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STRENGTHENING SOCIAL AND EMOTIONAL HEALTH

Rochester Early Childhood Assessment Partnership 2012-2013 Sixteenth Annual Report

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We thank the teachers, parent group leaders, parent coordinators, directors, and administrators who work closely with thousands of students and their parents. Their personal attention to families contributes greatly to RECAP. These individuals unselfishly contribute information and share their insight with the Assessment Team, which is vital to our continuous improvement system. We would especially like to recognize and thank the teachers who have continued to help us improve the process of collecting and sharing information about the children in RECAP. Their comments and feedback, especially regarding new software and data collection and management technology, have been invaluable.

We thank the thousands of parents who gave time from their busy schedules to share their thoughts and perceptions about their children and other topics. Without parents, RECAP would not be as complete or comprehensive.

We thank the RECAP Advisory Council for helping us to keep the needs of children and all our partners foremost in our operations, and for its valuable feedback and insights regarding the current goals and activities of our community's early childhood system.

We thank the communications staff of Children's Institute for contributions to this report.

Our sincere thanks to Andrew MacGowan, III of the Rochester City School District for his critical review, comments, and suggestions on this report. His insights were extremely valuable and improved the quality of this report; any errors or omissions remain ours.

Executive Summary

The Sixteenth Annual RECAP Report presents important findings that affect our community's young children, their families, and the providers and policymakers who serve them. This report also emphasizes the importance of longitudinal data. Many of the 2012-2013 results are largely, but not entirely, consistent with previous years' findings. Trends and replication of findings are a crucial foundation to understanding early childhood education in our community and making informed recommendations for the future.

Of note: RECAP, whenever possible, adheres to among the most rigorous statistical and process protocols in evaluation.

RECAP's Major Findings for 2012-2013

Students

We are observing high rates of academic growth, as much as two years' gains, but our pre-k students are arriving delayed, leaving behind benchmarks, and then losing gains over the summer.

- Students' academic growth, as measured by the Classroom Observation Record (COR), continued to show significant gains by the end of the school year. For example, students in RECAP showed, on average, approximately two years' growth in ***Math & Science*** skills from fall to spring. In fact, all areas of cognitive, academic, and other skills measured by the COR showed significant improvements and growth.

- While Rochester pre-k students made tremendous *gains* in skills, a large number of students *did not* attain the minimum level of "readiness" on tasks that prepare them for school. In brief, students entered pre-k at very low functioning levels and made significant growth, but did not improve enough to be ready for the new kindergarten curriculum.

There are mixed results on social-emotional growth: students are arriving at pre-k in better shape than previous years, but growing at lower rates. Students' lack of growth and problems in the realm of Behavior Control is a concern.

- In examining the social-emotional adjustment of pre-k pupils in 2012-2013 as measured by the Teacher-Child Rating Scale (T-CRS), we observed two very noteworthy results. First, the number of students who entered pre-k with social-emotional delays (scores in the bottom 15th percentile) decreased from last year, indicating that fewer students were emotionally unprepared for participation in a school setting upon entering pre-k. Secondly, gains in social and emotional skills from the beginning to the end of the year showed mixed results. In total, children showed similar or improved skill acquisition in ***Assertiveness***, ***Peer Social Skills***, and ***Task Orientation*** as compared to previous years. A disturbing trend over the past 7 years is noted in the ***Behavior Control*** scale, which measures constructs such as self-control and self-regulation. Pre-k children are not improving as much as in prior years. Additional

professional development regarding how to support behaviorally challenging children appears necessary.

- 2012-2013 was the third year of HighScope curriculum implementation in Rochester City School District (RCSD) UPK classrooms. Students' performance in ***Math & Science*** has improved significantly since the implementation of HighScope. Performance in the other three areas (***Initiative & Social***, ***Language & Literacy***, and ***Movement & Music***) has plateaued over the last three years with median gain scores of 1.2 each year. *This gain represents 140% growth* (beyond what is expected by development alone for RCSD students), due to the UPK half day program. However, children enrolled in UPK who then enter kindergarten in RCSD lose between 20% and 30% of the skills gained in pre-k over the summer, with the greatest loss in ***Math & Science***.

- Over the past three years, since the implementation of the HighScope curriculum, there have been mixed results regarding students' social-emotional growth. The greatest gains were in ***Assertiveness***; children ask more questions and are less shy and anxious by the end of the school year. Students' ***Peer Social Skills***, such as children's abilities to get along with other students, and their ***Task Orientation*** skills, e.g., completing work on time, also improved from last year. Similar to the 7-year trend noted above, students' skills relative to controlling their behavior in a classroom setting (***Behavior Control***) showed significant declines in growth from previous years. There is some anecdotal evidence suggesting that these declines happened due to environmental factors in the home and community.

- This year, RCSD pre-k programs used The Brigance® Early Childhood Screen (Brigance) to assess students' development in physical and cognitive functioning. The Brigance also assists in identifying students who should receive formal evaluation for developmental delays. Upon entering pre-k, approximately 60% of students needed monitoring and possible formal evaluation. When compared with other groups nationally, a large majority of four-year-old children enter Rochester's UPK programs with significant developmental delays.

- The Common Core Assessment of Pre-kindergarten Skills (CCAPS) was developed and piloted with a sample of RECAP students during the spring of 2013. Upon request of RCSD, this assessment addresses the need to evaluate whether or not students are achieving the early literacy and math standards outlined by the New York State Foundation for the Common Core adopted by New York State. Students who scored high on the CCAPS assessment also scored high on the COR subscales.

- Academic achievement based on student attendance was a focal point for analyses this year. While some areas of cognitive development measured by the COR increased as children spent more time in the classroom, other areas showed no difference or declined. Students with high levels of attendance throughout the year showed high cognitive and academic functioning upon entering pre-k. Students with low attendance entered the school year with lower social-emotional/behavioral functioning, as measured by the Teacher-Child Rating Scale (T-CRS). However, by the end of the school year, they were able to catch up to their peers, regardless of the lack of time they spent in the classroom. High attendance is important, but it appears that exposure to Rochester's pre-k programs by those with low attendance is also very important. Policies and practices that encourage pre-k participation at

any level, versus those that remove children from pre-k enrollment and participation, are indicated.

- The length of a day spent in a UPK program was another priority for investigation this year. Students who attended full-day UPK programs had approximately 8.5% higher levels of cognitive and academic performance than students who attended a UPK program for half a day (2.5 hours). Based on these results, all RECAP program partners should consider adding more full-day UPK programs.

- Only 2.1% of students experienced loss on the COR between fall and spring. While it is not unusual that some students will exit the pre-k programs at a lower level than when they entered (often due to family tragedy or personal crisis), this year marked the lowest percentage of students to experience absolute loss to date. This possible trend emerged last year (2011-12), where "absolute loss" was a then-low of 3.9%. Historically, the percentage of students experiencing absolute loss has been 5-6%.

- The transition from pre-k to kindergarten is considered more and more critical to children's continual learning. As noted above, students showed, on average, between 20% and 30% loss of the skills gained in pre-k, close to a year's worth of "natural" growth on the COR over the summer. Furthermore, students' who did not come from RECAP programs showed even lower academic performance on the COR in the fall of their kindergarten year than students who were a part of UPK and RECAP.

Classrooms

- In 2012-2013, RECAP classrooms continued to achieve high levels of quality, with a mean rating of 6.2 out of a possible 7.0 on the ECERS-R. This contrasts to averages of 4.0 to 4.3 found in other national studies. RECAP classrooms' quality is ***in the top 5%*** in relation to other classrooms in the nation that assess quality using the ECERS-R. The ECERS-R is considered one of the national benchmarks regarding quality early education standards; it was adopted and endorsed by the New York State Office of Children and Family Services (OCFS) and the New York State Department of Education for its Quality Stars assessments.

- Individual classroom scores for the ECERS-R have also been consistently high. The majority of RECAP classrooms scored at or above a 6.0 on the ECERS-R this year. There have been a handful of studies reporting some programs reaching or exceeding 6.0, but there have been no rigorous, independent evaluations that we can find where a consistent ECERS-R rating of 6.0 or higher for a whole system occurred, except by RECAP in Rochester.

- The high reliability of classroom observations, arguably *among the most rigorous in education evaluation*, remains a continuous part of the RECAP system. Reliable observations are ensured through the recruitment and training of "Master Observers." These Master Observers must have a minimum of 10 years' experience in early childhood education, participate in annual training, and meet an inter-rater reliability standard of 85% agreement prior to conducting any observation. They are required to maintain a minimum of 85% agreement in order to preserve their "Master Observer" status.

- RECAP continues to identify teachers with extremely high classroom quality. Fifty-four of 114 (47%) of Rochester's UPK teachers earned scores of 6.20 or higher on the ECERS-R for three consecutive years. Classrooms in this category are truly superior.

- After three years of piloting in approximately 30 classrooms per year (95 total classrooms), the Classroom Assessment Scoring System (CLASS), was implemented throughout all participating programs and classrooms in 2012-2013. The CLASS assesses interactions among classroom adults and children with more depth than the ECERS-R. RECAP classrooms demonstrated high levels of ***Emotional Support*** and ***Classroom Organization***, with the ***Negative Climate*** subdomain scoring nearly perfect at 6.9 out of 7. Compared to the pilot years of the CLASS, RECAP classrooms have improved marginally since the initial administration four years ago. The instructional area assessed with the CLASS of greatest need is within the Instructional Support and especially Concept Development.

Parents and Families

Parent participation has remained stubbornly low since the inception of Universal Pre-K. While a variety of approaches have been deployed over the years, none seem to have produced the level of parental participation necessary for sustained parent involvement and participation. This is a weakest in Rochester UPK programs. The instrument used to assess parent participation, the Family Involvement Questionnaire (FIQ) confirms the low levels of parent participation within schools and with teachers. This suggests entirely different approaches to parent participation must be discovered or developed, implemented, and tested, if parent participation is desired.

- This was the seventh consecutive year that RECAP administered the Family Involvement Questionnaire (FIQ), developed by researchers at the University of Pennsylvania and validated by RECAP. The FIQ allows parents to report the extent of their involvement in their children's education across three dimensions: ***Parent-Teacher Communication***, ***School Involvement***, and ***Home Involvement***. Parent involvement has remained consistent across all three dimensions since the first year using FIQ in Rochester. Parents continued to be most involved in their child's education at home and least involved in the school environment. If improvements in parent involvement are desired at the pre-k level, then additional efforts need to be made, as existing efforts have been ineffective in increasing parent participation.

- On the Parent-Child Rating Scale (P-CRS), parents continue to report medium to high scores for their children's social-emotional behavior. However, they also report little change from fall to spring. Regardless of the gains seen by teachers throughout the school year, parents do not perceive these changes in their child at the end of the school year.

Introduction to RECAP

RECAP began in 1992 as a collaboration of the United Way of New York State, the Rochester Area Community Foundation, the Rochester City School District, the Center for Governmental Research (CGR), Action for a Better Community (ABC) and Children's Institute. Since its inception, one of RECAP's overall guiding tenets has been to continuously promote, ensure, and improve the quality of pre-k classroom experiences through the use of an integrated and comprehensive information system. In addition to providing information to enhance children's, teachers', and systems' performance, RECAP works to translate collected data into usable information for parents, providers, and policy makers. This has resulted in informed and targeted interventions for children, professional development activities for providers, and changes in policy by funders and governments. Throughout its history, RECAP has collaborated with many partners, including area foundations, local governments, public and parochial schools, Head Start programs, and early education teachers at multiple schools and community-based organizations.

Each year, RECAP provides important services – primarily to providers and policy makers – which include:

- Training teachers and program administrators in the use of child screening measures, assessments, and rating scales and in the interpretation of these tools' results.
- Efficient and user-friendly data collection and feedback reports, with reports looped back to teachers and directors. Primarily this is accomplished using web-based COMET® system[1] reports, which provide instant feedback, and paper reports at the child, classroom, program, and system levels.
- Training teachers and observers on fidelity implementation and quality indicators of the standards assessed with the Early Childhood Environment Rating Scale, Revised (ECERS-R) and the Classroom Assessment Scoring System (CLASS).
- Twice monthly review and planning meetings with community-based organizations, ABC Head Start, RCSD, and other early education community leaders and evaluators to analyze and synthesize available information, recommend changes, and monitor the systematic quality of early education in Rochester.
- Quarterly hosting of a Policy Advisory Group to facilitate support and direction from and to the community.
- Community presentations of RECAP results to stimulate understanding of where we are and where we could be heading in order to improve community outcomes for prekindergarten children.

[1] COMET is a web-based data collection and management system initially created by Children's Institute, Inc. and SophiTEC, Inc for the early education community.

In sum, these information-based decisions are integrated into a continuous improvement system that strives to ensure and maintain high quality pre-k classrooms and programs and improve students' overall performance and outcomes.

Consistently, RECAP has tried to employ the best available measures to assess program quality and student outcomes. Throughout RECAP's 21-year history, the ECERS (or its revised version, the ECERS-R) has been used to study classroom quality. Starting four years ago, the CLASS, a relatively "new" measure at that time, was piloted with random subsamples of RECAP classrooms. The pilot lasted from 2009 to 2012; approximately 30 classrooms per year, 95 classrooms overall, were randomly selected to receive CLASS training and observations. During the pilot phase, analyses repeatedly showed that, while both measures assess classroom quality, the quality indicators assessed by CLASS and the ECERS-R are different. Therefore, for the 2012-2013 school year, all RECAP teachers were observed with the CLASS instrument as well as the ECERS-R. The results of this first year of full implementation of the CLASS in all 113 of RECAP's participating classrooms are reported in the **Program Quality - CLASS** section of this report.

To measure levels of students' competencies and needs within academic, motoric, and social/emotional domains, the Child Observation Record (COR), the Teacher-Child Rating Scale (T-CRS) and the Brigance Early Childhood Screen II (Brigance) were completed in the fall and again in the spring. In keeping with national trends and local needs with program quality assessments, the Brigance was used for the first time this year in RECAP. The introduction of the Brigance to RECAP's battery of assessments allows for comparisons between the performance of Rochester's pre-k students and national samples; also, the Brigance meets new state quality and assessment guidelines. Children's attendance and parental participation were also recorded by school staff, primarily by teachers, each school day.

The level of parents' perceived involvement with multiple facets of their children's education was evaluated using the Family Involvement Questionnaire (FIQ). On the FIQ, parental involvement is assessed based on parents' reports of their time spent in their children's pre-k classroom, with their children's teacher, and working at home with their children. Additionally, parents were asked to provide their perspective on their children's cognitive, social-emotional, and motor skill development using the Parent-Child Rating Scale (P-CRS). Both of these assessment tools were completed by parents at the beginning and at the end of the school year.

The following table summarizes the screening and assessment measures collected and the total numbers assessed during the 2012-2013 school year.

Table 1. RECAP Variables, Measures, Numbers Assessed, and Method of Assessment

RECAP 2012-2013 Variables, Measures, Number Assessed and Methods			
Variables	**Measures**	**Completed Assessments in 2012-13[a]**	**Method**
Classroom Environment Quality	ECERS-R	67	Classroom Observation by Independent Observer
Quality Teacher and Student Interactions	Classroom Assessment Scoring System (CLASS)[b]	113	Classroom Observation by Independent Observer
Academic, Motor, and Social	Child Observation Record (COR)	2,120	Teacher Observation
School, Emotional, and Behavioral Adjustment	Teacher-Child Rating Scale (T-CRS)	2,116	Teacher Observation
Academic Skills, Physical Development, and Health	Brigance Early Childhood Screen II[b]	1,739	Child Performance
Parent Involvement	Family Involvement Questionnaire (FIQ)	1,271	Parent Survey
Social, Emotional, and Behavioral Adjustment	Parent-Child Rating Scale (P-CRS)	1,306	Parent Survey

[a] Numbers assessed are not the number of participants; e.g., there were 148 classrooms this year and 108 classrooms assessed with ECERS-R. Teachers with both a.m. and p.m. classrooms were assessed once. 51 teachers were "exempt," as they had performed at the 6.2 level or above for 3 consecutive years.
[b] First year tool was used for full sample in RECAP.

RECAP classrooms are comprised of both male and female students from a variety of ethnic backgrounds. Table 2 presents demographic information regarding the students in RECAP classrooms.

Table 2. RECAP Student Demographics

RECAP 2012-2013 Student Demographics		
Gender	Male	53.0%
	Female	47.0%
Race/Ethnicity	Black/African American	59.7%
	White Caucasian	10.8%
	Hispanic/Latino	26.7%
	Asian	2.6%
	Native American	<1%
	Other	<1%

As in previous years, this RECAP Report presents the major findings of classroom quality and students' outcomes for the 2012-2013 school year. For example, the ECERS-R averages for RECAP classrooms are presented here, while individual classroom results and detailed descriptions of the assessment instruments and analyses are provided in the Statistical Supplement.

In prior years, the RECAP reports included many statistical findings, such as inter-rater reliability on the ECERS-R and alpha reliability on the scales of the student outcome measures. In this report, they are located the Statistical Supplement.

Additionally, some of the results for both of the parent-completed measures have been moved to the Statistical Supplement due to the stable nature of the results over the past three school years. The reliability of the P-CRS and the FIQ, as well as the correlations of the parent involvement measures and the student outcomes assessments, have been transferred to the Statistical Supplement.

Program Quality – ECERS-R

From the beginning of RECAP, the environmental quality in pre-k classrooms has been assessed using the Early Childhood Environmental Rating Scale. In 2005, the developers of the ECERS released a revised edition of the instrument and that version, the ECERS-R, was immediately incorporated into RECAP and has been used ever since (Harms, Clifford, & Cryer, 2005). The ECERS-R consists of 43 items organized into seven subscales: ***Space and Furnishings***, ***Personal Care Routines***, ***Language-Reasoning***, ***Activities***, ***Interaction***, ***Program Structure***, and ***Parents and Staff***. Together, the items and scales assess a classroom's quality. Since 1998, RECAP has observed that almost all four-year-old classrooms in Rochester have better than "good" (≥ 5.0) quality, as measured by the ECERS-R. Additionally, almost half have performed in the superior range (6.25- 7.0) for 3 to 5 years in a row. Over the last ten years, classroom performance, as rated by independent observers, has averaged from "very good" to "excellent" (6.0-6.2 out of 7) on the ECERS-R. These results reflect the ongoing professional development provided by RECAP and its participating programs, as well as the significant individual work put in by teachers.

As explained in prior years' reports, in 2007-2008, RECAP implemented a program change that allowed RECAP teachers to earn exemption from the annual ECERS-R assessment. To earn this "exempt" designation, teachers had to obtain ECERS-R scores of at least 6.5 for five consecutive years. Once "exempt" status was achieved, teachers were "exempt" for three years and were no longer obligated to have an ECERS-R observation during that period. Additional analyses and observations have shown that teachers who have three consecutive years of ECERS-R performance of 6.2 or higher do not significantly improve their performance. In 2012-2013, another program change was implemented, allowing teachers to earn the "exempt" designation with an average (mean) ECERS-R score of at least 6.2 for three consecutive years. Similar to earlier "exempt" status procedures, teachers retain their exemption status for three years, at which time they are eligible for re-exemption for another three years by having an ECERS-R observation score of 6.2 or higher.

In 2012-2013, there were 41 exempt teachers/classrooms. Three teachers were up for re-exemption for the 2012-2013 school year, and one of them achieved the required score for re-exemption. Because of the "exempt" teacher status, some of the tables and charts that follow will have results for the exempt classrooms for which the ECERS-R was not collected in 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012 or 2012-2013. In these instances, while the program transitions to the new exemption criteria, we will provide either the five-year average score or the three-year average score for the exempt group, which will be determined based on the set of criteria they met in order to earn their exemption.

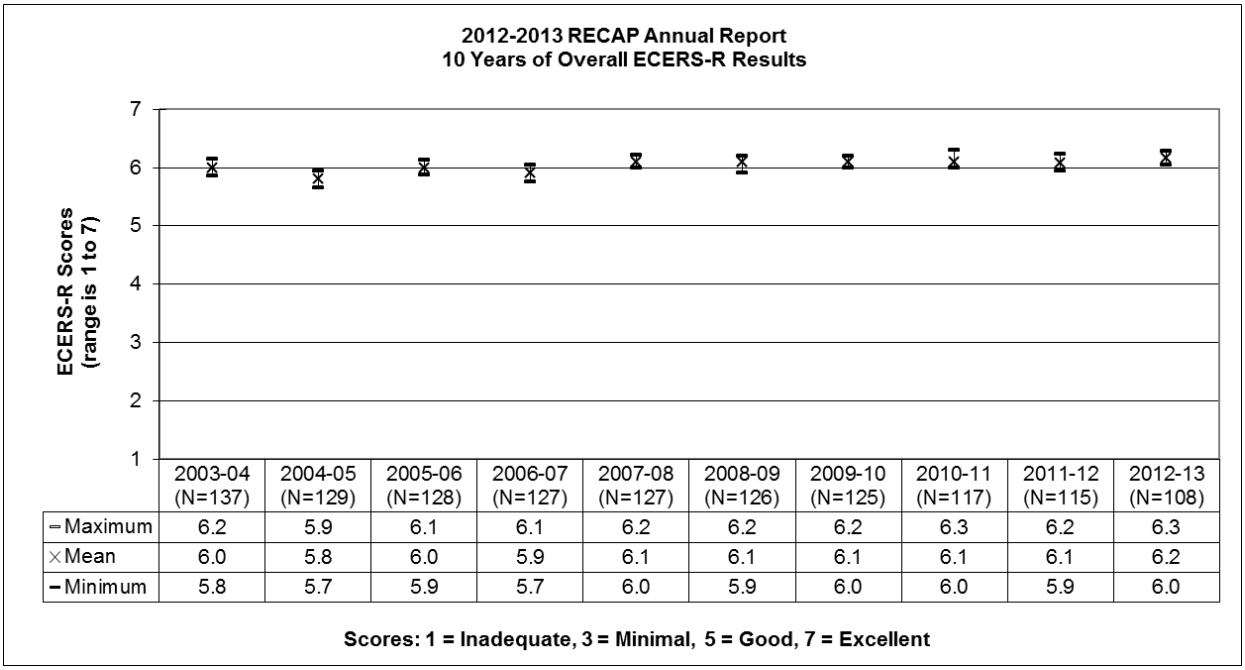
In prior years' reports, we included results on the statistical integrity of the ECERS-R in this section, with the results from the tabulation of the inter-rater reliability of observers. This information was collected and computed for the 2012-2013 school year, and, as in prior years, high inter-rater reliabilities (>85%) are noted. These results are reported in further detail in the Statistical Supplement.

