



STRENGTHENING SOCIAL AND
EMOTIONAL HEALTH

Rochester Early Childhood Assessment Partnership 2014-2015 Eighteenth 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.

Executive Summary

The 2014-2015 school year proved to be an exciting year for Universal Pre-K (UPK) and was one of the most eventful years for Rochester's four year old pre-kindergarten programs since its inception in 1998. Rochester enjoys a long and distinguished history of high quality pre-k programs, and yet this past year still stands as significant. This momentous school year included: (1) the implementation of COR Advantage as an assessment tool for our UPK students, (2) the continued availability of more transportation for pre-k students, (3) the continued operationalization of the Classroom Assessment Scoring System (CLASS), and (4) the continued full implementation of the HighScope curriculum (which began in 2010).

The *RECAP 2014-2015 Eighteenth Annual Report* gives us a clear picture of the conditions, achievement levels, and performances of our Rochester City School District's UPK students, classrooms, and parents. Many of the significant trends we witnessed in recent school years continued in 2014-2015, including student learning and academic growth (which continued to accelerate), concerns about the social-emotional areas of children's development, and program quality improvement as revealed on the classroom assessments used by RECAP.

Our classrooms' scores on the Early Childhood Environmental Rating Scale – Revised (ECERS-R) remain at the top of known scores throughout the rest of the United States and Western Europe. The progress made in teacher-student interactions and the instructional program as revealed by the Classroom Assessment Scoring System (CLASS) demonstrated growth overall, but with added work backing further classrooms' instructional support. Rochester's UPK teachers are clearly above many national benchmarks for both the ECERS-R and CLASS.

Last year, we observed incredible academic growth of pre-k students. During the school year, students grew tremendously with especially high rates of growth in **Science & Technology**, **Mathematics**, and **Social Studies**. Although many of our children arrived at relatively low developmental levels, we still saw extraordinary rates of growth in **Physical Development & Health** and **Creative Arts**. However, this encouraging news must be tempered by concerns revealed by *continuing lack of skills* in many of our incoming four year-olds. Our pre-k students arrived with great needs. Their entry developmental levels, as revealed by the Child Observation Record – Advantage (COR Advantage), show substantial needs. Teacher-Child Rating Scale (T-CRS) data show that the social-emotional growth of our pre-k pupils is now a fraction of what it was a few years ago, even though the students are not arriving in any worse condition. The lack of social-emotional growth is concerning.

With the growth of pre-k students and high program quality, in contrast to general trends within the City of Rochester, it is arguable the work conducted by RECAP is vital.

RECAP's Major Findings for 2014-2015

Students:

- ❖ We are seeing high rates of academic growth, as much as two years' gains – but with children arriving farther behind and leaving still behind. Students grew on average 1.8 years on the COR Advantage overall, with over two years of growth within the **Science & Technology, Social Studies, and Mathematics domains**. We are concerned regarding the relatively little growth observed in **Language, Literacy, & Communication** compared with other academic dimensions assessed by the COR Advantage.
- ❖ 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. On average, our pre-k pupils *exited above the accepted benchmark* for “kindergarten readiness.” However, approximately 46% of students did not attain kindergarten readiness levels. This does *not* account for any summer losses, which we have observed repeatedly for the past decade.
- ❖ Student growth within the social-emotional realm, as revealed by the T-CRS and the **Initiative & Social** subscale of the COR, remains a concern. We did see a slight improvement in the social-emotional risk pool of incoming pre-k pupils, with 80.5% entering with no risks, the highest level in the past six years. Last year we saw 11% - one student in nine – arrive with multiple social-emotional problems. In previous years, we saw as many as 48% leave the risk pool entirely by the following spring. Last year only 0.8% grew out of this multiple risk pool – the lowest since the inception of UPK.
- ❖ Students’ social-emotional growth, as shown by the T-CRS revealed a number of interesting results for 2014-2015. In a departure from the continuously declining trends of nearly a decade, we witnessed a slight improvement in the social-emotional risk pool of incoming pre-k pupils. Moreover, where in most recent years we witnessed anywhere from over 10% to as high as 12% entering with multiple social-emotional problems, in 2014-2015 we saw a drop to 8.7% of students entering with these conditions. These are non-trivial drops. Note that this is a one-year reporting, so caution must be used. However, this is most encouraging and a reversal of a negative trend.
- ❖ For the second consecutive year, RECAP has identified relationships between student attendance and student growth. Because we only have two-year findings, caution must be exercised. The results are nonetheless tantalizing and potentially important in terms of policy. The relationship between attendance and growth is especially true in social-emotional development, an area of low growth in recent years. These findings are not across the board, but are still revealing. In both the COR Advantage, and especially in the T-CRS, some subscales reveal significant advantages in growth for high-attending pre-k students. Students who attend over 90% of the time make large significant gains in **Assertive Social Skills** and **Peer Sociability** and to a lesser extent **Task Orientation** (now

frequently termed “executive functioning” which is emerging as a key predictor in later school success or failure).

- ❖ In follow-up to the successful *2014 UPK Summer Program Outcome Summary*, 149 students participated in a six-week summerLeap program during the summer of 2015. Students were assessed a fourth time by the COR Advantage at the conclusion of the program. Upon entry, 55% of the total students had already met HighScope’s definition of school readiness (see page 24). By the conclusion of the SummerLeap program, 63% or 94 of the 149 students were school ready.
- ❖ In a new initiative, the lead levels of pre-k students, taken when they were one and two year-olds, were collected through protocols developed between RCSD and the Department of Public Health, and then matched to COR Advantage data. We found overall few pupils with levels considered by the Center for Disease Control “lead poisoned”. We found no effects of lead levels on student achievement in any area examined, including developmental levels upon entry to pre-k; general education students versus students with disabilities; gender; ethnicity; age of the students, and growth over the course of the school year. However, there were approximately 11% of students at high enough levels to be considered at the toxic threshold, and as many as 40% with moderate levels that may be an issue for these children by the time they reach the intermediate grades.

Classrooms

- ❖ High levels of classroom quality were maintained as assessed with the ECERS-R and the CLASS. Where national and international scoring of ECERS-R has remained in the 4.0 – 4.3 range (on a 1 – 7 scale), Rochester’s classrooms score an average of 6.1, with the majority above this score. Rochester classrooms have met or surpassed a 6.1 overall score for eight consecutive years. Rochester’s ECERS-R scores remain 1.7 standard deviations above national averages.
- ❖ RECAP teachers showed growth on two of the three CLASS subscales. The Instructional Support Scale remained the same. In the past five years, scores have increased one full point. Last year the CLASS scores grew overall one-tenth of a point. Our overall CLASS scores have maintained a 5.6 for the past two years. Rochester teachers appear to be some of the highest performers on the CLASS in comparison to the currently published reports, where the national averages hover in the 4.5 range.
- ❖ RECAP continues to invest a substantial amount of time and resources into professional development. In 2014-2015, the professional development activities included a variety of trainings and workshops that were offered to UPK teachers and administrators. The training topics included, but were not limited to: an orientation to the RECAP system of assessment; how to interpret assessment results; an introduction to the ECERS-R; an introduction to the CLASS; a refresher training in both the ECERS-R and the CLASS; how to use and score the new COR Advantage; and the use of the use of the COMET®

attendance system¹. These activities are fundamental to ensuring high quality classrooms.

Parents and Families

- ❖ In 2014-2015, changes in parent participation remained stubbornly low. This was the tenth consecutive year that RECAP administered the Family Involvement Questionnaire (FIQ). Parent involvement has remained consistent from the beginning to the end of the year across the three FIQ dimensions since the first year it was used in Rochester. Such results confirm the low levels of parent participation in school and parent interactions with the teacher. While a variety of approaches to engage families has been employed over the years, none seems to have produced any respectable increase in the parental participation necessary for their sustained involvement over the course of their children's schooling. If parent involvement is considered important, then new approaches to family engagement must be developed and tested.
- ❖ For the second year, **Teacher-Parent Communication Data** was tracked and reported via COMET, a web-based system. For 2014-2015 UPK staff recorded 40,146 instances of communication with 2,741 parents; a total of 2,899,282 minutes, or 48,321 hours of communication. These figures represent an increase of approximately 100% over 2013-2014. However, reporting is not consistent and varies widely over schools and programs. We believe considerably more communication takes place, but is simply not recorded.
- ❖ Parents reported exceptionally high levels of satisfaction with their child's pre-k program. In the new RECAP *Early Childhood Parent Survey 2.0*, 95% of the parents responded with an "A", "A-", "B+", or a "B"; 62% responded with an "A"; and 82% responded with an "A" or "A-". In a parallel effort by RCSD at their *Transition to Kindergarten Fair*, parent satisfaction surveys were distributed. Parents reported nearly identical approval ratings. Both of these are very close in results to the five consecutive RECAP parent satisfaction surveys of 2002 through 2006. In short, UPK parents reported in two separate survey procedures that they are highly pleased with their children's pre-k year. **By any measure, these are extraordinarily high approval ratings by parents.**

Our children have many needs and our programs must be improved. Nevertheless, there are many positive results that have demonstrated consistent excellence dating back to 1998. Most important, the *RECAP 2014-2015 Eighteenth Annual Report* provides a detailed, accurate road map in continuously improving on an already solid UPK program.

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.

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:

- ❖ Professional development for 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 COMET® system reports, which provide instant feedback, and paper reports, when desired, 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 Community Advisory Group meetings 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 pre-kindergarten children.

In sum, 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 22-year history, the ECERS (or its revised version, the ECERS-R) has been used to study classroom quality. Starting six 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 the ECERS and CLASS assessed classroom quality, the quality indicators within the CLASS and those within the ECERS-R are different. Therefore, for the 2012-2013 school year, all RECAP classrooms were observed with the CLASS instrument, as well as the ECERS-R. The 2014-2015 school year marks the third year that the CLASS instrument was used to assess all RECAP classrooms.

To measure levels of students' competencies and needs within academic, motoric, and non-cognitive or social/emotional domains, the Child Observation Record - Advantage (COR-Advantage) and the Teacher-Child Rating Scale (T-CRS) were completed in the fall and again in the spring. In keeping with national trends, state requirements, and local needs and for screening children early in the school year, the Brigance Early Childhood Screen III (Brigance III) was used for the second time this year in RECAP. Children's attendance and parental participation were also recorded by school staff, primarily 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). The FIQ is a parent completed questionnaire. Parents report their time spent in their children's pre-k classrooms, with their children's teachers, and participating in educational activities with their children at home. The FIQ was completed by parents at the beginning and at the end of the school year. Teacher-parent communications were record by pre-k programs via the web-based COMET Informatics system.

Table 1 below summarizes the screening and assessment measures collected and the total numbers assessed during the 2014-2015 school year.

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

RECAP 2014-2015 Variables, Measures, Number Assessed and Methods			
Variables	Measures	Completed Assessments in 2014-15	Method
Classroom Environment Quality	ECERS-R	132	Classroom Observation by Independent Observer
Quality Teacher and Student Interactions	Classroom Assessment Scoring System (CLASS)	131	Classroom Observation by Independent Observer
Academic, Motor, and Social	Child Observation Record (COR)	2,192	Teacher Observation
School, Emotional, and Behavioral Adjustment	Teacher-Child Rating Scale (T-CRS)	1,943	Teacher Observation
Academic Skills, Physical Development, and Health	Brigance Early Childhood Screen III	1,475	Child Direct Performance
Parent Involvement	Family Involvement Questionnaire (FIQ)	642	Parent Survey
Program Evaluation	Early Childhood Parent Survey (2.0)	485	Parent Survey

RECAP students' demographic information is presented in Table 2 and their attendance data in Table 3.

Table 2. RECAP Student Demographics

RECAP 2014-2015 Student Demographics		
Gender	Male	49.7%
	Female	50.3%
Race/Ethnicity	Black/African American	62.0%
	White Caucasian	13.1%
	Hispanic/Latino	19.7%
	Asian	3.0%
	Native American	<1%
	Other	1.7%

Note: Sample represents the number of children that attended at least one day of pre-k. n=2401

Table 3. RECAP Student Attendance Data

2014-2015 RCSD UPK Student Attendance				
	<=80%	81%-89%	>=90%	Totals
frequency	1378	602	421	2401
percent	57.39	25.07	17.53	100
missing=241				

In the next sections, as in previous years, this report presents the major findings of classroom quality and students' outcomes for the 2014-2015 school year. For example, the ECERS-R averages for RECAP classrooms are presented in this report, while detailed descriptions of the assessment instruments and individual classroom results and analyses are provided in the Statistical Supplement available at www.childrensinstitute.net.

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. These statistics are also located the Statistical Supplement.

The next section provides information on UPK program quality in Rochester, as assessed by the ECERS-R and CLASS.

Program Quality – ECERS-R

For 18 years, RECAP has documented the quality of pre-kindergarten classroom environments in the Rochester area using the Early Childhood Environmental Rating Scale (ECERS). In 2005, a decade ago, the developers of the ECERS released a revised edition of the instrument, the ECERS-R (Harms, Clifford, & Cryer, 2005). Upon its release, the ECERS-R was immediately incorporated into RECAP's pre-kindergarten program evaluation process and has been used ever since. The ECERS-R is nationally recognized as a leading observation-based instrument for assessing and evaluating the early childhood classroom environment.

The ECERS-R consists of 43 items that are scored by independent observers on a 7-point scale, where a 1 indicates “Inadequate” quality and a 7 represents “Excellent” quality. Scores for these items are 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 overall environmental quality.

From the beginning of its use in RECAP, the ECERS and, subsequently, the ECERS-R have consistently shown that almost all four-year-old classrooms in Rochester have achieved at least “good” (≥ 5.0) quality, as measured by the ECERS-R, with many performing in the excellent range (6.2-7.0) for 3 or more years in a row. The continual focus on, and support of, the professional development of classroom teachers by RECAP and its participating programs has resulted in an average rating ranging from “very good” to “excellent” (5.8-6.2 out of 7) on the ECERS-R for the past ten years, see Figure 1 below. For each of the past eight years, the average ECERS-R score was 6.1 or higher.

The consistently high ECERS-R scores of the classrooms participating in RECAP prompted a change to the evaluation procedures used to assess classrooms’ quality. In the 2007-2008 school year, teachers were allowed to earn “exemption” from the annual ECERS-R assessment by achieving overall scores of at least 6.5 for five consecutive years. Teachers who earned this “exempt” status were then no longer obligated to have an ECERS-R observation for the following three consecutive years. After additional analyses and observations were conducted on teachers’ ECERS-R scores, it was found that teachers who had obtained scores of 6.2 or higher over the course of three consecutive years had mastered the ECERS-R standards. Therefore, it was decided in 2012-2013 to change the “exempt” criterion to require teachers to achieve an average total ECERS-R score of at least 6.2 for three consecutive years, which is the current exemption criterion that teachers must meet to earn the “exempt” designation. Similar to earlier “exempt” status procedures, teachers retain their exemption status for three years, at which time they are observed and if their observation is 6.2 or higher they are “exempt” for an additional 3 years. If classrooms do not meet the 6.2 threshold, they must be observed annually until they meet the exemption criteria again. To date, no teacher who has received exempt status has ever lost this status upon re-observation.

