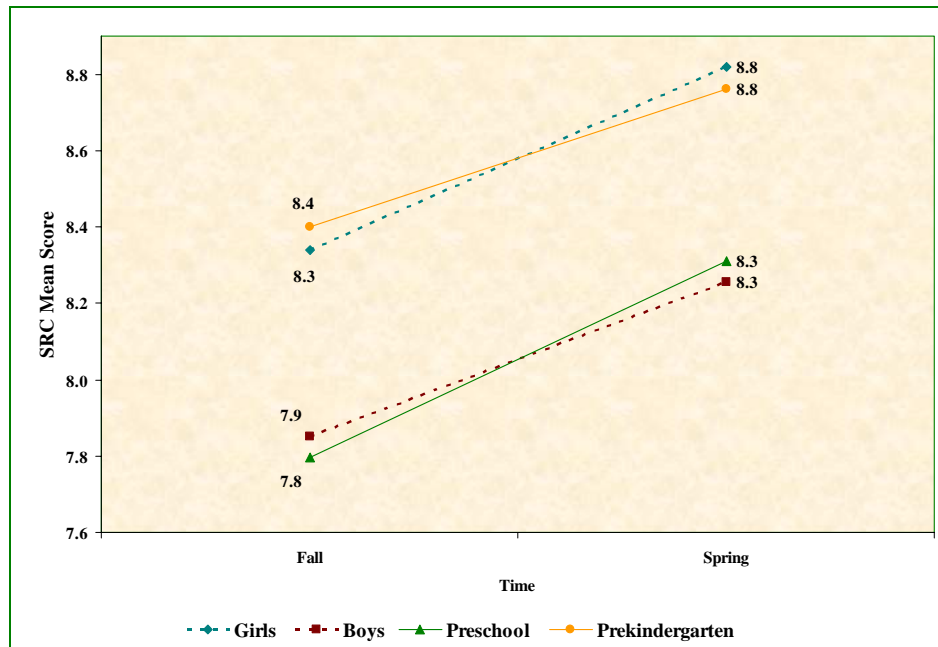


Figure 3. BBCS-3:R SRC scores of preschoolers ($n = 193$), prekindergarteners ($n = 252$), boys ($n = 245$), and girls ($n = 200$).

Averaged across class assignment as preschoolers and prekindergarteners, girls' mean scores (turquoise rhombi on dotted line) and boys' mean scores (red squares on dotted line) have similar slopes which represent similar growth, but have different fall and spring mean scores. Similarly, when boys' and girls' scores are averaged, preschoolers' mean scores (green triangles on solid line) and prekindergarteners' mean scores (orange circles on solid line) have similar slopes but have different fall and spring mean outcomes. The fall to spring SRC achievement of boys when averaged across class assignment was the same as the fall to spring SRC achievement of preschool boys and girls.

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 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 4 shows the percentage of preschool scores in the BBSC-3:R achievement categories in the fall and spring.

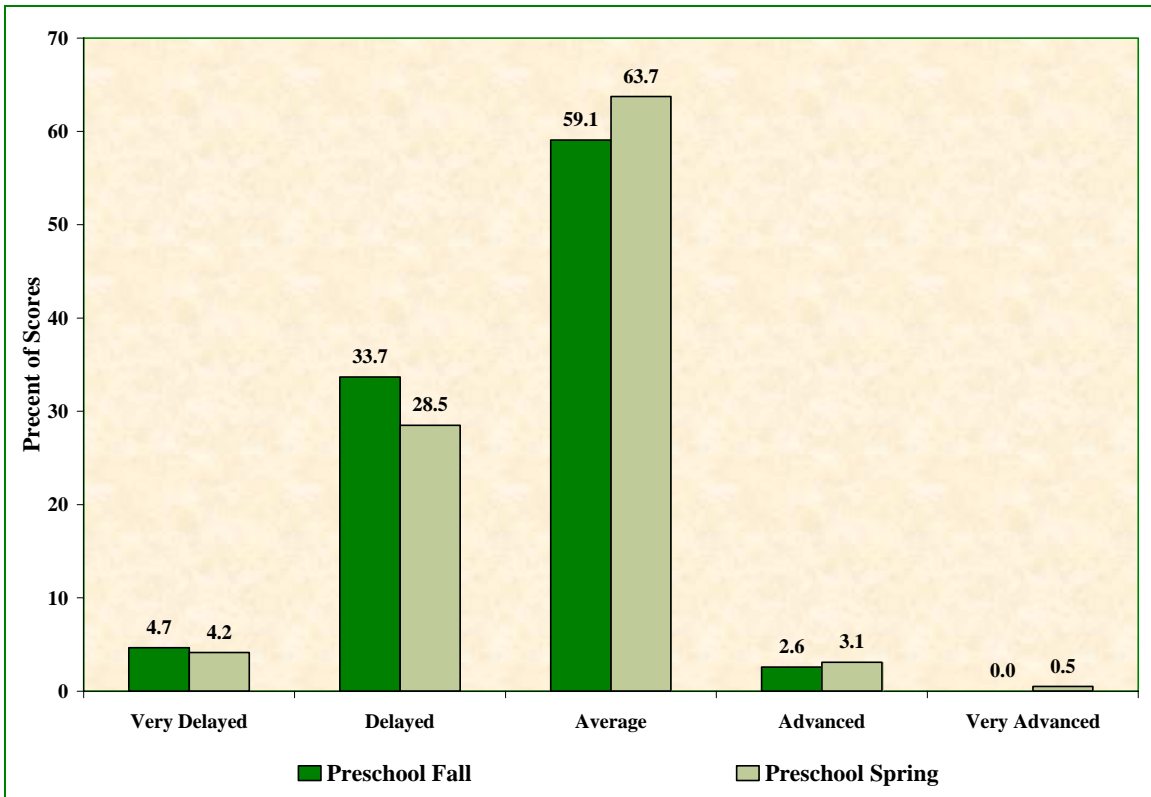


Figure 4. The percent of preschool children's BBSC-3:R SRC scores categorized as *Very Delayed* to *Very Advanced* in the fall and spring of the school year ($n = 193$).

The preschool children's BBSC-3:R SRC mean scores indicate that they made fall to spring gain, and, as can be seen in Figure 4, the gain resulted in more spring than fall scores categorized *Average* or higher. In the fall, the scores of 62% of the preschoolers' scores were classified *Average* or higher, and in the spring, 67% of the scores were classified *Average* or higher. Similarly, Figure 5 shows the percentage of prekindergarten BBSC-3:R SRC fall and spring scores in the achievement categories.

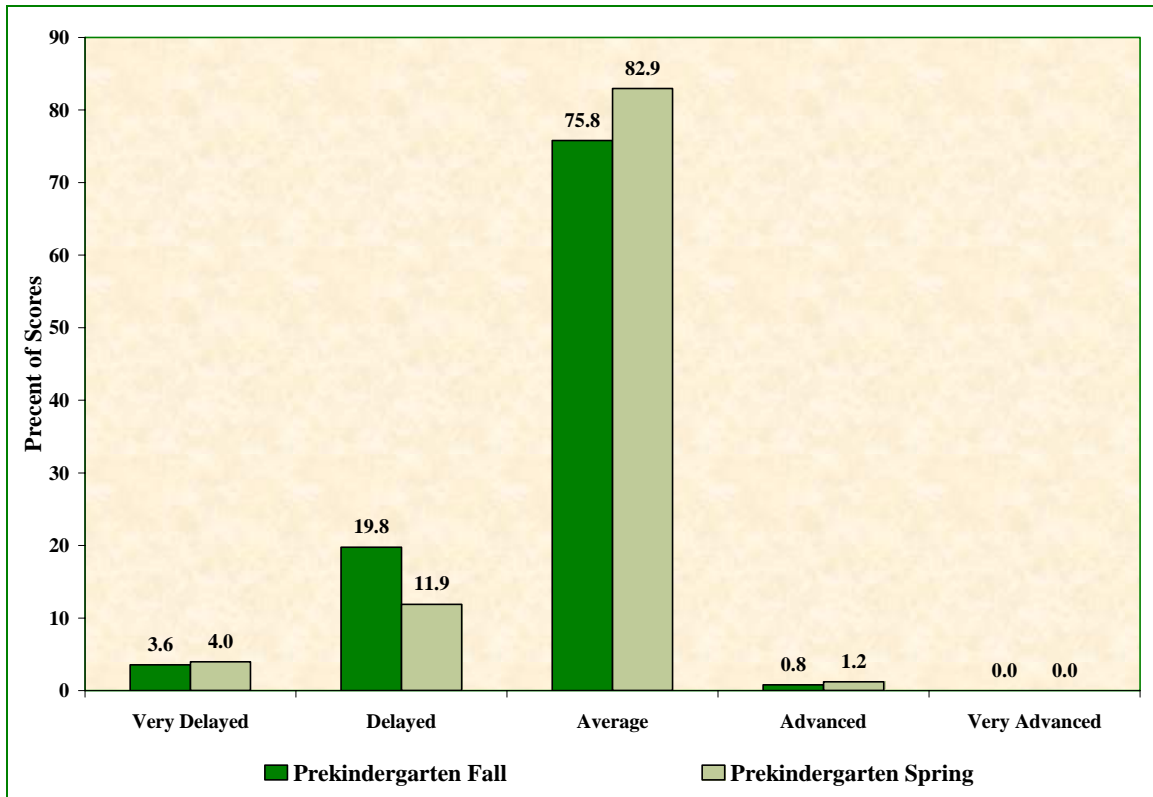


Figure 5. The percent of prekindergarten children's BBSC-3:R School Readiness Composite scores categorized as *Very Delayed* to *Very Advanced* in the fall and spring of the school year ($n = 252$).

The prekindergarten children's BBSC-3:R SRC scores indicate that they made fall to spring achievement gain, and, as can be seen in Figure 5, the gain resulted in more spring than fall scores categorized *Average* or higher. In the fall, the scores of 77% of the prekindergarten children were classified *Average* or higher, and in the spring, 84% of the scores were classified *Average* or higher.

Prekindergarten children were also given the five BBSC-3:R scales that do not form the SRC. Table 8 presents fall and spring summary statistics for these additional BBSC-3:R scales.

Table 8

BBCS-3:R Scales: Summary Statistics for Prekindergarten School Readiness Children

BBCS-3:R Test	Fall		Spring	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Direction/Position	8.06	2.58	8.51	2.68
Self-/Social Awareness	7.79	2.70	8.31	2.31
Texture/Material	7.87	2.33	8.07	2.41
Quantity	7.67	2.57	8.13	2.27
Time/Sequence	8.49	2.25	8.56	2.13

The highest mean spring score was on the Time/Sequence scale and the lowest mean score was on the Texture/Material scale. The greatest difference in the fall and spring mean scores was on the Self-/Social Awareness scale. The scores of these five additional scales were analyzed using repeated measures ANOVA models that controlled for possible differences in the achievement of girls and boys. Table 9 presents the results of the analyses.

Table 9

BBCS-3:R ANOVA Results

BBCS-3:R Scale	Source	<i>F</i>	<i>p</i> -value	<i>ES</i>
Direction/Position	Time	10.38	.001 ^{***}	0.15
	Time*Sex	1.64	.201	
	Sex	0.03	.856	
Self-/Social Awareness	Time	15.36	<.001 ^{***}	0.17
	Time*Sex	0.82	.367	
	Sex	0.31	.575	
Texture/Material	Time	2.06	.153	
	Time*Sex	0.24	.628	
	Sex	0.41	.522	
Quantity	Time	9.52	.002 ^{***}	0.24 (boys)
	Time*Sex	4.03	.046 ^{**}	
	Sex	0.43	.513	
Time/Sequence	Time	0.19	.667	
	Time*Sex	0.30	.583	
	Sex	0.03	.868	

Note. ^{**} Indicates that $p < .05$, and ^{***} indicates that $p < .01$.