ECERS-R Aggregate Results for 2003-2013

The 10-year ECERS-R aggregate results demonstrate a decade of quality in Rochester. The ECERS-R serves as a barometer for pre-kindergarten programs both nationally and in Rochester. Overall, classroom quality, as assessed by the ECERS-R, has been integrated into the pre-k infrastructure and performance within the "very good" to "excellent" range has been expected and maintained.

Figure 1 depicts the most recent ten years of ECERS-R performance. The 10-year average score is 6.0 for all classrooms participating in RECAP. For 2012-2013, the mean score was 6.2. This marked the highest average score achieved by RECAP classrooms on the ECERS-R in the past 10 years. This exemplifies the high quality environment of RECAP classrooms when compared to early childhood national standards and indices.

Figure 1. Ten Years of Overall ECERS-R Results



	2003-04 (N=137)	2004-05 (N=129)	2005-06 (N=128)	2006-07 (N=127)	2007-08 (N=127)	2008-09 (N=126)	2009-10 (N=125)	2010-11 (N=117)	2011-12 (N=115)	2012-13 (N=108)
Maximum	6.2	5.9	6.1	6.1	6.2	6.2	6.2	6.3	6.2	6.3
Mean	6.0	5.8	6.0	5.9	6.1	6.1	6.1	6.1	6.1	6.2
Minimum	5.8	5.7	5.9	5.7	6.0	5.9	6.0	6.0	5.9	6.0

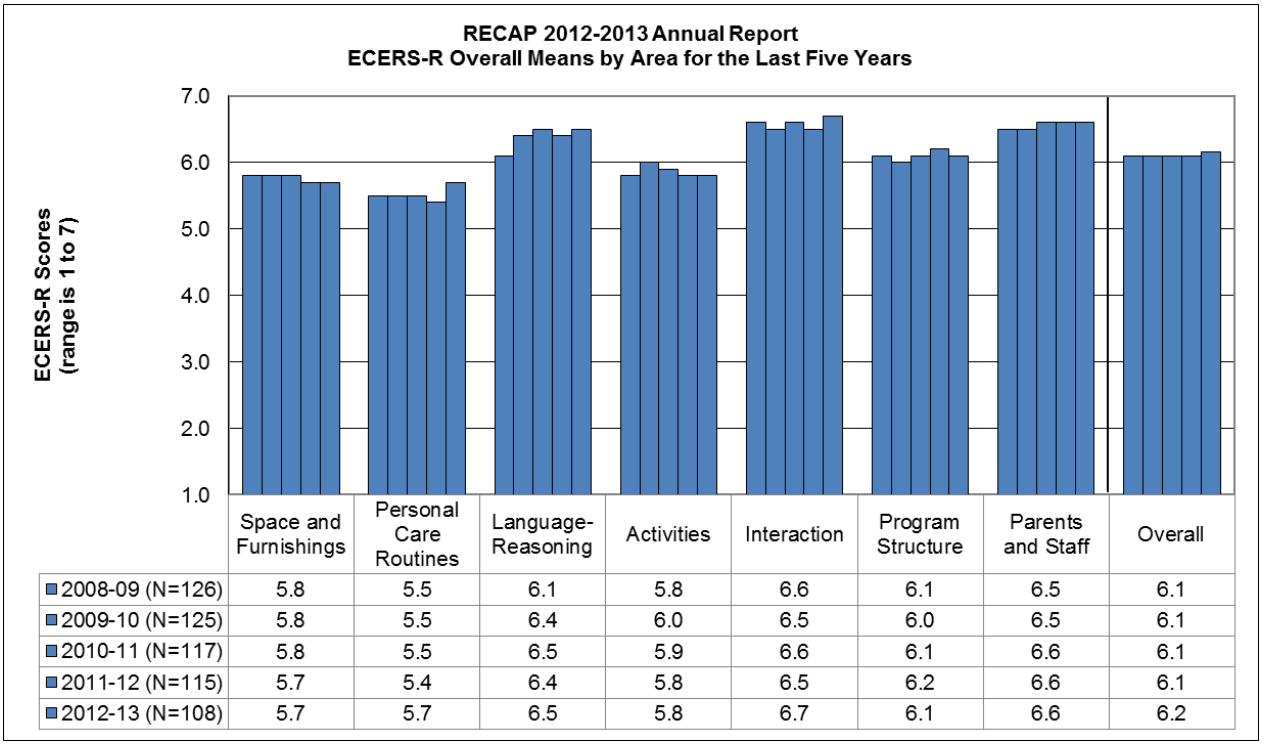
ECERS-R Overall Means by Area: A Five-Year Historical Perspective

Figure 2 illustrates the general stability across the seven areas assessed by the ECERS-R over the past five years. Starting with the 2007-2008 year, both exempt and non-exempt teachers' performances (using their respective five- or three-year averages) are included in the grouping.

This year, ***Personal Care Routines*** saw a jump up in performance from 5.4 last year to 5.7, matching the ***Space and Furnishings*** score for this year. Regardless of the fact that these two area scores are the lowest on the ECERS-R, both are firmly in the "good" range. After showing a small decrease last year, ***Language-Reasoning*** returned to its previous score of 6.5. For the past five years, four of the seven areas (***Language-Reasoning***, ***Interaction***, ***Program Structure***, and ***Parents and Staff***) have maintained mean ratings of at least 6.0, showing consistent strength. The areas of ***Parents and Staff, Interaction,*** and ***Language-Reasoning*** are all particularly high, showing scores of 6.5 or more that are approaching "excellent." ***Activities*** and ***Program Structure*** are neither the strongest nor the weakest areas of quality assessed. They continue to maintain performance levels that fall within the "good" to "very good" range.

Both Figure 1 and Figure 2 provide strong evidence that RECAP classrooms operate at a very high level of quality. For the past decade, classrooms have demonstrated consistently high performance. As such, there are no specific recommendations regarding the ECERS-R at this time other than to keep systems in place that will continue to foster the historically high performance expectations held for RECAP classrooms.

Figure 2. ECERS-R Overall Means by Area for the Last Five Years



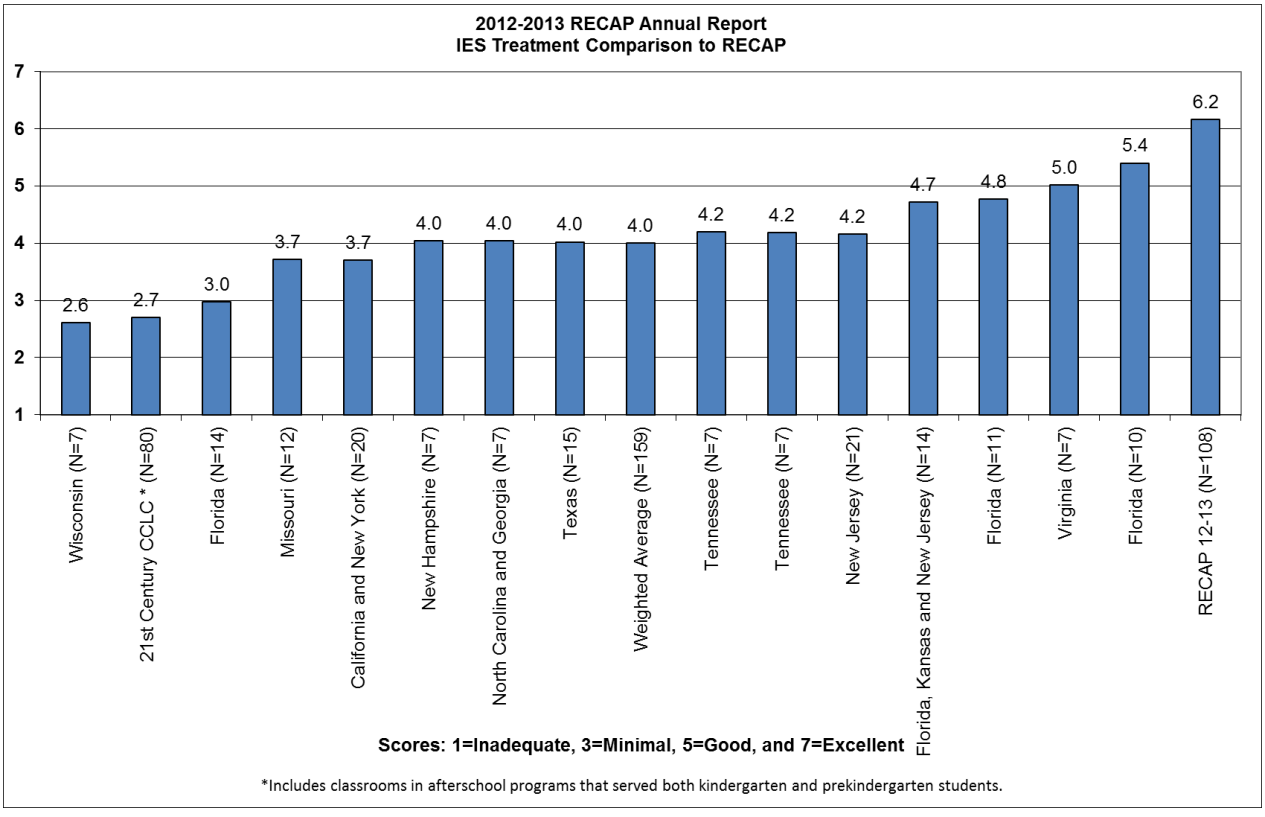
	Space and Furnishings	Personal Care Routines	Language-Reasoning	Activities	Interaction	Program Structure	Parents and Staff	Overall
2008-09 (N=126)	5.8	5.5	6.1	5.8	6.6	6.1	6.5	6.1
2009-10 (N=125)	5.8	5.5	6.4	6.0	6.5	6.0	6.5	6.1
2010-11 (N=117)	5.8	5.5	6.5	5.9	6.6	6.1	6.6	6.1
2011-12 (N=115)	5.7	5.4	6.4	5.8	6.5	6.2	6.6	6.1
2012-13 (N=108)	5.7	5.7	6.5	5.8	6.7	6.1	6.6	6.2

Comparing Rochester's Quality on the ECERS-R to Other Early Childhood Education Programs Across the United States

RECAP continues to provide the pre-k programs in Rochester with information pre-k teachers need to instill and maintain a range of "very good" to "excellent" standards of quality. As a comparison with other programs' quality, we report here the findings from the U.S. Department of Education Institute of Education Sciences (IES) "*Effects of Preschool Curriculum Programs on School Readiness*." In its report, IES presents findings from its multi-site, multi-curriculum evaluation. Fourteen different pre-kindergarten curricula were randomly assigned to treatment and control classrooms. ECERS-R assessments were conducted on these preschool classrooms in 13 states in the 2003-2004 school year.

Presented here are the ECERS-R results, showing data collected in the spring – as in the RECAP model – from the treatment classrooms (Preschool Curriculum Evaluation Research Consortium, 2008). The findings from this IES report show variability across the treatment programs; results range from 2.6 to 5.4. The most recent five years of the RECAP program, in comparison, have seen a mean quality rating of 6.1 for the past four years and 6.2 for the most recent school year. Rochester programs assessed in RECAP are in the top 5% of programs nationally.

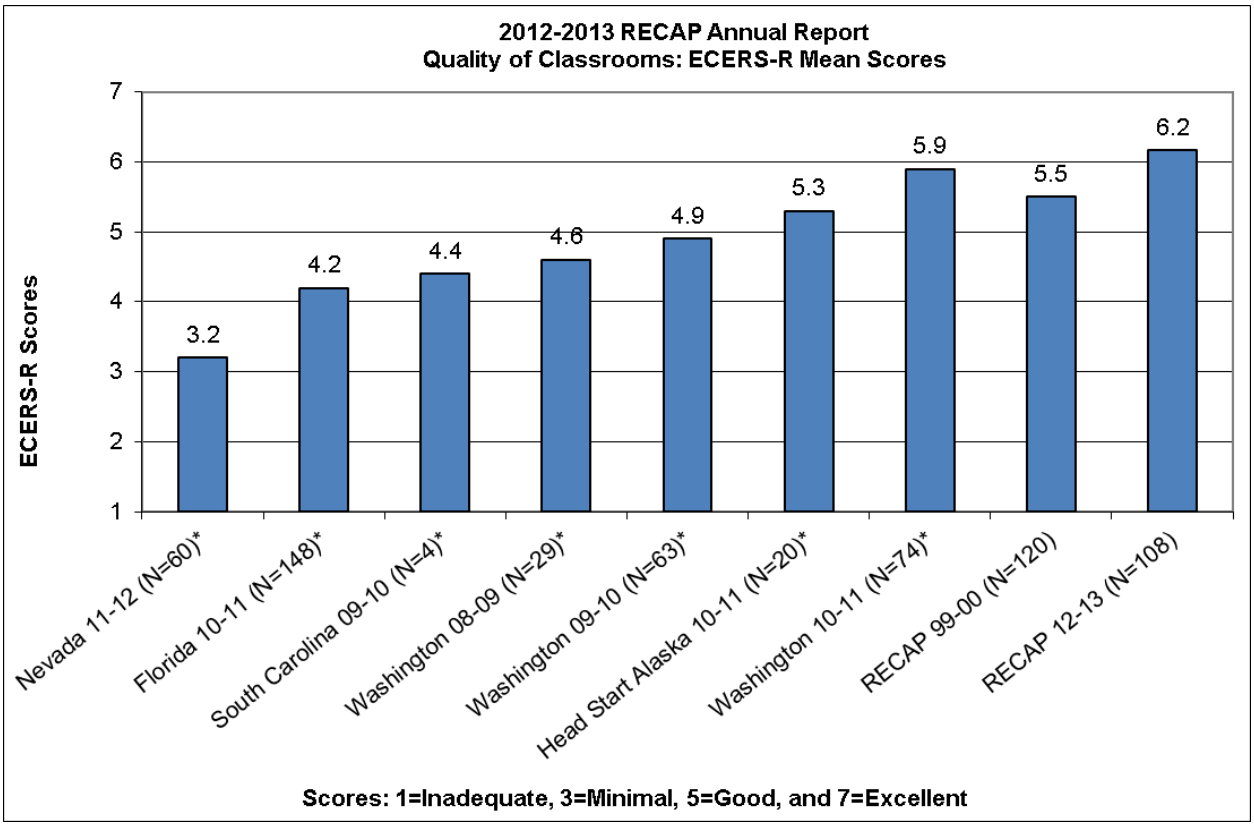
Figure 3. IES Treatment Comparison to RECAP



This year, in an effort to gain another perspective of how the classrooms in RECAP compare to other samples of classrooms across the nation, we did another review of recent research. Figure 4

compares several studies and reports that included: the use of the ECERS-R as a measure of classroom quality, the overall ECERS score achieved by classrooms in RECAP in the first year of RECAP's implementation, and the classroom's most recently completed ECERS-R assessment. Again, RECAP classrooms stand out in their ability to provide a highly desirable learning environment for prekindergarten children.

Figure 4. ECERS-R Comparisons to RECAP



*Sources: Council, N. E. C. A. Assessment of Center-Based Quality 2011-12.; Florence County First Steps Partnership. Fiscal Year 2010 Annual Report.; Kids Corps, Inc. Early Childhood Environment Rating Scale-Revised Edition.; Early Learning Coalition of Duval. (2011). Quality connections. [PowerPoint slides]. Retrieved from The Early Learning Coalition of Duval website: http://elcofduval.org/Uploads/reports/QC%20Report%20-%202010-11%20-%20board%20presentation%20-%20083111.pdf; Jamero, C. S. (2011), Early education and program improvement: Using data to increase results and success [PowerPoint slides]. Retrieved from City of Seattle website: http://www.seattle.gov/neighborhoods/education/documents/UsingDataCDSA.pdf

Program Quality – CLASS

Classroom Assessment Scoring System (CLASS)

From the 2009-2010 school year to the 2011-2012 school year, RECAP piloted the **Cl**assroom **A**ssessment **S**coring **S**ystem (CLASS) (Pianta, et al., 2008) with 95 different UPK teachers and classrooms. These classrooms were randomly selected for observations in 2009-2010 (n=30), 2010-2011 (n=30), and 2011-2012 (n=35). The pilot was implemented because the RECAP assessment team, school district administrators, and teachers desired more information to help them understand the different factors that influence the effectiveness of pre-kindergarten instruction and learning. Howes, Burchinal, Pianta, Bryant, Early, Clifford & Barbarin (2008) found the following:

> Teacher-child relationships that provide young children with a sense of acceptance and security and through which teachers and children are actively involved with one another are more likely to support engagement in and cooperation with the activities and instruction provided by the teacher.

Upon completion of the three-year pilot, it was determined that the CLASS provides valuable feedback on the climate provided by the teacher, the nature of the relationships in the classroom, and the quality-of-feedback loop. These quality assessment areas, while touched on by the ECERS-R assessment, were not examined in depth. Therefore, it was recommended and decided by the RECAP Assessment Team that all RECAP classrooms would be assessed using the CLASS in the 2012-2013 school year (n=113). By doing so, a more complete picture of the quality of the classroom environment was gained and further opportunities for growth and improvement have been identified.

CLASS observations for ABC Head Start classrooms (n=21) were conducted using their own trained and certified "Master Observers," and domain scores were provided to RECAP for the purposes of analysis and comparison. The other RECAP classrooms (n=92) were assessed by trained and certified CLASS community observers hired by Children's Institute. Of the non-ABC Head Start classrooms, 9 (~10%) were selected to receive two observations from two independent Master Observers. This provided RECAP with the ability to calculate inter-rater reliability as Agreement/(Agreement+Disagreement) x 100 = 93.1%. Further information on the inter-rater reliability assessments is provided in the Statistical Supplement.

CLASS Master Observer Training

In December 2012, three additional observers successfully completed the time-intensive CLASS Master Observer Training. These Master Observers participated in a rigorous three-day training program to attain or exceed the level of reliability specified by the authors of the CLASS (.80). Training materials provided observers with a clear and comprehensive understanding of the instrument's purpose and procedures. Trainees watched multiple videotaped segments that were consensus coded by at least three master CLASS coders. The consensus ratings established a standard by which to judge the accuracy of ratings made by trainees. At the end of training,

trainees took an online reliability test in which they watched and coded classroom segments. In addition to the in-depth training on the CLASS received by the Master Observers, the logistics of the observation process and the observation guidelines and protocol were also studied.

CLASS Results

Specifically, the CLASS assesses three empirically derived domains: ***Emotional Support***, ***Classroom Organization***, and ***Instructional Support*** (Pianta et al., 2008). Like other observational tools used in early childhood, CLASS items are rated on a 1-to-7 scale, with 1 indicating the item being rated is minimally characteristic or low quality, and 7 as highly characteristic or excellent quality.

For all RECAP classrooms, the mean scores in the ***Classroom Organization*** domain were in the mid-5 range. Subdomain scores within the ***Emotional Support*** domain were all at or above a 6.0, with the ***Negative Climate*** subdomain scoring nearly perfect at 6.9. For ***Instructional Support***, the mean score was in the mid-3 range with no individual subdomain scoring less than a 3.0. RECAP classroom performance in all three domains was notably and statistically higher than those of the My Teaching Partner (MTP) programs reported in the Technical Appendix of the CLASS Manual, which provides the results of 164 Virginia preschool classrooms (Pianta, et al., 2008). Table 3 shows CLASS domain and subdomain scores from RECAP classrooms, as well as providing a side-by-side comparison with the reported scores of the MTP programs.

As measured by the CLASS, RECAP classrooms demonstrated "very good" to "excellent" quality on ***Emotional Support,*** *and* ***"****very good" quality on the* ***Classroom Organization*** *domain; however, there is significant room for improvement in the* ***Instructional Support*** *domain. It is recommended to the Professional Development Committee that more professional development be provided in the* ***Instructional Support*** *area for all teachers and program administrators involved in UPK and other RECAP programs.*

Table 3. CLASS Means by Subdomain

2012-2013 RECAP Annual Report RECAP CLASS Means by Subdomain (N=92)[1]					
		RECAP		MTP	
Domain	**Subdomain**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Emotional Support	Positive Climate	6.3	0.7	5.2	0.9
	Negative Climate[2]	6.9	0.2	6.4	0.7
	Teacher Sensitivity	6.0	0.7	4.3	0.9
	Regard for Student Perspective	6.0	0.6	4.4	1.0
Classroom Organization	Behavior Management	5.9	0.8	4.9	0.9
	Productivity	5.9	0.8	5.4	0.8
	Instructional Learning Formats	5.2	1.0	4.6	0.8
Instructional Support	Concept Development	3.0	1.2	2.7	0.7
	Quality of Feedback	3.7	1.1	2.9	0.9
	Language Modeling	3.9	1.2	2.9	0.7
Total	All Subdomains	5.2	0.6	4.4	0.8

[1] ABC Head Start classrooms are not included
[2] Rekeyed so that higher value indicates better functioning
Note: All RECAP to My Teaching Partner comparisons across all domains and subdomains were statistically significant at p<.01, with RECAP classrooms performing significantly better than those classrooms in the CLASS Technical Manual.