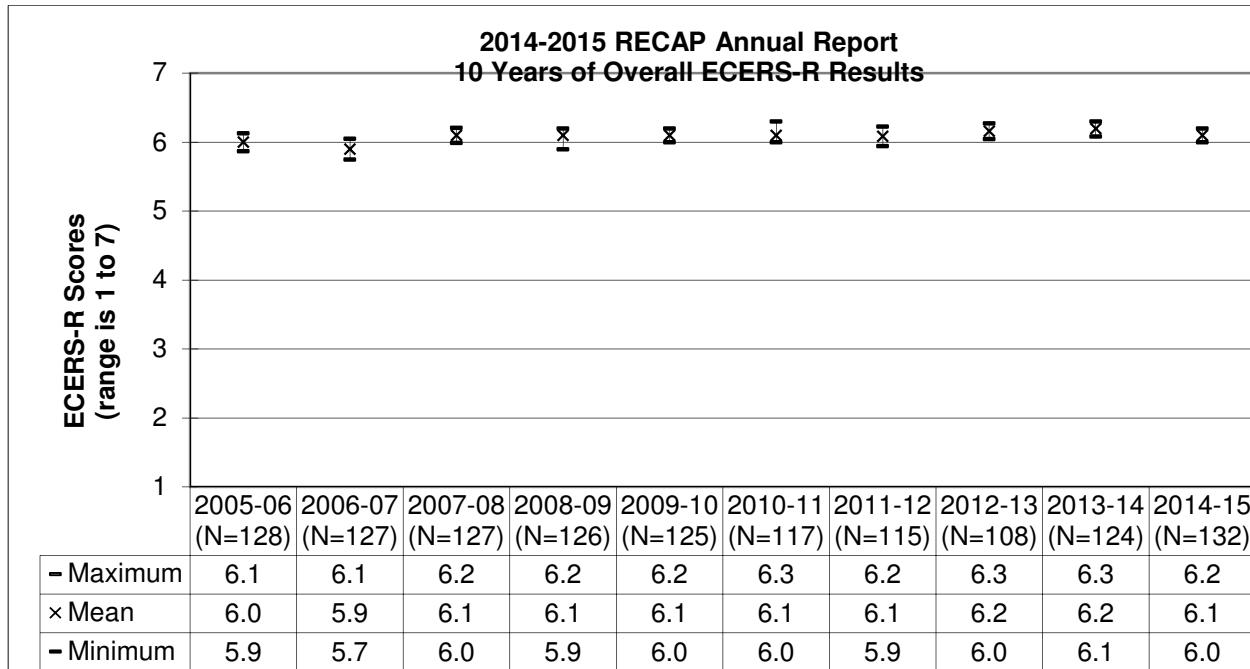
Due to the “exempt” teacher status, some of the tables and charts that follow will have results for the exempt classrooms for which the ECERS-R was not collected in 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, or 2014-2015. In these instances, while the program transitions to the new exempt criteria, we will provide either the five-year average score or the three-year average score for the exempt group.

As noted, but as a reminder, in prior years’ reports, we included results on the alpha reliability of the scales and inter-rater reliability of observers of the ECERS-R, but this information is now reported only in the Statistical Supplement.

ECERS-R Aggregate Results for 2005-2015

For over ten-years, the ECERS-R aggregate results for RECAP have reflected the high quality of pre-kindergarten classrooms in Rochester. The ECERS-R has been fully incorporated into the RECAP assessment and continuous improvement system and serves as both a local and a national barometer of the overall quality of early childhood classrooms. As noted above, as a group, Rochester’s pre-kindergarten classrooms have performed within the “very good” to “excellent” range for the past decade. This high level of quality has become an expectation within the Rochester community.

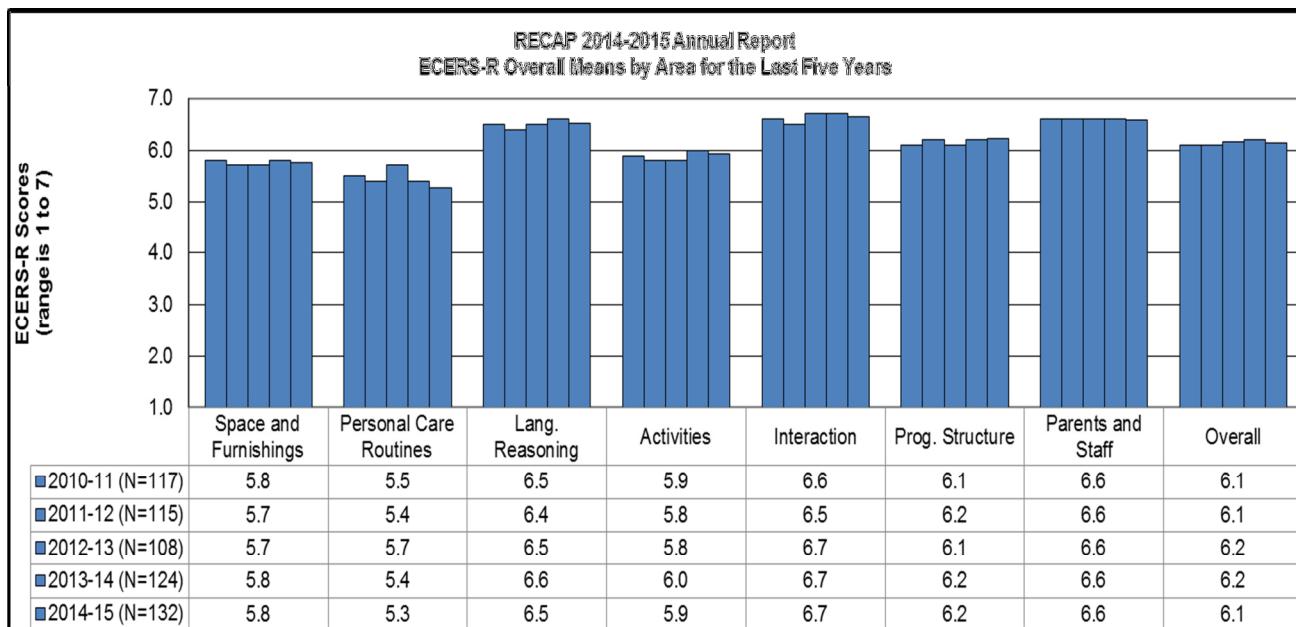
Figure 1 depicts the most recent ten years of ECERS-R performance within Rochester. The 10-year average score is 6.1 for all classrooms participating in RECAP. For 2014-2015, the mean score was 6.1, dropping slightly from 6.2 last year. The consistency in the classroom environment, not only exemplifies the high quality environment of RECAP classrooms when compared to early childhood national standards and indices, but also indicates that teachers and programs are striving to continue improving or maintaining their already exceptional scores. This trend is especially noteworthy as it shows that the aggregate ECERS-R quality performance for RECAP assessed classrooms was maintained regardless of the influx of new teachers and classrooms that were added as part of UPK in NY State and RECAP in February of 2014 due to the Priority Pre-kindergarten (full day) expansion grant.

Figure 1. Ten Years of Average Overall ECERS-R Results**ECERS-R Means by Area: A Five-Year Historical Perspective**

As noted, consistent quality has been the hallmark of ECERS-R scores for RECAP classrooms. Across the seven areas assessed, average scores have varied 0.4 points or less over the past five years. Both exempt and non-exempt teachers' performances are included in the scores for each of the five years displayed in Figure 2.

Many of the subscales maintained consistency this year, including *Space and Furnishings*, *Interactions*, *Program Structure*, and *Parents and Staff*. The *Personal Care Routines*, *Language Reasoning*, and *Activities* subscales saw a slight decrease from the 2013-2014 year. The *Overall* score of 6.1 dropped slightly, from 6.2 in 2013-2014. It should be noted that all of subscale scores, even the lowest scores for *Space and Furnishings* (*Mean = 5.3*) and *Personal Care Routines* (*Mean=5.3*), are still performing at a "good" or "very good" level, indicating a high quality classroom environment. Historically, the areas of *Language-Reasoning*, *Interaction*, *Program Structure*, and *Parents and Staff* have been areas of strength for RECAP classrooms. That trend continues with each of the four subscales maintaining mean ratings of at least 6.0 over the past five years. *Parents and Staff*, *Interaction*, and *Language-Reasoning* continue to achieve very good scores of 6.5 or more. *Activities* and *Program Structure* have maintained performance levels that fall within the "good" to "very good" range and are neither the strongest nor the weakest areas assessed by the ECERS-R.

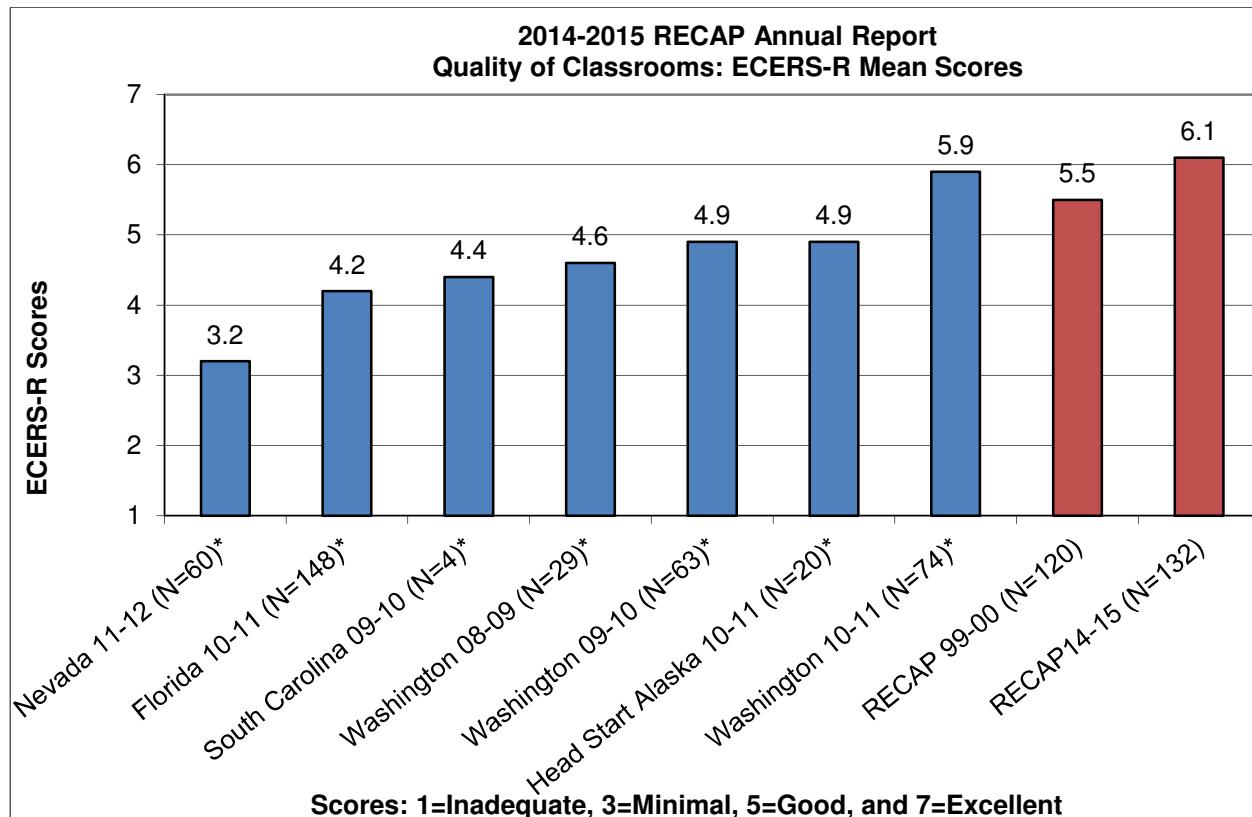
Figure 2. ECERS-R Overall Means by Area for the Last Five Years



Comparing Rochester's Quality on the ECERS-R to Other Early Childhood

Education Programs Across the United States

One of the basic tenets of RECAP is to use information to make program and policy decisions for the pre-kindergarten community in Rochester. For example, within 5 days of an observation, teachers are given the feedback that they need in order to continue achieving “very good” to “excellent” standards of quality. In addition, we benchmark our data to others. Included in Figure 3 below are the results of several studies across different years that provide ECERS-R scores for pre-kindergarten programs in Nevada, Florida, South Carolina, Washington, and Alaska. These scores are provided as a context to understand how RECAP classrooms compare with other programs across the nation. Additionally, Figure 3 shows the initial ECERS average score that was obtained by all of the RECAP classrooms in 1999-2000, its first full year of implementation, as well as the results of this past year’s ECERS-R results. With the exception of Seattle, Washington (2010-2011), ECERS-R ratings for the classrooms in RECAP were substantially higher than ratings for other programs around the nation. RECAP classrooms have consistently provided a high quality learning environment for pre-kindergarten children.

Figure 3. 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://elcofdaval.org/Uploads/reports/QC%20Report%20-%202010-11%20-%20board%20presentation%20-%2020083111.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>

Summary and Recommendations:

Figures 1, 2, and 3 provide strong evidence that RECAP classrooms continue to operate at a very high level of quality as assessed by the ECERS-R. 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 the existing monitoring and improvement systems in place that foster the high performance expectations held for RECAP classrooms, which includes the incentive for remaining exempt.

At the end of 2014 a new version of the ECERS was introduced, ECERS-3. It was decided by the RECAP A-Team to use the ECERS-3 starting the 2015-2016 school year. Training for the ECERS-3 started over the summer 2015. All teachers will be trained in the new, quite different edition and all non-exempt classrooms will be observed using the ECERS-3 starting in February 2016.

Program Quality – CLASS

Classroom Assessment Scoring System (CLASS)

The Classroom Assessment Scoring System – Pre-k (CLASS) (Pianta, La Paro, & Harme, 2008) is an observational tool that is used to illuminate the complex ways in which the relationships between pre-kindergarten children, their peers, their teachers, and the classroom environment can affect students' instruction and learning. The quality-of-feedback loop is also assessed by the CLASS and is, along with the relationships formed in the classroom, a critical part of the process for supporting and encouraging continuous academic growth in young children. As Howes et al., state:

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.

To be more specific, highly trained and reliable (interrater reliability $[a/(a+d)] > .85$) independent observers use the CLASS to assess program quality by rating classrooms on 10 dimensions from which three domains are empirically derived: ***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. (Note: For this report the ***Negative Climate*** dimension was reverse scored so that a higher value is indicative of a higher quality program, thus aligning it with the other 10 dimensions.)

In essence, the CLASS provides the standards needed to enhance the overall understanding of what high quality pre-kindergarten classrooms should look like, while also providing teachers, school district administrators, and others in early childhood education with additional information regarding the interactive climate of pre-kindergarten classrooms. The use of the CLASS enhances RECAP's understanding of the classroom quality domains that are not rigorously assessed as part of the ECERS-R (Story et al., 2012). As a result of the pilot study, the CLASS has become fully integrated within RECAP and has been used to assess classroom quality across all RECAP programs for the past two consecutive years. By using both the CLASS and the ECERS-R, a more comprehensive picture of the classroom quality has emerged, making it easier for RECAP to identify and address areas of classroom quality that need improvement.

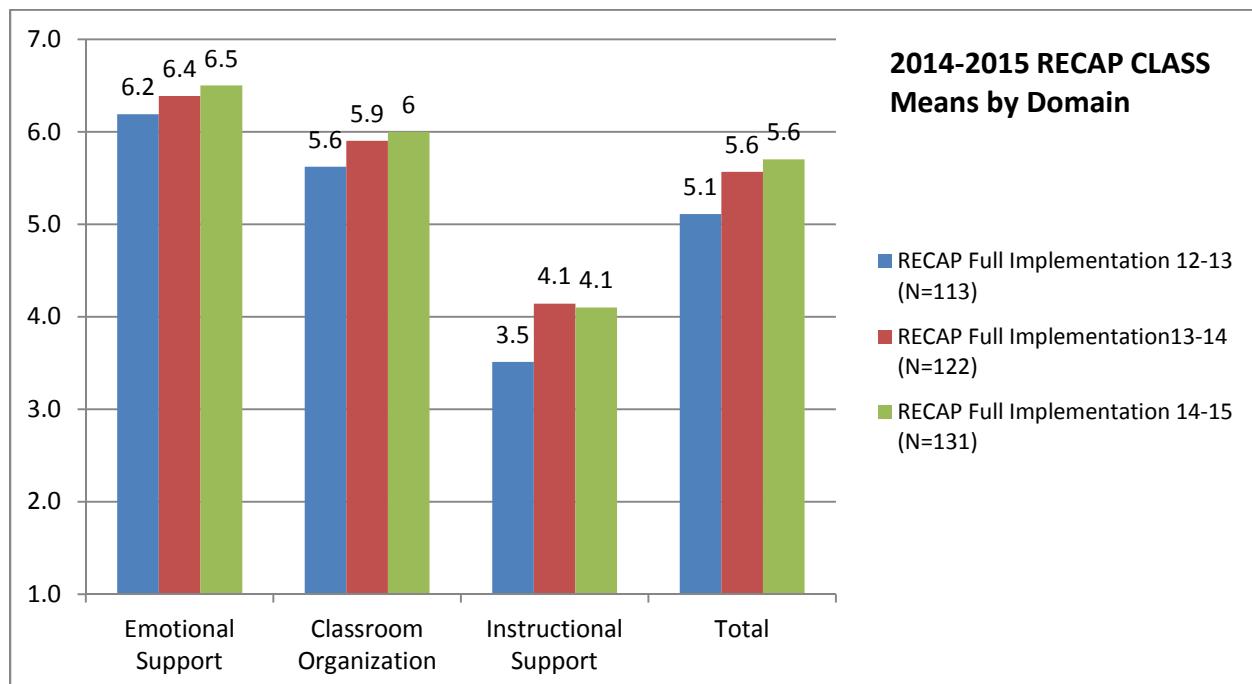
CLASS Results

As stated previously, this is the third year the CLASS was used in all classrooms. With each passing year, the average (mean) scores have improved. As can be seen in Figure 4 and Table 4, the strongest domain continues to be ***Emotional Support***. From the baseline study until the year ending in 2015 there was an increase from 6.0 to 6.5.