The prekindergarteners made statistically significant fall to spring gains on the Direction/Position and Self-/Social Awareness scales (effect sizes = 0.15 and 0.17, respectively). The prekindergarteners did not make statistically significant gains on the Texture/Materials or Time/Sequence scales. Additionally, mean scores of girls and boys were not different across time nor was their fall to spring growth different. However, results indicate that the Quantity scale fall to spring mean scores represented positive fall to spring growth ($p = .002$); however, evidence also suggests that the growth was different for boys and girls. Figure 6 displays the difference in growth for boys and girls on the BBCS-3:R Quantity scale.

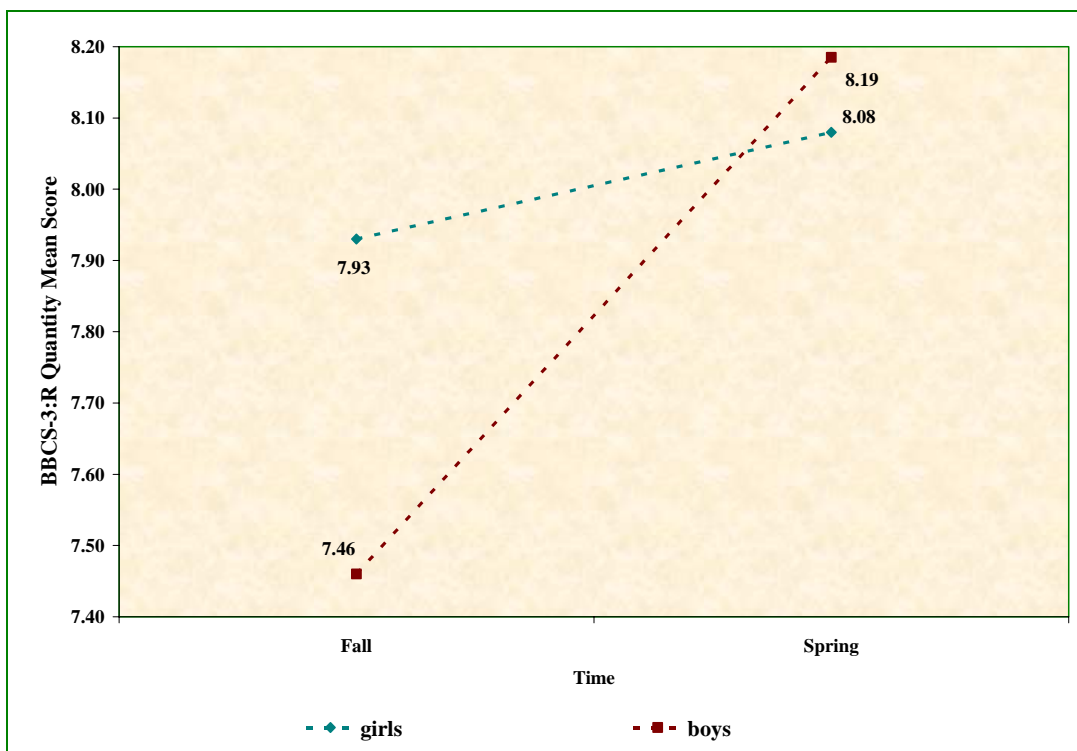


Figure 6. The fall to spring adjusted mean scores of the School Readiness prekindergarten boys ($n = 135$) and girls ($n = 117$) on the BBCS-3:R Quantity scale.

The adjusted mean fall and spring scores suggests that BBCS-3:R Quantity achievement over the school year was different for boys (red squares on dotted line) and girls (turquoise rhombi on dotted line) and that the initial advantage girls had over the

boys was gone by the end of the school year. The boys' statistically significant gain resulted in an effect size of 0.24.

School Readiness Summary

- The School Readiness sample included both preschool ($n = 193$) and prekindergarten ($n = 252$) 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 (81%).
- The age range of both the sampled preschool and prekindergarten children was typical for Florida.
- Preschool and prekindergarten children demonstrated statistically significant gains on the BBCS-3:R SRC scale with an effect size of 0.14.
- In spring, 67% of the preschool children and 84% of the prekindergarten children had BBCS-3:R SRC scores classified *Average* or higher.
- On the BBCS-3:R SRC, girls scored higher in the fall and spring than boys; however, boys and girls made the same gains over the school year.
- School readiness gains made by the preschoolers were similar to the gains made by prekindergarteners; however, the fall and spring BBCS-3:R SRC mean scores of the preschool children were statistically lower than prekindergarteners' mean scores.
- The School Readiness prekindergarten children demonstrated statistically significant gains on the BBCS-3:R Self-/Social Awareness and Direction/Position scales with effect sizes of 0.17 and 0.15, respectively.
- The children's BBCS-3:R Quantity scale gains were different for boys and girls with boys making statistically significant gains (effect size = 0.24).

Question 2: School Readiness Children in Kindergarten

To what extent do ELC School Readiness children demonstrate positive readiness outcomes as measured by the Florida Kindergarten Readiness Screener (FLKRS)?

The extent ELC School Readiness children demonstrated readiness outcomes as measured by FLKRS was determined by combining an ELC-provided data set containing children identified by ELC as School Readiness prekindergarteners during the 2007-2008 academic year and the DCPS 2008 FLKRS data.

FLKRS consists of 19 items from the Early Childhood Observation System (ECHOS) and two scales from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The ECHOS items form an observational instrument that is aligned with the domains of the *Florida Voluntary Prekindergarten Education Standards*. The DIBELS Letter Naming Fluency and Initial Sounds Fluency scales measure skills important to the acquisition of reading and are aligned with the *Florida Voluntary Prekindergarten Education Standards' Emergent Literacy* domain. Each child's kindergarten teacher administered the ECHOS screening during the first 30 days of the school year. In Duval County, assessment teams consisting of non-teaching faculty collected DIBELS data during the first 30 days of the school year.

The readiness results for the ECHOS scale were calculated from the observational ratings of the teachers. Item ratings are reported in three readiness categories, *Demonstrating*, *Emerging/Progressing*, and *Not Yet Demonstrating*. Scores in the *Demonstrating* and *Emerging/Progressing* categories are further classified as *Ready*.

The DIBELS measures are individually administered tests that provide a measure of risk. In the Letter Naming Fluency task, the child is presented with a page of upper-

and lowercase letters arranged in non-alphabetical order and allowed 1 minute to produce as many letter names as he or she can. In the Initial Sounds Fluency task, the assessor presents the child with four pictures, names each picture, and then asks the child to identify the picture that begins with a sound produced by the assessor.

DIBELS scores are categorized as *Above Average*, *Low Risk*, *Moderate Risk*, and *High Risk*. *Above Average* and *Low Risk* scores are further classified as *Ready*.

The ELC data contained 1,410 observations, and the DCPS FLKRS data contained 8,232 observations of children who were assessed using the FLKRS scales and who completed the kindergarten year in DCPS elementary schools. The combined data contained 671 (48%) observations from both sources. Therefore, the observations in the combined data are those of ELC School Readiness 2007-2008 prekindergarten children who attended DCPS kindergarten during the entire 2008-2009 academic year and were assessed using at least one of the three FLKRS measures. Table 10 presents the demographic information of these 671 children.

Table 10
Demographic Information Describing the Sample of 2007-2008 Prekindergarteners as 2008-2009 DCPS Kindergarteners

Characteristic	<i>n</i>	%
Sex		
Boys	356	53
Girls	315	47
Ethnicity		
Black	509	76
White	98	15
Other	64	10
Lunch		
Free	544	81
Reduced	61	9
Full Price	66	10

The sample of children included more boys than girls, the largest ethnicity represented was Black children, and 90% of the children received free or reduced-price lunch. The children’s ages on September 1, 2007, ranged from 60 to 78 months; however, only seven children were over-aged, and 47% of the children were 66 months old or less on September 1.

At the time of the fall FLKRS assessments, the 671 children attended 99 DCPS elementary schools. Table 11 presents the names of the 23 schools enrolling at least 10 School Readiness children.

Table 11
Elementary Schools Enrolling 10 or More School Readiness Kindergarten Children

School Name	<i>n</i>	School Name	<i>n</i>
Arlington Heights	10	Hyde Grove	10
Andrew A. Robinson	20	Hyde Park	10
Beauclerc	14	Jacksonville Heights	14
Biscayne	10	John E. Ford	29
Brentwood	14	Merrill Road	12
Carter G. Woodson	10	Normandy Village	13
Chimney Lakes	11	North Shore	17
Crown Point	12	R. V. Daniels	15
Fort Caroline	14	Richard L. Brown	10
Garden City	15	Timuquan	12
Gregory Road	15	Woodland	15
Highlands	10		

The school enrolling the largest number of School Readiness kindergarten children was John E. Ford Elementary School and six schools enrolled the minimum number of 10 students. Figure 7 shows these 23 schools, placed on a Duval County map that differentiates between Title I and non-Title I elementary schools.

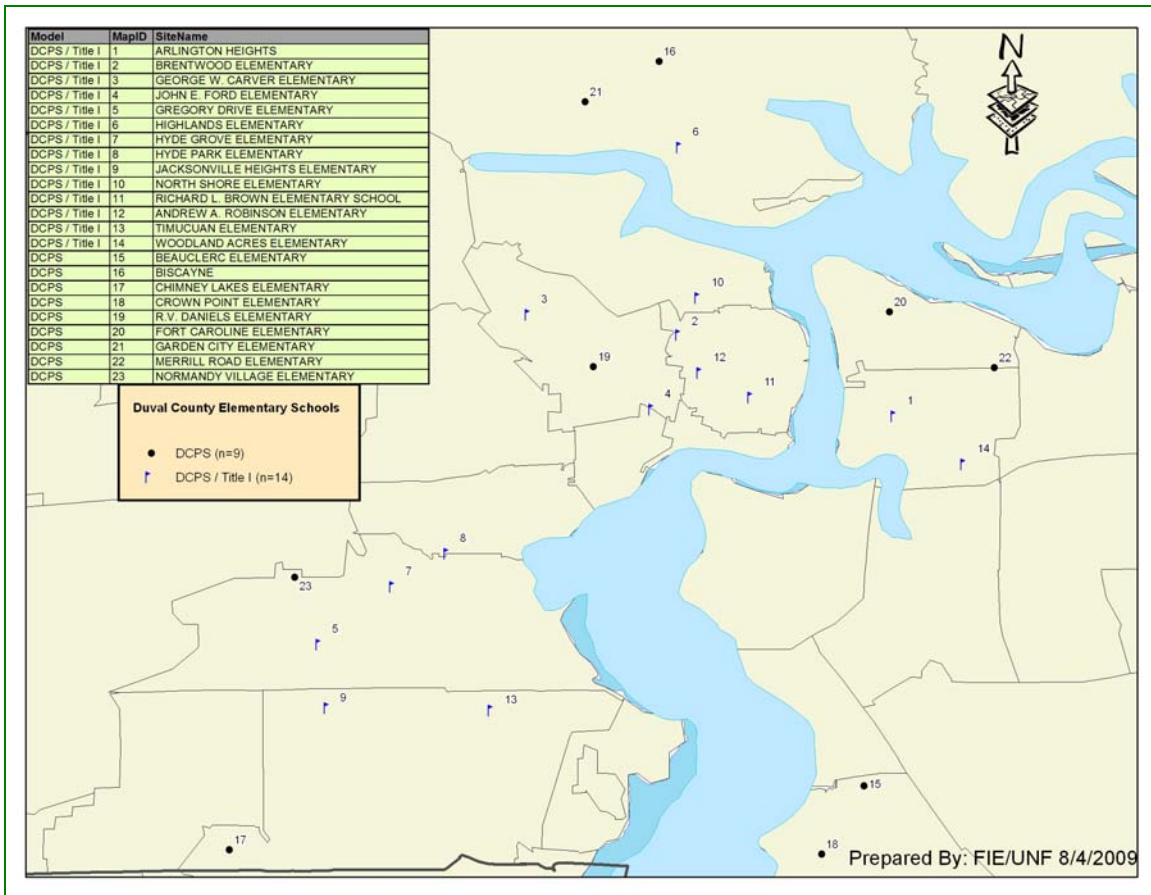


Figure 7. The location of the 23 DCPS elementary schools enrolling at least 10 kindergarten children who were 2007-2008 School Readiness prekindergarteners.