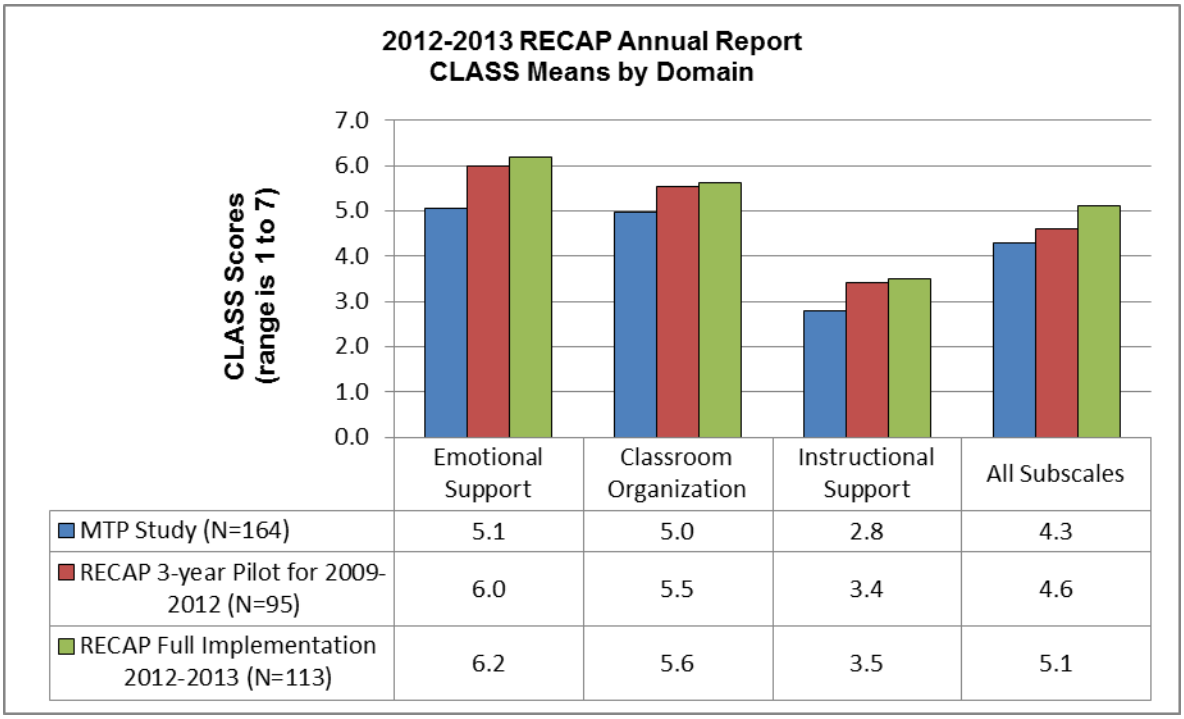
Comparing CLASS Results of the My Teaching Partner Study to the RECAP 3-Year Pilot and to the RECAP 2012-2013 Implementation

As noted previously, 2012-2013 marked the first school year in which all RECAP classrooms were assessed using CLASS observations. Prior to this year, only random subsamples of classrooms had been selected to receive a CLASS observation. Figure 5 shows the mean domain scores of the MTP Study reported in the CLASS Technical Manual, the RECAP three-year pilot classrooms (n=95), and all of the RECAP 2012-2013 (n=113) classrooms.

Compared to the results reported in the CLASS Technical Manual, it is evident that RECAP classrooms have had strong programs regarding ***Emotional Support*** and ***Classroom Organization***. However, it is clear that there is opportunity for RECAP programs to grow in the ***Instructional Support*** domain.

When compared to the pilot years, RECAP classrooms in 2012-2013 showed continued excellence in ***Emotional Support*** and ***Classroom Organization***. Furthermore, the mean scores for each domain increased, showing growth since the CLASS was introduced to RECAP programs and classrooms. Overall, total scores on the CLASS increased from 4.6 in the pilot phase to 5.1 in the 2012-2013 school year. Domain scores and the total score for RECAP classrooms were statistically significantly higher than those of the MTP Study.

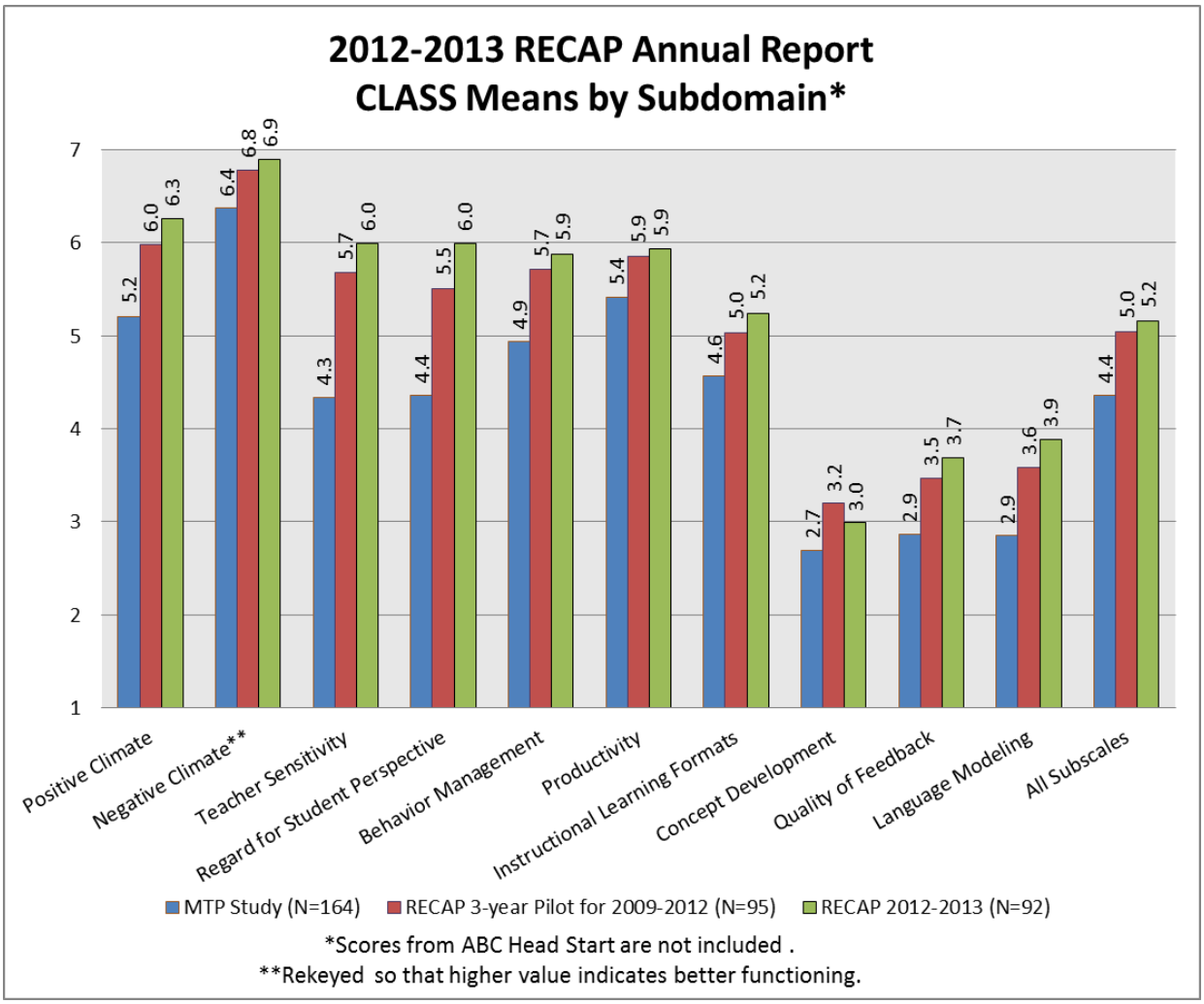
Figure 5. CLASS Means by Domain



	Emotional Support	Classroom Organization	Instructional Support	All Subscales
MTP Study (N=164)	5.1	5.0	2.8	4.3
RECAP 3-year Pilot for 2009-2012 (N=95)	6.0	5.5	3.4	4.6
RECAP Full Implementation 2012-2013 (N=113)	6.2	5.6	3.5	5.1

Figure 6 shows the subdomain scores for the MTP Study, the RECAP three-year pilot, and the 2012-2013 school year. All subdomains showed improvement from the pilot phase to the 2012-2013 school year except for ***Concept Development***, which showed a slight decrease in score from 3.2 to 3.0. This is a specific area that may be in need of further attention.

Figure 6. CLASS Means by Subdomain

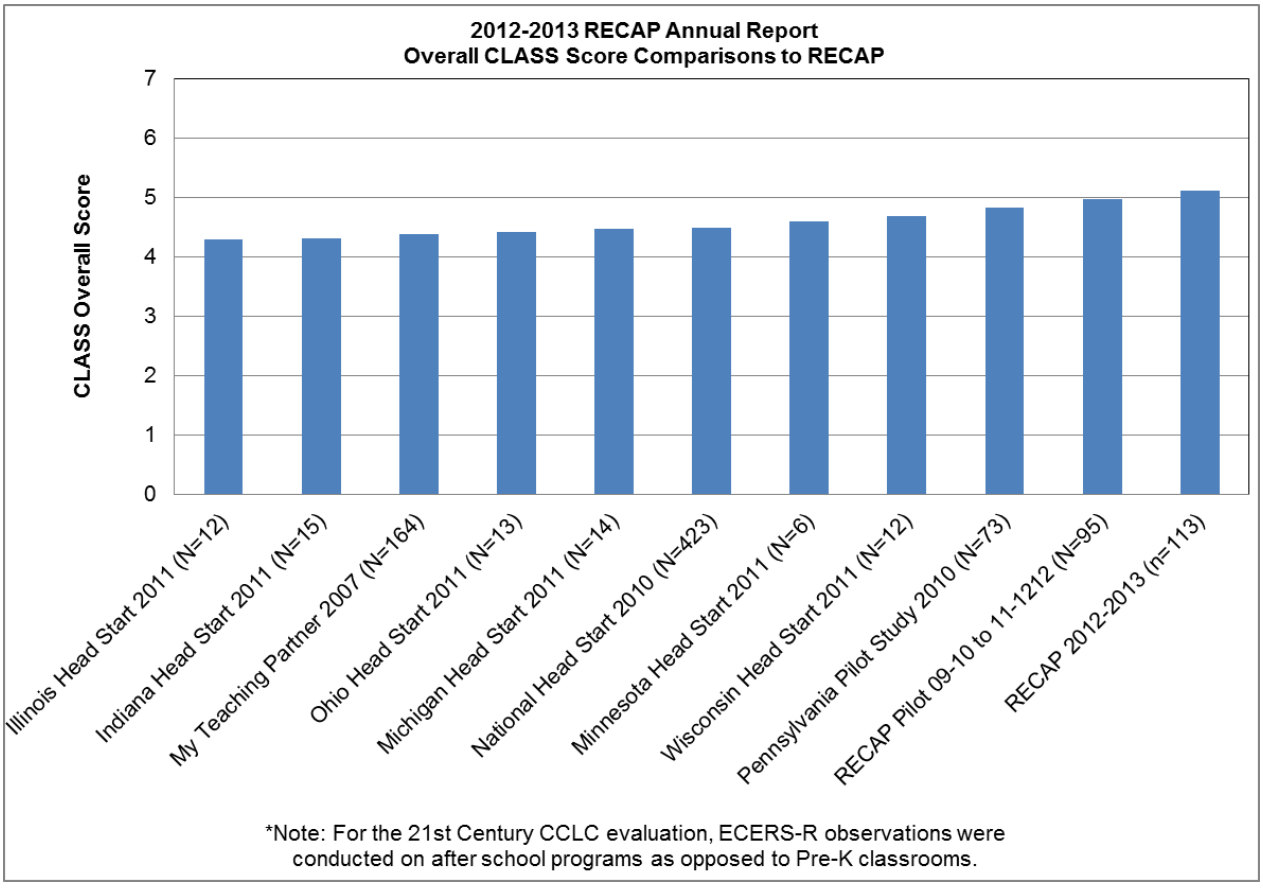


Comparing Rochester's Quality on the CLASS to Other Early Childhood Education Programs Across the United States

Figure 7 shows a side-by-side comparison of CLASS overall means for RECAP with the results from several other programs. (Note: Nationally, Head Start programs must use the CLASS to measure their program quality, so more studies reporting Head Start results are available.) Other programs' results include reports from: Head Start sites in Illinois, Indiana, Ohio, Minnesota, Michigan, Wisconsin, and a national average of all Head Start programs (Sullivan, Williams, Lacey-Ward, & Burns, 2011); My Teaching Partner sites in Virginia (Pianta et al., 2008); and pre-k classrooms across the state of Pennsylvania (Philson, 2011). These results indicate little variability across programs. The CLASS means range from 4.3 to 4.8, with a median of 4.5. Last year, RECAP classrooms that had participated in the three-year pilot had an average mean of 5.0. In the 2012-2013 school year, with all RECAP classrooms being assessed in the spring, the mean overall CLASS score was 5.1, with mean scores for the domains ranging from 3.5 to 6.2.

Compared to most other programs that use the CLASS to assess quality, RECAP classrooms are significantly better. However, this does not negate the need for additional work by RECAP classrooms in the ***Instructional Support*** *domain and, more specifically, in the area of* ***Concept Development****.*

Figure 7. CLASS - Classroom Assessment Scoring System Comparisons



CLASS Correlations with ECERS-R

A thorough review of the ECERS-R and the last three year's preliminary results on the CLASS domains (Story, Hightower, Macgowen, Van Wagner, Brugger, & Lotyczewski, 2012; Taylor, Hightower, MacGowan, Van Wagner, Brugger, & Lotyczewski, 2011; Taylor, Lehmann, Reynolds Weber, Hightower, MacGowan, Van Wagner, & Brugger, 2010) suggested that the CLASS and the ECERS-R assess different domains. It was then hypothesized that there would be relatively few significant correlations between the classroom domains as measured by the two measures and that, if significant correlations were found, they would account for relative small amounts of overlapping variance.

This year, analyses of the correlations between the CLASS and the ECERS-R continued (see Table 4). Correlations were derived from a sample of RECAP teachers (n=67) who had both a CLASS and an ECERS-R observation conducted during the 2012-2013 school year. Of the 32 correlation coefficients (3 domains and a total of the CLASS, and 7 subdomains and a total of the ECERS-R ([4 X 8 = 32]), statistically significant ($p \leq .001$) correlations were found between 7 of the relationships. There were *no* significant relationships between the CLASS ***Emotional Support*** domain and any ECERS-R subscales. This result could be due to the very high means on this scale, which restricts range for this construct.

The CLASS ***Classroom Organization*** domain was significantly related only to the ECERS-R ***Language*** subscale (r=.34; 12% common variance). The CLASS ***Instructional Support*** domain was significantly related to the ECERS-R subscales of ***Space*** (r=.32; 10% commons variance) and ***Language*** (r=.31; 10% of common variance as well as the ECERS-R ***Total*** [r= .33; 11% of the common variance]). There were also significant correlations between the CLASS ***Total*** and the ECERS-R subscales of ***Space*** (r=.34;12% of the common variance), ***Language*** (r=.36; 13% of the common variance). The correlation found between the CLASS ***Total*** and the ECERS-R ***Total*** (r=.36; 13% common variance) was also significant.

These analyses show that there is some evidence that these assessment tools overlap to some degree based the number of statistically significant correlations between them. Of the 32 tests, 7 (22%) of the correlations were significant at p<.01; however, the largest amount of common variance was 13%. This means that approximately 87% of what the CLASS and ECERS-R measure is unique and not overlapping. Because analyses continue to support the assertion that the ECERS-R and CLASS measure different components of the quality pre-kindergarten environments, using both of these tools to assess program quality remains a recommendation of the RECAP Assessment Team.

Table 4. CLASS Dimension and ECERS-R Subscale Correlations

2012-2013 RECAP Annual Report CLASS Dimension and ECERS-R Subscale Correlations (N=67)								
	ECERS-R							
CLASS	***Space***	***Routines***	***Language***	***Activities***	***Interactions***	***Program Structure***	***Parents***	***Total***
Emotional Support	0.31	0.31	0.26	0.22	0.02	0.12	0.24	0.31
Classroom Organization	0.25	0.24	0.34*	0.22	0.05	0.04	0.26	0.29
Instructional Support	0.32*	0.19	0.31*	0.31	0.11	0.14	0.19	0.33*
Total	0.34*	0.27	0.36*	0.30	0.08	0.12	0.25	0.36*
* Significant at the p<.01 level								

Student Performance

Child Observation Record (COR)

The COR was created and released in 1992 by the HighScope Educational Research Foundation, a nonprofit organization dedicated to the development and evaluation of materials that teach and assess young children. It is used by Head Start programs nationally and is approved by the New York State Department of Education for use in pre-k settings. RECAP began use of the COR nearly two decades ago, based on the recommendations of teachers and administrators from RCSD and Head Start. Three years ago, after a thorough review of eight curricula and assessments, RECAP reaffirmed the benefits of continuing to use the present edition of the COR (2003). It is expected that a new edition of the COR will be published in 2014.

The COR is considered a developmentally appropriate measure for young children. It measures academic (language, literacy, mathematics & science), social, and motor competencies. Teachers observe children for at least 6 weeks and record their observations of their students' functioning on 32 items. Each item is scored on a 5-point, developmentally sequenced, scale where each point represents a level of children's growth along the developmental continuum.

Teachers completed the COR in the fall and spring. By administering the COR at these two times, the growth of the individual student is assessed, and, if a problem area exists, teachers can address it in the classroom. Furthermore, by aggregating the data, the growth rates for the entire pre-k sample can be assessed by gender and race and – when administered – the kindergarten sample can be assessed as well. For this report, growth rates are analyzed based on risk factors. The COR results presented in this section, as well as in the Statistical Supplement, are integral to understanding pre-k program effectiveness.

Teachers complete the COR on their students using the COMET system, which tabulates and processes the data and produces child summary reports almost instantly. These reports show the average raw and percentile scores in four skill areas. The individual items by their respective skill areas are:

- ***Initiative & Social***: Making choices and plans
  Solving problems with materials
  Initiating play
  Taking care of personal needs
  Relating to adults
  Relating to other children
  Resolving interpersonal conflict
  Understanding and expressing feelings

- ***Language & Literacy***: Showing awareness of sounds in words
  Using letter names and sounds
  Reading
  Writing
  Counting

- ***Movement & Music***: Moving in various ways
  Moving with objects
  Feeling and expressing steady beat
  Moving to music
  Singing

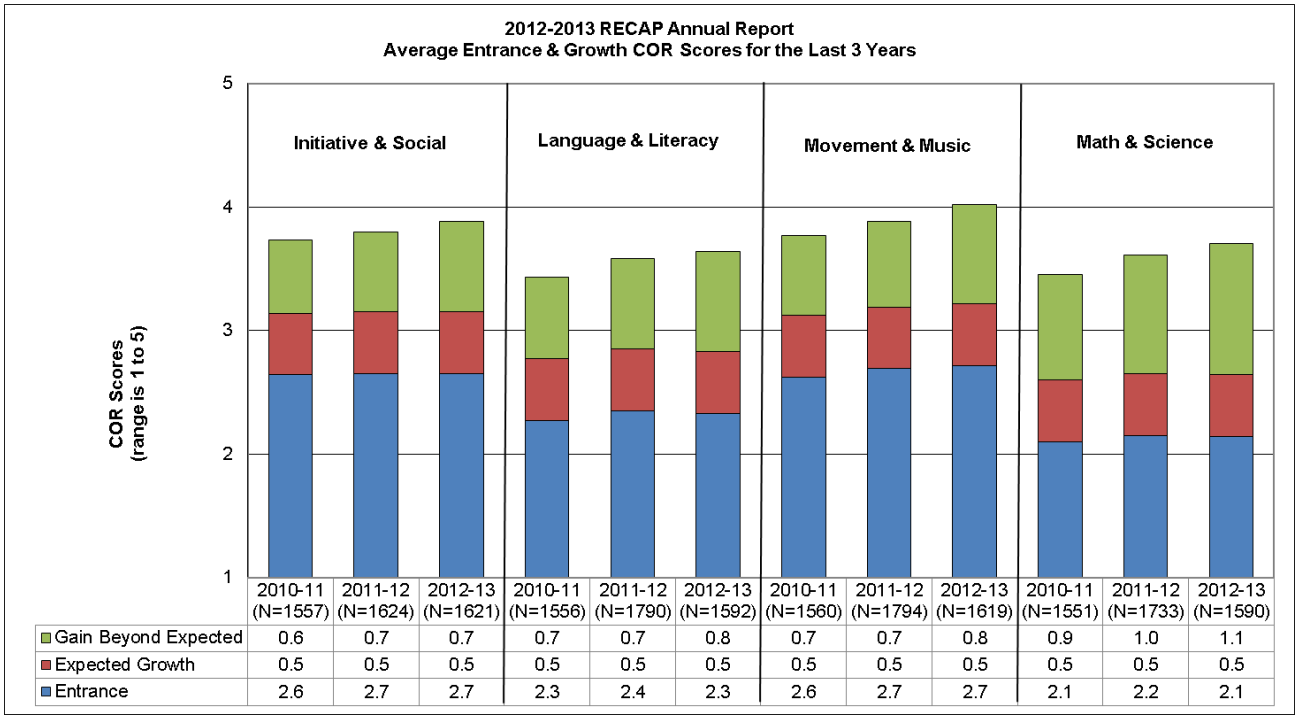
- ***Math & Science***: Comparing properties
  Identifying position and direction
  Identifying sequence change and causality
  Identifying materials and properties
  Identifying natural and living things

The following text and figure depict the growth of RECAP students on the COR for the entire cohort for the 2012-2013 school year, including some three year-olds and some students who are in non-UPK classrooms. The Statistical Supplement presents additional analyses based on gender and race/ethnicity.