For the third year, dimension scores within the ***Emotional Support*** domain remained at or above a 6.0 (Figure 5). Again, the ***Negative Climate*** dimension remained the highest scoring dimension by maintaining its score of a near perfect 6.9. RECAP classrooms have almost no aspects of negativity during the times observations were conducted. ***Teacher Sensitivity*** and ***Regard For Student Perspectives*** increased from the previous year by .1 and .2 respectively. ***Positive Climate*** maintained from last year with a score of 6.5

During the pilot study, mean scores for ***Classroom Organization*** were in the mid-5 range but over the past three years have risen by ~0.5 to 6.0. Both the ***Behavior Management*** and the ***Productivity*** subscales achieved mean scores above 6.0. Scores for the third dimension, ***Instructional Learning Formats***, remain the lowest for this domain. They have shown improvement, increasing from 5.0 to 5.5 over the four years. CLASS scores above 5.0 are considered to be indices of acceptable performance. The overall score for the ***Classroom Organization*** subscale increased to 6.0, from 5.9 in 2013-2014.

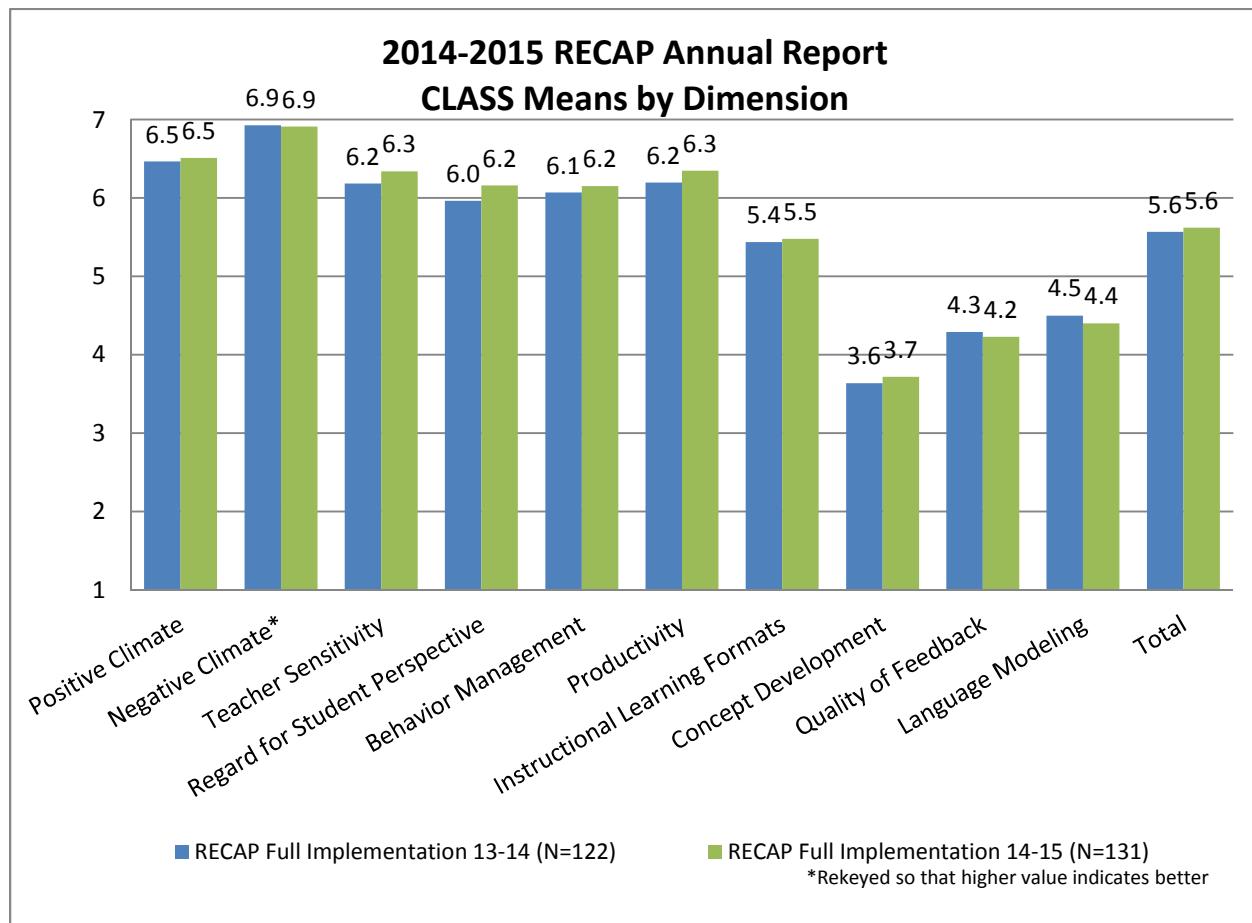
Instructional Support continues to be weakest domain for RECAP classrooms. From the pilot study, this domain has been a focal point for professional development and training. Even though this domain was the weakest, it is evident that great strides in improving the dimensions in this area occurred. From last year to this year, scores on two dimensions (***Quality of Feedback***, and ***Language Modeling***) dropped slightly. ***Concept Development*** made a small gain (see Figure 5).

Figure 4. CLASS Means by Domain for RECAP

The 2014-2015 school year marked the third year CLASS was used in all RECAP classrooms. Over the course of the past three years, the *Emotional Support* and *Classroom Organization* domains have shown moderate/significant growth. The *Emotional Support* domain grew .3 points from the first implementation year in 2012-2013. The *Classroom Organization* domain grew .4 points from the first full implementation year of 2012-2013. Significant growth occurred in the third domain of *Instructional Support* from the 2012-2013 to 2013-2014 school years. *Instructional Support* did not show growth from the 2013-2014 school year to this year. Teachers remained consistent with an average score of 4.1.

CLASS Instructional Support scores in Boston, MA were found to have a mean of 4.3 (Weiland, Ulvestad, Sachs, & Yoshikawa, 2013), while pre-k programs in Tulsa, OK had a mean of 3.2 (Phillips, Gormley, & Lowenstein, 2009; Weiland, Ulvestad, Sachs, & Yoshikawa, 2013).

Figure 5. CLASS Means by Dimension for RECAP



Overall, compared to last year, during the 2013-2014 school year, RECAP teachers showed consistent growth across a majority of the ten CLASS individual domains. ***Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, and Concept Development*** all grew by .1 of a point in 2014-2015; ***Regard for Student Perspective*** grew by .2 of a point. ***Positive Climate, Negative Climate***, and the Overall Score remained the same during the 2014-2015 school year. Unfortunately, ***Quality of Feedback*** and ***Language Modeling*** dropped by .1 of a point during the 2014-2015 school year. Historically, the Instructional Support domain has been and continues to be a difficult domain to raise performance (***Concept Development, Quality of Feedback, and Language Modeling***).

Table 4. CLASS Means by Domain for RECAP

**2014-2015 RECAP Annual Report
CLASS Means by Domain**

Domains	RECAP Pilot* 09-10 (N=30)	RECAP Pilot* 10-11 (N=30)	RECAP Pilot* 11-12 (N=35)	RECAP 3-year Pilot 09-12 (N=95)	RECAP Full Implementation 12-13 (N=113)	RECAP Full Implementation 13-14 (N=122)	RECAP Full Implementation 14-15 (N=131)
Emotional Support	5.9	5.9	6.2	6.0	6.2	6.4	6.5
Classroom Organization	5.6	5.4	5.7	5.5	5.6	5.9	6.0
Instructional Support	3.5	3.5	3.3	3.4	3.5	4.1	4.1
Total	4.4	4.4	5.0	4.6	5.1	5.6	5.6

* The scores for these 3 years were averaged to get a single score for the entire “RECAP 3-year Pilot 09-12” sample.

Summary and Recommendations:

*RECAP classrooms have continued to demonstrate “very good” to “excellent” quality on **Emotional Support**, and “very good” quality on the **Classroom Organization** domain, as measured by the CLASS. The results for the **Instructional Support** domain again provided evidence that this is an area to focus efforts for improvement.*

*It is encouraging and important to note that all three domains have improved steadily since the integration of the CLASS within RECAP, with growth demonstrated particularly on the **Instructional Support** domain. These results support the focused professional development and program efforts to improve the quality indicators measured by the CLASS. With that in mind, we recommend that the Professional Development Committee, program directors, and teachers continue to focus on improving pre-k classrooms quality, especially in the area of **Instructional Support**. Based upon last year’s improvement, a target of >6.2 for **Classroom Organization** and >5.0 for **Instructional Support** are within the reach of RECAP classrooms with the ultimate recommended target being >6.25 for all classrooms for all domains.*

Specific recommendations:

- ❖ Increased focus on **Instructional Support** with additional professional development offerings provided by the PD committee and Technical Support Teachers.
- ❖ Assign mentor teachers to new teachers, < 5 years of UPK teaching experience, for specific coaching on **Instructional Support** standards.
- ❖ Assess teachers’ perceptions of their efficacy and mentors’ perceptions of teachers’ “readiness to change” and focus coaching sessions on improving the level of these constructs to see if this strategy over a three year period improves CLASS performance.

Comparing RECAP's CLASS Results to Other Early Childhood Education Programs

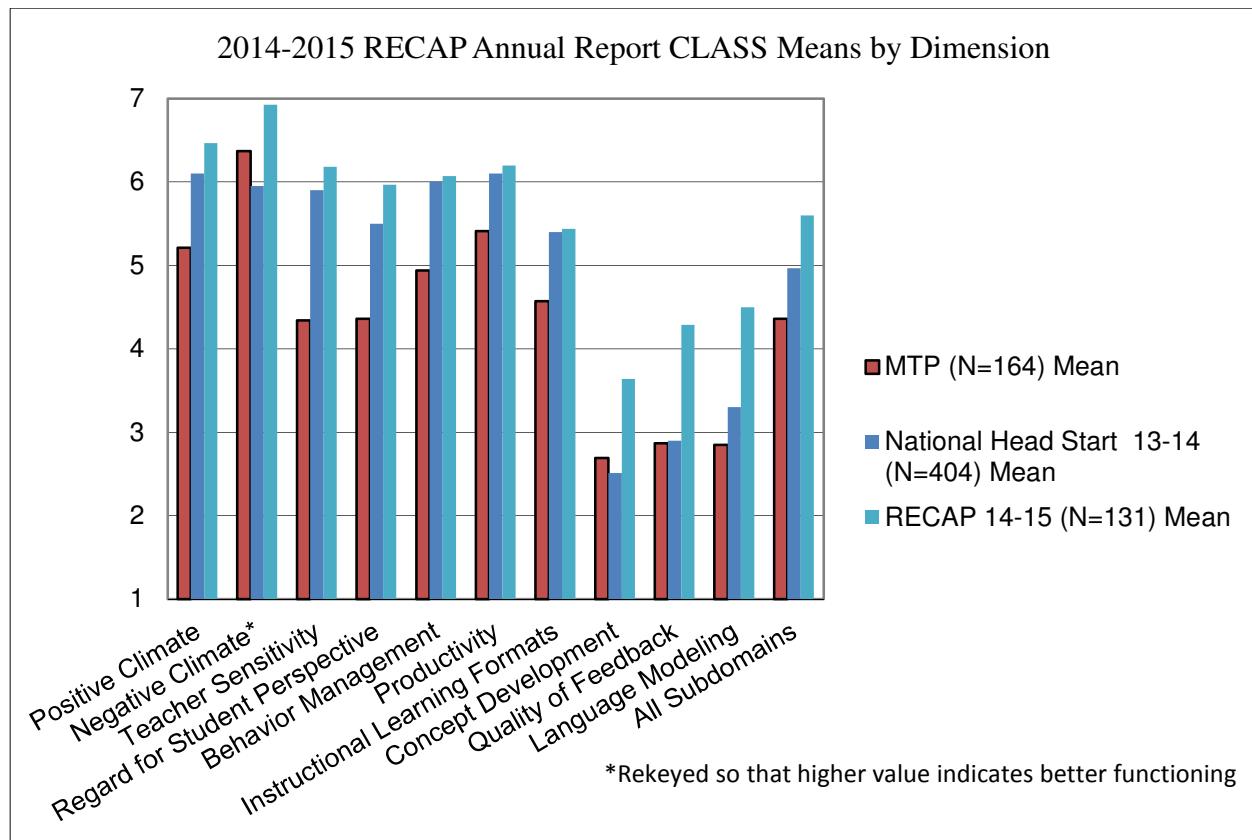
The CLASS has gained popularity across the nation based on the number of studies and evaluations that use the CLASS to assess classroom quality. These studies provide RECAP partners with a valuable context in which to compare Rochester's results with other pre-k programs throughout the United States.

The My Teaching Partner (MTP) study (Kinzie, Whitaker, Neesen, Kelley, Matera, & Pianta, 2006) was the first to provide CLASS domain and dimension scores. These scores were also reported in the CLASS technical manual (Pianta, et al. 2008) and have been used as a comparison point for the RECAP reported results. As noted, the CLASS has also been used nationally by the Head Start Association since 2011-2012. Mean dimension and total scores for the MTP and for the most recent year reported for Head Start, as well as mean scores for the most recent year of RECAP, are displayed in Table 5 and in Figure 6 (U.S. Department of Health & Human Services, 2014).