The schools were primarily located on the Northside and Westside, and 14 of the 23 schools were Title I elementary schools.

All of the 671 children did not have reportable scores on all three measures, but all had a reportable score on at least one of the measures. Table 12 presents the scores of the children by percentage for each scoring category and readiness status.

Table 12
FLKRS Scores of the 2008-2009 DCPS Kindergarten School Readiness Children

Measure	Category	<i>n</i>	%	School Readiness % Ready	DCPS % Ready	Florida % Ready
ECHOS	<i>D</i>	232	35	85	86	88
	<i>E</i>	331	50			
	<i>N</i>	102	15			
Letter Naming	<i>A</i>	459	69	82	79	77
	<i>L</i>	88	13			
	<i>M</i>	67	10			
	<i>H</i>	51	8			
Initial Sounds	<i>A</i>	274	42	62	65	68
	<i>L</i>	129	20			
	<i>M</i>	144	22			
	<i>H</i>	106	16			

Note. ECHOS *D* is *Demonstrating*, *E* is *Emerging/Progressing*, and *N* is *Not Yet Demonstrating*; and for DIBELS measures *A* is *Above Average*, *L* is *Low Risk*, *M* is *Moderate Risk*, and *H* is *High Risk*.

The percentage of ELC 2007-2008 School Readiness children’s ECHOS *Ready* scores was slightly less than the DCPS percentage; the percentage of *Ready* Letter Naming Fluency scores exceeded both the DCPS and Florida percentages, and the percentage of *Ready* Initial Sounds Fluency scores was also slightly less than the DCPS percentage. Table 13 presents information concerning the percentage of School Readiness kindergartens with *Ready* scores.

Table 13
FLKRS Ready Scores of the DCPS Kindergarten ELC School Readiness Children

<i>Ready</i> Scores	<i>n</i>	%
No <i>Ready</i> Scores	33	5
Only One <i>Ready</i> Score	95	14
Only Two <i>Ready</i> Scores	211	31
Three <i>Ready</i> Scores	332	49

Note. Missing scores are considered *Not Ready* in obtaining values for this table.

Four fifths (80%) of the children had *Ready* scores on at least two of the three FLKRS measures.

School Readiness Kindergarteners Summary

- Of the 1,410 School Readiness children identified by ELC as attending prekindergarten in 2007-2008, 671 (48%) were also identified in the DCPS FLKRS data of children who completed kindergarten in DCPS during the 2008-2009 academic year.
- 53% of the children were boys, 76% were Black, and 90% received free or reduced-price lunch.
- The children were assessed using the FLKRS measures in fall 2008 at 99 DCPS elementary school; 23 of the schools enrolled 10 or more of the 2007-2008 School Readiness children. These 23 schools are mostly located on the Northside or Westside.
- 85% of the School Readiness kindergarteners had *Ready* scores on the ECHOS measure. Across DCPS elementary schools, 86% of the ECHOS scores were *Ready* scores.
- 82% of the School Readiness kindergarteners had *Ready* scores on the DIBELS Letter Naming Fluency measure. Across DCPS elementary schools, 79% of the DIBELS Letter Naming Fluency scores were *Ready* scores.
- 62% of the School Readiness kindergarteners had *Ready* scores on the DIBELS Initial Sounds Fluency measure. Across DCPS elementary schools, 65% of the DIBELS Initial Sounds Fluency scores were *Ready* scores.
- 49% of the School Readiness kindergarteners had *Ready* scores on all three FLKRS measures, and 80% of the School Readiness kindergarteners had *Ready* scores on at least two of the three FLKRS measures.

Question 3: ELC/QC

To what extent do children enrolled in Quality Connections Support Services (ELC/QC) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness?

The extent to which children enrolled in ELC/QC 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 15 child care ELC/QC. Centers were randomly selected and then prekindergarten children within the selected centers were randomly sampled. The original sample included children from 18 ELC/QC sites; however, three of the sites became part of the Jacksonville Journey initiative in winter 2009, and the three sites were removed from the ELC/QC study. However, any data from School Readiness children attending these three Jacksonville Journey sites were included in the response to Question 1 concerning School Readiness children. Ethnicity data were collected across six categories; however, four categories (*Hispanic*, *Asian*, *Mixed*, and *Other*) and children with missing data were collapsed into one category, *Other*, because of their small representation. Table 14 presents the child and child care center characteristics of the ELC/QC sample.

Table 14

Demographic Information Describing the Sample of Children Enrolled in ELC/QC Child Care Centers

Characteristic	<i>n</i>	%
Sex		
Boys	53	56
Girls	41	44
Ethnicity		
Black	50	53
White	20	21
Other	24	26
School Readiness	16	17

The sample of children with complete scores included more boys than girls, and the largest ethnicity represented was Black children. Additionally, 17% of the 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 BBCS-3:R, TERA-3, and ALRI scales. Table 15 presents the summary statistics for the BBCS-3:R, TERA-3, and ALRI scales.

Table 15

BBCS-3:R, TERA-3, and ALRI Summary Statistics: ELC/QC Sample

Assessment	Fall		Spring	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BBCS-3:R				
SRC	8.81	2.78	9.32	2.56
Direction/Position	8.33	2.50	8.33	2.80
Self-/Social Awareness	8.22	2.84	8.56	2.50
Texture/Material	7.98	2.24	8.15	2.18
Quantity	7.93	2.72	8.60	2.26
Time/Sequence	8.44	2.29	8.64	2.22
TERA-3				
Reading Quotient	91.72	14.38	96.17	13.80
Alphabet	9.97	3.79	11.36	3.56
Conventions	8.24	1.92	8.36	2.39
Meaning	7.94	2.31	8.49	2.34
ALRI	29.26	18.08	40.77	14.94

The spring mean scores for all measures other than the BBCS-3:R Direction/Position scales were higher than the fall mean scores. The largest gain on comparable scales (BBCS-3:R scales and TERA-3 scales other than the Reading Quotient) occurred on the TERA-3 Alphabet scale. Repeated measures ANOVA statistical models were analyzed to determine if the children made statistically significant fall to spring gains in school readiness. Table 16 presents the results of the analyses of the BBCS-3:R scales. All models controlled for possible differences in the achievement of girls and boys.

Table 16
ANOVA Results of BBCS-3:R Scales: ELC/QC Sample

BBCS-3:R Scale	Source	F	p-value	ES
SRC	Time	8.74	.004***	0.17
	Time*Sex	0.40	.527	
	Sex	2.03	.157	
Direction/Position	Time	0.00	.989	
	Time*Sex	0.01	.913	
	Sex	0.34	.561	
Self-/Social Awareness	Time	2.01	.160	
	Time*Sex	0.03	.858	
	Sex	0.25	.618	
Texture/Material	Time	0.72	.400	
	Time*Sex	0.16	.686	
	Sex	0.89	.348	
Quantity	Time	6.11	.015**	0.22
	Time*Sex	2.54	.114	
	Sex	1.74	.191	
Time/Sequence	Time	0.36	.550	0.25 (boys)
	Time*Sex	9.81	.002***	
	Sex	2.26	.136	

Note. ** indicates statistical significance, $p < .05$, and *** indicates statistical significance, $p < .01$.

Results of the analyses indicate that statistically significant gains were made on the BBCS-3:R SRC and Quantity scales with resulting effect sizes of 0.17 and 0.22, respectively. The results also indicate that for all BBCS-3:R scales other than the

Time/Sequence scale there was no difference in the achievement gains or outcomes for boys and girls. However, on the BBCS-3:R Time/Sequence scale, the gains made by girls and boys were different. Figure 8 displays the differences in the gains of girls and boys.

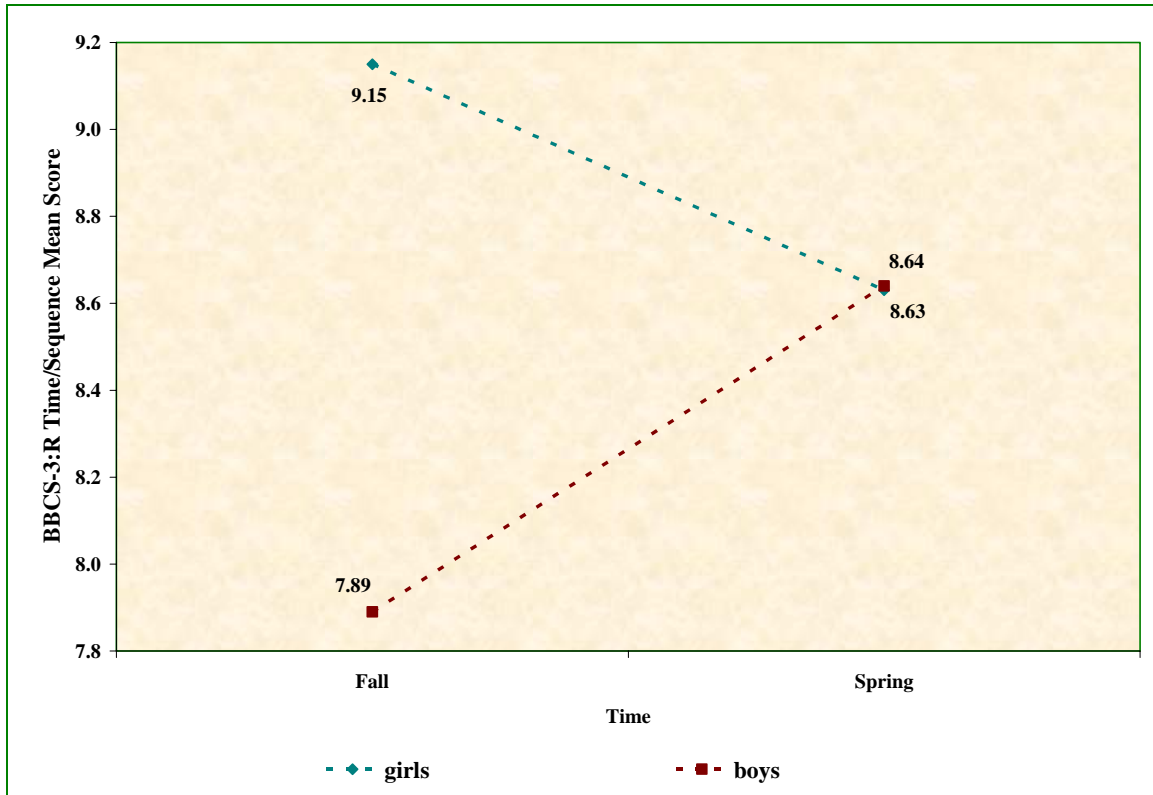


Figure 8. The difference in achievement of girls ($n = 41$) and boys ($n = 53$) on the BBCS-3:R Time/Sequence scale.

In fall, the mean score of the boys (red square) was significantly different than the girls' score (turquoise rhombus), and the boys made statistically significant gains on the BBCS-3:R Time/Sequence with resulting effect size of 0.25. The girls lost ground on the concepts measured by this scale.

Repeated measures ANOVA statistical models were analyzed to determine whether the children made statistically significant fall to spring gains in early reading achievement. Table 17 presents the results of the analyses for the TERA-3 scales and the ALRI. All models controlled for possible differences in the scores of boys and girls.

Table 17
ANOVA Results of TERA-3 Scales and the ALRI: ELC/QC Sample

Assessment	Source	F	p-value	ES
TERA-3				
Reading Quotient	Time	13.27	.001***	0.30
	Time*Sex	0.11	.743	
	Sex	0.92	.341	
Alphabet	Time	19.05	<.001***	0.46
	Time*Sex	0.71	.402	
	Sex	1.01	.317	
Conventions	Time	0.33	.569	
	Time*Sex	0.64	.426	
	Sex	1.48	.226	
Meaning	Time	4.14	.045**	0.18
	Time*Sex	0.15	.704	
	Sex	0.02	.893	
ALRI	Time	78.89	<.001***	0.70
	Time*Sex	1.33	.252	
	Sex	1.57	.213	

Note. ** Indicates statistically significant difference, $p < .05$, and *** indicates statistically significant difference, $p < .01$.