In Figure 8, the COR results for the entire cohort for the past three school years are presented with the means reported for each of the academic subscales. Based on analyses of the 2012-2013 cohort, it is conservatively estimated that children in Rochester are expected to gain close to .50 points on each of the COR scales over the course of school year, due to development alone (using a 95% confidence interval). It can be reasoned that any gain beyond .50 points is due to changes from participation in classroom instruction. Further description of these analyses is provided in the Statistical Supplement. Figure 8 depicts students' COR scores upon entering pre-k, their estimated expected growth based on development alone, and their actual growth beyond the expected growth for each subscale.

This year, RECAP also acquired a new memo from HighScope entitled, "Interpretation of the Relationship of the COR Scores and School Readiness." In this memo, HighScope indicates that "The COR is constructed on the model that preschool children with average category scores of 4 or 5 have reached a developmental level -- or completed the "readiness" tasks -- that prepare them for school." (Luke, July 2012). This new information will allow for RECAP to compare Rochester's pre-k children's readiness for kindergarten based on HighScope data for the first time.

Figure 8. Average Entrance and Growth COR Scores for the Last 3 years



	2010-11 (N=1557)	2011-12 (N=1624)	2012-13 (N=1621)	2010-11 (N=1556)	2011-12 (N=1790)	2012-13 (N=1592)	2010-11 (N=1560)	2011-12 (N=1794)	2012-13 (N=1619)	2010-11 (N=1551)	2011-12 (N=1733)	2012-13 (N=1590)
Gain Beyond Expected	0.6	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.8	0.9	1.0	1.1
Expected Growth	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Entrance	2.6	2.7	2.7	2.3	2.4	2.3	2.6	2.7	2.7	2.1	2.2	2.1

As noted in the above figure, growth on COR domains has increased slightly from previous years for most domains. ***Math & Science*** growth scores, while the lowest in the fall, have consistently demonstrated the greatest gains in a single year and a slow increase in growth from year to year. Regardless of the students' scores upon entering pre-k, only the ***Movement & Music*** domain (which assesses motor functioning) even comes close to the lower bound of kindergarten readiness (a COR score of 4.0) by the spring.

Table 5 displays the three-year median scores at entry to pre-k. They range from lows of 2.1 for ***Math & Science*** and 2.3 for ***Language & Literacy***, to highs of 2.6 for ***Initiative & Social*** and 2.7 for ***Movement & Music***. All of these scores are far below kindergarten readiness indices on the COR, but the lowest scores are on the more "academic" dimensions.

An average Rochester child coming into pre-k with a 2.1 score on ***Math & Science*** would be expect to gain .5 points by typical development alone. In other words, the child would be expected to achieve a score of at least 2.6 (2.1 +.5) in the spring. A child entering at the lower end of the readiness spectrum would need to grow an additional 1.9 (4.5 – 2.6) points or learn at a 380% (1.9 / 0.5) growth rate over development alone. Table 5 illustrates growth rates necessary for each COR scale to achieve kindergarten readiness for an "average" child in Rochester. It is clear from this table that Rochester's pre-k children will need to make great gains in all areas and huge gains of 340% to 380% in ***Language & Literacy*** and ***Math & Science***, respectively, to be ready for kindergarten.

Table 5. Growth rates necessary to achieve kindergarten readiness

Domain	Median Fall Skills Scores Over the Past 3 Years	Expected Skill Gain by Development Alone*	COR Score in the Spring Due to Development Alone	Gain Above Development Needed to Achieve K Readiness (4.5)	Necessary Growth Rate to Achieve K Readiness
Initiative & Social	2.6	0.5	3.1	1.4	280%
Language & Literacy	2.3	0.5	2.8	1.7	340%
Movement & Music	2.7	0.5	3.2	1.3	260%
Math & Science	2.1	0.5	2.6	1.9	380%
*Based on upper bounds of 95% confidence level.					

Children who enter and complete pre-k gain, on average, 1.2 points, or 1.4 school years (1.2 - 0.5 = 0.7 / .05 = 1.4 school years) worth of growth above expected levels for ***Initiative & Social***, ***Language & Literacy***, and ***Movement & Music*** domains. They gain 2.0 school years' worth of growth on ***Math & Science*** skills (1.5-0.5 =1.0 /.05 = 2.0 school years) above expected levels.

In summary, based on the COR, four year-old children in Rochester enter half day (2.5 hours of instruction) pre-k ***with significant needs, have significant performance gains, but still do <u>not</u> come close to kindergarten readiness****.*

Later in this report, Brigance analyses confirm these findings. Additionally, analyses regarding COR performance upon exiting pre-k and beginning kindergarten demonstrate that, during the summer, children experience significant losses in functioning. This further explains their lack of readiness for kindergarten.

In essence, there are at least four major strategies that need to be considered immediately:

- *Help parents better prepare their children for school entry, at whatever age educational services become available*
- *Provide more intensive services at a younger age (e.g., pre-k for three year-olds)*
- *Extend the school day from half-day to full-day*
- *Add at least 6 weeks of instruction from July through August for all children transitioning from pre-k to kindergarten*

Teacher-Child Rating Scale (T-CRS)

The T-CRS consists of 32 items that assess both positive and negative aspects of a child's social-emotional performance. These items are grouped into four empirically derived subscales: ***Task Orientation***, ***Behavior Control***, ***Assertiveness***, and ***Peer Social Skills.***

The T-CRS has a variety of uses; it can be used as a screening measure, as part of an individual assessment battery, and as a pre- and post-research or evaluation measure. In addition, within RECAP, the T-CRS also serves as a tool to track population trends, changes in students' social and emotional development, and the effects of pre-k programs in Rochester. Table 6 compares initial at-risk status (at or below the 15th percentile, approximately 1 standard deviation) as measured by the fall administration of the T-CRS for the 2011-2012 and 2012-2013 RECAP program years.

In order to identify if there were any significant ($p \leq .01$) changes in the percentage of children who were "at-risk" in one or more of the subdomains at the beginning of the school year, a series of chi-square tests were run. These tests were used to determine whether the fluctuations in percentages are within an expected amount of change from year to year. The results showed that a significantly larger proportion of students entered pre-k in 2012-2013 with no risk factors identified on the T-CRS. Also, significantly fewer students entered pre-k with only ***Behavior Control*** risks evident. The change in the percentages of students at risk in the other domains upon entry to pre-k were not significantly different from 2011-2012 to 2012-2013.

Table 6. Social-emotional risk factors for the past two years at Time 1

2012-2013 RECAP Annual Report Students with Social-Emotional Risk Factors at Time 1					
	2011-2012		2012-2013		Chi Square
	Frequency	Percentage[+]	Frequency	Percentage[+]	
No risk factors	1,391	75.0%	1,454	78.2%	10.5*
***Task Orientation* risk only**	48	2.6%	60	3.2%	4.0
***Behavior Control* risk only**	59	3.2%	32	1.7%	7.8*
***Assertiveness* risk only**	61	3.3%	55	3.0%	0.2
***Peer Social* risk only**	65	3.5%	53	2.9%	1.1
Multiple risk factors	230	12.4%	205	11.0%	1.3
Number of valid responses	1,854	-	1,859	-	

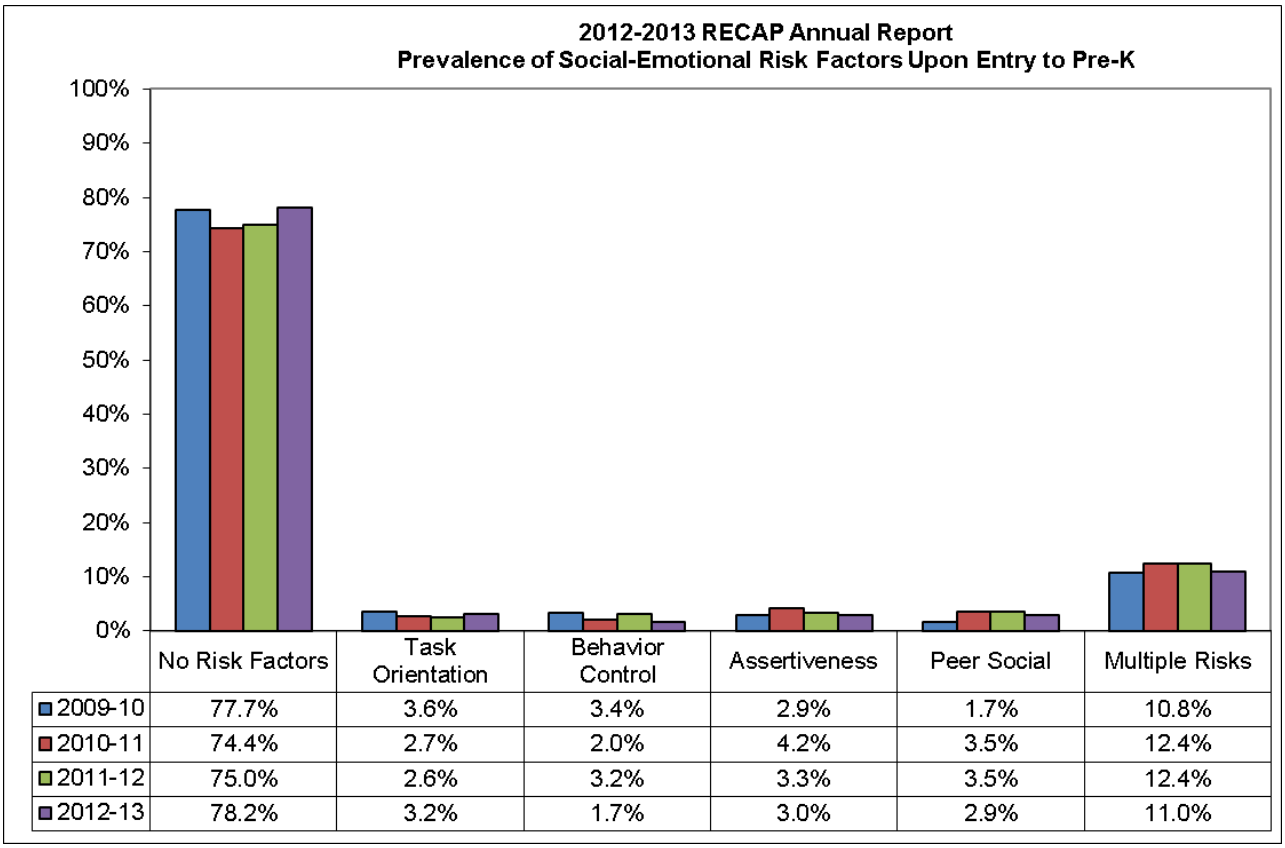
[+] Percentage is calculated from number of valid responses
* Scores are statistically different (p<.01)

In comparison to 2011-2012, 3% fewer children arrived with any social or emotional risk factors in 2012-2013. However, considering the T-CRS is a nationally normed instrument, it is expected that approximately 85% of the children assessed would arrive with no social or emotional risk factors presenting. In Rochester, only 78% of students entered pre-k without any risk factors, which is significantly lower than expected when compared with the national norms.

In sum, Rochester's four-year-old children entered pre-k with fewer risks when compared with last year, but they continued to show significantly more social and emotional risks when compared to national samples.

For 2012-2013, teachers completed the T-CRS for 1,859 students. As shown below in Figure 9, the rates for all of the groups (no risk factors, and single or multiple risk factors) have remained relatively consistent for the last four years for the students attending RECAP-affiliated pre-k programs. Combining the single-risk rates from each of the four groups shows that the grouped individual risk factor is approximately 11 to 12%. This rate has remained consistent for the last four years.

Figure 9. Prevalence of Social-Emotional Risk Factors at Entrance



	No Risk Factors	Task Orientation	Behavior Control	Assertiveness	Peer Social	Multiple Risks
2009-10	77.7%	3.6%	3.4%	2.9%	1.7%	10.8%
2010-11	74.4%	2.7%	2.0%	4.2%	3.5%	12.4%
2011-12	75.0%	2.6%	3.2%	3.3%	3.5%	12.4%
2012-13	78.2%	3.2%	1.7%	3.0%	2.9%	11.0%

Rochester UPK Students

As discussed previously, new information has been made available to RECAP by HighScope that states that scores of 4 or 5 on the COR indicate that a child is ready for kindergarten. Table 7 shows the number and percent of Universal Pre-kindergarten (UPK) students who scored 4 or above on the COR in the fall and in the spring. Only students who had COR scores in both the fall and the spring were included in this analysis.

It was anticipated that in the fall, the percentage of students who performed at a level 4 or a level 5 would be small, if indeed any students were able to perform at that high a level. This was found to be true, with the highest number of students, N=75 (7.8%), being assessed as ready for kindergarten on the ***Movement & Music*** domain in the fall. Less than 1% scored 4 or 5 overall on the COR.

Of the 963 UPK students assessed, only 488 (50.7) % of students scored a 4 or higher, overall, on the COR in the spring. In the ***Language and Literacy*** domain, 418 (43.4%) students were considered ready for kindergarten based on their COR. ***Movement & Music*** had the highest percent of students who were kindergarten ready at 65.5%. For the ***Initiative & Social*** domain, 527 (54.7%) students scored 4 or above, and 493 (51.2%) scored 4 or above in ***Math & Science***.

Based on the information regarding kindergarten readiness provided by HighScope, it is now possible to assess how ready Rochester's UPK students are for kindergarten based on their COR scores. Upon leaving their respective UPK programs in the spring, approximately half of Rochester's UPK students are prepared to enter kindergarten in the fall. Furthermore, Rochester's students lose skills over the summer, meaning that even fewer students who enter kindergarten are actually ready for the more advanced educational instruction that they are exposed to; this trend is discussed further on in this report.

Table 7. 2012-2013 Rochester UPK Students Ready for Kindergarten Based on the COR

2012-2013 RECAP Annual Report Rochester UPK Students Number of Students with COR Scores of 4 or 5				
N=963	**Pre**		**Post**	
	N	**%**	**N**	**%**
Initiative & Social	56	5.8%	527	54.7%
Language & Literacy	28	2.9%	418	43.4%
Movement & Music	75	7.8%	631	65.5%
Math & Science	24	2.5%	493	51.2%
Overall	5	0.5%	488	50.7%

The social and emotional risk factors as assessed by the T-CRS in the fall and spring of the 2012-2013 school year are shown in Table 8. All 1,281 UPK students who had a T-CRS assessment completed at both times of administration were included in this analysis. Chi-square tests were run to determine if there was a significant difference in the numbers of at-risk students from the beginning to the end of the school year. The number of students who had no risk factors increased significantly from 1,014 (79.2%) in the fall to 1,045 (81.6%) in the spring. The number of children who were at risk for developmental delays in ***Assertiveness*** decreased significantly; however, the number at risk in the ***Behavioral Control*** domain increased by the end of the year.

*Consistent with the findings comparing **Assertiveness** from last year to this year, children who are at-risk at the beginning of the year improved by the end of the year and were no longer considered at-risk. Regarding the increase in the number of students at risk with only **Behavior Control**, this could be due, in part, to the decrease in the number of students who had multiple risk factors. As students made gains in one area of their development, they may have no longer been classified as having multiple risks, but may have still been at-risk for a single factor. This result bears further monitoring and investigation.*

Table 8. 2012-2013 Rochester UPK Students T-CRS

2012-13 RECAP Annual Report Rochester UPK Students T-CRS Risk Factors (Below 15th Percentile)					
N=1281	**Pre**		**Post**		**Chi Square**
	N	**%**	**N**	**%**	
No Risks	1014	79.2%	1045	81.6%	33.8*
Risks					
Task Orientation	133	10.4%	108	8.4%	0.4
Behavior Control	116	9.1%	113	8.8%	0.6
Assertiveness	71	5.5%	40	3.1%	5.4*
Peer Social	159	12.4%	127	9.9%	2.0
Risks					
Single Subscale	125	9.8%	130	10.1%	0.7
Task Orientation	32	2.5%	28	2.2%	0.0
Behavior Control	20	1.6%	38	3.0%	8.5*
Assertiveness	33	2.6%	19	1.5%	2.1
Peer Social	40	3.1%	45	3.5%	1.4
Multiple Subscales	142	11.1%	106	8.3%	1.6
Two Risks	82	6.4%	65	5.1%	1.1
Three Risks	50	3.9%	36	2.8%	1.5
Four Risks	10	0.8%	5	0.4%	1.4
* Scores are statistically different (p<.01)					

HighScope Curriculum

The 2012-2013 school year marked the third consecutive year of HighScope curriculum implementation in the Rochester City School District, ABC Head Start, and UPK community-based programs. HighScope Education Research Foundation is an independent, not-for-profit organization that supports child development professionals, educators, and parents. Its mission is to assist children with learning (Epstein, 2007). The HighScope curriculum integrates teaching practices for educators with content that facilitates developmentally appropriate learning for children; it has been approved as an evidenced-based curriculum by the NY State Education Department.

This curriculum emphasizes active participatory learning, adult-child interaction, and the plan-do-review process (Marshall, Lockhart, & Fewson, 2007). Active participatory learning refers to an approach where children are "active learners" through child-based learning that is supported by the teacher and materials as students manipulate their environment. Adult-child interaction is a partnership between teacher and child that allows for child-appropriate decisions within the classroom and a supportive climate for teachers to guide, nurture, and respond to students. The plan-do-review process is part of the HighScope daily routine; children meet in a small group with the teacher during planning time to decide what they would like to do during work time. After work time, when the children have participated in the activities they planned, the small group then comes back together with the teacher for recall time, where students share what they did and what they learned.

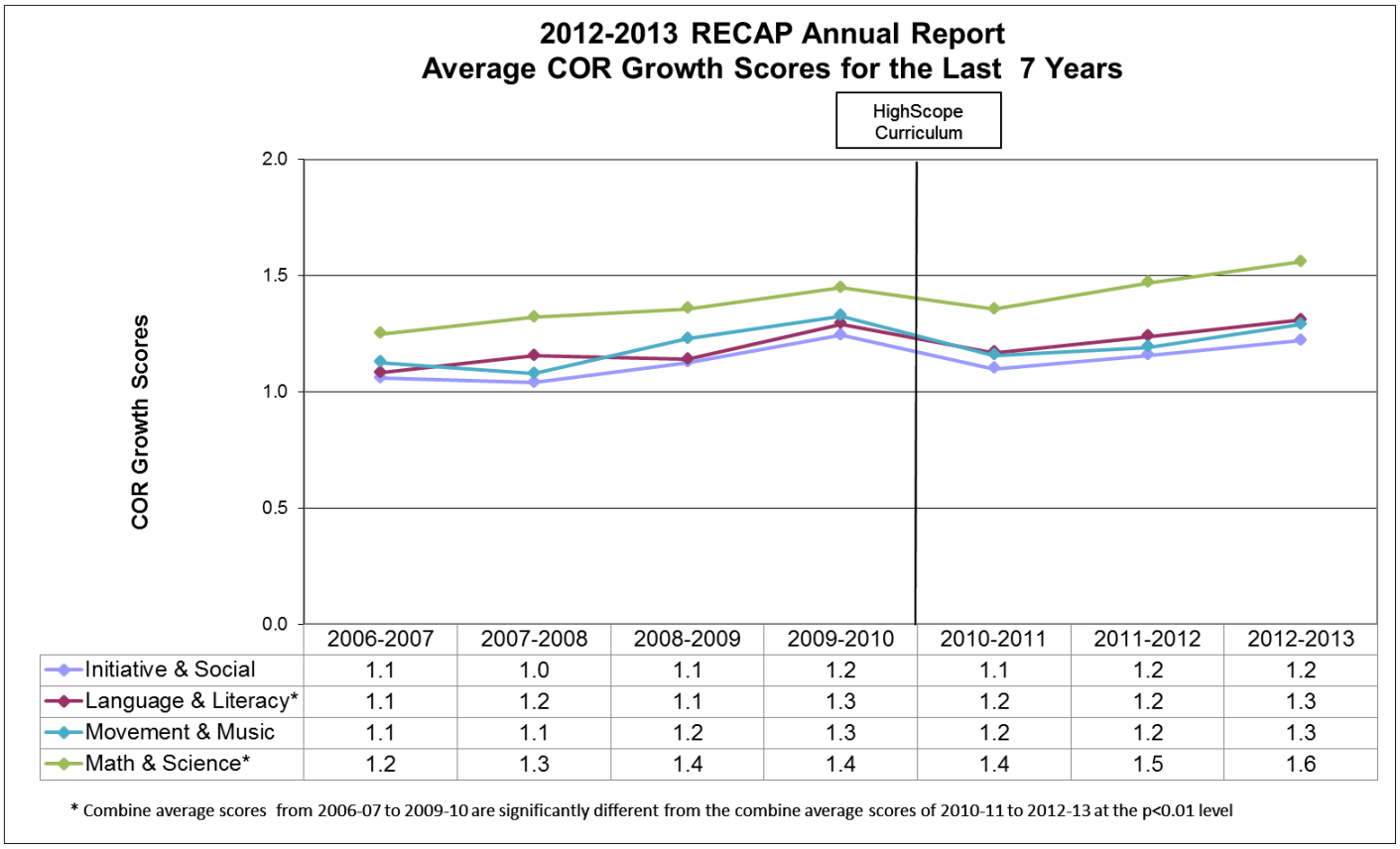
Change Scores

In order to account for any potential differences between student cohorts upon entering pre-k, COR growth scores were examined prior to and after the implementation of the *HighScope* curriculum. Growth scores were attained by calculating the average (mean) difference between students' COR scores from the beginning to the end of the school year. As revealed in Figure 10, COR growth scores have shown some fluctuations across the last 7 years, but, in general, are stable or trending upwards. In 2012-2013, the ***Initiative & Social*** subscale showed similar growth when compared to the students' in 2011-2012. The ***Language & Literacy***, ***Movement & Music***, and ***Math and & Science*** subscales displayed slight increases (0.1 point) in growth from last year to this year.