Table 5. CLASS Means by Dimension

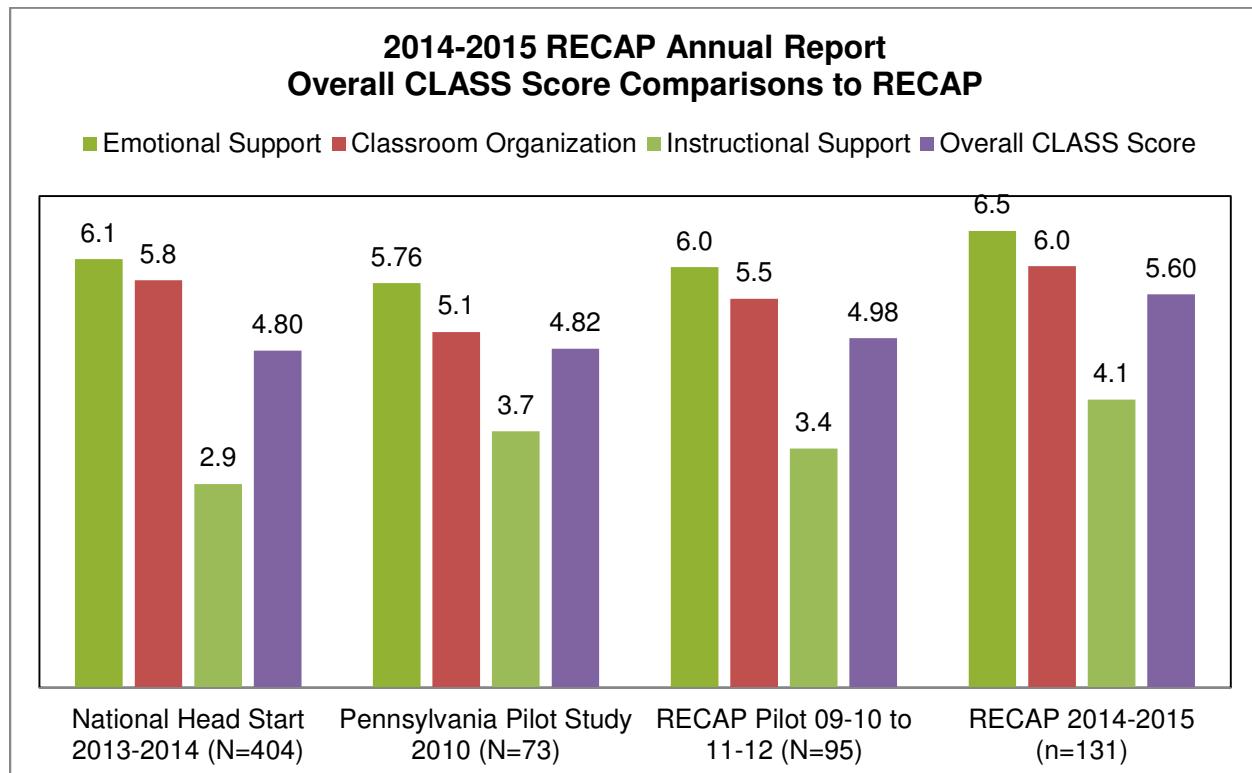
2014-2015 RECAP Annual Report RECAP CLASS Means Comparison by Dimension							
Domains	Dimension	MTP (N=164)		Nat. Head Start 13-14 (N=404)		RECAP 14-15 (N=131)	
		Mean	SD	Mean	SD	Mean	SD
<i>Emotional Support</i>	<i>Positive Climate</i>	5.2	0.9	6.1	0.4	6.5	0.6
	<i>Negative Climate*</i>	6.4	0.7	6.0	0.1	6.9	0.2
	<i>Teacher Sensitivity</i>	4.3	0.9	5.9	0.5	6.3	0.7
	<i>Regard for Student Perspective</i>	4.4	1.0	5.5	0.6	6.1	0.8
<i>Classroom Organization</i>	<i>Behavior Management</i>	4.9	0.9	6.0	0.5	6.2	0.8
	<i>Productivity</i>	5.4	0.8	6.1	0.5	6.3	0.6
	<i>Instructional Learning Formats</i>	4.6	0.8	5.4	0.6	5.5	0.9
<i>Instructional Support</i>	<i>Concept Development</i>	2.7	0.7	2.5	0.6	3.7	1.1
	<i>Quality of Feedback</i>	2.9	0.9	2.9	0.6	4.2	1.4
	<i>Language Modeling</i>	2.9	0.7	3.3	0.6	4.4	1.1
Total	All Dimensions	4.4	0.8	4.9	0.5	5.6	0.6

* Rekeyed so that higher value indicates better functioning

Figure 6. CLASS Means by Dimension

Compared to MTP (Pianta et al., 2008) and the 2013-2014 Head Start (U.S. Department of Health & Human Services, Office of Head Start, 2014) results, it is evident that RECAP classrooms have very strong ***Emotional Support, Classroom Organization, and Instructional Support*** environments and are significantly better, as a group, than the classrooms in these other studies.

Figure 7 adds a recent pilot study from programs across the state of Pennsylvania (Philson, 2011) for which CLASS total scores were available. Once again, CLASS total scores for RECAP classrooms were significantly better than the other samples providing further evidence of the comparatively high quality of RECAP classrooms.

Figure 7. CLASS - Classroom Assessment Scoring System Comparisons

Compared to the 2014 National Head Start Overall CLASS scores, RECAP teachers had higher scores in Emotional Support, Classroom Organization, Instructional Support, and Overall CLASS scores from 2014-2015. Most notably, RECAP Instructional Support scores are 1.2 points higher than that of the National Head Start Scores.

*In summary, to date RECAP classrooms are relatively strong when compared to others nationally. However, this does not negate the opportunity for RECAP programs to grow in the **Classroom Organization** and **Instructional Support** domains.*

CLASS Correlations with ECERS-R

Previous RECAP annual reports have reported on the relationships between the CLASS and the ECERS-R (Story, et al 2012; Taylor, et al 2011; Taylor, et al. 2010). The results of these analyses provided evidence that suggested that the CLASS and the ECERS-R assess different aspects of classroom quality. Based on these previous results, it was hypothesized that there would be relatively few significant correlations between the classroom domains as measured by the two instruments and that if significant correlations were found, they would account for relative small amounts of overlapping variance.

Correlations between the CLASS and the ECERS-R were analyzed again this year.

In summary, these observational assessment tools overlap to a small degree, primarily in the area of interactions, which is not surprising and supports the construct validity of each tool, i.e., overlap occurs where you would theoretically expect it to and there is no overlap where you would not expect any. Again this year, the few moderate correlations between the CLASS and ECERS-R indicated that each instrument measures different parts of classroom environments and program quality, which supports our recommendation to use both the ECERS-R and CLASS to get a comprehensive view of the classrooms. (Note: The correlation matrices between the ECERS-R and CLASS subscales and total scales are provided in full in the 2014-2015 Statistical Supplement)

Student Performance - Academics

Child Observation Record (COR)

In 1992, the HighScope Educational Research Foundation (HighScope), a nonprofit organization dedicated to the development and evaluation of materials that teach and assess young children, released the Child Observation Record (COR). The COR 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. In 2014, HighScope released a new version of the COR called the Child Observation Record: Advantage (COR Advantage). Due to the timing of its release, the COR Advantage could not be incorporated into the RECAP system for 2013-2014; however, it was integrated into RECAP's evaluation process in the 2014-2015 school year.

The COR Advantage is a developmentally appropriate measure that assesses children's approaches to learning, social and emotional, academic, physical development and health, and creative arts (see a list of specific items assessed below). Teachers observe children for at least six weeks and record their observations of their students' functioning using 34 items. Two additional items have been added to the COR Advantage to specifically monitor English Language Learners (ELL) as well. Each item is scored on a 7-point, developmentally sequenced, scale where each point represents a level of children's growth along a developmental continuum.

Similar to the previous two decades, teachers completed the COR Advantage in the fall and spring. This year classroom teachers also completed a winter COR Advantage to more closely monitor child growth and to meet NYS requirements. By administering the COR Advantage in the fall, teachers were able to quickly identify and address problem areas that their students displayed. The second administration of the COR Advantage in the winter gave administrators, teachers, and parents insights into student growth and development. It provided administrators from the RCSD an opportunity to provide additional professional development for teachers of struggling students. The third COR Advantage was administered in the spring and allowed teachers to assess how much individual students had grown, provided insights regarding the students' preparedness for kindergarten, and enabled the sharing of this information with parents. The three-time administration also provided RECAP with the ability to examine the growth rates for the entire pre-k sample. Over the summer of 2015, 149 children participated in the summerLeap program and a fourth COR Advantage was completed for these children. As a historical note, the COR was also administered in kindergarten at the beginning and at the end of the year and growth rates beyond pre-k were assessed as well. This practice ended two years ago when RCSD started using the Brigance Early Screening Measure in the fall and the NWEA at mid and end of year. The COR Advantage results presented in this section, as well as in the Statistical Supplement, are integral to understanding child outcomes and pre-k program effectiveness.

Teachers completed the COR Advantage for their students using the online COR Advantage website (coradvantage.com), which tabulates and processes the data and produces child summary reports instantly. These reports show the average raw and percentile scores for the individual child in nine skill areas. However, longitudinal data is not kept on the COR Advantage website, so it had to be transferred to the COMET system for archival purposes.

The individual items by their respective skill areas are:

❖ Approaches to Learning:

- A) Initiative and Planning
- B) Problem Solving with Materials
- C) Reflection

❖ Social and Emotional Development:

- D) Emotions
- E) Building Relationships with Adults
- F) Building Relationships with other Children
- G) Community
- H) Conflict Resolution

❖ Physical Development and Health:

- I) Gross-motor skills
- J) Fine-motor skills
- K) Personal Care and Healthy Behavior

❖ Language, Literacy, and Communication:

- L) Speaking
- M) Listening and Comprehension
- N) Phonological Awareness
- O) Alphabetic Knowledge
- P) Reading
- Q) Book Enjoyment and Knowledge
- R) Writing

❖ Mathematics:

- S) Number and Counting
- T) Geometry: Shapes and Spatial Awareness
- U) Measurement
- V) Patterns
- W) Data Analysis

❖ Creative Arts:

- X) Art
- Y) Music
- Z) Movement
- AA) Pretend Play

❖ Science and Technology:

- BB) Observing and Classifying
- CC) Experimenting, Predicting, and Drawing Conclusions
- DD) Natural and Physical World
- EE) Tools and Technology

❖ Social Studies:

- FF) Knowledge of Self and Others
- GG) Geography
- HH) History

❖ English Language Learning (ELL):

- II) Listening to and Understanding English
- JJ) Speaking English

The following text and tables depict the growth of the entire RECAP cohort on the COR Advantage for the 2014-2015 school year. The Statistical Supplement presents additional disaggregated analyses based on gender and race/ethnicity.

HighScope: The category scores represent the average of the item scores for that category. (Individual item scores represent the highest student performance observed during the specified time period.) Category scores are calculated when 75% of all possible items in a category have a score for the time period. For children transitioning to kindergarten in 2015-2016, school readiness, as defined by HighScope, is indicated by an average score of at least 3.75 in each category and an overall average of ≥ 4.0 .

Table 6 depicts students' COR Advantage scores upon entering pre-k. The fall 2014 data were collected from September 2014 through November 2014 (Period 1). Table 7 depicts students' COR Advantage scores from November 2014 through March 2015 (Period 2). Table 8 depicts students' COR Advantage scores from March 2015 to the beginning of June 2015 (Period 3). Table 9 depicts students' change scores between Period 1 and Period 3. Table 10 depicts RCSD UPK students' school readiness, as defined by HighScope. Overall, a slight majority of RCSD UPK students (54%) met school readiness guidelines, suggesting that these children were cognitively, socially, and emotionally ready for the rigors of kindergarten.

Table 6 depicts RCSD children entering UPK. ***Physical Development & Health*** and ***Creative Arts*** showed the highest scores during the first data collection period. ***Mathematics*** and ***Social Studies*** have the weakest scores of the first data collection period. Of the 1870 children assessed, 15 (< 1%) were considered kindergarten ready at the first data collection period.

Table 6. Fall 2014 COR Advantage Student Performance at Entry

		Fall 2014		
COR Advantage		N	Mean	Std Dev
Approaches to Learning		1925	2.92	0.66
Social Emotional Development		1936	2.83	0.74
Physical Development & Health		1948	3.43	0.65
Language, Literacy, Communication		1922	2.73	0.63
Mathematics		1854	2.65	0.64
Creative Arts		1895	3.06	0.77
Science & Technology		1846	2.73	0.64
Social Studies		1843	2.69	0.62
Overall score		1885	2.88	0.54

Table 7 depicts results from the second data collection period. ***Mathematics*** had a significant increase, with children making an overall gain of a full point. ***Social Studies*** also made a significant increase, with children gaining nearly one point. The Overall mean score increased from 2.88 to 3.79. Most importantly, 337 students out of 1421 (17%) made sufficient gains to qualify them as being kindergarten ready.

Table 7. Winter 2015 COR Advantage Student Performance at the End of the First Semester

		Winter 2015		
COR Advantage		N	Mean	Std Dev
Approaches to Learning		1835	3.72	0.73
Social Emotional Development		1837	3.70	0.77
Physical Development & Health		1852	4.30	0.73
Language, Literacy, Communication		1836	3.61	0.71
Mathematics		1717	3.65	0.77
Creative Arts		1750	3.95	0.71
Science & Technology		1714	3.66	0.73
Social Studies		1779	3.67	0.80
Overall Score		1758	3.79	0.62

Table 8. Spring 2015 COR Advantage Student Performance at the End of the School Year

		Spring		
COR Advantage		N	Mean	Std Dev
Approaches to Learning		1828	4.42	0.77
Social Emotional Development		1832	4.37	0.86
Physical Development & Health		1855	5.11	0.88
Language, Literacy, Communication		1828	4.21	0.79
Mathematics		1750	4.35	0.83
Creative Arts		1779	4.64	0.73
Science & Technology		1741	4.44	0.86
Social Studies		1794	4.37	0.89
Overall Score		1770	4.49	0.71

Table 9 below depicts change scores on COR Advantage between the beginning and the end of the year. Over the course of the 2014-2015 school year, significant and very large gains were made in all areas. The areas with the largest relative gains (largest effect sizes) were ***Social Studies***, ***Science & Technology***, ***Mathematics***, and ***Physical Development & Health***, with huge gains of $d > 2.6$ and all areas saw gains of $d > 2.0$, which are considered very large.

Table 9. Fall-Spring COR Advantage Change Scores from Beginning to End of Year

COR Advantage	Change (Fall - Spring)			t	p	Effect Size (d)
	N	Mean	Std. Dev			
Approaches to Learning	1628	1.51	0.79	77.40	<.0001	2.29
Social Emotional Development	1652	1.55	0.84	75.20	<.0001	2.12
Physical Development & Health	1678	1.69	0.85	81.47	<.0001	2.64
Language, Literacy, Communication	1638	1.49	0.67	89.94	<.0001	2.37
Mathematics	1538	1.72	0.73	91.65	<.0001	2.65
Creative Arts	1581	1.57	0.85	73.18	<.0001	2.07
Science & Technology	1528	1.74	0.83	81.97	<.0001	2.76
Social Studies	1547	1.70	0.88	75.67	<.0001	2.79
Overall Score	1577	1.62	0.60	107.03	<.0001	3.00

Table 10 depicts school readiness, as defined by HighScope, and the number and percent of UPK students in the 2014-2015 school year who scored 4.0 or above (kindergarten ready) on the COR in the fall, winter, and then in the spring.. At the conclusion of the 2014-2015 school year, 949 (54%) of RCSD UPK students were ready to transition to kindergarten. However, this also means almost half (46%) were not ready for kindergarten. This compares similarly to the 2013-2014 school year, when 50% of UPK students achieved a total score indicative of kindergarten readiness on a different version of the COR.

Table 10. 2014-2015 Number of RCSD UPK Children Reaching School Readiness Criteria on the COR Advantage at Three Times

Kindergarten Readiness*	Fall		Winter		Spring	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Ready for Kindergarten	15	0.8%	337	17.2%	949	53.6%
Not Ready for Kindergarten	1870	99.2%	1421	80.8%	821	46.4%

*Children are deemed ready for kindergarten if each COR+ category score is ≥ 3.75 and the overall score is ≥ 4.0

These results parallel previous years' results. Therefore, RCSD UPK children make huge to large gains during their pre-k school year, but many children are still not ready for kindergarten. Inevitably, this leads to many students entering kindergarten without the foundational abilities needed to begin to understand the more advanced educational instruction provided. This suggests that for many children any curriculum and instruction not realistically and developmentally aligned with and targeted for children's needs and "present" levels of understanding will result in frustration and learning failure. High expectations are important, realistic expectations are equally important. We discuss this trend and some potential strategies for slowing or even halting it further on in this report

Performance and Student Attendance

RECAP has tracked student attendance for almost two decades. For the second consecutive year, we provide detailed analyses of attendance data from both RCSD and community-based organizations (CBOs). For purposes of these analyses, all students having qualifying pre and post COR Advantage and T-CRS data were included in the analyses. Three groups were formed on the basis of average daily attendance. The low attendance group, severely chronically absent, had $\leq 80\%$ attendance; the moderate attendance group, chronically absent, had 81%-89% attendance; and the high attendance group had $\geq 90\%$ attendance. These attendance groups replicate the attendance groups used in grades K-12 at the RCSD and in the research literature.