The ELC/QC children made statistically significant gains on all TERA-3 scales other than the Conventions scale. Neither the gains nor achievement outcomes were different for girls and boys. The children also made statistically significant gains resulting in a large effect of 0.70 on the ALRI. Gain in letter recognition was also not different for boys and girls.

The ELC/QC sampling used a stratified sampling frame; therefore, children were nested in centers. Because children learned together in classes, it is important that ANOVA models which ignore the dependency in scores and HLM models which account for the dependency result in the same conclusions. ANOVA and HLM models of the ELC/QC data are in agreement with the exception of the TERA-3 Meaning scale. ANOVA results indicate statistically significant gains ($p = .045$) and HLM indicates no

gain ($p = .118$). HLM results indicate that 13% of the variance in the children’s Meaning scale scores can be accounted for by the center in which they learned rather than by individual differences. However, as data were collected from only 15 centers, the HLM study is under-powered and, therefore, may fail to detect a true fall to spring gain. At best, the TERA-3 Meaning scale results should be interpreted with caution.

Another way to look at the early reading and school readiness achievement of the children enrolled in ELC/QC child care centers is to look at the fall to spring differences in the percentage of scores ranked in the BBSC-3:R, TERA-3, and ALRI, and achievement categories. (See page 6, Table 1 for the TERA-3 categories.) The BBSC-3:R SRC scale scores can be displayed in five categories ranging from *Very Delayed* to *Very Advanced*. Figure 9 presents the percentage of the BBSC-3:R SRC scale scores in each of the five categories.

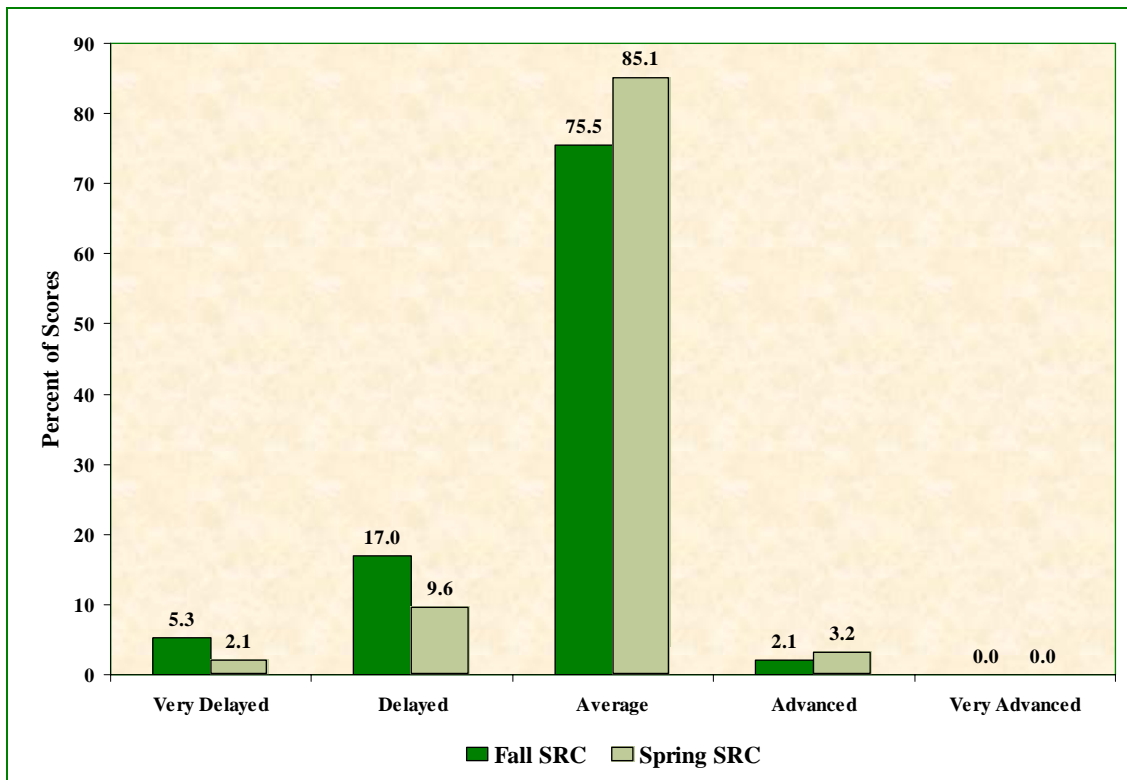


Figure 9. The distribution of fall and spring BBSC-3:R SRC scale scores ($n = 94$).

Figure 9 clearly shows that the children’s gains on the BBCS-3:R SRC measure resulted in more scores ranking in the broad *Average* category in the spring than in the fall. In the fall, 78% of the children’s scores ranked *Average* or higher, and in the spring, 88% of the children’s scores ranked *Average* or higher. No spring or fall School Readiness Composite scores ranked *Very Advanced* and fewer than 4% ranked in the *Advanced* category at either time.

Figure 10 shows the percentage of scores in the achievement categories in the fall and spring of the academic year for the TERA-3 Reading Quotient.

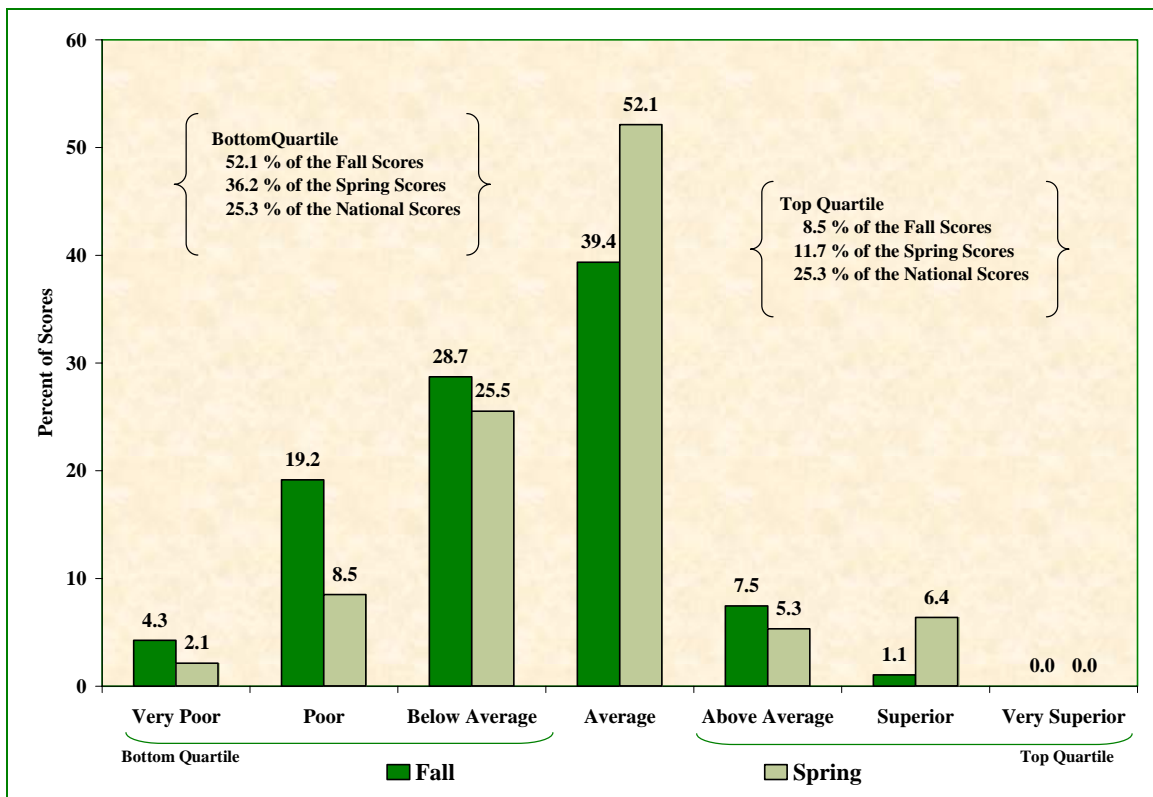


Figure 10. The distribution of TERA-3 Reading Quotient fall and spring scores (n = 94).

At the end of the academic year, 36% of the TERA-3 Reading Quotient scores ranked in the bottom quartile of national scores, and 12% of the TERA-3 Reading Quotient scores ranked in the top quartile of national scores. The percentages indicate

that 60 of the 94 prekindergarteners had spring scores ranked *Average* or higher.

Figure 11 shows the percentage of scores in the achievement categories in the fall and spring of the school year for the TERA-3 Alphabet scale.

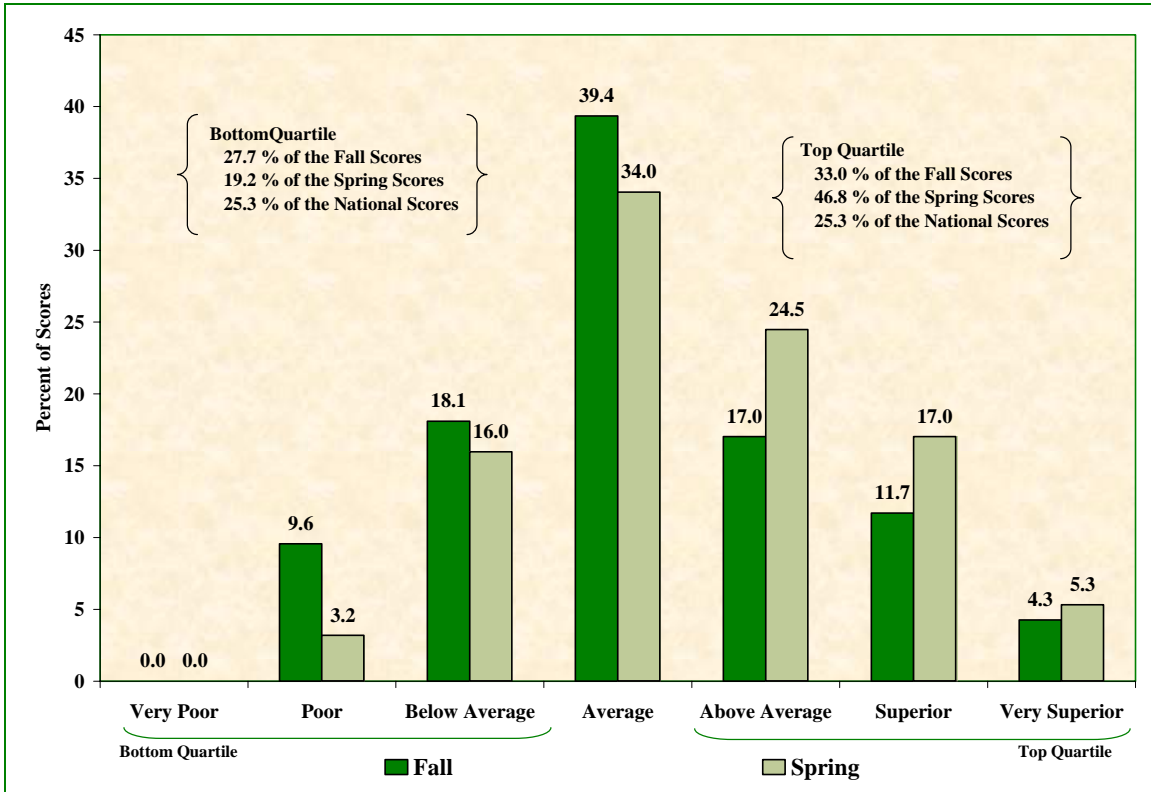


Figure 11. The distribution of TERA-3 Alphabet scale fall and spring scores ($n = 94$).

At the end of the academic year, 19% of the TERA-3 Alphabet scores ranked in the bottom quartile of national scores, and 47% of the TERA-3 Alphabet scores ranked in the top quartile of national scores. The percentages indicate that 76 of the 94 prekindergarteners had spring scores ranked *Average* or better. Furthermore, at the end of the academic year, 22% of the Alphabet scale scores ranked above the 90th national percentile.

ALRI scores are presented in Figure 12 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.