When COR subscales growth scores for the four years prior to HighScope curriculum implementation were averaged (mean) and compared (*t*-tests) to the average of the three years of HighScope curriculum implementation, students' growth on the ***Language & Literacy*** and ***Math & Science*** subscales during the HighScope implementation were significantly better ($p<.01$). There were no significant changes in the ***Initiative & Social*** or ***Movement & Music*** domains.

In sum, the HighScope Curriculum is supporting significant growth in pre-k children's ***Language & Literacy*** *and* ***Math & Science,*** *as measured by the COR.*

Figure 10. Seven Years of COR Growth Scores



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Initiative & Social	1.1	1.0	1.1	1.2	1.1	1.2	1.2
Language & Literacy*	1.1	1.2	1.1	1.3	1.2	1.2	1.3
Movement & Music	1.1	1.1	1.2	1.3	1.2	1.2	1.3
Math & Science*	1.2	1.3	1.4	1.4	1.4	1.5	1.6

* Combine average scores from 2006-07 to 2009-10 are significantly different from the combine average scores of 2010-11 to 2012-13 at the p<0.01 level

Spring Performance

A detailed, side-by-side comparison of the combined results of the COR scores *in the spring* from the four years prior to the implementation of the HighScope curriculum and the results of the combination of the scores of the three years of implementation is provided in Table 9. To determine if there were significant differences between the COR scores prior to the implementation of the HighScope curriculum and after the curriculum, *t*-tests were used. The results of the *t*-tests suggest that the absolute skill levels achieved by students on three of the four subscales during the implementation of the curriculum are significantly ($p<.01$) improved when compared to students' scores in the four years prior to the curriculum's implementation.

Effect sizes (the change in standard deviation units) indicate that the greatest gain before and after the HighScope implementation was in ***Language & Literacy*** (d=.27). *This is not only a significant result, but also an important one, indicating that real changes can be attributed to the HighScope curriculum*.

Table 9. COR Spring Subscale Scores Before and After HighScope Implementation

2012-2013 RECAP Annual Report Mean Spring COR Subscale Scores							
	Pre-HighScope			Post-HighScope			
Skill Area	**N**	**Mean**	**St. Dev.**	**N**	**Mean**	**St. Dev.**	**Effect Size**
Initiative & Social	6840	3.82	0.88	4506	3.79	0.83	-0.03
Language & Literacy*	6838	3.27	1.04	4495	3.40	0.91	0.27
Movement & Music*	6843	3.97	0.89	4495	3.86	0.80	-0.12
Math & Science*	6833	3.50	1.09	4461	3.55	1.03	0.05
Overall*	6858	3.64	0.89	4512	3.68	0.83	0.05
* Scores are statistically different (p<.01)							

2012-2013 marks the third year that HighScope curriculum was used in pre-k classrooms. Based on the past seven years of data, the effects of the curriculum's implementation are becoming clearer. The ***Language & Literacy***, ***Movement & Music***, and ***Math & Science*** subscales on the COR are statistically and significantly different in the years following the implementation of the curriculum than they were in the years before HighScope implementation.

In general, students who completed their pre-k education after the implementation of the HighScope curriculum displayed higher skill levels in the more academic ***Language & Literacy*** and ***Math & Science*** subscales. There were no differences in ***Initiative & Social*** and a significant decrease in ***Movement & Music***. However, it is important to note that the effect sizes for all but ***Language & Literacy*** are very small.

*Since the introduction of HighScope, students have displayed greater gains in **Language & Literacy** and **Math & Science** skills. However, there was no change **Initiative & Social** skills and children's **Music & Movement** growth scores showed a decline after the implementation of HighScope. From the evidence gathered so far, the HighScope curriculum has helped to improve students' academic performance.*

Recommendations based on these analyses include:

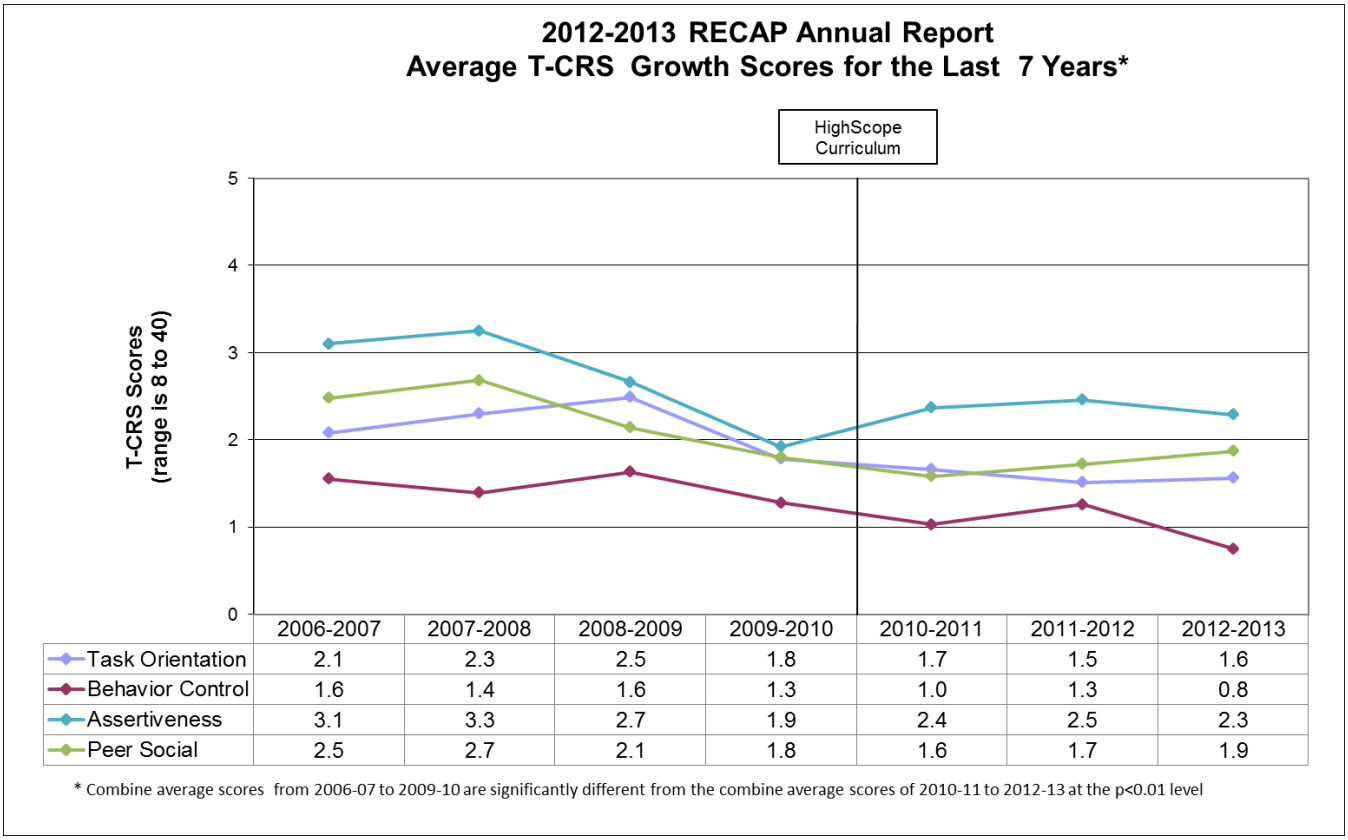
- *Continued implementation of the HighScope curriculum. The first three years may likely show the poorest results because teachers are still mastering the curriculum during this time. Yet, the significant and important results in the **Language & Literacy** domain alone support keeping this curriculum, as it is a prime area of needed development. **Math & Science** results have significantly improved, but the effect size is very small. More time in this important area with additional math and science activities is recommended.*
- *Increased efforts should be made by teachers and administrators to incorporate additional supplemental activities that support skills in **Initiative & Social**, where there has been no gain, and in **Movement & Music,** where students are losing ground.*

- *Continued monitoring of the effects of the HighScope curriculum on children's performance across multiple domains.*

Social and Emotional Performance

As with the COR, the growth scores for the T-CRS were compared in order to examine the effects of the HighScope curriculum while controlling for variations in the initial scores of the incoming students. From 2011-2012 to this year, students' growth scores in ***Task Orientation*** and ***Peer Social Skills*** increased slightly, while the amount of growth in ***Assertiveness*** experienced by students decreased**.** Growth scores for the ***Behavior Control*** subscale had the largest decrease from last year to this year, with students going from gaining 1.3 points last year to only making gains of 0.8 this year.

Figure 11. Seven Years of T-CRS Growth Scores by Subscale



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Task Orientation	2.1	2.3	2.5	1.8	1.7	1.5	1.6
Behavior Control	1.6	1.4	1.6	1.3	1.0	1.3	0.8
Assertiveness	3.1	3.3	2.7	1.9	2.4	2.5	2.3
Peer Social	2.5	2.7	2.1	1.8	1.6	1.7	1.9

* Combine average scores from 2006-07 to 2009-10 are significantly different from the combine average scores of 2010-11 to 2012-13 at the p<0.01 level

Figure 11 shows the growth scores from the administration of the T-CRS from the 2006-2007 to the 2012-2013 school years. As is evident, the growth scores for the T-CRS ranged from 1.3 to 3.3 before the use of the HighScope curriculum, but, in the three years since the adoption of HighScope, T-CRS growth scores have ranged from a low of 0.8 to a high of only 2.5. Again, all of the T-CRS subscale growth scores have been significantly lower since the introduction of HighScope when compared to before the curriculum's introduction. This is exemplified further by examining the change in the growth scores for the Total T-CRS shown in Figure 12. From 2006-2007 until 2009-2010, students saw gains of approximately 2.2 on the T-CRS, with the

lowest average gain of 1.7 in 2009-2010. Since then, overall growth scores on the T-CRS have been averaging 1.7 and appear to be on a downward trend.

Since the implementation of the HighScope curriculum, students have been experiencing smaller gains in the social-emotional areas as assessed by the T-CRS.

Figure 12. Seven Years of Overall T-CRS Growth

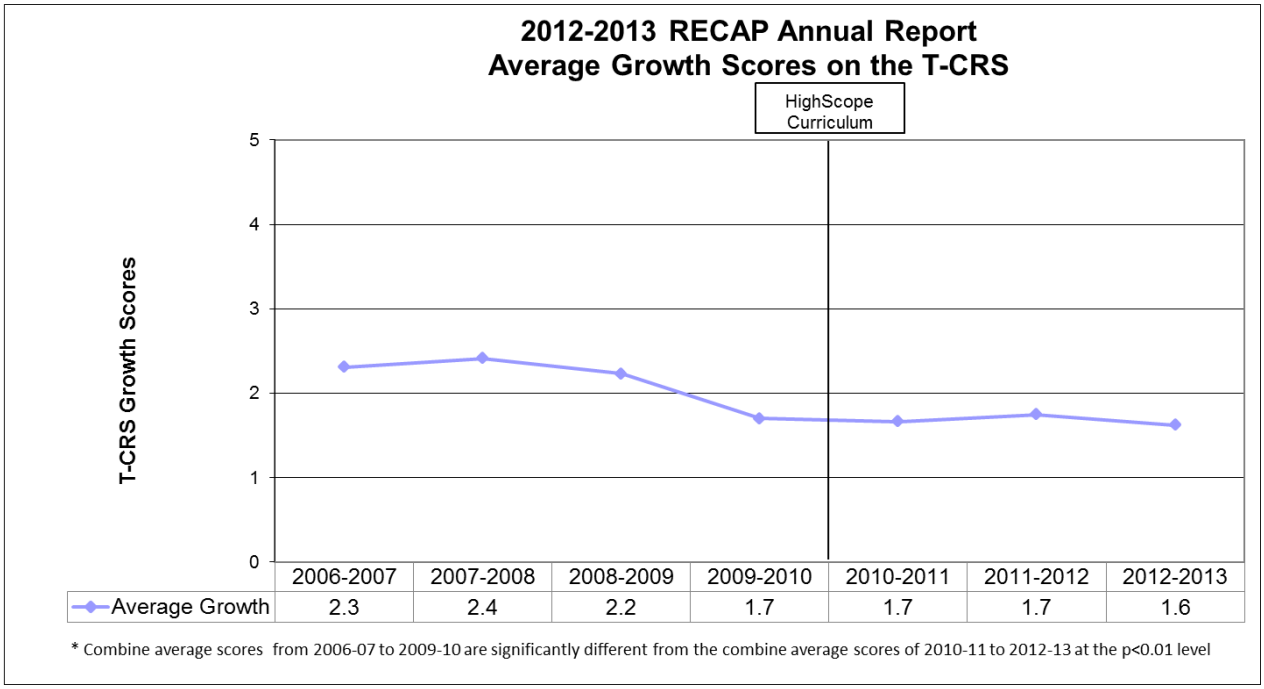


Table 10. T-CRS Subscales Before and After HighScope Implementation

2012-2013 RECAP Annual Report Average T-CRS Subscale Scores at Time 2 (Spring)							
	Pre-HighScope			Post-HighScope			
Skill Area	**N**	**Mean**	**St. Dev.**	**N**	**Mean**	**St. Dev.**	**Effect Size**
Task Orientation	6564	30.04	7.48	4878	29.89	6.76	-0.02
Behavior Control*	6562	28.97	8.06	4878	28.45	7.44	-0.07
Assertiveness	6548	31.41	6.57	4878	31.17	5.80	-0.04
Peer Social*	6561	32.54	6.66	4878	31.76	5.97	-0.12
Overall*	6572	30.74	6.05	4878	30.32	5.44	-0.07
* Scores are statistically different (p<.01)							

Table 10 provides a side-by-side comparison of the combined results of the *spring* T-CRS scores from the four years prior to the implementation of the HighScope curriculum and the results of the combination of scores in the spring for the three years following the implementation of the curriculum.

The *t*-test results indicate that the subscale scores for ***Behavior Control*** and ***Peer Social Skills*** were significantly worse after the curriculum implementation than they were prior to the curriculum's implementation. Furthermore, the findings showed that, overall, T-CRS scores at the end of pre-k also decreased. It is important to note that the effect sizes are small and declines in these scores appear prior to the inauguration of the HighScope curriculum, as illustrated by Figure 11.

*Combined with the above COR results for the **Initiative & Social** domain, where there were no differences (d=.-03), these T-CRS results indicate that children's behavior in the areas of **Behavior Control** (d=-.07), overall social and emotional performance (d=-.07), and especially **Peer Social Skills** (d=-.12) are being negatively impacted by the use of the HighScope curriculum. Although the effect sizes of these unintended consequences are not large, they should be a concern because children's social and emotional behaviors are tied directly to students' long-term academic performance (Durlak et al, 2011).*

It is recommended that a more thorough review of the potential causes and remedies of these negative results be conducted by a new Ad Hoc Committee of the UPK Policy Advisory Group and/or the UPK Professional Development Committee.

Brigance ® Early Childhood Screen (Brigance)

Due in part to NYS state requirements, RECAP added the Brigance to its battery of assessments in 2012-2013. This direct assessment is used to screen students for critical predictors of school success and provide important information on a student's development. The Brigance identifies children whose development may be delayed and in need of further evaluation. It also screens for students who may be gifted or talented and might benefit from more enhanced work.

Areas assessed by the Brigance include ***Language Development, Literacy, Math, Science,*** and ***Physical Development & Health.*** An overall score for the Brigance is calculated out of a possible 100 points and is used to assign a status level to each student. The status levels include: Level 1-- high risk and may be in need of further evaluation for developmental delays, Level 2 -- students who should be monitored closely, Level 3-- students who are functioning in a normal developmental range, and Level 4 -- students who are possibly talented and may need enhanced work and additional stimulation.

In the fall, the Brigance was administered to all students by their teachers. Results showed that 38% of students were functioning either within the normal range or as possibly gifted (Levels 3 and 4). Approximately 62% of the incoming pre-k students screened were identified as being at-risk and possibly in need of a more formal evaluation or to be monitored closely (Levels 1 and 2). Table 11 shows the breakdown of the students' overall developmental status based on the Brigance screen in the fall of the 2012-2013 school year.

Upon entering pre-k, more than 60% of all students were already showing signs of delayed developmental readiness.

Table 11. Brigance screening status in the fall

2012-2013 RECAP Annual Report Brigance Screening Status in the Fall		
Screening Status	**Fall**	
	N=1736	**%**
Determine need for formal evaluation	971	55.9
Monitor closely	102	5.9
Functioning in normal range	543	31.3
Possibly talented and may need enhanced work	120	6.9

In the spring of 2012-2013, a self-selected group of teachers volunteered to complete a second Brigance on some of their students. This second administration was requested in order to determine where students who spent a year in a UPK program scored by the end of the school year. The Brigance is an authentic assessment based on children's development, therefore, the difference in the students' ages from fall to spring directly affects which items are administered to them. For instance, a child who is four years old at the time of assessment will be able to

accumulate a maximum of 42 points on the ***Language Development*** subscale area, while a 5-year-old child can only accumulate 22 points on the same subscale area. In order to allow for comparisons between fall and spring, regardless of which set of questions were administered, the percent of items correct was calculated (number correct/number possible) x100.

Table 12 presents the means of the percent of items correct for each area assessed by the Brigance in the fall and the spring, as well as the mean overall scores for both administrations. For each subscale area, with the exceptions of ***Language Development*** and the total Brigance score, the mean percent of items correct increased significantly from fall to spring.

Table 12. Brigance Scores in the Fall and in the Spring

2012-2013 RECAP Annual Report Brigance Fall and Spring Skill Area Scores- Full Samples							
Subscale	**Fall**			**Spring**			**Effect Size**
	N	**Mean % Correct**	**SD**	**N**	**Mean % Correct**	**SD**	
Language Development	1543	73.6	21.7	536	75.0	26.0	0.06
Literacy*	1543	49.2	29.4	536	62.9	35.4	0.53
Math*	1543	43.6	33.7	536	56.4	36.2	0.37
Science*	1543	50.9	26.1	536	57.9	31.7	0.25
Physical Development & Health*	1543	63.4	41.6	536	81.6	41.0	0.44
Total*	1986[1]	61.9	19.4	538	65.2	21.7	0.17

[1] Ns for total scores include total scores from hand-scored assessments for which sub skill areas were not available
*Scores are statistically significantly different from fall to spring (p<.01)

Table 13 presents the number of students whose total scores fell within each Brigance screening status level. In order to determine if there was any change in the distribution of students from the beginning of the year to the end of the year, a series of Chi Square tests were run. Only students who had received a Brigance administration in both the fall and the spring were included in these analyses.

The results showed there was a significantly higher percentage of students who performed in the "possibly talented" level of the Brigance at the end of the school year than there was at the beginning of the school year. There were no significant differences in the number of students who fell into the other three levels.

Table 13. Brigance Status in the Fall and in the Spring

2012-2013 RECAP Annual Report Brigance Screening Status in the Fall and in the Spring					
Screening Status Level	**Fall**		**Spring**		**Chi Square**
	N	**%**	**N**	**%**	
1 – Determine need for formal evaluation	195	53.1	186	50.7	0.79
2 - Monitor closely	15	4.1	11	3.0	0.71
3 - Functioning in normal range	119	32.4	99	27.0	3.08
4 - Possibly talented and may need enhanced work*	38	10.4	77	19.4	14.92
*Results significantly different at the $p<.01$ level					

Because of the similarity of the numbers across levels, it was questioned if students who fell into Level 1 in the spring were the same students who had previously scored in Level 1 in the fall. Similarly, it was asked if students who started in Level 4 would remain in the Level 4 range at the end of the school year, and so on for the other two Brigance screening levels. An analysis was conducted to determine if individual students' scores changed significantly enough that they would fall into different screening levels from fall to spring. The results of that analysis are presented in Table 14 and Figure 13.

Of the 38 students who were originally identified as Level 4, only 33% (n=12) retained that status at the end of the school year. However, of the 149 students who fell in either Level 3 or 4, 76% stayed within those two levels. Alternately, 77% of the students who performed in Level 1 or Level 2 did not move outside those two levels. Also, 73% of those starting in Level 1, remained in Level 1. In general, a very small percentage of children fall into the range of Level 2 (n=13, 3.79% in the fall and n=11, 3.21% in the spring).

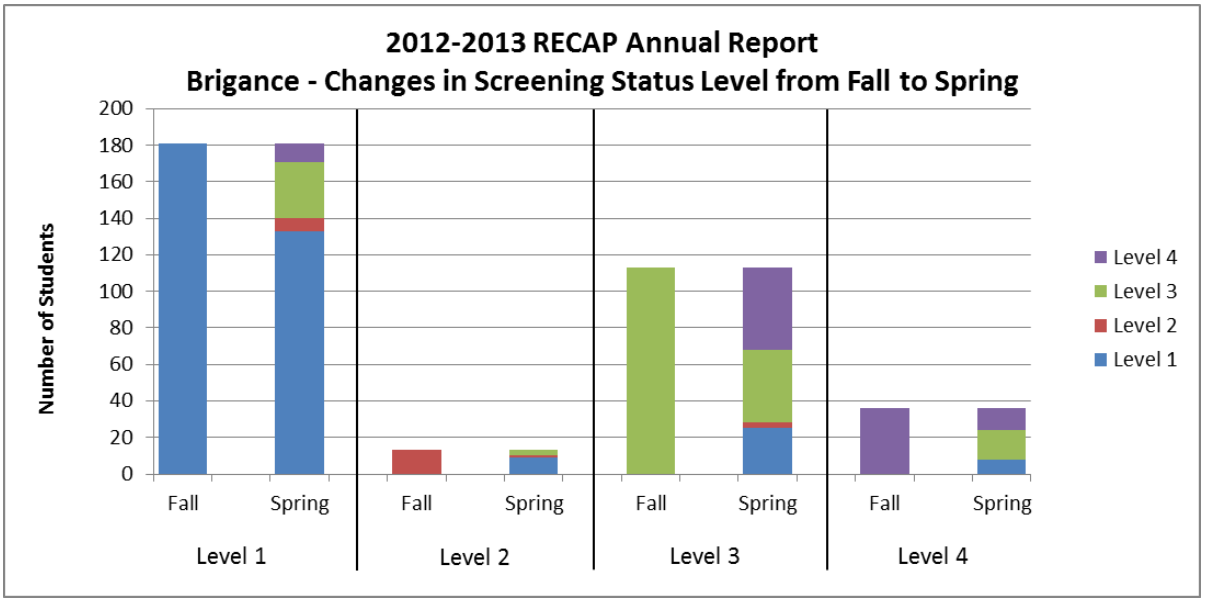
Overall, the majority of the students did not make dramatic changes either positively or negatively. Students who entered pre-k at risk and with potential developmental delays tended to perform at the same level at the end of the year. One hypothesis is that these students may have entered pre-k with such a large deficit that any gains made cognitively or physically were not sufficient to move them out of the Level 1 range. Also of concern is why 33 students (10% of total) moved from Levels 3 and 4 to Levels 1 and 2, demonstrating a significant loss of skills.