There are at least two hypotheses relative to the impact of attendance on student performance. Based on the impact of attendance on academic performance with elementary and secondary students, it was predicted that pre-k students with better attendance would perform better and

gain more on the COR Advantage by the end of the year due to the additional instruction time they received. Based on the RECAP results from last year's report, it was predicted that attendance would have an impact on students overall performance, but would not have an impact on students' *gains* as measured by the COR Advantage.

At the beginning of this year, we found significant differences in COR Advantage scores. Students with moderate attendance compared with those who had low and high attendance, had higher performance across all COR Advantage subscales. These results are present in Table 11.

Table 11. Comparison of Three Attendance Groups on Fall Assessment with the COR Advantage

2014-2015 RECAP Annual Report COR+ Attendance Scores										
	Low Group (≤80%)			Moderate Group (81%-89%)			High Group (≥90%)			
COR+ Pre	n	Mean	SD	n	Mean	SD	n	Mean	SD	F Value ¹
Approaches to Learning	988	2.85	0.64	544	3.04	0.68	369	2.92	0.65	15.3
Social Emotional Development	989	2.76	0.74	551	2.95	0.71	371	2.86	0.75	12.41
Physical Development and Health	998	3.40	0.63	548	3.54	0.65	376	3.33	0.66	12.74
Lang., Lit., Communication	984	2.63	0.62	545	2.87	0.63	368	2.78	0.62	28.36
Mathematics	949	2.55	0.61	532	2.83	0.65	351	2.62	0.62	33.3
Creative Arts	974	2.98	0.78	539	3.26	0.78	359	2.95	0.65	28.2
Social Studies	945	2.61	0.62	528	2.78	0.59	347	2.74	0.63	15.32
Science and Technology	944	2.66	0.62	524	2.84	0.68	357	2.73	0.61	13.32
COR Overall Pre	965	2.8	0.53	534	3.02	0.54	362	2.87	0.53	26.82

Note: The attendance breakdown is based on the overall yearly attendance reported at the end of the school year

¹All tests (p < .001)

Spring 2015 COR Advantage scores are presented in Table 12. There were no significant differences between moderate and high attendance groups on COR Advantage at the end of the school year, but significant differences were observed between these groups and the low group, which performed significantly worse. Otherwise put, pre-k students with severely chronic attendance issues had significantly lower performance as measured by the COR Advantage at the end of the school year.

Table 12. Comparison of Three Attendance Groups on Spring Assessment with the COR Advantage

	Low Group (<80%)			Moderate Group (81%-89%)			High Group (≥90%)			F Value
	n	Mean	SD	n	Mean	SD	n	Mean	SD	
COR+ Post										
Approaches to Learning	880	4.28	0.77	565	4.55	0.73	359	4.58	0.74	32.05*
Social Emotional Development	874	4.20	0.89	571	4.49	0.79	362	4.57	0.82	34.78*
Physical Development and Health	883	5.04	0.92	575	5.21	0.80	372	5.12	0.83	5.99
Lang., Lit., Communication	870	4.03	0.79	567	4.39	0.74	366	4.36	0.77	44.68*
Mathematics	845	4.17	0.81	547	4.51	0.75	336	4.54	0.85	41.92*
Creative Arts	858	4.54	0.76	552	4.76	0.66	348	4.67	0.68	15.88*
Social Studies	862	4.25	0.91	557	4.54	0.81	352	4.39	0.86	18.69*
Science and Technology	842	4.29	0.86	545	4.58	0.82	333	4.59	0.83	26.52*
COR Overall Post	854	4.35	0.72	553	4.64	0.65	341	4.60	0.69	33.07*

* p < .0001

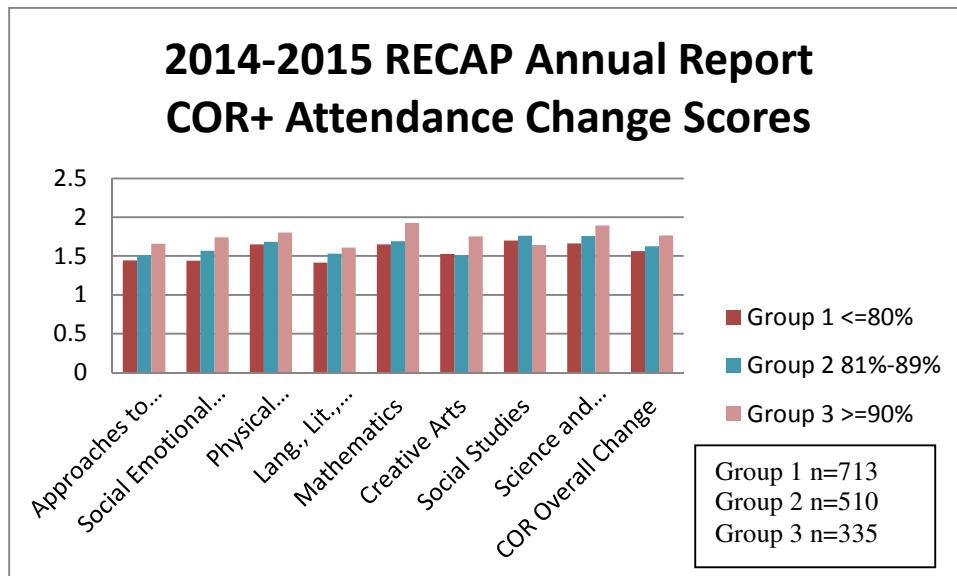
COR Advantage change scores from the fall to the spring are presented in Table 13. Overall, children who had severely chronic absences had fewer gains than those with chronic attendance, who had fewer gains than those who had high attendance. There were no differences in growth by attendance group on the Physical development and Social Studies subscales.

Table 13. Comparison of Three Attendance Groups on Change/Growth from the Beginning to the End of the School Year on the COR Advantage

	Low Group (<80%)			Moderate Group (81%-89%)			High Group (≥90%)			
COR+ Change	n	Mean	SD	n	Mean	SD	n	Mean	SD	F Value
Approaches to Learning	741	1.44	0.80	522	1.50	0.74	345	1.65	0.77	8.83*
Social Emotional Development	740	1.43	0.88	536	1.56	0.77	354	1.74	0.80	16.05*
Physical Development and Health	752	1.64	0.90	535	1.68	0.82	368	1.80	0.77	4.15
Lang., Lit., Communication	734	1.41	0.70	527	1.53	0.63	355	1.61	0.63	11.5*
Mathematics	705	1.64	0.74	501	1.68	0.67	315	1.92	0.75	16.44*
Creative Arts	719	1.52	0.88	511	1.50	0.84	333	1.75	0.76	10.28*
Social Studies	702	1.69	0.90	503	1.76	0.85	323	1.64	0.86	1.79
Science and Technology	695	1.66	0.84	493	1.75	0.83	323	1.89	0.75	8.85*
COR Overall Change	713	1.56	0.62	510	1.62	0.57	335	1.76	0.56	12.93*

(*significant at p<.001)

Figure 8 below represents the data displayed in Table 13 above.

Figure 8. COR Change Scores 2014-2015 RECAP**Table 14. Correlation Between COR Advantage Subscales and Total Days Attended**

COR Advantage Categories	Total ¹ Days-Pre	Total ² Days-Post	Total Days ³ -Change
Approaches to learning	0.13*	0.22*	0.09*
Social Emotional Development	0.15*	0.23*	0.11*
Physical Development & Health	0.08*	0.12*	0.05*
Language, Literacy, Communication	0.20*	0.24*	0.10*
Mathematics	0.17*	0.26*	0.12*
Creative Arts	0.14*	0.15*	0.04
Social studies	0.18*	0.18*	-0.005
Science & Technology	0.15*	0.20*	0.09*
Overall Score	0.19*	0.23*	0.09*

(*p < .05)

¹n's for the correlations range from 1846 to 1951 with a median of 1898²n's for the correlations range from 1744 and 1858 with a median of 1744³n's for the correlations range from 1531 and 1681 with a median of 1584

Table 15. Kindergarten Readiness by Attendance Group

Kindergarten Readiness by COR+ and Attendance							
	Group1 (<=80%)		Group2 (81%-89%)		Group3 (>=90%)		Total
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Kindergarten Ready	377	44%	359	65.00%	205	60%	941
Not Kindergarten Ready	477	56%	194	35.00%	136	40%	807
Totals	854	100%	553	100%	341	100%	1748

Students in Group 2 are more likely to be kindergarten ready than their peers in Group 1 and Group 3. Although Group 1 is considered severely chronically absent, based on RCSD attendance policy, 377 (44%) of such students are still kindergarten ready by the end of the school year. *It appears that students who are even severely chronically absent make significant gains with the days they do attend.* Based on these data, *it is recommended to not drop students from UPK classrooms for poor attendance, as they are still making large and significant gains according to COR Advantage and should be encouraged to attend more.*

summerLeap Pre-k to K COR Advantage Results

This section of the report summarizes progress made in the evaluation of the summer programs for entering kindergarteners, which were offered by the Greater Rochester Summer Leap Association (GRSLA) during 2015. In this report, findings from assessments using the COR Advantage are discussed.

As noted previously, the COR Advantage is a developmentally appropriate, standards-based measure that assesses children's academic (language, literacy, mathematics, & science), social, and motor competencies. Unlike the COR, the COR Advantage is aligned with the Common Core Learning Standards. Teachers observe children and record their observations of their students' functioning on 7-point developmentally sequenced scales in which each point represents a specific level of children's growth along a developmental continuum.

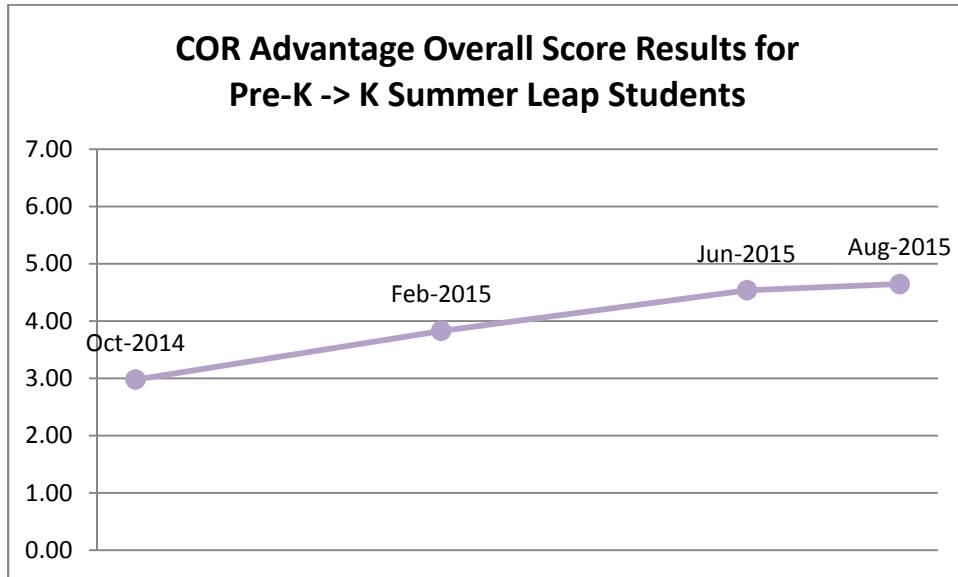
A COR Overall score is based on 34 items. Kindergarten Readiness is indicated if a student is rated at least 3.75 on each subscale and scores at least 4.0 overall.

In review, the community used the COR Advantage during the 2014-2015 school year to assess students participating in the pre-kindergarten programs. Teachers completed the instrument in the fall, winter, and spring to monitor student progress and document outcomes. GRSLA used the COR Advantage to compare pre-k with summer scores collected by summerLeap. GRSLA did not have access to individual pre-k student scores, and RCSD did not have access to individual summerLeap student scores. RECAP staff had permission to access both datasets. Only aggregated results are reported to protect students' privacy.

The COR-Advantage was completed for 149 Summer Leap students. Table 16 and Figure 9 show results from four times of assessment for this group. Some students did not have complete pre-k COR Advantage data.

Table 16. Pre-k and Summer COR Advantage Results for summerLeap Students

COR Score	Fall 2014 (T1)			Winter 2015 (T2)			Spring 2015 (T3)			Summer 2015 (T4)		
	n	M	SD	n	M	SD	n	M	SD	n	M	SD
Approaches to learning	130	2.98	0.71	140	3.79	0.67	145	4.42	0.77	149	4.44	0.89
Social emotional development	131	2.96	0.68	139	3.76	0.70	145	4.46	0.84	149	4.63	0.81
Physical development & health	131	3.61	0.65	139	4.51	0.73	145	5.31	0.82	149	5.47	0.82
Language, literacy, communication	131	2.79	0.56	138	3.58	0.66	145	4.17	0.77	148	4.31	0.78
Mathematics	123	2.83	0.67	135	3.63	0.73	141	4.38	0.67	149	4.44	0.74
Creative arts	123	3.25	0.70	137	4.00	0.54	142	4.63	0.63	149	4.74	0.63
Science & technology	124	2.83	0.61	136	3.64	0.59	140	4.44	0.88	149	4.57	0.88
Social studies	125	2.64	0.53	136	3.71	0.73	143	4.51	0.83	149	4.60	0.88
Overall score	124	2.98	0.48	137	3.83	0.54	144	4.54	0.65	149	4.65	0.67

Figure 9. COR Advantage Overall Results for summerLeap Students

Of the 149 Summer Leap students with summer COR Advantage data, 145 were also rated at the end of the pre-k session during the spring. We calculated a change score from spring to summer to assess the extent of growth as measured by the COR Advantage during the summer program. Table 17 shows these results.

Table 17. Spring to summer change scores for summerLeap students

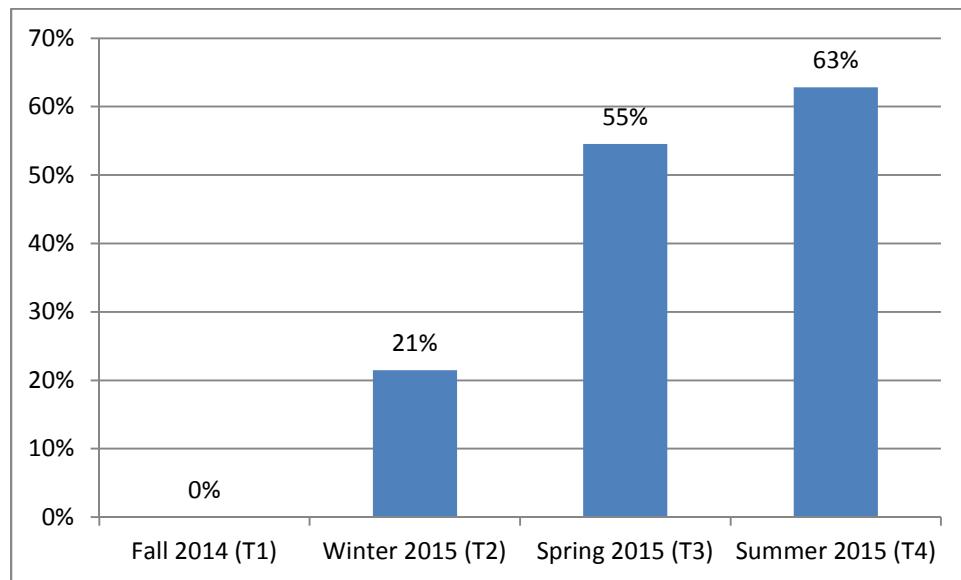
COR Score	N	Mean	Std. Dev.	t
Approaches to learning	145	0.04	0.70	< 1
Social emotional development	145	0.18	0.62	3.55*
Physical development & health	145	0.17	0.70	2.98*
Language, literacy, communication	144	0.13	0.52	3.06*
Mathematics	141	0.07	0.54	1.62
Creative arts	142	0.13	0.56	2.65*
Science & technology	140	0.17	0.79	2.60*
Social studies	143	0.11	0.67	2.01*
Overall score	144	0.13	0.43	3.60*

*p≤.05

Student growth during the summerLeap program was statistically significant ($p \leq .05$) for six of the eight COR Advantage subscales and the overall score. The Approaches to learning and Mathematics subscales did not change enough over the summer to reach significance.