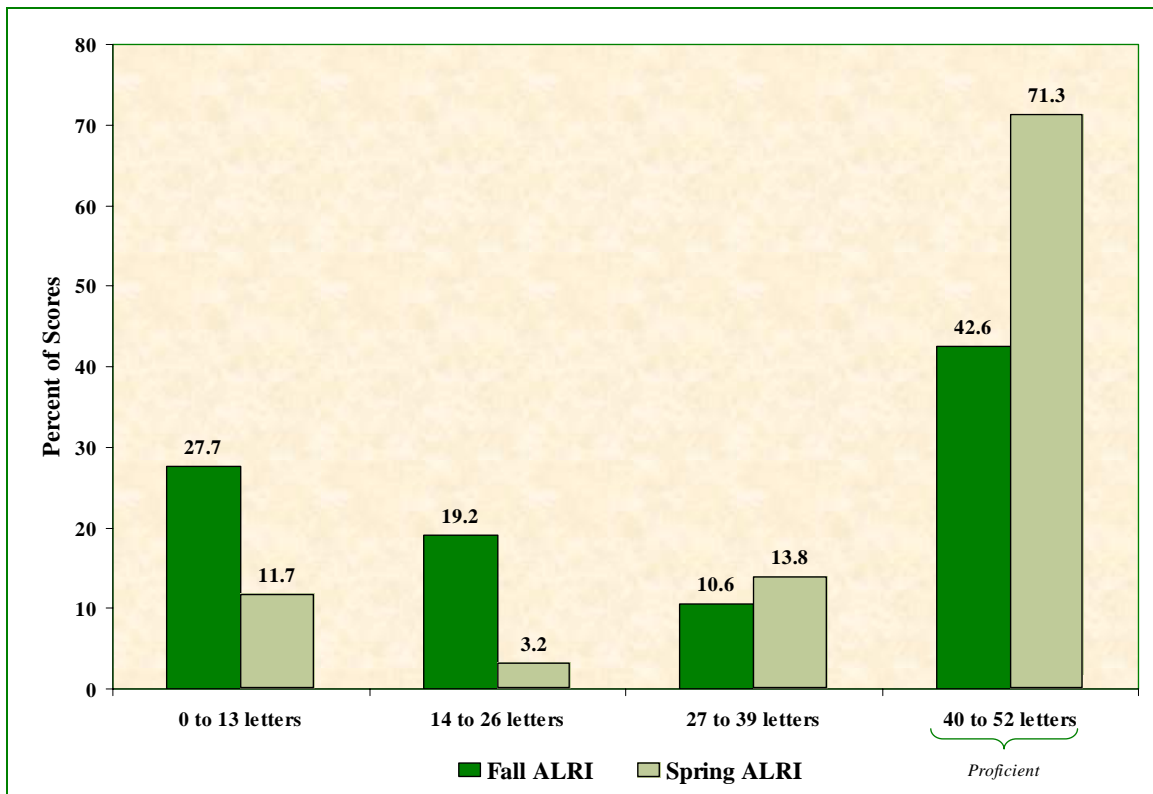


Figure 12. The Alphabet Letter Recognition Inventory scores of the ELC/QC children ($n = 94$).

Inspection of Figure 12 shows that, at the end of the year, 71% of the children were *proficient* in letter recognition, recognizing at least 75% of the letters. Additionally, almost 17% of the children recognized all 52 letters presented, 39% recognized at least 50 of the letters, and 11% recognized fewer than 8 letters (the federal guideline for Head Start).

ELC/QC Summary

Figure 13 summarizes the fall to spring gains of the sampled children enrolled in ELC/QC child care centers in terms of the percentile ranking of the mean fall and spring early reading and school readiness scores that represent statistically significant gains.

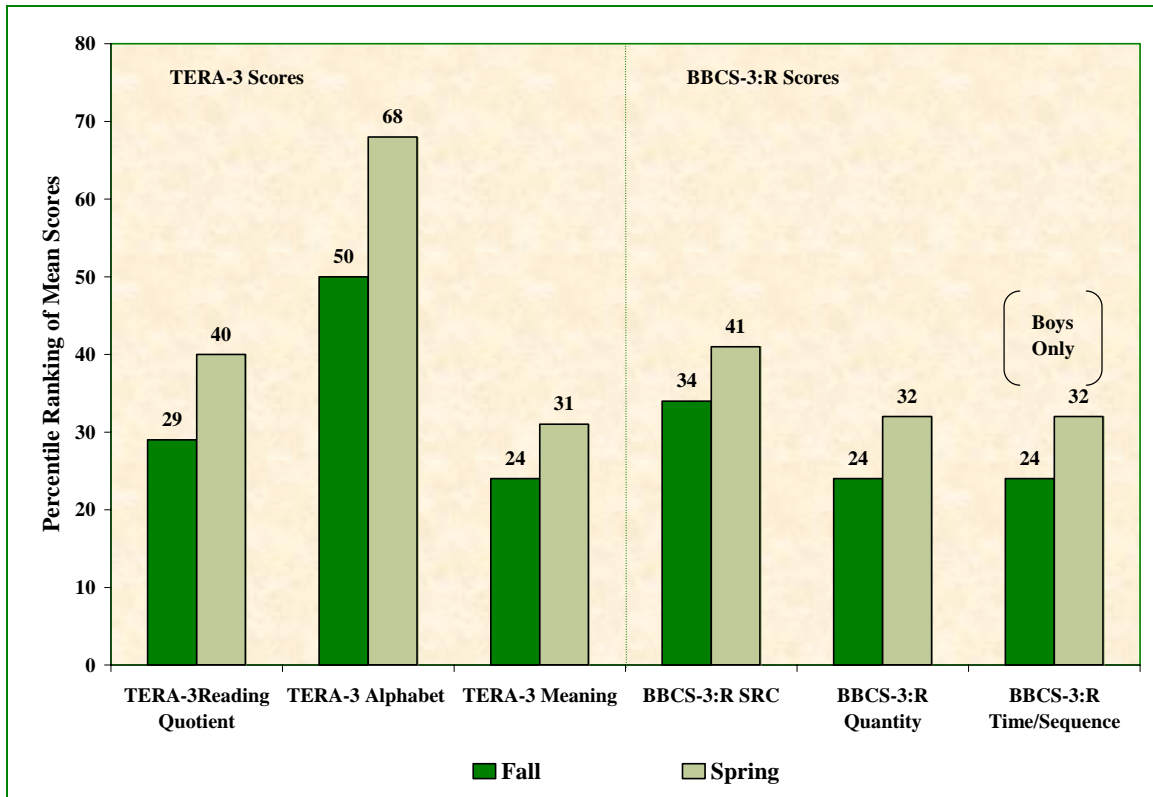


Figure 13. Summary of the statistically significant gains made by the sampled ELC/QC children ($n = 94$).

The mean percentile rankings of the children’s mean fall scores across four of the measures were similar—near the bottom quartile (25th percentile) ranking less than the 30th 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 of the other five measures; however, the percentile rankings of the mean scores of all measures demonstrated the expected increases in percentile ranking. Larger changes of 11 and 18 percentile rankings were found for the TERA-3 Reading Quotient and Alphabet scale measures and smaller changes of 7 and 8 percentile rankings resulted from statistically significant gains made on the BBCS-3:R measures and the TERA-3 Meaning scale.

Statements summarizing the finding for Question 3 are listed below.

- The ELC/QC sample included 94 children with complete scores from 15 sites.
- The sample included more boys (56%) than girls (44%) and more Black (53%) than White (21%) children.
- The children demonstrated statistically significant gains on the BBCS-3:R SRC and the Quantity scale with effect sizes of 0.17 and 0.22, respectively.
- In the spring, the school readiness of 88% of the ELC/QC children was *Average* or higher.
- The ELC/QC boys demonstrated statistically significant gains on the BBCS-3:R Time/Sequence scale with an effect size of 0.25.
- The children demonstrated statistically significant gains on the TERA-3 Reading Quotient, Alphabet, and Meaning scales with effect sizes of 0.30, 0.46, and 0.18, respectively.
- In the spring, 47% of the children's TERA-3 Alphabet scale scores ranked in the top quartile (75th percentile or higher) of the national population, and 22% of the children's scores ranked above the 90th percentile.
- The children demonstrated statistically significant gains on the ALRI measure with an effect size of 0.70.
- In the spring, 71% of the ELC/QC children's ALRI scores indicated *proficiency* at letter recognition, recognizing at least 75% of the upper- and lowercase letters.

Question 4: QRIS

To what extent do children enrolled in Intensive Quality Support Services (QRIS) child care centers demonstrate significant and meaningful gains in early reading achievement and school readiness?

The extent to which children enrolled in QRIS child care centers demonstrated significant and meaningful gains in early reading and school readiness achievement 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 stratified random sample of children (with informed parental consent) enrolled in 39 child care centers receiving QRIS support. Centers were randomly selected using a stratified framework that accounted for funding agency and whether the center was experiencing a first or second year of support. At least four and no more than eight prekindergarten children within the selected centers were sampled. Table 18 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*) and children with missing data were collapsed into one category, *Other*, because of their small representation.

Table 18

Demographic Information Describing the Sample of Children Enrolled in ECS or JCC Child Care Centers Participating in Their First or Second Year of QRIS

Characteristic	Children		Centers	
	<i>n</i>	%	<i>n</i>	%
Children	268		39	
Gender				
Boys	138	51		
Girls	130	49		
Ethnicity				
Black	90	34		
White	108	40		
Other	70	26		
School Readiness	50	19		
Centers				
ECS First-year Centers	53	20	7	18
ECS Second-year Centers	86	32	12	31
JCC First-year Centers	69	26	10	26
JCC Second-year Centers	60	22	10	26

The sample of children with complete scores included more boys than girls, and the largest ethnicity represented was White children. Additionally, 19% of the 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 BBBS-3:R, TERA-3, and ALRI scales. Table 19 presents the summary statistics for the BBBS-3:R, TERA-3, and ALRI scales.

Table 19
BBCS-3:R, TERA-3, and ALRI Summary Statistics: QRIS Sample

Assessment	<u>Fall</u>		<u>Spring</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BBCS-3:R				
SRC	9.11	2.89	9.69	2.59
Direction/Position	8.82	3.01	9.25	2.93
Self-/Social Awareness	8.58	2.71	8.95	2.41
Texture/Material	8.87	2.60	8.95	2.57
Quantity	8.43	2.53	9.09	2.45
Time/Sequence	8.92	2.48	9.24	2.46
TERA-3				
Reading Quotient	93.68	13.16	97.89	13.82
Alphabet	10.18	3.59	11.63	3.40
Conventions	8.58	2.02	8.92	2.60
Meaning	8.29	2.28	8.48	2.04
ALRI	29.88	18.39	41.58	13.63

The fall and spring mean scores reported in Table 19 indicate positive gains on all measures. The largest gains across comparable measures (BBCS-3:R scales and TERA-3 scales other than the Reading Quotient) was for the TERA-3 Alphabet scale and the BBCS-3:R Quantity scale. Repeated measures ANOVA statistical models were analyzed to determine if the children made statistically significant fall to spring gains in early reading ability and school readiness. All models controlled for possible differences in the achievement of girls and boys and of children enrolled in QRIS centers receiving their first or second year of intensive report. Table 20 present the results of the analyses of the BBCS-3:R scores.