It is recommended that the Brigance be administered both in the fall and spring to a larger sample of students during the 2013-2014 school year to confirm these results or open them to question.

Table 14. Change in Brigance Screening Status from Fall to Spring

2012-2013 RECAP Annual Report Brigance - Changes in Screening Status Level from Fall to Spring					
Fall N=343			**Spring N=343**		
	Sample n	**% of sample**		**Sub-sample n**	**% of sub-sample**
Level 1 - Determine need for further evaluation	181	52.77%	**Level 1**	133	73.48%
			Level 2	7	3.87%
			Level 3	31	17.13%
			Level 4	10	5.52%
Level 2 - Monitor closely	13	3.79%	**Level 1**	9	69.23%
			Level 2	1	7.69%
			Level 3	3	23.08%
			Level 4	0	0.00%
Level 3 - Functioning in normal range	113	32.94%	**Level 1**	25	22.12%
			Level 2	3	2.65%
			Level 3	40	35.40%
			Level 4	45	39.82%
Level 4 - Possibly talented	36	10.50%	**Level 1**	8	22.22%
			Level 2	0	0.00%
			Level 3	16	44.44%
			Level 4	12	33.33%

Figure 13. Change in Brigance Screening Status from Fall to Spring



Relationships between the COR and the Brigance: Concurrent and Construct Validity

Brigance and COR scores were correlated in both the fall and the spring in order to assess convergence of these two measures. For these correlations, only students who were assessed using both instruments during the same timeframe were included.

Correlations Between the Brigance and the COR in the Fall

Correlations for fall responses between the COR and Brigance subscales are displayed in Table 15. All of the relationships between the Brigance subscales and total and the COR subscales and overall score were positive and significant. The strongest relationship was found between total scores on the Brigance and overall scores on the COR (r=.48). Of the Brigance subscales assessed, ***Language Development*** was consistently highly correlated with the COR subscales and overall score (r=.32-.46). The weakest relationships were seen between the ***Physical Development & Health*** subscale and the COR subscales (r=.10-21); however, even these relationships were positive and significant in the fall.

Table 15. Correlations Between the COR and the Brigance in the Fall

2012-2013 RECAP Annual Report Correlations Between COR Subscale Scores and Brigance Subscale Scores in the Fall						
	N	***Initiative & Social***	***Language & Literacy***	***Movement & Music***	***Math & Science***	***Overall***
		r	r	r	r	r
Language Development	1122	0.41	0.46	0.37	0.32	0.44
Literacy	1122	0.30	0.38	0.29	0.28	0.36
Mathematics	1122	0.30	0.41	0.26	0.34	0.37
Science	1122	0.19	0.26	0.19	0.19	0.24
Physical Development & Health	1122	0.21	0.16	0.21	0.10	0.18
Total	1122	0.43	0.51	0.39	0.37	0.48
*All results are significant at the p<.01 level.						

Correlations Between the Brigance and the COR in the Spring

Again, for these correlations, only students who were assessed with both instruments in the spring were used for this analysis. However, due to the smaller sample of Brigance scores obtained, the sample size for these correlations in smaller than in the fall. Regardless, most of the spring scores for both assessments had positive and significant (p<.01) correlations, which is similar to the fall results using the whole sample, with only a few exceptions. Regardless, the sample size is sufficiently robust enough to draw conclusions.

The ***Science*** subscale had the least number of significant relationships with the COR subscales in the spring. Interestingly, the ***Science*** subscale on the Brigance was not correlated with the ***Math***

& Science subscale on the COR, while the ***Mathematics*** subscale was shown to be related to the ***Math & Science*** subscale. This suggests that the ***Math & Science*** subscale of the COR may be more focused on assessing students' math skills than on their science skills.

Table 16. Correlations between the COR and the Brigance in the spring

2012-2013 RECAP Annual Report **Correlations Between COR Subscale Scores and Brigance Subscale Scores in the Spring**						
	N	***Initiative & Social***	***Language & Literacy***	***Movement & Music***	***Math & Science***	***Overall***
		r	*r*	*r*	*r*	*r*
Language Development	394	0.14	0.26	0.20	0.13*	0.20
Literacy	394	0.30	0.38	0.22	0.18	0.34
Mathematics	394	0.26	0.40	0.26	0.28	0.04
Science	394	0.13	0.16	-0.01*	0.03*	0.09*
Physical Development & Health	394	0.14	0.18	0.21	-0.03*	0.18
Total	394	0.31	0.45	0.30	0.25	0.39
*Results are not significant at the $p<.01$ level. All other results are significant at the $p<.01$ level.						

Overall, there was convergent and construct validity between the COR and Brigance at both the fall and spring assessment periods, supporting the use of both measures.

In the fall, the correlations between the Brigance ***Physical Development & Health*** scale and all of the COR scales were significant; however, they were not very strong relationships. This was expected, as the Birgance and the COR purport to measure different constructs, supporting construct validity due to the divergence of the dissimilar constructs. Similar non-significant or almost non-significant results were found in the spring, again supporting the construct validly of both measures. Convergence was supported, as the scales described by their authors as measuring similar constructs had the highest correlations and other related scales had smaller correlations.

Because the Brigance Total has reasonable reliability when compared to its subscales, its correlations with the COR subscales are the most appropriate correlations for further analysis and review.

In both the fall and the spring, the weakest relationship with the Brigance Total was with COR ***Math & Science*** subscale (r=.37 and .25 respectively). Second lowest correlations for both fall and spring were between Brigance Total and COR ***Movement & Music*** subscale (r=.39 and .30 respectively). For both the fall and the spring, the Brigance Total correlated the highest with the COR subscale of ***Language & Literacy*** (r=.51; .45). The ***Initiative & Social*** COR subscale also showed higher correlations with the Brigance total (r=.43; .34). The common variance between the Brigance Total and COR subscales was lowest with ***Math & Science*** (6%) and highest with ***Language & Literacy*** (26%). Again, reasonable construct convergence was demonstrated. The

strength of the correlations indicate that the Brigance has strong construct validity and is able to assess some of the same skills that the COR assesses.

Recommendation:

From a psychometric perspective, the Brigance and the COR assess either different aspects of the same constructs or slightly different constructs with similar names. Because the Brigance is correlated with the COR, it is recommended the Brigance continue to be used as a screening measure for children entering pre-k. It is able to identify children with potential academic delays quickly and reliably. However, the continued use of the COR is also recommended to confirm or refute the initial Brigance screening. Again, both measures should be used, as they will provide different data from each other and both can provide insights for teaching and instruction of pre-k children as well as for program improvements.

Common Core Assessment of Pre-kindergarten Skills (CCAPS)

In July of 2010, New York State became one of 45 states to adopt the Common Core. The New York State Board of Regents began implementation of the Common Core Learning Standards (CCLS) with the goal of having them fully implemented by the 2013-2014 academic year. The intent of the CCLS is to have a standardized system for setting student learning objectives and expected proficiencies for kindergarten through grade twelve.

In an effort to continue linking early learning expectations to the K-12 standards introduced by the CCLS, the Board of Regents also adopted and approved the New York State Prekindergarten Learning Standards in January 2011. The New York Prekindergarten Learning Standards, which already focused on the learning and development of the whole child in broad areas of academics (such as English language arts, literacy, and mathematics), was further revised to fully encompass the New York State K-12 CCLS in science, social studies, and the arts. This revised document was adopted and dubbed the New York State Prekindergarten Foundation for the Common Core (PFCC). The primary purpose of these pre-k standards is to ensure that all children have a stable and standardized foundation of learning that will contribute to their preparation for college and career readiness.

The Rochester community has a longstanding history of providing high quality early childhood programming, with many programs participating in regular quality assurance and improvement activities. These activities include a battery of assessments measuring the quality of the teaching and education opportunities provided, as well as children's development and learning skills. None of the existing assessments encompassed the learning objectives specified by PFCC. During the 2012-2013 academic year, upon the direction of the Superintendent of the Rochester City School District, Dr. Bolgen Vargas, the RECAP Assessment Team developed an assessment of the PFCC for children attending universal pre-kindergarten (UPK). First, Dr. Robin Hooper, the other members of the RECAP Assessment Team, and many UPK teachers operationalized the learning objectives specified in both the English Language Arts (ELA) and Mathematics sections of PFCC. These objectives were aligned with skills appropriate to children between the ages of four and six, the typical age range for students attending UPK programs.

Several iterations of the resultant assessment battery were vetted for interpretability by early childhood educators and refined by the RECAP Assessment Team. The final set of 61 questions was piloted by a subset of UPK teacher volunteers in the spring of 2013 and compared with Brigance and the COR – two measures currently used by RECAP. Psychometric properties of the instruments' items were analyzed through factor analyses and other statistical methods. Test validity was determined to be acceptable. The instrument, named the Common Core Assessment of Pre-kindergarten Skills (CCAPS), still needs to undergo additional refinement prior to community-wide implementation.

As stated above, the subscales on the CCAPS were derived from the ELA and Math standards of the PFCC. The subscales from the first pilot of the CCAPS are ***Motivation, Background Knowledge, Viewing, Representing, Emergent Reading/Reading, Writing, Speaking & Listening, Language Standards, Vocabulary,*** and ***Mathematics***. These subscales were then

correlated with the subscales on the COR and the Brigance to determine whether the CCAPS was able to accurately assess students' cognitive skills.

Table 17 displays the results of correlations between the CCAPS and the fall administration of the COR. Because both instruments are used to assess cognitive functioning, it was anticipated that the CCAPS and the COR subscales would be highly correlated. The findings support that hypothesis, as all the correlations were statistically significant at the $p<.01$ level and had medium to large magnitudes. Correlations between the CCAPS and the spring administration of the COR were hypothesized to be strong and the findings support that conclusion. Again, all subscales' correlations were significant at the $p<.01$ level and had medium to large magnitudes.

In general, students who scored high on the COR subscales also scored high on the CCAPS assessment. It was expected that the correlations between the CCAPS and the spring COR subscales would be stronger than the correlations with the fall because of the growth they experience throughout the school year and because these instruments were completed roughly at the same time. These hypotheses were supported.

Table 17. Correlations Between the Spring CAPPS and Fall COR scores

2012-2013 RECAP Annual Report **Correlations Between Spring CCAPS and Fall COR Subscales**				
N = 219	***Initiative & Social***	***Language & Literacy***	***Movement & Music***	***Math & Science***
Motivation	0.31	0.34	0.28	0.23
Background Knowledge	0.40	0.48	0.35	0.38
Viewing	0.40	0.44	0.37	0.34
Representing	0.30	0.34	0.22	0.28
Emergent Reading/Reading	0.33	0.42	0.33	0.36
Writing	0.24	0.31	0.25	0.22
Speaking and Listening	0.40	0.42	0.34	0.39
Language Standards	0.44	0.43	0.38	0.39
Vocabulary	0.40	0.40	0.35	0.39
Mathematics	0.38	0.39	0.35	0.40
* All correlations were significant at the p<.01				

Table 18. Correlations Between the Spring CAPPS and Spring COR Scores

2012-2013 RECAP Annual Report* Correlations Between Spring CCAPS and Spring COR Subscales				
N = 219	***Initiative & Social***	***Language & Literacy***	***Movement & Music***	***Math & Science***
Motivation	0.59	0.55	0.53	0.46
Background Knowledge	0.59	0.66	0.51	0.52
Viewing	0.63	0.64	0.53	0.52
Representing	0.52	0.57	0.45	0.45
Emergent Reading/Reading	0.57	0.70	0.48	0.55
Writing	0.56	0.66	0.58	0.53
Speaking and Listening	0.63	0.66	0.51	0.58
Language Standards	0.61	0.72	0.56	0.59
Vocabulary	0.59	0.70	0.56	0.62
Mathematics	0.53	0.71	0.50	0.58
* All correlations were significant at the p<.01				

The results of the correlations between the CCAPS and the cognitive subscales on the fall administration of the Brigance were also hypothesized to be strong. Table 19 displays the results of those correlations. As anticipated, the CCAPS correlated significantly with the cognitive subscales on the Brigance.

There were no significant correlations of the CCAPS with the ***Physical Development & Health*** subscale on the spring administration of the Brigance. There were few significant relationships with the ***Language Development*** subscale on the Brigance. ***Motivation, Emergent Reading,*** and ***Viewing*** were positively and significantly correlated with ***Language Development.*** However, none of the other ELA related subscales were significantly correlated with the spring Brigance ***Language Development***. This provides evidence that the CCAPS touches upon some of the same skills assessed by the Brigance, but the two assessments' ELA related skills do not entirely overlap.

Table 19. Correlations Between the Spring CAPPS and Fall Brigance

2012-2013 RECAP Annual Report Correlations Between Spring CCAPS and Fall Brigance Subscales						
N = 224	***Language Development***	***Literacy***	***Mathematics***	***Physical Development & Health***	***Science***	***Total***
Motivation	0.53	0.31	0.37	0.21	0.30	0.50
Background Knowledge	0.60	0.42	0.52	0.23	0.36	0.61
Viewing	0.51	0.36	0.45	0.23	0.34	0.54
Representing	0.41	0.33	0.40	0.18	0.28	0.46
Emergent Reading/Reading	0.56	0.40	0.52	0.25	0.37	0.60
Writing	0.50	0.36	0.41	0.26	0.33	0.52
Speaking and Listening	0.57	0.42	0.78	0.24	0.38	0.60
Language Standards	0.52	0.39	0.45	0.25	0.35	0.56
Vocabulary	0.51	0.40	0.46	0.24	0.34	0.55
Mathematics	0.57	0.48	0.54	0.30	0.31	0.63

*All results are significant at the $p<.01$ level

Table 20. Correlations Between the Spring CAPPS and Spring Brigance

2012-2013 RECAP Annual Report Correlations Between Spring CCAPS and Fall Brigance Subscales						
N = 157	***Language Development***	***Literacy***	***Mathematics***	***Physical Development & Health***	***Science***	***Total***
Motivation	0.23	0.34	0.42	0.04^	0.42	0.52
Background Knowledge	0.15^	0.50	0.41	0.10^	0.12	0.51
Viewing	0.23	0.42	0.38	0.05^	0.42	0.51
Representing	0.14^	0.42	0.29	0.05^	0.48	0.42
Emergent Reading/Reading	0.21	0.51	0.45	-0.02^	0.43	0.56
Writing	0.19^	0.45	0.34	-0.02^	0.41	0.49
Speaking and Listening	0.16^	0.43	0.41	0.01^	0.48	0.47
Language Standards	0.17^	0.50	0.42	0.10^	0.42	0.55
Vocabulary	0.17^	0.48	0.38	0.04^	0.45	0.52
Mathematics	0.14^	0.52	0.48	0.05^	0.36	0.54

^Results are not significant at the $p<.01$ level.
All results not otherwise marked are significant at the $p<.01$ level

Performance and Student Attendance

Student attendance has been tracked for over 10 years and, this year, only community-based classrooms that use the COMET data management system were analyzed because data from the school district was not available. For purposes of these analyses, student attendance was divided into Time 1 (Fall), which included attendance for the months of September, October, November, and December, and Time 2 (Spring), which included the months of March, April, May, and June. During Time 1, a child could attend no more than 74 days, and during Time 2, the maximum number of days was 106. During the period of September to December, students attended, on average, approximately 59 days, missing an average of 15 days. From March to June, the average attendance was 83 days, missing an average of 26 days. The extent to which these results were related to weather conditions versus other factors has not been examined at this time

These results reveal that students attended school 80% of the time in the fall and 76% in the spring, indicating a clear decrease in attendance rates from fall to spring. These results also provide evidence showing that an average pre-k student is absent 41 days, which is considered extremely poor and in need of significant attention.

An analysis of student attendance and its effects on student performance was conducted. For this analysis, students were categorized as having "high" attendance when they were present for 171 total days (95% of the 180 total days they could possibly attend) or more during the school year or as having "low" attendance if they did not attend a CBO pre-k program for at least 171 days. It was predicted that those students with better attendance would perform better on the COR in the spring.

Table 21 shows students' COR scores in the fall based on attendance. In the fall, those pre-k students who had low attendance perform significantly ($p<.01$) poorer than those with high attendance on the ***Language & Literacy*** and ***Math & Science*** domains as well as on the COR as a whole. Much of this difference can most likely be attributed to children's life experiences prior to entrance into pre-k, such as family and community chaos, parental discipline styles, witnessing violence in the home and community, the effects associated with poverty, etc.

COR growth scores (difference between spring and fall) for students with low and high levels of attendance were significantly different ($p<.01$) on the ***Initiative & Social***, ***Language & Literacy***, and ***Math & Science*** domains (Table 22). These results demonstrated the high attendance group improved more than the low attendance group in these skill areas. As noted, Table 21 also shows that upon entering pre-k in the fall, students who had high levels of attendance were already performing better on the COR and maintained a higher score at the end of the year. Spring COR scores for the two groups based on attendance are displayed in Table 23 and in Figure 14.

In sum, children's experience prior to pre-k entrance matters. Furthermore, children who come to pre-k with fewer initial assets absorb information quickly, but still do not catch up to those children who have more assets. Without consistent attendance, children miss out on instruction that is critical to their preparation for kindergarten.

Table 21. COR Scores in the Fall Based on Attendance

2012-2013 RECAP Annual Report COR Scores in the Fall Based on Total Attendance							
Skill Area	**Fall**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Initiative & Social	156	2.62	0.66	697	2.76	0.65	0.21
Language & Literacy*	156	2.24	0.70	697	2.44	0.69	0.29
Movement & Music*	156	2.65	0.66	697	2.85	0.71	0.29
Math & Science	156	2.04	0.81	697	2.19	0.80	0.19
Overall*	156	2.39	0.65	697	2.56	0.64	0.26
*Results are significant at the $p<.01$ level							

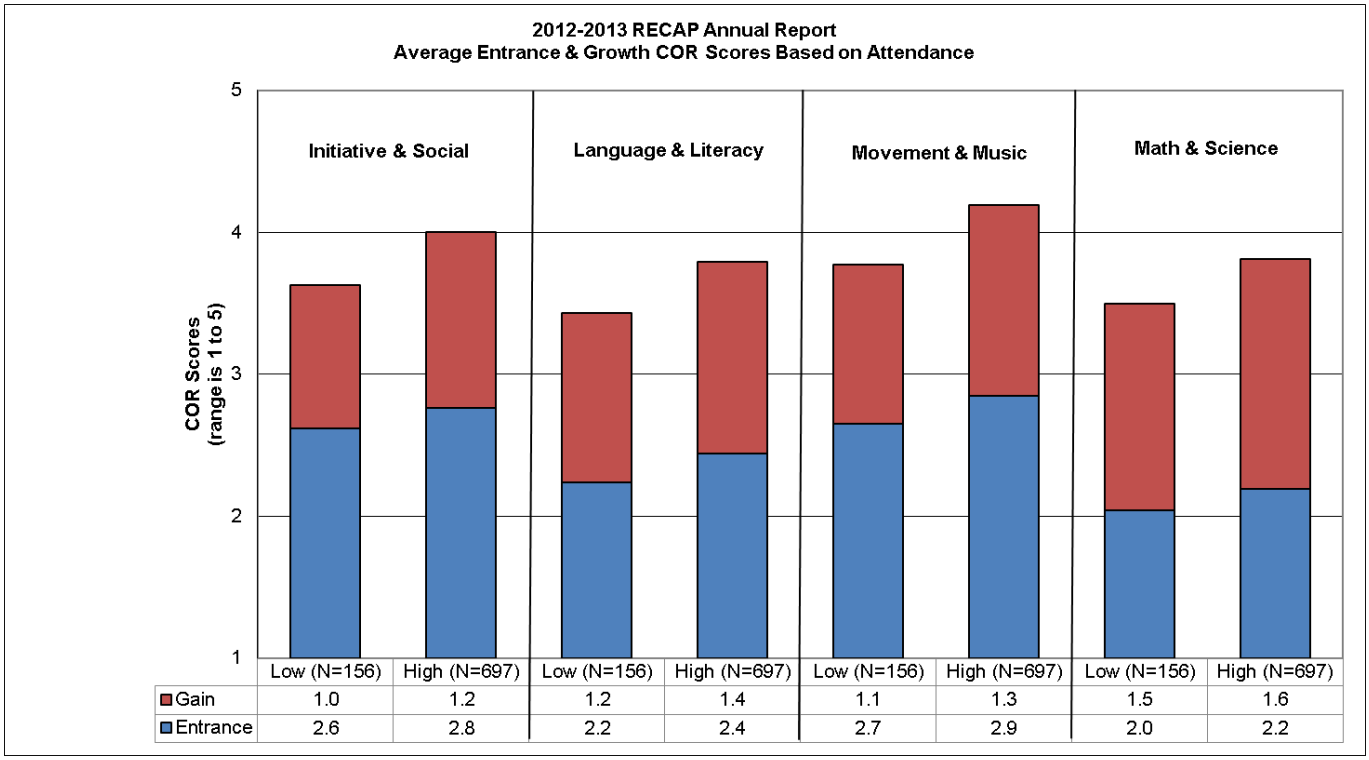
Table 22. COR Growth Scores Based on Attendance

2012-2013 RECAP Annual Report COR Growth Scores Based on Total Attendance							
Skill Area	**Growth**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Initiative & Social*	156	1.01	0.73	697	1.24	0.68	0.33
Language & Literacy*	156	1.19	0.89	697	1.35	0.67	0.22
Movement & Music*	156	1.12	0.87	697	1.34	0.69	0.30
Math & Science	156	1.46	1.04	697	1.62	0.91	0.17
Overall*	156	1.19	0.78	697	1.39	0.64	0.30
*All results are significant at the $p<.01$ level							

Table 23. COR Scores in the Spring Based on Attendance

2012-2013 RECAP Annual Report COR Scores in the Spring Based on Total Attendance							
Skill Area	**Spring**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Initiative & Social	156	3.63	0.89	697	4.00	0.69	0.51
Language & Literacy	156	3.42	0.92	697	3.97	0.72	0.72
Movement & Music	156	3.77	0.86	697	4.19	0.59	0.65
Math & Science	156	3.49	1.06	697	3.82	0.93	0.35
Overall	156	3.58	0.87	697	3.95	0.67	0.52
*All results are significant at the $p<.01$ level							

Figure 14. COR Fall and Growth Scores Based on Attendance



T-CRS scores based on attendance were also analyzed, and the results are displayed in Table 24. At the beginning of the school year, students in the high and low attendance groups scored basically the same on all of the T-CRS subscales, as there were no statistically significant differences between the two groups ($p<.05$).