Kindergarten readiness was calculated for summerLeap students at each of the four time points. These results are shown in Figure 10.

Figure 10. COR Advantage Kindergarten Readiness Assessment at 4 Time Points for summerLeap Students



Kindergarten readiness for the summerLeap group increased from 55% at the end of pre-K to 63%.

We repeated the analyses described above with a subsample of students attending at least 80% of the available days, and with the sub-sample which had complete data at all time points, and found essentially the same results.

We conclude that, as measured by the COR Advantage, participation in summerLeap programs prior to entry into kindergarten was associated with growth in students' academic, social emotional, and physical development, and with an increase in the proportion of students who will enter kindergarten prepared to learn.

Brigance® Early Childhood Screen III (Brigance III)

Due in part to New York state requirements, RECAP added the Brigance® Early Childhood Screen II to its assessment battery in 2012-2013. RECAP used this direct assessment to screen students for critical predictors of school success and provide important information regarding students' development. In the summer of 2013, the developers of the Brigance disseminated a new edition of the Brigance called the Brigance® Early Childhood Screen III. This new version of the Brigance contains new content and more closely aligns with the learning standards outlined by Common Core standards. It is used to identify children whose development may be delayed and who may need further evaluation. It also screens for students who may be gifted or talented and might benefit from more enhanced work. In the 2013-2014 school year, RECAP incorporated the Brigance III, replacing the prior version of the assessment.

Areas assessed by the Brigance III include ***Language Development, Academic & Cognitive Skills, and Physical Development & Health***. An overall score for the Brigance III is calculated out of a possible 100 points and is used in conjunction with a calculated "At Risk" score, which is derived from a subset of Brigance III items to assign a status level to each student:

- Level 1 – students who are at 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
- Level 4 – students who are possibly talented and may need enhanced work and additional stimulation

In the fall, teachers administered the Brigance III to all of their students. Results showed that 64% of students were functioning either within the normal range or as possibly talented (Levels 3 and 4). The Brigance III identified 36% of the incoming pre-k students as being at-risk and possibly in need of a more formal evaluation or to be monitored closely (Levels 1 and 2). Table 18 shows the breakdown of the students' overall developmental status based on the Brigance III screen in the fall of the 2014-2015 school year.

Table 18. Brigance III Screening 2014-2015

Brigance III Screening Status		
Screening Status	2014-2015	
	N=1475	%
Determine need for formal evaluation	462	31.3
Monitor closely	66	4.5
Functioning in normal range	810	54.9
Possibly talented and may need enhanced work	137	9.3

Upon entering pre-k, a third of all students were already showing signs of delayed developmental readiness. This is a substantial proportion of the pre-k population and further supports the COR's assessment that many children are entering pre-k significantly behind where they should be developmentally.

Correlations Between the Brigance III and the Pre and Post COR Advantage

Correlations for responses between the COR Advantage Overall scores and Brigance III subscales are displayed in Table 19. All of the relationships between the **Brigance III Total Score, At-Risk, Language Development, Academic/Cognitive, and Physical Development** subscales and the **COR Overall Pre, Post, and Change scores** were positive and significant. The overlap of assessed constructs between the Brigance and COR Advantage at the fall and spring range between 20 % to 25% for all scales, except for Health and Physical development, which is about 14% overlap with the COR Advantage Total

Table 19. Correlations Between the COR Advantage and the Brigance for the 2014-2015 School Year

	<i>COR Advantage Pre¹</i>	<i>COR Advantage Post²</i>	<i>COR Overall Change³</i>
Brigance Total	0.50*	0.50*	0.20*
Risk	0.38*	0.36*	0.15*
Language	0.46*	0.45*	0.16*
Cognitive	0.46*	0.44*	0.19*
Health and Physical	0.11*	0.13*	0.06

¹ n=1373; ² n=1264; ³ n=1152

*Results are significant at the p<.0001

Student Performance – Social/Emotional

Teacher-Child Rating Scale (T-CRS)

The Teacher-Child Rating Scale (T-CRS) has also been an integral part of the RECAP assessment system for two+ decades. The T-CRS consists of 32 items that assess both positive and negative aspects of a child's social-emotional performance. The items on the T-CRS combine to create four empirically derived subscales: ***Task Orientation***, ***Behavior Control***, ***Assertiveness***, and ***Peer Social Skills***.

The T-CRS has a variety of uses: as a screening measure, as part of an individual assessment battery, and as a pre- and post-research or evaluation measure. Within RECAP, the T-CRS serves as a screener to identify students with needs and as a tool to track population trends, changes in students' social and emotional development, and the effects of pre-k programs in Rochester. Table 20 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 2014-2015 RECAP program years.

We used *t*-tests to identify any significant ($p \leq .0001$) changes in the proportion of children who were "at-risk" in one or more of the dimensions at the beginning of the school year. These tests determine whether the fluctuations in percentages are within an expected amount of change from year to year. While there were small, non-significant increases in the proportions of students who were at-risk in ***Task Orientation*** and ***Behavior Control***, the largest increase from last year to this year in the proportion of students at-risk was in ***Peer Social Skills***.

Table 20. Social-Emotional Risk Factors for Fall 2014-2015 School Year

2014-2015 School Year Students with Social-Emotional Risk Factors in the Fall			
	Frequency	Percentage ⁺	<i>t</i>
No Risk Factors	1,390	80.5%	84.48*
<i>Task Orientation</i> risk only	69	4.0%	14.17*
<i>Behavior Control</i> risk only	55	3.2%	13.46*
<i>Assertiveness</i> risk only	33	1.9%	7.88*
<i>Peer Social Skills</i> risk only	30	1.7%	12.95*
Multiple risk factors	150	10.8%	9.68*
Number of valid responses	1,727	-	-

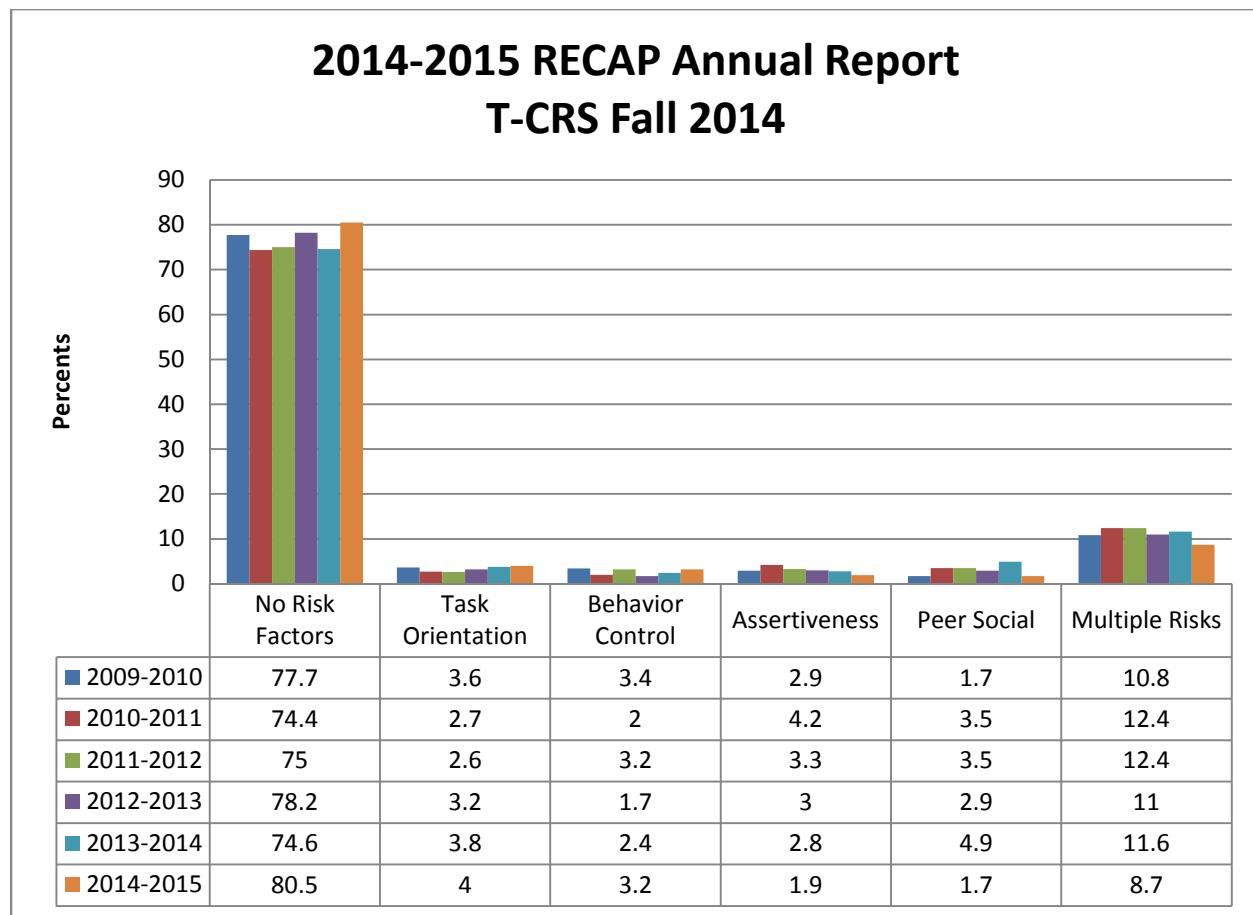
⁺Percentage is calculated from number of valid responses

*Scores are statistically significant ($p < .0001$)

As shown below in Figure 11, the proportions of students for each at-risk category (no risk factors, and single or multiple risk factors) have remained relatively consistent, with the exception of this year's ***Peer Social Skills*** scores, for the last five years for the students attending RECAP-affiliated pre-k programs.

Children with no risks in the past two years have ranged from 75% to 78%; therefore, overall, 22% to 25% have at least one social and emotional risk. Combining the single-risk rates from each of the four groups show that children with individual risk factors comprise approximately 14%. This rate is slightly higher than in previous years, which were approximately 11-12% over the last four years.

Figure 11. Prevalence of Social-Emotional Risk Factors at Entrance from 2010 to 2015



Note: Domains of T-CRS are significant at $p < .05$. No Risk Factors and Multiple Risks are also significant at $p < .05$

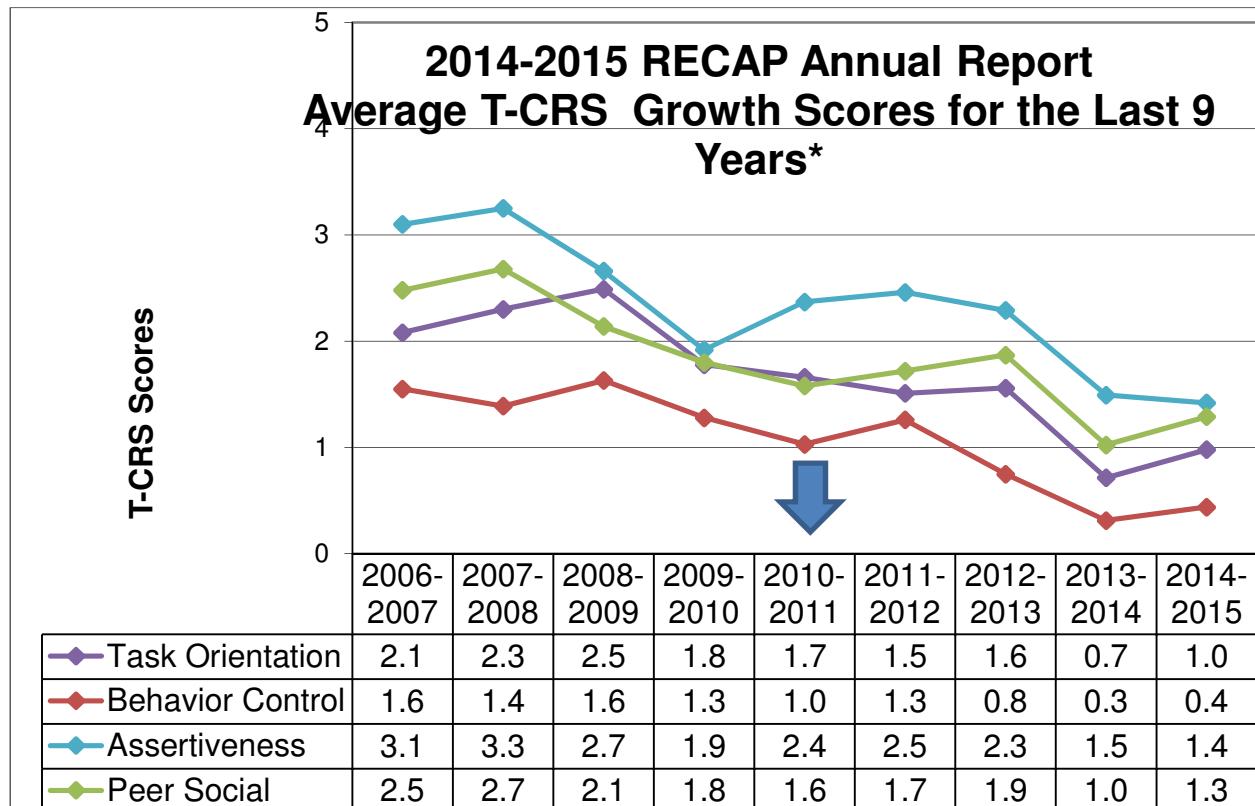
*In Rochester, over 80% of students entered pre-k without any social or emotional risk factors, a higher rate than the 2013-2014 school year. It is the highest reported rate of no risk factors over the course of the past six years. Additionally, UPK students entered the 2014-2015 school year with more **Task Orientation** and **Behavior Control** risks than the previous school year. UPK students entered the 2014-2015 school year with fewer **Assertiveness**, **Peer Social**, and **Multiple Risks** than in the previous school year.*

Table 21. 2014-2015 RECAP Annual Report T-CRS Change Scores

TCRS	Pre n=2059		Post n=1948		Change Scores n=1727		t*	Effect Size
	Mean	SD	Mean	SD	Mean	SD		
Task Orientation	27.81	6.33	28.7	6.93	0.98	5.71	7.11	0.54
Behavior Control	26.84	7.29	27.2	7.71	0.44	6.06	3.01	0.44
Assertiveness	28.91	5.45	30.35	5.53	1.42	5.21	11.31	0.37
Peer Social	29.92	5.72	31.09	6.09	1.29	5.06	10.60	0.23

*Scores significant at p<.01

Table 21 exhibits T-CRS scores for the 2014-2015 school year. Overall, students made gains in all four subdomains of the T-CRS. Even though students made gains across all four subdomains, *Assertiveness* growth was the lowest recorded growth over the course of the past nine years (see Figure 12).

Figure 12. Average T-CRS Growth Scores for the Last 9 Years

*Combine average scores from 2006-07 to 2009-10 are significantly different from the combined scores from 2010-2011 to 2014-2015 at the p<.01

*HighScope curriculum implemented during the 2010-2011 school year

Figure 12 shows the growth scores from the administration of the T-CRS from the 2006-2007 to 2014-2015. The growth scores for the T-CRS ranged from 1.3 to 3.3 before the use of the HighScope curriculum, but, in the five years since the adoption of HighScope, T-CRS growth scores have ranged from a low of 0.3 to a high of 2.5.

This year, in particular, growth increased in the ***Task Orientation, Behavior Control, and Peer Social*** subscales, as compared to the 2013-2014 school year. Student growth declined in ***Assertiveness***, with the lowest measured growth since the HighScope curriculum was introduced in the 2010-2011 school year.