Table 20
ANOVA Results of BSCS-3:R Assessments: QRIS Sample

	Source	F	p-value	ES
School Readiness Composite	Time	28.59	<.001 ^{***}	
	Time*Sex	0.01	.935	
	Time*Support Years	5.62	.019 ^{**}	0.29 (year 1) 0.11 (year 2)
	Sex	4.57	.034 ^{**}	
	Support Years	0.48	.490	
Direction/Position	Time	7.94	.005 ^{***}	0.14
	Time*Sex	0.09	.760	
	Time*Support Years	0.14	.704	
	Sex	4.52	.034 ^{**}	
	Support Years	0.10	.757	
Self-/Social Awareness	Time	6.96	.009 ^{***}	0.12
	Time*Sex	0.07	.794	
	Time*Support Years	0.18	.669	
	Sex	8.09	.005 ^{***}	
	Support Years	0.92	.338	
Texture/Material	Time	0.22	.641	
	Time*Sex	0.20	.659	
	Time*Support Years	0.71	.401	
	Sex	4.32	.039 ^{**}	
	Support Years	0.54	.464	
Quantity	Time	22.07	<.001 ^{***}	0.22
	Time*Sex	0.32	.573	
	Time*Support Years	1.29	.257	
	Sex	7.89	.005 ^{***}	
	Support Years	0.05	.822	
Time/Sequence	Time	4.56	.034 ^{**}	
	Time*Sex	0.27	.605	
	Time*Support Years	3.46	.064 [*]	0.19 (year 2)
	Sex	6.39	.012 ^{**}	
	Support Years	0.74	.390	

Note. * Indicates statistical significance, $p < .10$; ** indicates statistical significance, $p < .05$; and *** indicates statistical significance, $p < .01$.

Results indicate statistically significant gains on the BSCS-3:R

Direction/Position, Self-/Social Awareness, and Quantity scales with effect sizes of 0.14, 0.12, and 0.22, respectively. Additionally, across all scales, results indicate a statistically significant difference between the achievement of girls and boys. Girls made higher mean

fall and spring scores, but the mean fall and spring scores of boys and girls indicate they made the same gains in achievement.

ANOVA results also indicate children's gains on the SRC and Time/Sequence scales were not the same for children in QRIS centers experiencing their first or second year of QRIS intensive support. Figure 14 displays the SRC fall and spring scores for boys and girls and for first- and second-year QRIS centers.

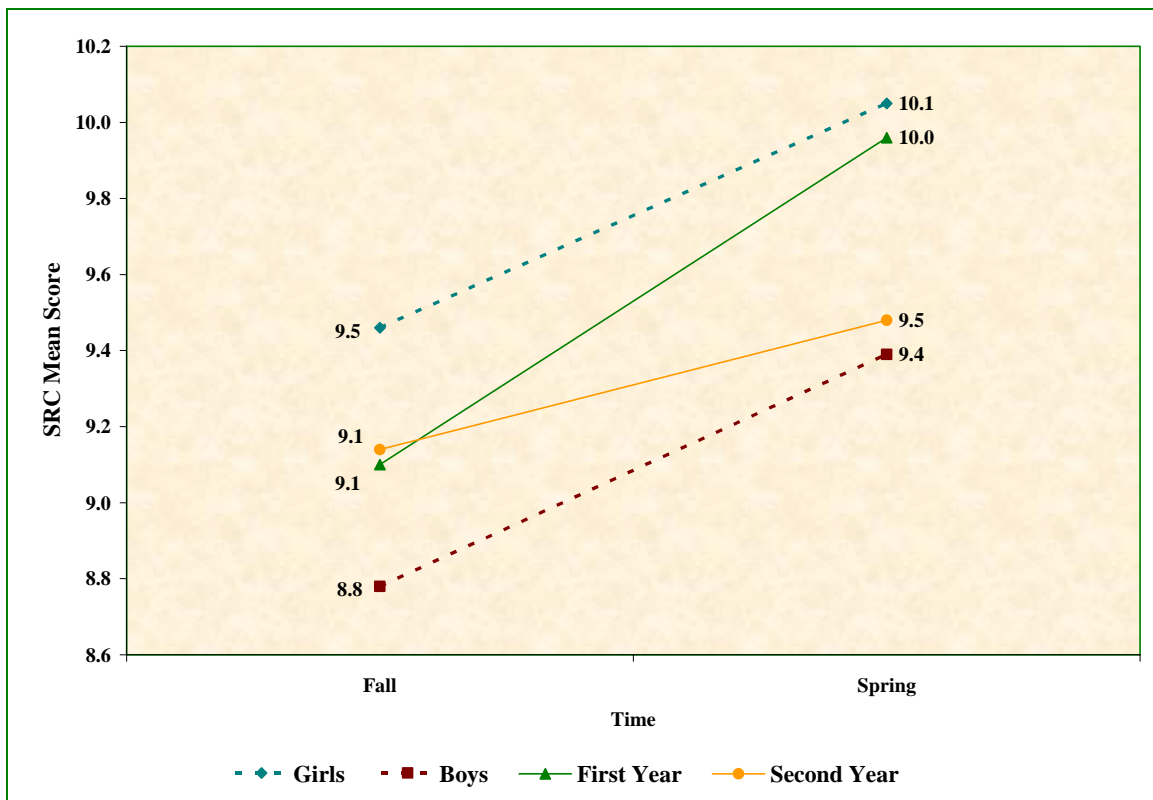


Figure 14. The mean fall and spring BBCS-3:R SRC scores for girls ($n = 130$) and boys ($n = 138$) and for first-year ($n = 122$) and second-year ($n = 146$) QRIS centers.

The mean SRC scores of boys (red squares on dotted line) were lower than the girls' mean scores (turquoise rhombi on dotted line); however, the fall to spring gains (slope) are the same. The mean fall SRC score of the children enrolled in the first-year QRIS centers (green triangle) was the same as the mean fall score of the children enrolled in the second-year QRIS centers (orange circle). At spring, the mean SRC scores of

children enrolled in the first-year centers was greater than the mean score of the children enrolled in second-year centers. Children enrolled in both types of centers made statistically significant fall to spring gains, but the children enrolled in the first-year QRIS centers made greater gains.

Figure 15 displays the BBCS-3:R Time/Sequence fall and spring mean scores for fall and spring scores for boys and girls and for first- and second-year QRIS centers.

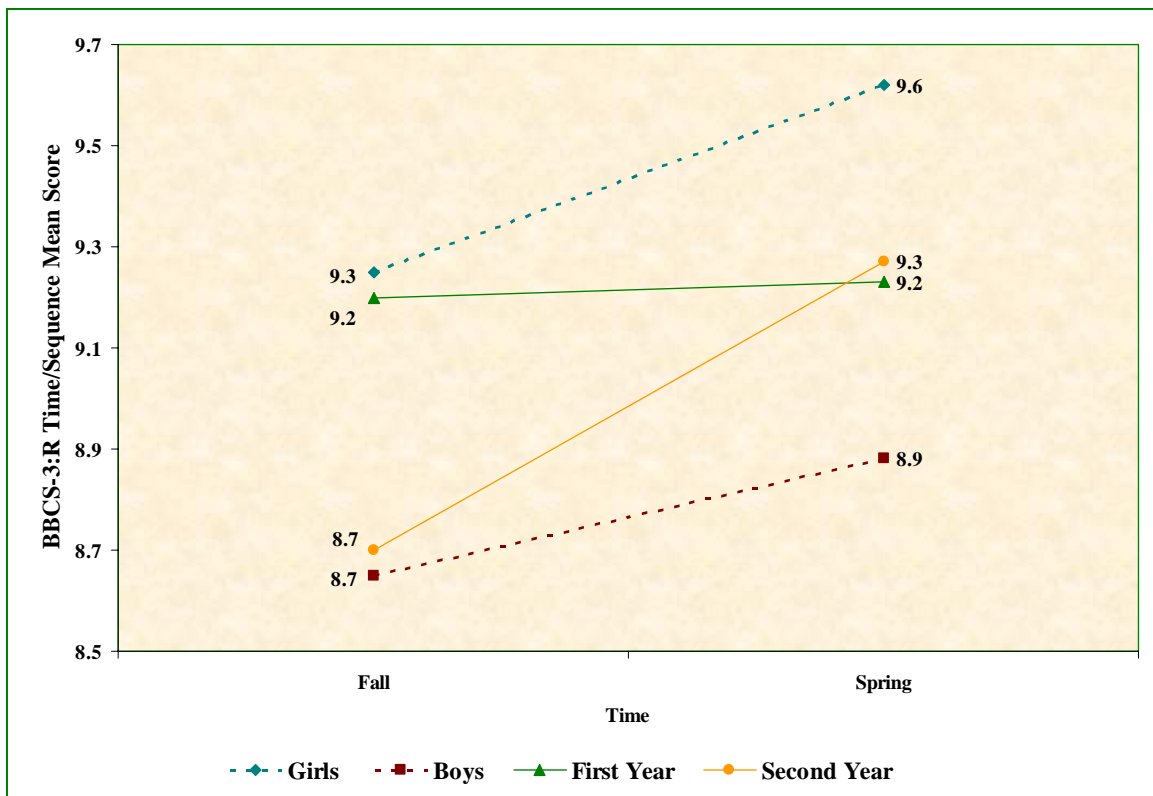


Figure 15. The mean fall and spring BBCS-3:R Time/Sequence scores for girls ($n = 130$) and boys ($n = 138$) and for first-year ($n = 122$) and second-year ($n = 146$) QRIS centers.

The mean Time/Sequence scores of boys (red squares on dotted line) were lower than the girls' mean scores (turquoise rhombi on dotted line); however, the fall to spring gains (slopes) are the same. The fall mean Time/Sequence score of the children enrolled in second-year centers (orange circle) was lower than the mean score of children enrolled in first-year centers (green triangle). No difference was found in the mean spring scores

of the children in first- and second-year centers. However, children in first-year centers made no statistically significant fall to spring gain and children in second-year centers did make statistically significant fall to spring gains (effect size = 0.19).

Repeated measures ANOVA statistical models were analyzed to determine if the children made statistically significant fall to spring gains in early reading ability. All models controlled for possible differences in the achievement of girls and boys and of children enrolled in QRIS centers receiving their first- or second-year of intensive report.

Table 21 presents the results of the analyses of the TERA-3 and ALRI scores.

Table 21
ANOVA Results of TERA-3 and ALRI Assessments: QRIS Sample

	Source	F	p-value	ES
TERA-3				
Reading Quotient	Time	49.26	<.001***	0.28
	Time*Sex	0.52	.472	
	Time*Support Years	2.40	.123	
	Sex	6.39	.012**	
	Support Years	0.26	.608	
Alphabet	Time	65.14	<.001***	0.48
	Time*Sex	0.44	.600	
	Time*Support Years	2.43	.120	
	Sex	5.19	.024**	
	Support Years	0.75	.387	
Conventions	Time	5.72	.018**	0.11
	Time*Sex	0.23	.632	
	Time*Support Years	0.04	.835	
	Sex	1.91	.168	
	Support Years	0.49	.484	
Meaning	Time	2.39	.123	
	Time*Sex	0.02	.877	
	Time*Support Years	2.05	.154	
	Sex	6.39	.012**	
	Support Years	0.41	.522	
ALRI				
	Time	276.12	<.001***	0.73
	Time*Sex	2.88	.091*	
	Time*Support Years	4.18	.042**	
	Sex	3.74	.054*	
	Support Years	0.03	.859	

Note. * Indicates statistical significance, $p < .10$; ** indicates statistical significance, $p < .05$; and *** indicates statistical significance, $p < .01$.

The QRIS children made statistically significant gains on all TERA-3 scales other than the Meaning scale. Neither the gains nor the achievement outcomes were different for boys and girls or for children enrolled in QRIS children centers experiencing their first or second year of support. The children also made statistically significant gains on the ALRI measure resulting in a large effect size of 0.73. However, the achievement was different for children enrolled in first- and second-year centers ($p = .042$) and for boys and girls ($p = .091$). Figure 16 displays the differences in the growth and mean scores between girls and boys and first- and second-year centers.