The amount of growth from fall to spring was also not significantly different between the two attendance groups for each of the T-CRS subscales. While there were no statistically significant differences, it is interesting to note that the students who had lower attendance during the school year actually grew more than students who had high levels of attendance (Table 25).

Table 26 and Figure 15 show that final T-CRS subscale scores in the spring were not different based on student attendance. *Historically, there has been relatively little change for children from fall to spring on the T-CRS. These findings, based on attendance, suggest that students entered the school year at similar levels of social-emotional functioning and were able gain the same or more social-emotional functioning regardless of the amount of school days that they were present. In essence, student attendance did not have an effect on the exit scores for children on the T-CRS.*

Table 24. T-CRS Scores in the Fall Based on Attendance

2012-2013 RECAP Annual Report T-CRS Scores in the Fall Based on Total Attendance							
Skill Area	**Fall**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Task Orientation	156	27.72	6.73	697	28.42	6.50	0.11
Behavior Control	156	26.61	8.08	697	27.87	7.49	0.17
Assertiveness	156	29.17	6.53	697	29.39	5.93	0.04
Peer Social	156	30.10	6.63	697	30.46	5.71	0.00
*No results are significant at the $p<.01$ level							

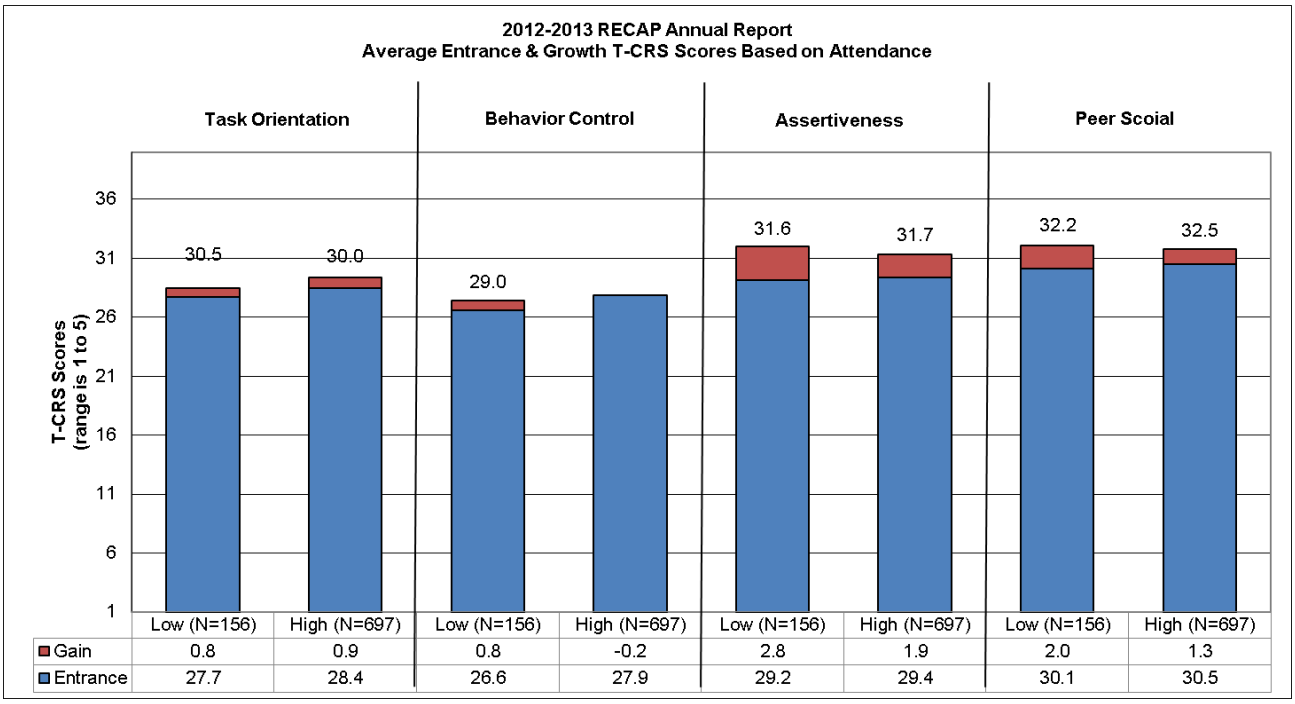
Table 25. T-CRS Growth Scores Based on Attendance

2012-2013 RECAP Annual Report T-CRS Growth Scores Based on Total Attendance							
Skill Area	**Growth**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Task Orientation	156	0.76	5.54	697	0.93	5.26	0.03
Behavior Control	156	0.80	5.68	697	-0.22	5.86	0.18
Assertiveness	156	2.82	5.04	697	1.93	5.20	0.17
Peer Social	156	1.96	4.82	697	1.31	5.12	0.13
*No results are significant at the $p<.01$ level							

Table 26. T-CRS Scores in the Spring Based on Attendance

2012-2013 RECAP Annual Report T-CRS Scores in the Spring Based on Total Attendance							
Skill Area	**Spring**						**Effect Size**
	Low			**High**			
	N	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Task Orientation	156	28.48	7.94	697	29.35	6.65	0.13
Behavior Control	156	27.41	8.97	697	27.65	7.42	0.03
Assertiveness	156	31.99	6.48	697	31.32	5.44	0.12
Peer Social	156	32.06	7.37	697	31.77	5.81	0.05
*No results are significant at the $p<.01$ level							

Figure 15. T-CRS Scores Based on Attendance



Student Performance and Program Length

In recent years, RECAP stakeholders have become very interested in understanding the effects that program length – the time spent in the program – may have on student outcomes. Therefore, this year, we analyzed student performance based on the length of time that the students spent in the classroom each day.

For these analyses, students were grouped based on the number of hours that their pre-k program ran each day. Students in programs that ran for 2.5 hours or less each day were considered to be attending "Part-day" programs (n>1030), while students who attended programs that ran longer than 2.5 hours a day were labeled as "Full-day" programs (n=253). Student outcomes on the COR and the T-CRS were compared based on these two groupings.

At the beginning of the school year, on average, Part-day students performed significantly lower than Full-day students on two COR subscales – ***Initiative & Social*** and ***Language & Literacy.*** By the end of the school year, Full-day students performed significantly better than Part-day students on all COR subscale scores.

At the end of the school year, students who attended a full-day pre-k program performed significantly and meaningfully better on academic and cognitive assessments as assessed by the COR, than did students who only attended part day programs. This supports the need for more full-day programs to improve academic functioning.

Table 27. COR Scores in the Fall Based on Program Length

2012-2013 RECAP Annual Report Fall COR Scores Based on Program Length							
	Fall						Effect Size
	Part			Full			
Skill Area	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Initiative & Social	1056	2.59*	0.70	253	2.81	0.64	0.32
Language & Literacy	1026	2.27*	0.73	253	2.44	0.65	0.24
Movement & Music	1054	2.69	0.76	253	2.76	0.60	0.10
Math & Science	1014	2.07	0.79	251	2.12	0.85	0.06
Overall	1029	2.41*	0.68	253	2.53	0.63	0.18
*Results are significant at p<.01 level							

Table 28. COR Scores in the Spring Based on Program Length

2012-2013 RECAP Annual Report Spring COR Scores Based on Program Length							
	Spring						Effect Size
	Part			Full			
Skill Area	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Initiative & Social	1052	3.81	0.83	253	3.97	0.69	0.20
Language & Literacy	1044	3.52	0.91	253	3.79	0.67	0.31
Movement & Music	1046	3.91	0.78	253	4.15	0.61	0.24
Math & Science	1030	3.58	1.06	253	3.79	0.82	0.21
Overall	1033	3.70	0.83	253	3.93	0.64	0.29
*All results are significant (p<.01)							

Students' social and emotional performance, as measured by the T-CRS, remained relatively stable on three of four dimensions assessed, regardless of the program length. There were no significant differences on the T-CRS in the fall, but Full-day students showed significantly better (p<.05) ***Assertiveness*** when compared to Part-day students (d=.17) in the spring.

In sum, although relatively small differences were observed, children at the end of Full-day UPK programs were more likely to assert themselves and show leadership characteristics and were less likely to show shy or withdrawn behaviors than children in Part-day programs.

Table 29. T-CRS Fall Scores Based on Program Length

2012-2013 RECAP Annual Report Fall T-CRS Scores Based on Program Length							
	Fall						Effect Size
	Part			Full			
Skill Area	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	
Task Orientation	1056	28.39	6.35	253	28.70	6.51	0.05
Behavior Control	1056	27.47	7.24	253	27.97	7.68	0.07
Assertiveness	1056	28.81	5.68	253	29.37	7.11	0.09
Peer Social	1056	29.83	5.65	253	30.55	6.37	0.12
*No results are significant at the p<.01 level							

Table 30. T-CRS Spring Scores Based on Program Length

2012-2013 RECAP Annual Report Spring T-CRS Scores Based on Program Length							
	Spring						Effect Size
	Part			Full			
Skill Area	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Task Orientation	1056	30.37	6.83	253	29.74	6.41	0.09
Behavior Control	1056	28.59	7.80	253	28.51	7.17	0.01
Assertiveness*	1056	31.39	6.03	253	32.40	5.44	0.17
Peer Social	1056	32.20	6.09	253	32.51	5.58	0.05
*Results are significant at the p<.05 level							

Pre-kindergarten to Kindergarten Transition

For the past few years the Rochester, state, and national early education communities have become more interested in the transition between pre-k and kindergarten. This year we looked closer at this critical period in children's education.

Summer Break and Student Academic Performance in Kindergarten

Since RECAP, Head Start, and the Rochester City School District have used the COR for both UPK and kindergarten for a number of years at both the beginning and at the end of the school years, comparisons across multiple times are possible. For the comparisons below, because kindergarten teachers used a shortened 23 item version of the COR, pre-k students' COR performance was recalculated using the same 23 items used in kindergarten. Only students with both pre-k and kindergarten scores were used in these analyses.

Figure 16 illustrates the difference in students' COR subscale scores from the spring of their pre-k year to the fall of their kindergarten year. Over the summer, students' performance decreased significantly on all subscales and on their overall COR scores ($p<.01$). On average, from the end of pre-k to the beginning of kindergarten, students lost:

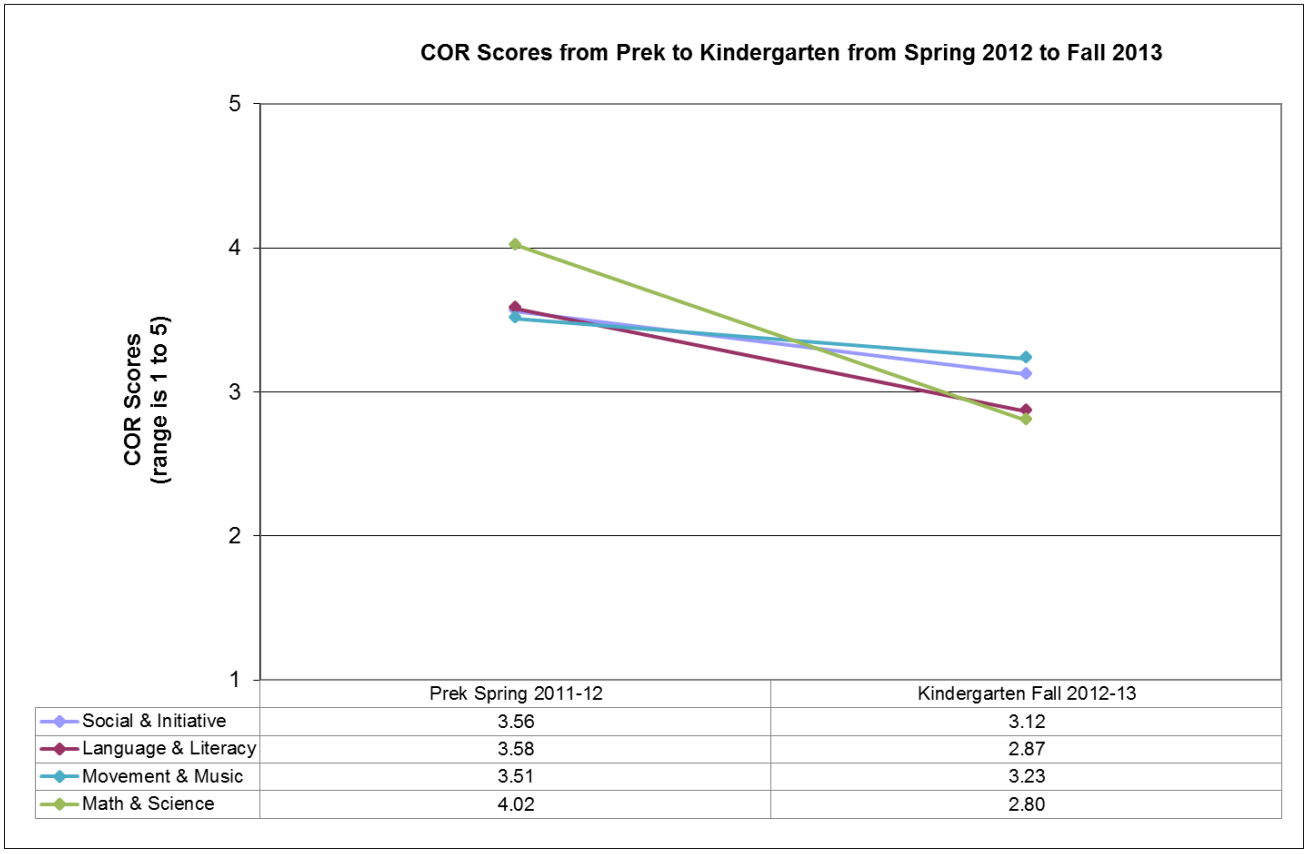
- -0.44 on ***Social & Initiative*** – an absolute loss of 12% from the end of pre-k;
- -0.71 on ***Language & Literacy*** – a 20% absolute loss, which is more than a year's worth of developmental gains (.50);
- -0.28 on ***Movement & Music*** – only an 8% loss; and
- -1.01 on ***Math & Science*** – a 30% absolute loss, approximately two years of developmental gains

From the end of pre-k to the beginning of kindergarten (i.e., over the summer), students lost significant academic functioning. As noted earlier, students gained the most in ***Math & Science*** *during the school year, but lost almost as much as they had gained over the summer. The second greatest loss was in the area* ***Language & Literacy****. While RCSD pre-k students make significant gains during the school year while in high quality programs, without ongoing stimulation by such programs, significant losses occur*

Recommendations:

1. *Provide full-day UPK programs to as many children as possible.*
2. *Extend the "school year" through summers. It should be noted that Horizons, a major provider of summer programming, has determined through its research and evaluations that high-quality summer programming should occur for at least three consecutive years to make a significant and lasting difference. Therefore, a* ***minimum*** *of high-quality summer programming should be in place for with students going from pre-k to kindergarten and continue for kindergarteners going into first grade and first graders going into second grade.*

Figure 16. COR Scores from Pre-k to Kindergarten



	Prek Spring 2011-12	Kindergarten Fall 2012-13
Social & Initiative	3.56	3.12
Language & Literacy	3.58	2.87
Movement & Music	3.51	3.23
Math & Science	4.02	2.80

Comparing Kindergarten Academic Performance for RECAP and Non-RECAP Students

Research has demonstrated that students who attend high-quality pre-kindergarten programs will have better success in their academic performance in the years following (Barnett, 2008). The RECAP system of assessment, feedback, and improvement has allowed programs to offer continually high-quality experiences at the pre-k level. This year, an analysis was conducted to determine the effects of RECAP's high quality pre-k experience on students' academic performance. Using the COR, kindergarten students who were enrolled in a RECAP UPK program and attended at least 152 days (85% of total days possible) were compared to kindergarten students who had never been registered in a RECAP UPK program.

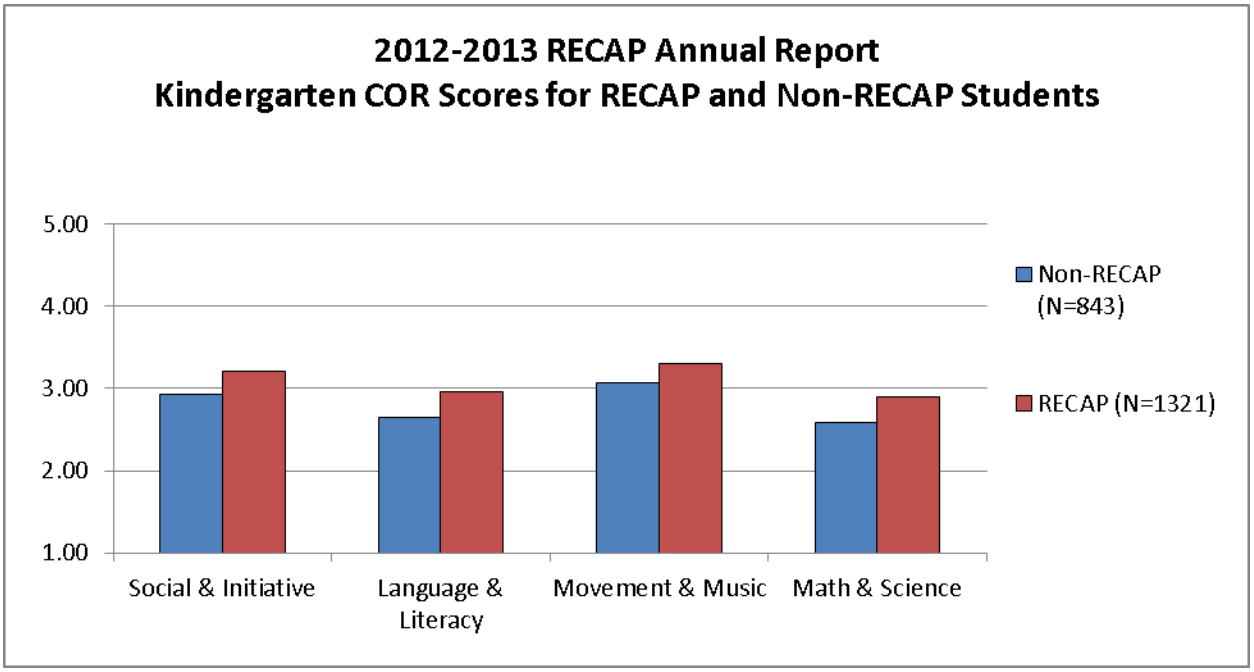
Table 31 displays a side-by-side comparison of the means, standard deviations, and effect sizes of kindergarten COR scores for RECAP students and Non-RECAP students in the fall of the 2012-2013 school year. Approximately 39% of kindergarten students attended a RECAP program. As shown, students who had attended a RECAP program had significantly higher kindergarten COR scores for all subscales than did non-RECAP students ($p<.01$). Effect sizes were in the "small" range.

Students who participated in RECAP affiliated classrooms performed significantly better in the beginning of their kindergarten year than their peers who were not involved in RECAP classrooms. Students in RECAP programs were functioning at a higher academic, social, and emotional levels. These results suggest that attendance in a high-quality pre-k program, such as those provided by RECAP, can have significant effects on students' academic performance, starting in kindergarten.

Table 31. Fall Kindergarten COR Scores for RECAP and Non-RECAP Students

2012-2013 RECAP Annual Report RECAP Students vs. Non-RECAP Students on Fall Kindergarten COR					
COR Subscales	**RECAP (N=1321)**		**Non-RECAP (N=843)**		**Effect Size**
	Mean	**SD**	**Mean**	**SD**	
Initiative & Social	3.21	0.91	2.93	0.98	0.15
Language & Literacy	2.96	1.08	2.65	1.12	0.14
Movement & Music	3.31	0.88	3.08	0.95	0.12
Math & Science	2.90	1.04	2.58	1.12	0.15
*All results significantly different at the $p<.01$ level					

Figure 17. Fall Kindergarten COR Scores for RECAP and Non-RECAP Students



Parent Perspectives

Family Involvement Questionnaire

Family involvement and participation is a required and important component of the NYS Universal Pre-kindergarten (UPK) program. In 2006, the RECAP administrative team reviewed the literature and determined that the Family Involvement Questionnaire (FIQ) (Fantuzzo, McWayne, & Perry, 2004) was one of the best-researched instruments available for assessing parent involvement with their child's education from the parent's perspective. RECAP first piloted and administered the FIQ during the 2006-2007 school year. For the past four years, the FIQ has been administered twice during the school year – once in the fall and once in the spring – to measure changes that may have occurred in parent involvement throughout the course of the school year.