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

Rochester UPK Students

The social and emotional risk factors for UPK students, as assessed by the T-CRS in the fall and spring of the 2014-2015 school year, are shown in Table 22. All 1,727 UPK students who had a T-CRS assessment completed at both times of administration were included in this analysis. RECAP used a series of chi-square tests to determine if the proportions of at-risk students at the beginning and the end of the school year were significantly different. This year we did not find any significant changes in the proportions of students who were at-risk from fall to spring.

Table 22. T-CRS Risk Factors for Rochester UPK Students

<i>2014-2015 UPK SED Annual Report</i>				
<i>Rochester UPK Students</i>				
<i>T-CRS Risk Factors (At or below 15th Percentile)</i>				
<i>N with complete data:</i>	<i>Fall</i>		<i>Spring</i>	
1727	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>No Risks</i>	1390	80.5%	1407	81.5%
<i>Risks</i>				
<i>Task Orientation</i>	180	10.4%	178	10.3%
<i>Behavior Control</i>	164	9.5%	185	10.7%
<i>Assertiveness</i>	60	3.5%	45	2.6%
<i>Peer Social</i>	153	8.9%	129	7.5%
<i>Single subscale risk</i>				
<i>Task Orientation</i>	69	4.0%	58	3.4%
<i>Behavior Control</i>	55	3.2%	63	3.6%
<i>Assertiveness</i>	33	1.9%	25	1.4%
<i>Peer Social</i>	30	1.7%	22	1.3%
<i>Multiple subscale risks</i>				
<i>Two Risks</i>	89	5.2%	94	5.4%
<i>Three Risks</i>	52	3.0%	51	3.0%
<i>Four Risks</i>	9	0.5%	7	0.4%

There were no significant decreases in the proportion of students at-risk in any subscale of the T-CRS.

Performance and Student Attendance

For the second consecutive year, we analyzed the effects of student attendance on students' social and emotional ratings from the T-CRS. Students were grouped in three categories: those with low (severely chronic) attendance ($\leq 80\%$), moderate (chronic) attendance (81%-89%), and high attendance ($\geq 90\%$).

Table 23 presents pretest T-CRS scores for the three attendance groups. Students in the low attendance group entered pre-k with greater social-emotional concerns than the other two attendance groups for task orientation, assertiveness, and peer social skills. No differences were found for behavior control.

Table 23. T-CRS Scores in the Fall Based on Attendance—2014-15 RECAP Annual Report

2014-2015 RECAP Annual Report Pretest T-CRS and Attendance										
	Low Group (<=80%)			Moderate Group (81%-89%)			High Group (>90%)			
T-CRS Pre	n	Mean	SD	n	Mean	SD	n	Mean	SD	F Value
Task Orientation	419	26.63	6.43	949	27.94	6.36	686	28.33	6.12	9.91*
Behavior Control	419	26.24	7.10	949	26.99	7.21	686	27.02	7.49	1.81
Assertiveness	419	27.54	5.83	949	29.14	5.18	686	29.42	5.41	17.50*
Peer Social	419	29.01	6.13	949	30.30	5.59	686	29.94	5.55	7.40*

*scores are statistically significant (p<.001)

Results of posttest comparisons of the attendance groups are shown in Table 24. The high attendance group was rated as having superior social-emotional skills and behaviors than the other groups in each area measured by the T-CRS, and the medium attendance group outperformed the low attendance group in all areas except behavior control, for which no differences were found.

Table 24. T-CRS Scores in the Spring Based on Attendance—2014-15 RECAP Annual Report

2014-2015 RECAP Annual Report Posttest T-CRS and Attendance										
	Low Group (<80%)			Moderate Group (81%-89%)			High Group (>90%)			
T-CRS Post	n	Mean	SD	n	Mean	SD	n	Mean	SD	F Value ¹
Task Orientation	307	26.71	6.81	941	28.32	6.97	695	30.02	6.66	27.40
Behavior Control	307	26.64	7.17	941	26.79	7.77	695	27.96	7.79	5.51
Assertiveness	307	28.44	5.71	941	30.07	5.36	695	31.55	5.39	37.15
Peer Social	307	29.60	6.63	941	30.91	5.95	695	31.95	5.90	16.76

¹scores are statistically significant (p<.001)

Analyses of the T-CRS change scores are shown in Table 25. Children who attended pre-k regularly gained social-emotional skills to a greater extent than the other groups in each area. The medium attenders – chronically absent – outscored the low attenders – severely chronically absent – on task orientation and assertiveness as well.

Table 25. T-CRS Change Scores Based on Attendance—2014-15 RECAP Annual Report

2014-2015 RECAP Annual Report T-CRS Change and Attendance										
	Low Group ($\leq 80\%$)			Moderate Group (81%-89%)			High Group ($\geq 90\%$)			
T-CRS Change	n	Mean	SD	n	Mean	SD	n	Mean	SD	F Value ¹
Task Orientation	168	-0.35	5.88	892	0.55	5.47	662	1.84	5.82	14.98
Behavior Control	168	0.20	5.62	892	-0.01	5.85	662	1.07	6.39	6.39
Assertiveness	168	0.05	5.27	892	1.03	5.07	662	2.27	5.25	17.33
Peer Social	168	0.19	5.21	892	0.75	4.74	662	2.25	5.26	21.49

¹scores are statistically significant (p<.001)

In brief, the more a child attends UPK, the better his/her social and emotional learning.

Parent Perspectives

Overview of RECAP Parent and Family Measures

Family involvement and participation in children's first formal exposure to education is believed to be integral to children's development and academic success and reflects parents' future involvement with the education system. Capturing parent and family perspectives and promoting family engagement at this stage are important because parent participation tends not to increase over the time. Therefore, pre-k and kindergarten may be optimal times to encourage parents to begin active patterns of engagement in their children's formal education.

Since Rochester's Universal Pre-K initial year in 1998-99, RECAP has evaluated many parental aspects. The parent/family instruments used over these 18 years have included:

1. *Early Childhood Parent Survey (2.0)* – an end of the year measurement of parent satisfaction with their child's pre-k program. RECAP began using this instrument at the onset of Universal Pre-K and continued to use it for many years. It yielded consistent results with 94% of parents assigning a grade letter rating of "B" or higher to their child's pre-k program. RECAP determined to bring this parent measurement back after discontinuing its implementation in 2008.
2. *Family Involvement Questionnaire, FIQ* (Fantuzzo, McWayne, & Perry, 2004) – an instrument that assesses three domains: **School Involvement**, **Parent-Teacher Communication**, and **Home Involvement**. The FIQ has emerged as an important parent and family survey.
3. *Pre-K Parent Appraisal of Children's Experiences, Pre-K PACE* (Hightower et al., 2008) – a relatively long and very comprehensive instrument, completed by parents, that details their child's history from pre-birth to entry into pre-k. The Pre-K PACE collects information about a child's medical history, developmental history, and current functioning within speech and language, motor skills, cognitive skills, social-emotional adjustment, and life experiences' domains.

Teacher-parent contact and communication data have also been collected for the past three years, via COMET. UPK teachers and family service providers input information about eleven types of parent contacts (for example, phone conferences, classroom visits, and parent-teacher conferences) throughout the school year. This data collection system is relatively new and UPK staff are still learning its mechanisms. Therefore, we believe the data collected thus far is incomplete; however, we are now observing increases in the number of contacts being recorded, and we suspect that the number of actual contacts may be substantially higher.

Family Involvement Questionnaire

Tracking family involvement and participation is an important component for UPK. In 2006, RECAP reviewed the pertinent literature and determined that the Family Involvement Questionnaire (FIQ) (Fantuzzo et al., 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. Since then, RECAP has administered the FIQ twice a 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 (Fantuzzo et al., 2004). 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 increases the likelihood of the FIQ's completion.

The FIQ measures parents' involvement in and support of their children's education. The measure is psychometrically sound and has three empirically derived factors (Fantuzzo et al., 2004). Children's Institute independently validated these results (Gramiak et al., 2007). The three parent involvement domains are:

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. Item examples 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)."

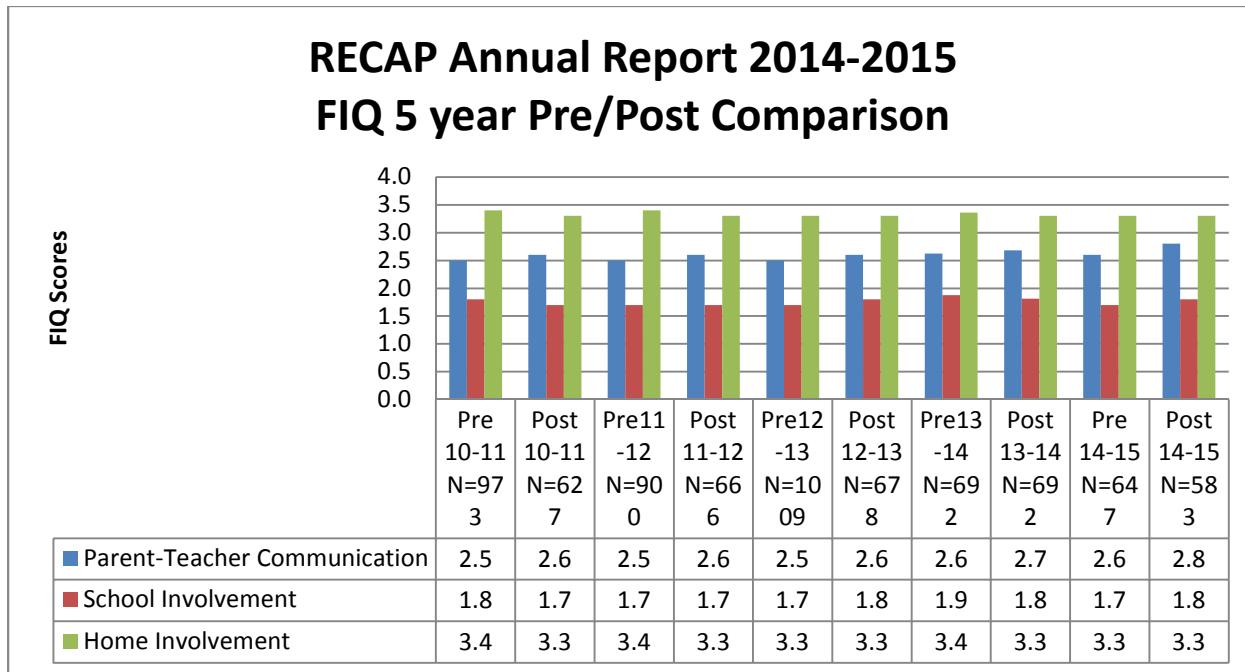
With this school year's data, we assessed whether differences emerged throughout the course of the family's involvement in their child's preschool year by reporting the pre- and post-comparison on the three scales. The Cronbach's alpha reliabilities (Cronbach, 1951) of the fall data collection have remained stable and are reported in the *Statistical Supplement* this year. Also reported in the *Statistical Supplement* are the results for individual programs.

Figure 13 below shows parents consistently report their greatest involvement in the home environment, followed by moderate involvement with communications with teachers, and the least involvement in the classroom. Results for the previous four years show similar results.

As we consistently reported over the past 5 years, family involvement remains low, and it has shown very little change from one school year to the next. Overall, efforts by program administrators and teachers, if any, have made no evident impact on parent involvement as measured by the FIQ.

Because family involvement is important and families typically do not get more involved in their children's education as their 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 13. Five Year Family Involvement Questionnaire Comparisons



This figure represents five years of pre and post-data in the three domains. As observed, there have been *no evident changes in parent participation in any of the domains, spanning the course of the last half-decade.*

FIQ Correlations with the COR and T-CRS

Last year, the three parent completed FIQ scales were correlated with the teacher completed subscales of the COR and T-CRS *at the beginning of the 2013-2014 school year*. Eight of the 12 COR-FIQ correlations were statistically significant at $p<.01$. All four COR scales were related to FIQ **School Involvement** domain, the COR **Math & Science** scale had the smallest correlation. There was a direct relationship between parents involvement in school and UPK children's academic and social functioning.

Due to the COR changing subscales and items for the 2014-2015 school year, the COR Advantage Overall score was used for the correlational analysis this year. Table 26 shows the COR Advantage Overall score included with the four T-CRS domains. In the Fall 2014, no significant correlations existed between the FIQ with the COR Advantage or T-CRS.

Table 27 depicts the Spring 2015 analysis between the FIQ, COR Advantage, and T-CRS. The Behavior Control subscale had a positive small significant ($p<.05$) correlation with the Teacher Communication subscale of the FIQ. There were no other significant correlations.

In summary, this year we did not find significant and meaningful relationships between family involvement as reported by parents and either academic or social and emotional performance as recorded by teachers. Family involvement and its relationship with student performance needs to be examined carefully and further to assess what, if any, impact family involvement has on student outcomes.

Table 26. FIQ Correlations With the COR and the T-CRS in the Fall 2014-2015 (n=647)

	COR Overall	Task Orientation	Behavior Control	Assertiveness	Peer Social Skills
Teacher Communication	0.01	0.01	-0.01	0.03	-0.04
School Involvement	0.03	0.03	0.10	0.01	0.04
Home Involvement	0.05	0.05	0.02	0.05	0.01

No significant correlations exist between the COR Overall score, T-CRS subscales, and FIQ subscales.

Table 27. 2014-2015 FIQ Correlations Spring 2014-2015 (n=583)

	COR Overall	Task Orientation	Behavior Control	Assertiveness	Peer Social Skills
Teacher Communication	0.03	0.03	0.10*	0.01	0.04
School Involvement	0.05	0.05	0.02	0.05	0.01
Home Involvement	-0.03	-0.07	-0.02	-0.05	0.02

* $p<.05$

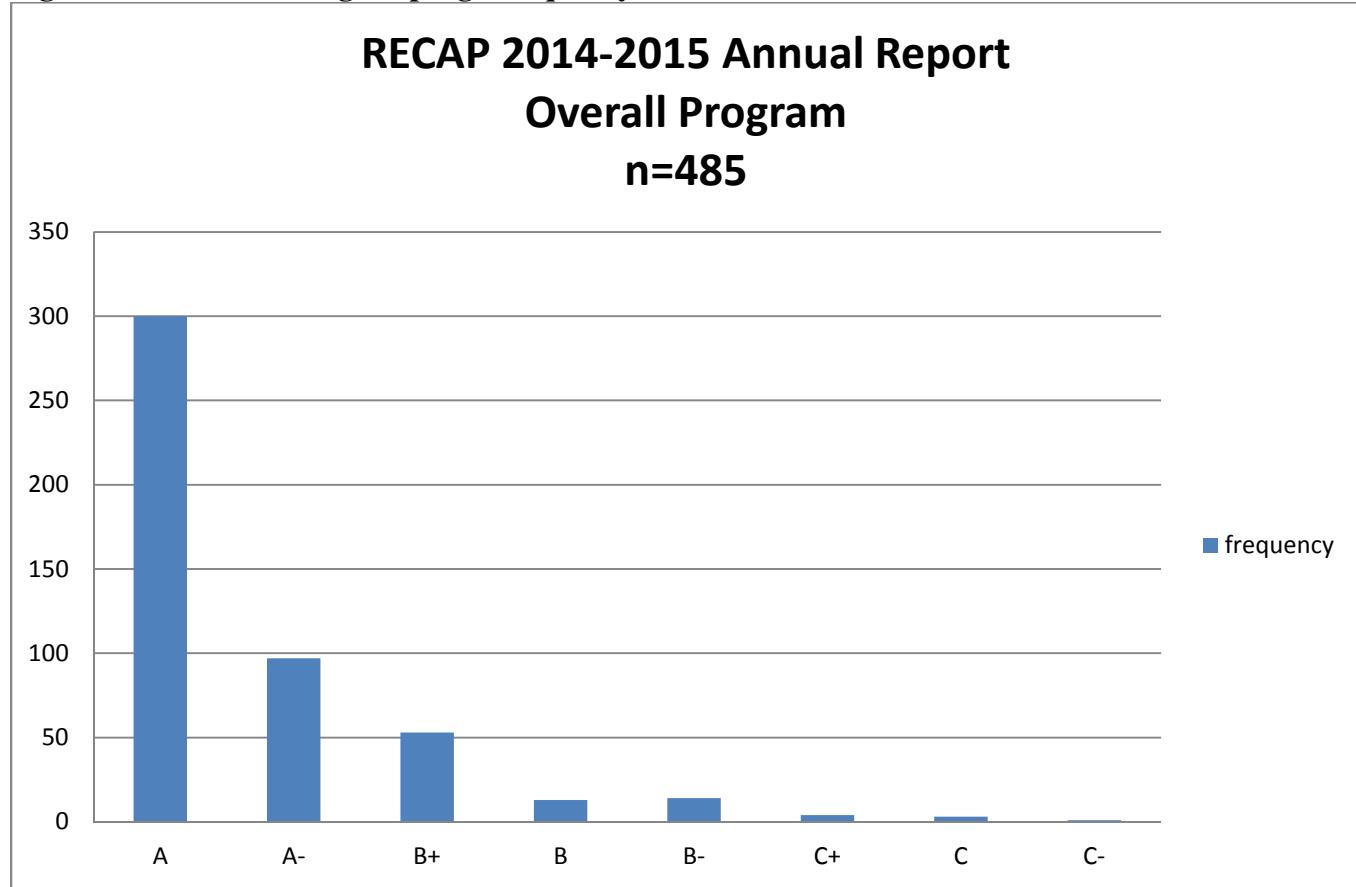
A small positive significant correlation exists between the *Behavior Control* subscale of the T-CRS and Teacher Communication subscale of the FIQ, but accounts for only 1% of the shared variance.