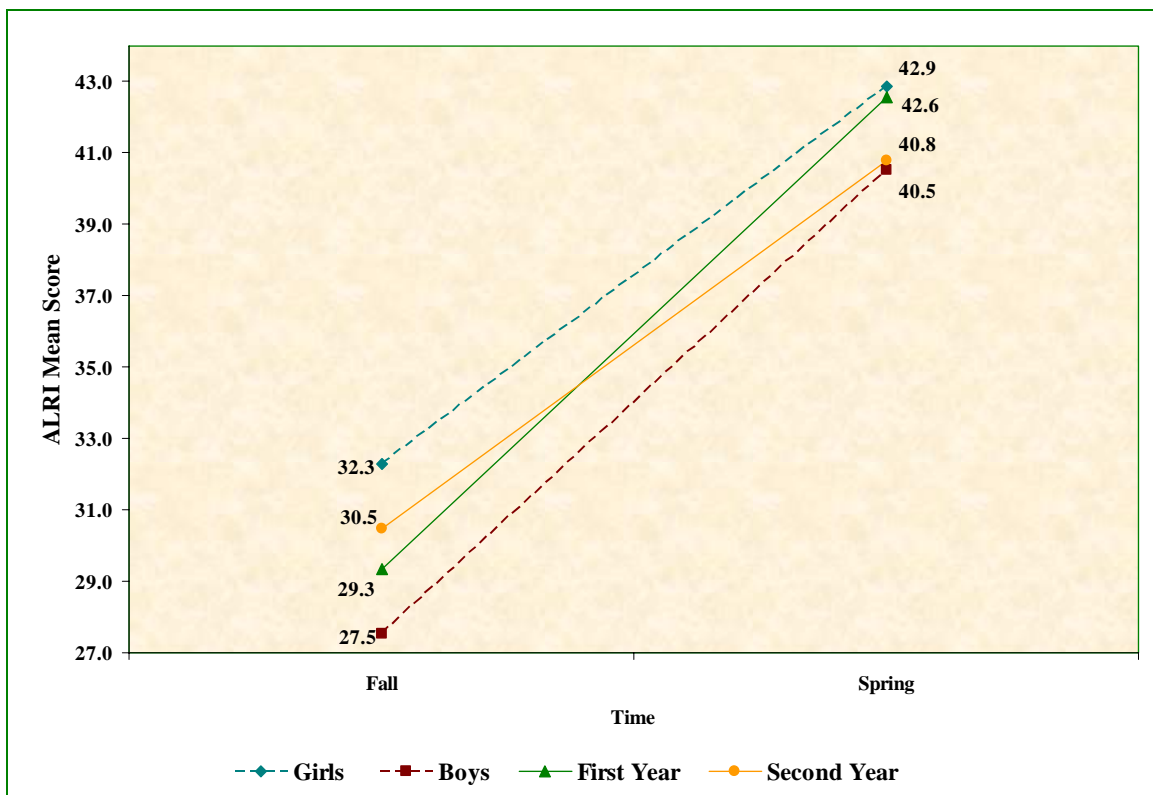


Figure 16. The mean fall and spring ALRI scores for girls ($n = 130$) and boys ($n = 138$) and for first-year ($n = 122$) and second-year ($n = 146$) QRIS centers.

As can be seen, the boys' mean scores (red squares on dotted line) averaged across first- and second-year centers indicate a slightly greater gain than girls mean scores (turquoise rhombi on dotted line). This gain represents the fact that, in general,

boys recognized fewer letters in the fall than the girls did. The fall and spring mean ALRI scores of children in first-year (green triangles on solid line) and second-year (orange circles on solid line) centers experienced differential growth. In general, children in first-year centers recognized one less letter in the fall than children in the second-year centers. Conversely, in spring, children in first-year centers recognized almost two more letters than children in second-year centers.

The QRIS sampling used a stratified sampling frame; therefore, children were nested in centers. Because children learned together in classes, it is important that ANOVA models which ignore the dependency in scores and HLM models which account for the dependency result in the same conclusions. ANOVA and HLM models of the QRIS data are in agreement across all scales with only slight differences in *p*-values that do not result in differences in the inferential conclusions.

Another way to look at the early reading 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 BBSC-3:R, TERA-3, and ALRI achievement categories. (See page 6, Table 1 for the TERA-3 categories.) Figure 17 shows the BBSC-3:R SRC scale scores displayed in five categories ranging from *Very Delayed* to *Very Advanced*.

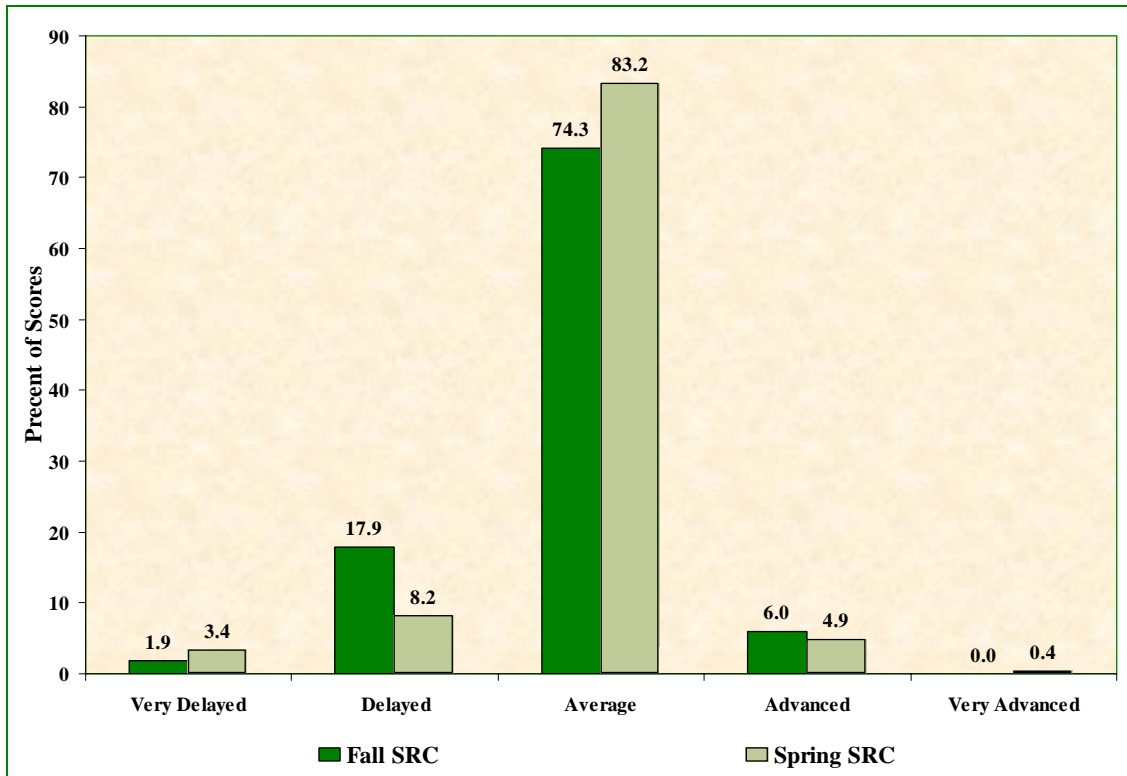


Figure 17. The distribution of fall and spring BBCS-3:R SRC scale scores ($n = 268$).

Figure 17 clearly shows that the children’s gains on the BBCS-3:R SRC measure resulted in more scores ranking in the broad *Average* category in the spring than in the fall. In the fall, 80% of the children’s scores ranked *Average* or higher, and in the spring, 88% of the children’s scores ranked *Average* or higher. Less than 1% of the children’s scores ranked *Very Advanced* and 6% or fewer scores ranked in the *Advanced* category.

Figure 18 shows the percentage of scores in the achievement categories in the fall and spring of the academic year for the TERA-3 Reading Quotient.

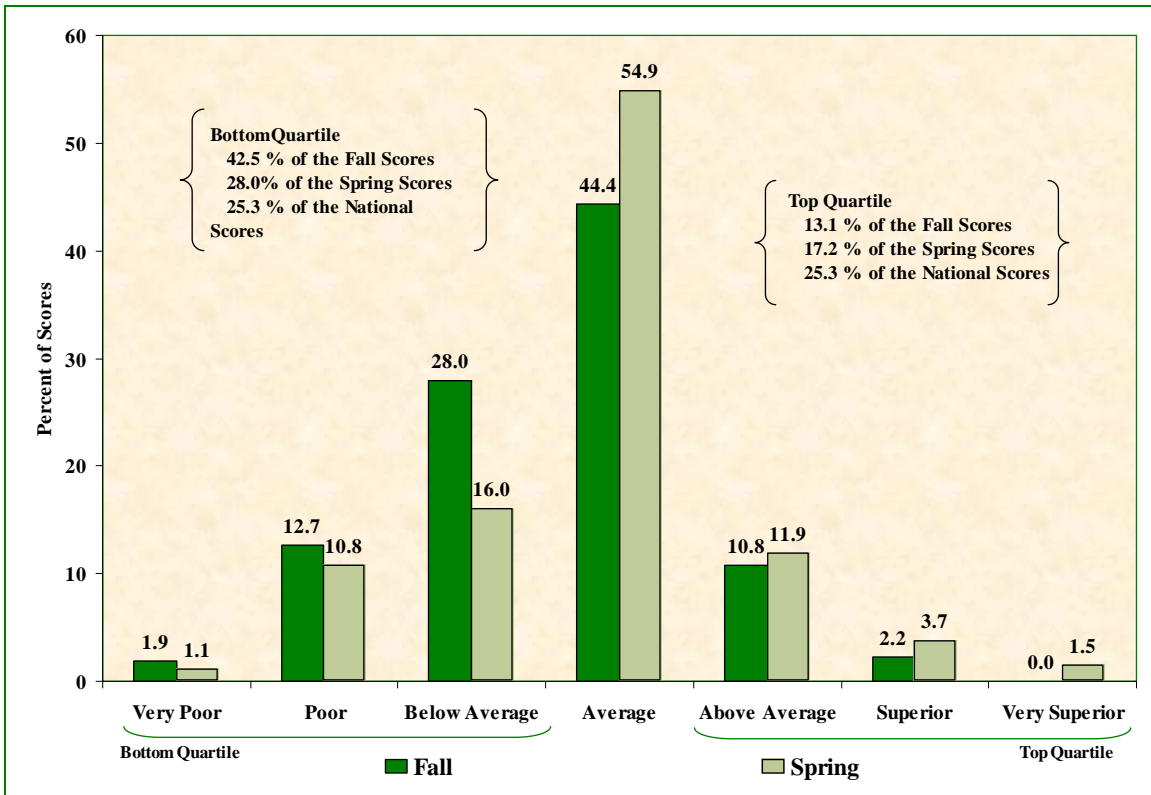


Figure 18. The distribution of TERA-3 Reading Quotient fall and spring scores ($n = 268$).

At the end of the academic year, 28% of the TERA-3 Reading Quotient scores ranked in the bottom quartile of national scores, and 17% of the TERA-3 Reading Quotient scores ranked in the top quartile of national scores. The percentages indicate that 193 of the 268 prekindergarten children had scores ranked *Average* or higher.

Figure 19 shows the percentage of scores in these same categories in the fall and spring of the school year for the TERA-3 Alphabet scale.