The 2011-2012 school year marked the beginning of the systematic use of the 21-item short form of the FIQ, which, based on analyses in previous years, demonstrated adequate and robust reliability and validity when compared to the full 42-item FIQ. There are a number of advantages to reducing the number of items. Most notably, it reduces the amount of time parents need to spend completing the questionnaire and, as an additional benefit, increases the likelihood of the FIQ's completion.

In general, the 21-item FIQ measures parents' involvement in and support of their children's education. The measure is psychometrically sound and has three empirically derived factors: ***School Involvement***, ***Parent-Teacher Communication***, and ***Home Involvement*** (Fantuzzo et al, 2004). These results have been independently validated by Children's Institute (Gramiak, Hightower, Brugger, Van Wagner, MacGowan, & Montes, 2007). These three areas of parent involvement are described as follows:

School Involvement: This includes activities and behaviors that parents engage in at schools/centers with their children. Examples are, "I go on class trips with my child," and, "I talk with other parents about school meetings and events."

Parent-Teacher Communication: This describes communication between parents and school personnel about the child's educational experience and progress, including talking with the teacher about multiple facets of the child's classroom experience. Questions include: "I talk to my child's teacher about his/her difficulties at school," and, "I talk to my child's teacher about my child's accomplishments."

Home Involvement: This scale examines parent-reported behaviors in the home that promote a learning environment for children, such as providing a place in the home for learning materials and creating learning experiences in the community. Items from this grouping include: "I spend time with my child working on reading/writing skills," and, "I take my child places in the community to learn special things (e.g. zoo, museum)."

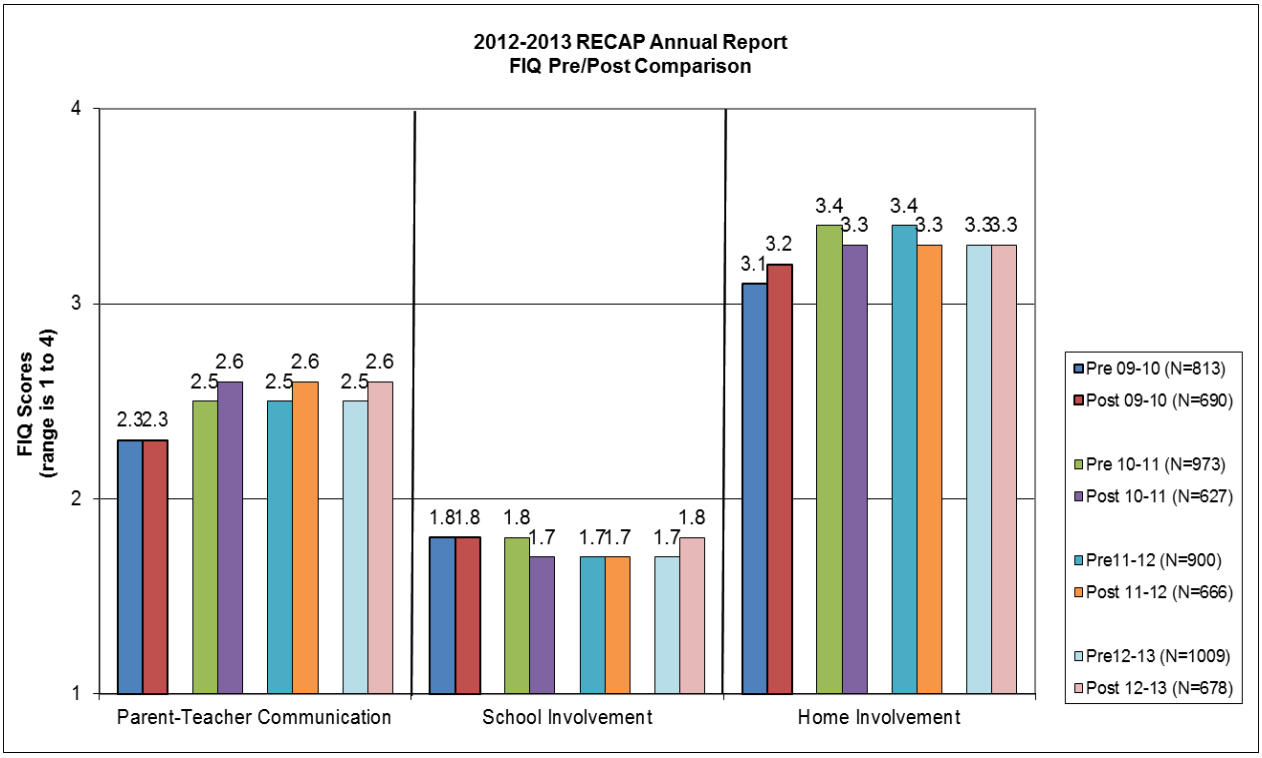
With this school year's data, we assessed whether differences emerged throughout the course of the family's involvement in their child's preschool year by reporting the pre- and post-comparison on the three scales. Due to the stability of the Cronbach's alpha reliabilities of the fall data collection, they have been moved to the Statistical Supplement. Results for individual programs are also reported in the Statistcal Supplement.

Figure 18 shows parents consistently report greatest involvement in the home environment, followed by moderate involvement with communications with teachers, and the least involvement in the classroom. Results for the past four years all show similar results.

Family involvement has continued to show very little change from one school year to the next. Overall, efforts by program administrators and teachers, if any, have made no impact on these results.

Because family involvement is important and families typically do not get more involved in their children's education as the children grow older, it is critical that increasing family involvement continues to be a significant area of focused effort in the pre-kindergarten years. Assuming there is a desire to improve family involvement and participation, pre-kindergarten program directors, teachers, and staff must lead the school district and implement specific successful strategies that improve communication between teachers and parents as well as family involvement in their programs and at their sites.

Figure 18. 2009-2013 FIQ Comparisons



* Results include all valid responses for both data collection points

FIQ Correlations with the COR and T-CRS

Table 32 displays the three parent completed FIQ scales correlated with the teacher completed subscales of the COR and T-CRS at the beginning of the school year in the fall of 2012.

The ***Home Involvement*** area of the FIQ had no significant correlations with the COR. There were a few significant correlations between the FIQ and the T-CRS. ***Parent-Teacher Communication*** was negatively correlated with ***Task Orientation***, and ***Behavior Control*** and ***Home Involvement*** were positively correlated with ***Assertiveness***.

How parents rate family involvement at the beginning of the year is unrelated to how teachers observe children's academic performance. While there is a weak relationship between parents' perceptions of their involvement and teachers' ratings of students' social and emotional functioning, it appears as though the FIQ measures different constructs than the COR and the T-CRS.

Table 32. 2012-2013 FIQ Correlations Time 1

2012-2013 RECAP Annual Report FIQ Correlations with COR and T-CRS for Time 1			
	FIQ		
	Parent-Teacher Communication	***School Involvement***	***Home Involvement***
COR			
Initiative & Social	0.05	0.00	0.03
Language & Literacy	0.06	0.07	0.08
Movement & Music	0.01	0.09	0.04
Math & Science	0.04	0.02	0.05
T-CRS			
Task Orientation	-0.13	0.00	0.07
Behavior Control	-0.14*	-0.06	0.04
Assertiveness	-0.02	-0.01	0.11
Peer Social	-0.08	-0.05	0.01
* Statistically significant at the p<.01 level			

Table 33 presents the correlations between the change parents perceive on their family's involvement from the beginning to the end of the year with the change observed by teachers on academic (COR), motor (COR), and social and emotional functioning (T-CRS) during that same time period. The FIQ change scores did not show any significant correlations with either the COR or the T-CRS.

Based on these results, family involvement, as measured by the FIQ, is unrelated to those areas assessed by the COR and the T-CRS.

Table 33. 2012-2013 FIQ Correlations Change Scores

2012-2013 RECAP Annual Report FIQ Correlations with the Change Scores on the COR and T-CRS			
	FIQ		
	Parent-Teacher Communication	***School Involvement***	***Home Involvement***
COR			
Initiative & Social	0.02	-0.06	0.00
Language & Literacy	0.03	-0.06	0.00
Movement & Music	0.02	-0.05	0.02
Math & Science	0.05	-0.04	0.04
T-CRS			
Task Orientation	0.00	-0.05	0.02
Behavior Control	-0.09	-0.07	0.05
Assertiveness	-0.08	-0.07	0.05
Peer Social	-0.07	-0.08	0.07

Parent-Child Rating Scale

The Parent-Child Rating Scale (P-CRS) is a 39-item parent-completed measure designed to assess social-emotional competences and concerns. Social-emotional competence includes forming and maintaining positive peer relationships, being assertive and self-reliant, tolerating frustration/setbacks, being able to self-regulate, and having a positive temperament. Social-emotional concerns include having negative peer relationships and being anxious and insecure. The items of the P-CRS were developed over a 15-year period to specifically fit the perspective of prekindergarten parents. During the 2012-2013 school year, parents completed the P-CRS twice, once in the fall and again in the spring.

In review, the P-CRS collects information on seven empirically derived subscales:

- ***Task Orientation***
- ***Frustration Tolerance***
- ***Positive Peer Social Relations***
- ***Negative Peer Social Relations***
- ***Self-Reliance***
- ***Shy Anxious-Withdrawn***
- ***Positive Disposition***

Negative Peer Social Relations and ***Shy Anxious-Withdrawn*** reflect parental concerns about children's difficulty behaving or relating to other children, while ***Task Orientation, Frustration Tolerance, Positive Peer Social Relations, Self-Reliance***, and ***Positive Disposition*** are associated with parent-perceived competencies. The parent-completed P-CRS, in conjunction with teacher-completed COR and T-CRS, provide a more comprehensive, multi-source composite of children's social and emotional development.

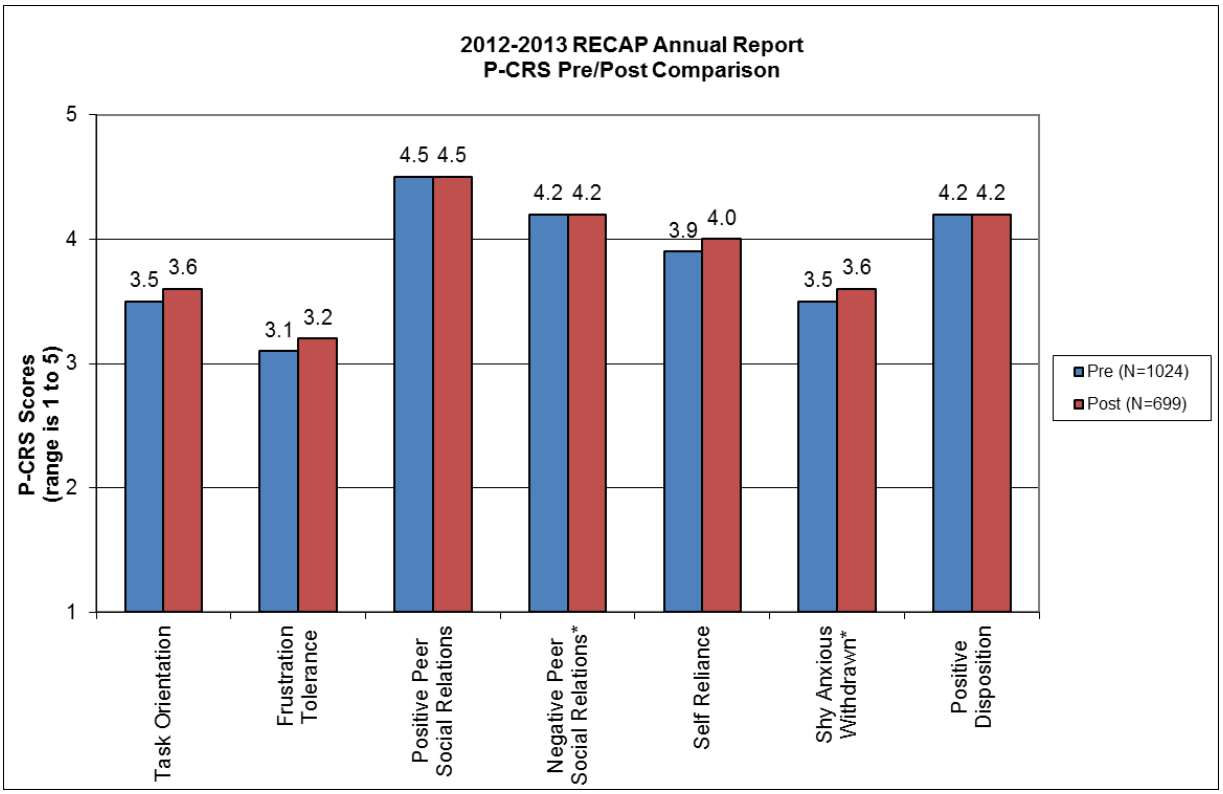
Figure 19 shows that parents reported the same levels of functioning for their child at the beginning and at the end of the school year. In other words, parents did not perceive a change in their children's behaviors from the start to the end of the school year. This result is consistent with previous years' findings.

One possible explanation is that parents have a long-term perspective of their child and they are less likely to see subtle changes in behavior at home than are teachers, who can see changes in a group of children relatively quickly within the classroom environment.

In short, though parents may not see the same changes in their children that teachers see over the course of a school year, parents' perceptions of their own children at the beginning of the year are critically important for early childhood educators. Discussions between parents and teachers that take place at the beginning of the year can provide invaluable insight into both the children's strengths and their weaknesses. By having these conversations, teachers are not only able to gain an understanding of their students' abilities earlier in the school year, allowing them to provide more direct support to areas of concern, but they are also shown areas in which they can encourage continued growth.

Recommendation: Unless there are additional efforts to involve parents in improving their children's behavior at home, the use of the P-CRS should be discontinued.

Figure 19. 2012-2013 P-CRS Pre/Post Comparison



*Rekeyed so that higher value indicates better functioning
**Results include all valid responses for both data collection points

Conclusion and Future Directions

Conclusion

This Sixteenth Annual Report on the RECAP system finds that classroom quality continues to maintain high standards of excellence. Each year, additional teachers are earning the ECERS-R exempt status, which is attained after achieving a 6.2 out of 7 point rating for three consecutive years.

The efficacy of RECAP's continuous improvement system and the important role that feedback reports serve in continuing to inform the implementation of quality standards in classrooms has been demonstrated repeatedly. High-quality practices are being implemented in 148 classrooms serving approximately 2,120 students in Rochester.

Summary of the major findings for the 2012-2013 school year:

- Students in RECAP enter pre-k at a significantly low level of academic, physical, social, and emotional functioning. Based on their Brigance status, a majority of students entering the RECAP system are in need of monitoring and, possibly, formal evaluation for developmental delays.

- Students' COR scores in the fall are also extremely low. Even with two or more years of growth in the skill areas assessed, students were, on average, still not ready for kindergarten by the end of their pre-k year in three of the four COR domains.

- During the summer months, students lose a significant amount of their functioning in the areas assessed by the COR. From spring of their pre-k year to the fall of their kindergarten year, students lose over a year's worth of growth on the academic domains of ***Language & Literacy*** and ***Math & Science***.

- Fall COR scores for kindergarten students who attended a high quality RECAP classroom were significantly better than students who did not attend a program within the RECAP system. Even though the effect size was small, these differences in COR scores were found to be significant across all four of the domains.

- Students' attendance in pre-k is important to their successful preparation for kindergarten. Children who do not consistently attend their pre-k program had fewer initial assets than those who had regular pre-k attendance. Students who had low attendance were able to absorb information quickly, but still did not catch up to those children who were present in the classroom regularly. Without consistent attendance, children miss instruction that is critical to their development and impacts their readiness for kindergarten.

- Classroom quality continues to be a hallmark of the RECAP experience. The last ten years have shown an overall average rating on the ECERS-R of "extremely good" ($\bar{x} \approx 6.1$) for Rochester's pre-kindergarten classrooms, one of the highest in the U.S.

- 2012-2013 marked the first year of full implementation of the CLASS across RECAP. The findings showed that ***Instructional Support*** is still an area that needs improvement and warrants additional professional development.

- Three years ago, the Rochester City School District and ABC Head Start implemented the HighScope curriculum. On the COR, growth has increased significantly in ***Literacy & Language*** and ***Math & Science,*** but has decreased in ***Movement & Music*** in comparison to previous years' results. ***Initiative & Social*** results have remained consistent.

- Student attendance in full-day UPK programs had a positive and significant effect on their academic and cognitive performance on the COR.

- Parents' perceptions of their own involvement and their child's development remain relatively unchanged from the beginning to the end of the school year.

- The RECAP system continues to serve its constituents – students, teachers, administrators, and policymakers – with data to assist in performing annual assessments that, in turn, support decision making with the use of trend data. RECAP allows for an in-depth understanding of the pre-k infrastructure and its working elements.

Recommendations and Future Directions

In an effort to continue to improve children's educational experiences, RECAP continues to undertake new initiatives and to reevaluate and refine its processes. The use of instant access to web-based reports for administrators and teachers will help guide the vision of those working with pre-k children. Access to information in a timely and comprehensive manner allows for shifts of policy and program implementation and helps administrators respond to the needs of children as they present themselves. Furthermore, a comprehensive data management system allows analyses to take place quickly with fewer errors or anomalies in the data.

Due to the consistently high ratings that classrooms in RECAP achieve on the ECERS-R, there are no specific recommendations at this time other than to maintain the current systems and processes that will continue to foster high performance on the ECERS-R. (See pages 5-7 for further details.)

The CLASS has demonstrated consistently a need for increased professional development surrounding the ***Instructional Support*** domain. Though this is the first year of full implementation, all previous administrations of the CLASS in RECAP have continually shown ***Instructional Support*** to be an area of classroom quality that provides opportunity for improvement. (See pages 10-15 for further details.)

After repeated analyses, RECAP has determined that while some overlap in content assessed exists between the CLASS and the ECERS-R, both observation tools provide unique information regarding classroom quality. Therefore, both measures should continue to be used in classrooms simultaneously. (See pages 16-17 for further details.)

The low entrance scores of Rochester's pre-k students indicate the need to help parents prepare their children for school entry. It is recommended that more intensive services be made available to children and families at younger ages (e.g., pre-k for three year-olds). (See pages 18-21 and 24-25 for further details.)

Even with the gains made in pre-k, RECAP students are still unprepared for kindergarten entrance. An extended pre-k school day would provide for additional learning and instructional opportunities to continue to foster high levels of cognitive growth. (See pages 18-21, 24-25, and 49-51 for further details.)

Students also suffered a sizable loss in academic skills and cognitive functioning over the summer break. It is recommended that pre-k programs consider the costs and benefits of implementing at least 6 weeks of instruction during the summer months to assist in the transition from pre-k to kindergarten. (See pages 52-53 for further details.)

Continued evaluation of the effects of the HighScope curriculum implementation will give a better understanding of its effects on children's academic and social-emotional growth. It is recommended that the HighScope curriculum continue to be implemented in classrooms. Efforts should be made to incorporate supplemental activities that support student skill acquisition in social skills and motor functioning. It is suggested that a more thorough review of the potential

causes and possible remedies for the negative results of children's social-emotional functioning since the implementation of the HighScope be conducted by the UPK Policy Advisory Group or UPK Professional Development Committee. (See pages 18-21 and 26-31 for further details.)

A refined process for managing student attendance would provide RECAP with additional information regarding the effects of student attendance on cognitive and social-emotional functioning. (See pages 43-48 for further details.)

The Brigance provides a very valuable snapshot regarding students' cognitive development. It is recommended that students receive both a fall and spring administration of the screening tool to help guide not only their pre-k teachers, but also their kindergarten teachers in the following school year. (See pages 32-38 for further details.)

Further development of the CCAPS is suggested as a means to provide an assessment that aligns itself with the Common Core Learning Standards adopted by New York State. (See pages 39-42 for further details.)

Pre-k programs in Rochester should examine their current efforts and make a more concentrated effort towards increasing parents' involvement in their children's education. (See pages 56-57 for further details.)

Due to the consistent results that have been observed on the P-CRS, it is recommended that the P-CRS not be administered in the 2014-2015 school year. (See pages 60-61 for further details.)

Presentations and Publications

Story, M., Van Wagner, G., & Brugger, L. (2013). *Enable Exploring Your World Preschool Program 2012-2013 ECERS-R Results.*

Smith, M., & Van Wagner, G. (2013). Rochester City School District Professional Development Academy - UPK Summer Institute: *Looking at CLASS to Support Effective Instructional Strategies*. Presentation and community-wide training to teachers, support staff and leadership to increase effectiveness of teacher-student interactions in the instructional support domain of the Pre-K Classroom Assessment Scoring System (CLASS).

Story, M., Hightower, A.D., MacGowan, A., Van Wagner, G., & Brugger, L. (2013). *Rochester Early Childhood Assessment Partnership (RECAP): Assessment team report*. Presentation to RCSD Board of Education and RECAP Advisory Council.

Hightower, A.D., Brugger, L., & Van Wagner, G. (2013). The Community Foundation of Herkimer & Oneida Counties. Presentation of RECAP trainings, assessment system, and COMET informational session.

Hightower, A.D. & MacGowan, A. (2012). *Rochester Early Childhood Assessment Partnership 2011-2012 Fifteenth Annual Report: Promoting informed decisions for early childhood.* Presentations to RECAP Community Partners and the RECAP Community Advisory Council.

Story, M., Hightower, A.D., MacGowan, A., Van Wagner, G., Brugger, L., & Lotyczewski, B. (2012). *Rochester Early Childhood Assessment Partnership 2011-2012 Fifteenth Annual Report.*

Brugger, L. (2012). *Rochester Early Childhood Assessment Partnership 2010-11 Fourteenth Annual Report: Promoting informed decisions for early childhood.* Presentation to Early Childhood Development Initiative.

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