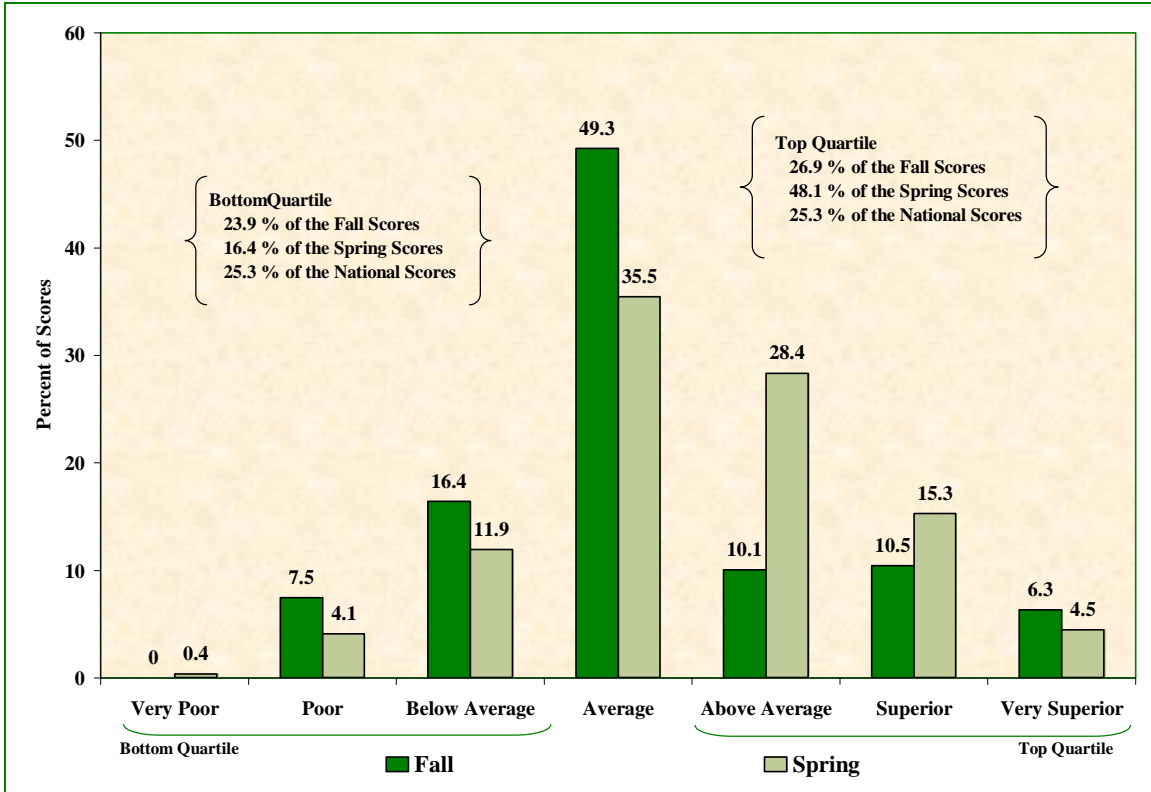


Figure 19. The distribution of TERA-3 Alphabet scale fall and spring scores (n = 268).

At the end of the academic year, 16% of the TERA-3 Alphabet scores ranked in the bottom quartile of national scores, and 48% of the TERA-3 Alphabet scores ranked in the top quartile of national scores. The percentages indicate that 224 of the 268 children had scores ranked *Average* or higher. At the end of the academic year, 20% of the Alphabet scale scores ranked above the 90th national percentile ranking.

ALRI scores are presented in Figure 20 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.

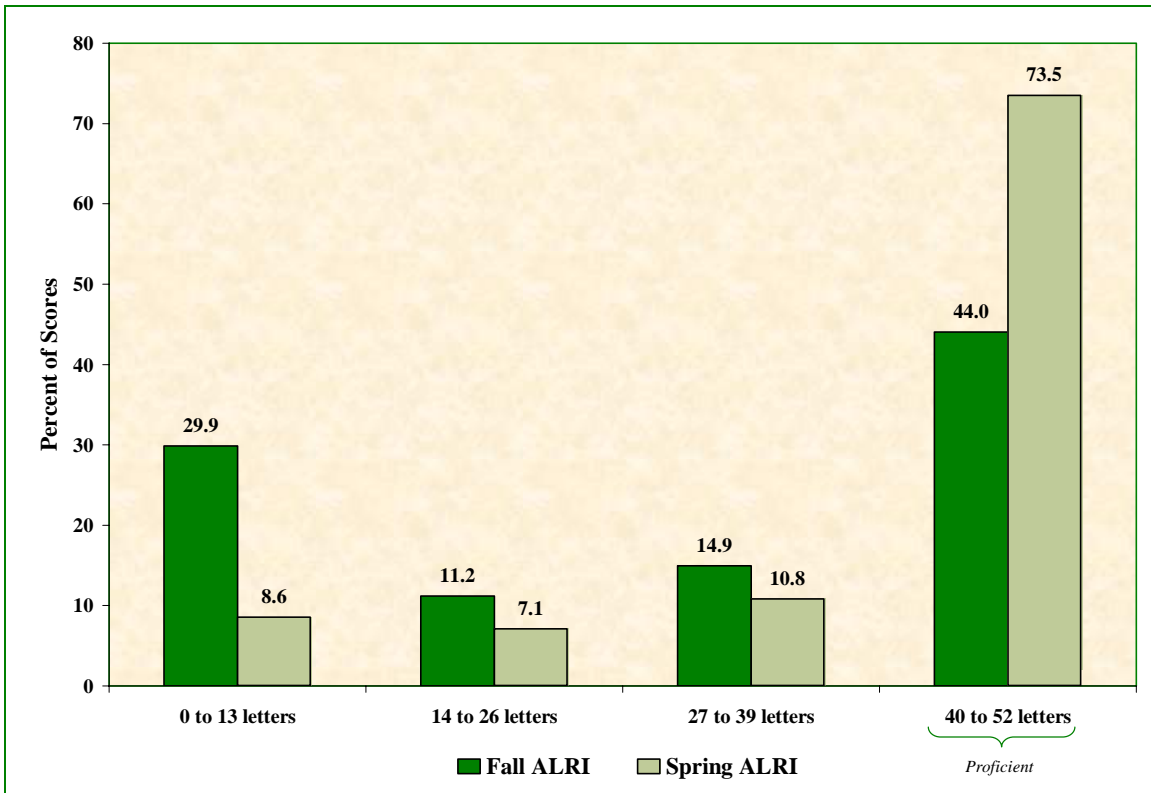


Figure 20. The Alphabet Letter Recognition Inventory scores of the sampled QRIS children ($n = 268$).

Inspection of Figure 20 shows that, at year's end 74% of the children were *proficient* in letter recognition, recognizing at least 75% of the letters. Additionally, almost 12% of the children recognized all 52 letters presented, 38% recognized at least 50 of the letters, and 4% recognized fewer than 8 letters (the federal guideline for Head Start).

QRIS Summary

Figure 21 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.

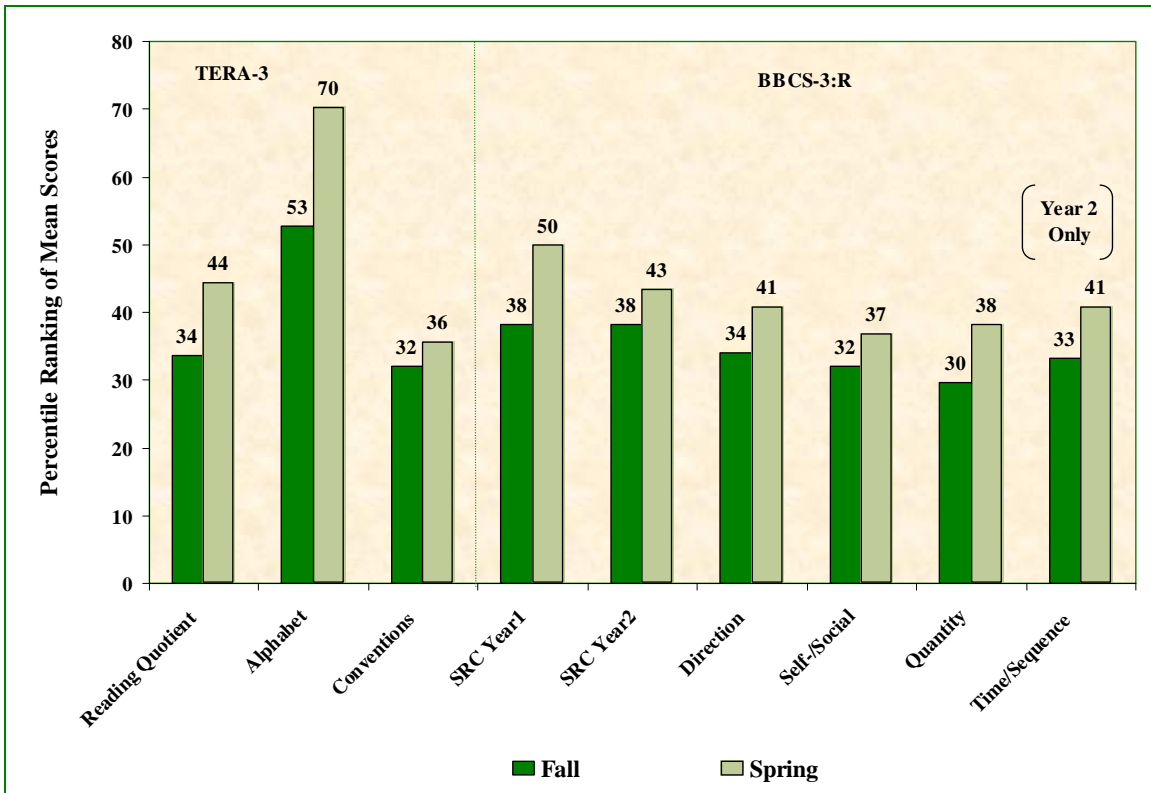


Figure 21. Summary of the statistically significant gains made by the QRIS children ($n = 268$).

The mean percentile rankings of the children's mean fall scores across all five measures were similar and above the bottom quartile (25th 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 seven measures; however, the mean percentile ranking of all measures demonstrated the expected increases. Larger changes of 10, 17, and 12 percentile rankings were for the TERA-3 Reading Quotient and Alphabet scales and the BBCS-3:R SRC mean score of the children in first-year centers, respectively. Smaller changes of 4-8 percentile rankings resulted from statistically significant gains made on the TERA-3 Conventions scale and the BBCS-3:R non-SRC scales.

Statements summarizing the finding for Question 4 are listed below.

- The QRIS ECS and JCC sample included 268 children with complete scores including 50 School Readiness children.
- The sample included more boys (51%) than girls (49%) and more White (40%) than Black (34%) children.
- The children demonstrated statistically significant gains on the BBCS-3:R SRC; however, children in first-year QRIS centers had greater gains than children in second-year centers, effect sizes 0.29 and 0.12, respectively.
- At the end of the school year, the school readiness of 88% of the QRIS children was *Average* or higher.
- The children demonstrated statistically significant gains on the BBCS-3:R Direction/Position, Self-/Social Awareness, and Quantity, scales. Effect sizes were 0.14, 0.12, and 0.22, respectively. Children in second-year centers also made statistically significant gains on the Time/Sequence scale with an effect size of 0.19.
- The children demonstrated statistically significant gains on the TERA-3 Reading Quotient, Alphabet, and Conventions scales with effect sizes of 0.28, 0.48., and 0.11, respectively.
- In the spring, 48% of the children's TERA-3 Alphabet scale scores ranked in the top quartile (75th percentile or higher) of the national population, and 20% of the children's scores ranked above the 90th percentile.
- The children demonstrated statistically significant gains on the ALRI measure with effect size of 0.73. However, children in first-year QRIS centers had greater gains than children in second-year centers. (An effect sizes of 0.29 for first-year centers and 0.11 for second-year centers.)
- In the spring, 74% of the children's ALRI scores indicated *proficiency* at letter recognition, recognizing at least 75% of the upper- and lowercase letters.

Question 5: Fall 2008 School Readiness

To what extent do Jacksonville children who entered kindergarten in Duval County Public Schools during the 2008-2009 academic year demonstrate *kindergarten readiness* as measured by the fall 2008 Florida Kindergarten Readiness Screener (FLKRS)?

A report on fall 2008 kindergarten readiness is available as a separate document.

Fall 2008 Kindergarten Readiness

- Three measures comprise 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.
- Duval County kindergarten readiness was compared to Florida and Broward, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas counties.
- The Duval County ECHOS *Ready* rate, 86%, did not exceed the *Ready* rates of Florida or Broward, Orange, and Pinellas counties.
- The Duval County DIBELS Letter Naming Fluency *Ready* rate, 79%, exceeded the Florida rate, and only the Broward County rate exceeded the Duval County rate.
- The Duval County DIBELS Initial Sound Fluency *Ready* rate, 65%, did not exceed the *Ready* rates of Florida or Broward, Hillsborough, Orange, and Pinellas counties.
- The Duval County kindergarten children were most ready in the area of *Fitness*, which is an indicator of engagement in activities that use large muscles, and *Social Problem Solving*, which indicates that the children interacted cooperatively with other children.
- The Duval County kindergarten children were least ready on the *Production, Distribution, and Consumption* social studies item, which indicates children's exploration of the various types of work people do and the benefits of work to the family and the community, and *Data Analysis*, which indicates that children could organize data to ask and respond to questions.