Early Childhood Parent Survey (2.0)

The Early Childhood Parent Survey (2.0) (ECPS) is a comprehensive assessment that captures parents' observations about the quality of programming their child is receiving. The ECPS allows parents the opportunity to grade seven components of their children's UPK program. The captured components are; (I) Parent Needs, Communication and Involvement, (II) Children's Needs, (III) Learning Environment, (IV) Teachers, (V) Administration, (VI) Building, Room and Equipment, and (VII) Overall Program.

Each unique component contains multiple questions that parents are asked to answer by simply filling in the "Yes" or "No" bubble that corresponds to each question. At the conclusion of the component section, parents are asked to grade how well the program meets their needs.

Figure 14. Parents ratings of program quality



95% of UPK families in Rochester graded the Overall Program Quality for their children either an A, A-, B+, or B. 81% of UPK families graded the Overall Program Quality of their children either an "A" or "A-".

Frequency: A = 300, A- = 97, B+ = 53, B = 13, B- = 14, C+ = 4, C = 3, C- = 1

Teacher-Parent Contacts and Communication

Much of the information gathered from and about the parents of pre-k children, via the FIQ has been static over the last several years. However, the tracking of teacher-parent contacts and communications has become an integral part of the RECAP system. Although we have recorded parent-teacher communication in a variety of ways in the past, the transition to electronic recording of the data with COMET did not occur until the mid-2000's. However, it has only been for the past two years that we have started to systematically examine these data.

The areas of teacher-parent interactions recorded include:

<i>Parent-Teacher Conferences</i>	<i>Telephone Conferences</i>
<i>School Events</i>	<i>Home Visits</i>
<i>Classroom Visits</i>	<i>Open Houses</i>
<i>Special Gatherings</i>	<i>Parent Take-Home Projects</i>
<i>Field Trips</i>	<i>Newsletters</i>
<i>Introductory Visits</i>	<i>Committee on Pre-School Special Education</i>
<i>Assemblies</i>	<i>Meeting with School Staff</i>
<i>Informal communications</i>	<i>Kindergarten Registration Help</i>
<i>Mail correspondences</i>	<i>Flyers</i>
<i>Other, miscellaneous contacts</i>	

For the past three years, overall teacher-parent contacts have grown significantly. Total contacts rose to 40,146 in 2014-2015, compared to 18,594 in 2012-2013. The rise in Total contacts may be caused by a few possibilities: (1) Expansion of UPK in Rochester, and (2) Teacher diligence in recording information in the COMET system. The number of people contacted and average duration of meeting length significantly increased from the 2012-2013 school year.

Through the COMET system, we are also able to track frequencies (the number of contacts) and duration (the number of minutes each contact lasted) of the communications throughout the school year. A summary of teacher-parent contacts for the 2012-2013, 2013-2014, and 2014-2015 school years is provided in Table 28.

Table 28. Summary of Teacher-Parent Contacts in the 2012-2013, 2013-2014, and 2014-2015 School Years

2014-2015 RECAP Annual Report Summary of Teacher-Parent Contacts in 2012-2013, 2013-2014, and 2014-2015 School Years				
School Year	Total Contacts	Time in Minutes	Number of People	Average Duration (Minutes)
2012-13	18,594	1,097,617	1,614	59.0
2013-14	23,663	1,412,737	1,796	59.7
2014-15	40,146	2,899,282	2,741	71.4

From 2012-2013 to 2014-2015 there was over 100% increase in the total number of reported teacher-parent contacts. UPK staff also reported a similar increase in the total duration of the contacts. The minutes of interactions recorded translate into over 18,290 hours in 2012-2013 and over 23,540 hours in 2013-2014. The total hours of interactions for the 2014-2015 school year is 48,321. For comparison purposes, a typical (full-day) school year, six hours per day, with 180 days in the school year, equals 1,080 hours.

The collection of teacher-parent communications data has not been an overriding priority in pre-k programs until recently. The data recorded are spotty in the two years we examined, with data missing from entire agencies. Entities that appeared to record most (if not all) interactions showed large year-to-year variations, but we cannot yet discern the cause of these increases. We do not know if they are the result of more actual contacts or if they just reflect efforts made to record more accurately the numerous contacts that have routinely been taking place.

While it is obvious that a great deal of teacher-parent communication is occurring, at this time the logging of these interactions is only partially operationalized and no firm conclusions can be drawn. However, such information holds a great deal of potential to help us understand teacher-parent interactions. We recommend that all of RECAP's partners encourage their staff to record these contacts more accurately in the future, so that the information gathered can inform effective policies and practices in working with our youngest students' parents.

Special Report:

Lead Poison Study: Linking Individual Young Children's Lead Levels with Later Pre-K Data

Lead poisoning of children in Rochester remains a major health concern. In the past 30 years, our community has been especially aggressive in the pursuit of lead abatement. New aggregate evidence revealed the results of these efforts have been fairly dramatic, with substantial declines in numbers of one and two year-olds with lead poisoning.

The Rochester City School District, as a result of obtaining parental consent at pre-k registration, has been receiving individual blood-lead level data on these pupils from the Monroe County Department of Public Health. The lead levels are relatively low overall, with very few pre-k students at "lead poison" levels. In linking and analyzing an assortment of data, we did not detect any differences in students' achievement based on lead levels. However, many of the adverse effects of lead poisoning, even at low levels, are often not detected until subsequent years.

In October 1991, the Center for Disease Control stated a fact known as far back as the second century BC: "Lead is a neurotoxin, and young children are at particular risk for exposure." Lead poisoning has been associated with lower IQ scores, cognitive deficits, learning disabilities, hyperactivity, behavior disorders, difficulty in focusing, dental issues and a host of other health effects. Lead poisoning is especially harmful to young children, owing to their smaller bodies which are growing and developing. Over the past decade, we have witnessed more research suggesting a link between lead poisoning and crime rates (including research linking leaded gasoline and crime rates) and newer research suggesting a relationship between the dramatic decreases in crime in the U.S. in the past 20+ years, and a concurrent decrease in lead levels among U.S. citizens.

The lead levels of children living in Rochester, with a high proportion of city children's levels being rated high enough to be considered "lead poisoned", have been an ongoing concern for over a generation. Area leaders, including URMC Department of Pediatrics' Stanley Schaffer, M.D. and Deborah Cory-Slechta, Ph.D.; former City Councilman and RCSD principal Tim O. Mains (currently Superintendent of Jamestown, N.Y. School District); principal Ralph Spezio, Ed.D. (retired); the Coalition to Prevent Lead Poisoning, and numerous other individuals and groups have directed efforts to reduce lead levels in city children. Many if not most of these efforts have centered on lead-based paint containment and abatement in city residences.

Although generally not vigorously enforced, New York State health regulations require children to be screened via blood samples at ages 1 and 2. In 2008, then-Director of the Monroe County Public Health Department, Dr. Andrew S. Doniger estimated approximately 80% of all city children and approximately 50% of all Monroe County children were being blood tested for lead levels.

The accepted metric for measuring lead levels is *micrograms per deciliter*, expressed in either "mcg/dL" or " $\mu\text{g}/\text{dL}$." For many years the accepted cut-off for determining lead poisoning had been 10 $\mu\text{g}/\text{dL}$ or higher. In the past decade, however, this cut-off has been formally lowered to

5 µg/dL. This new level was endorsed by the Center for Disease Control in November 2010. However, there is new research (using especially large databases) concluding that even 3 µg/dL can have an adverse effect on third grade reading scores (Evens et al., 2015; see below).

As a result of the City of Rochester's aggressive lead abatement initiatives, we have witnessed a sharp overall decline in the past 14 years in children tested with 10 µg/dL or higher. In June 2015, the Coalition to Prevent Lead Poisoning announced that from 2002 to 2014, there was an 86.9% decline in children who tested at or above 10 µg/dL. There was a 50% decline in the past four years alone.

The data released June 2015, revealed substantial declines in lead levels on one and two year-olds:

<u>Year</u>	<u>% with BLL >= 10 µg/dL</u>	<u>% with BLL >= 5 µg/dL</u>
2002	13.10%	Unknown
2003	10.80%	Unknown
2004	9.95%	Unknown
2005	7.55%	Unknown
2006	6.07%	Unknown
2007	4.57%	Unknown
2008	3.85%	Unknown
2009	3.20%	Unknown
2010	3.66%	Unknown
2011	2.50%	Unknown
2012	2.34%	Unknown
2013	2.45%	8.66%
2014	1.72%	5.73%

Reflects approximate city zip codes

Source: URMC Department of General Pediatrics, May 2015

Note, however, the larger percentage of students with 5 or above µg/dL, in 2013 and 2014; more than triple the percentage compared to 10 or more µg/dL in those years. Still, the direction is of continuously lower lead levels.

Tracking Individual Pre-K Student Lead Levels:

We have now begun the tracking of individual pre-k students' lead levels, taken when these students were one and/or two year-olds. Commencing in 2013, efforts among the Monroe County Department of Public Health, the University of Rochester Medical Center - Department of General Pediatrics, and the Rochester City School District Departments of Student Health Services, Early Childhood, and School Operations resulted in the District legally obtaining individual lead levels on District pre-k pupils. Consent protocols, at registration for pre-k, provided the legal means for the District to obtain individual child records from the Department of Public Health.

As a result of being able to obtain parental consent for lead level data, the District (including RECAP members) embarked on a small evaluation, linking assorted data to pre-k students' previously recorded lead levels.

Note, the results were two and three years prior to entry to pre-k, when these children were one and two year-olds, and we do not know the lead levels of these children as four year-olds. Of the full datasets (of 2,324 children) provided by the Department of Health, we were able to match with complete fall and spring data to 1,701 students, approximately 85% of the overall UPK enrollment in 2013-14.

Variables included students' gender, ethnicity, age within pre-k ("old" or "young" four year-olds, as a child must turn 4 by December 1 to be in UPK), special education status, and most important, their fall and spring Child Observation Record (COR) data.

Findings:

The main findings include:

Overall and in line with the aggregate data released, very few pre-k pupils tested at elevated lead levels. Only 15, or 0.65% of all pupils tested at levels above 10 µg/dL, what had been the former threshold for what is considered lead poisoning. There were no pupils who tested above 15 µg/dL.

On the other hand, two hundred thirty (230) or 11.4% (more than one student in nine) tested at levels of 5 or higher µg/dL, which is the current standard for being considered lead poisoned.

We found no adverse effects on pre-k students in their performances on the Child Observation Record, in any realm, regardless of lead levels:

- ❖ There was no detectable relationship in terms of entering students, their lead levels, and developmental levels. This was true for general education students, as well as Students with Disabilities (and Students with Individual Education Plans, or IEPs).

- ❖ We found no detectable differences among students based on their gender or ethnicity with respect to their lead levels. RECAP has consistently observed differences in students' developmental levels and growth based on gender and ethnicity – but not with respect to lead levels.
- ❖ We found no detectable differences among students with respect to students' growth over the school year. This was true for both general education students, as well as Students with Disabilities.
- ❖ We found no detectable differences among students' end of year COR scores. Again, this was true for both general education students, as well as Students with Disabilities.

Note that over the past 18 years, RECAP has consistently observed differences in gender/ethnic groups, Students with Disabilities and a host of other variables – but *not* based on child lead levels per se. We are simply seeing no evidence, at this time and with this relatively large sample, that lead levels are affecting student achievement among this cohort of pre-k students.

One long-term concern, of the initial raw data of 2,324 children, 791, or 34.0%, tested at levels of three micrograms per deciliter or above. (Five hundred sixty-one tested between 3 and 5 $\mu\text{g}/\text{dL}$; the other 230 noted earlier tested from 5 to 15 $\mu\text{g}/\text{dL}$.) This is significant because there are new, high-quality evaluations that point to even small lead levels, such as three micrograms per deciliter, having an adverse effect on young children and even on their third grade reading scores. For example, in a May 2015 research article published by *Environmental Health*, “The impact of low-level lead toxicity on school performance among children in the Chicago Public Schools: A population-based retrospective cohort study” (Evens et al., 2015), researchers found, in examining 58,650 children, that 13% of reading failures and 14% of mathematics failures on standardized tests can be attributed to exposure to blood lead concentrations of 5 to 9 vs. 0 to 4 $\mu\text{g}/\text{dL}$ in Chicago school children. They also found adverse effects on children with levels as low as 3 $\mu\text{g}/\text{dL}$.

Limitations:

This special report involves only one year of data and for one grade only. No follow-ups have been conducted at this time. We have not analyzed this group using Teacher-Child Rating Scale (T-CRS) data, and lead poisoning has been associated with a host of social-emotional disorders. National research points to adverse effects of lead poisoning occurring in a child's later years, where complex and abstract thinking are required. It is possible to follow these students into the later years and conduct analyses, but that will require capacity. Following these cohorts of students may provide a better perspective on the effects of lead poisoning in the longer term.

Policy Implications:

In the short-term, we need the capacity to (1) assist RCSD Student Health Services in the management and appropriate transmission of the parent consent forms which allow these data transfers; (2) assist the Department of Public Health (DPH) in the inputting of data for the 2014-15 and 2015-16 pre-k cohorts this time, as the DPH is limited in its capacity to input the data; (3) develop a systematic evaluation system, as in this report the work was done in staff's spare time. In the longer term, a genuine system needs to be built in order to address the immediate need to collect and analyze data, as well as sustain the work conducted to date.

There are also issues of interventions for children with lead poisoning. This includes the elimination of lead (and other metals) from the body, known as chelation. There are several types of chelation currently available. The University of Rochester Medical Center - Department of General Pediatrics is one place where chelation is conducted, but there are also other means to eliminate metals from the body. There are also interventions to ameliorate deficits in central auditory processing, a condition often associated with lead poisoning. Well known interventions include Fast ForWord and Auditory Integration Training (AIT). Developing a system of tracking lead levels in children, along with direct interventions that would both reduce lead levels in children and provide interventions for children to help them overcome the effects of lead poisoning, could promise a different era for our community's children.

Acknowledgements for this Special Report:

Thanks go to: Ralph N. Spezio, Ed.D., recently (re)retired from RCSD as Principal at Enrico Fermi School No. 17, who has been a decades-long leader in preventing lead poisoning of children and who was instrumental in the formulation of this evaluation; and Erin Graupman, RCSD Director of Student Health Services, who works with the Department of Health in securing data. Dave Peelle of RCSD conducted the regression analyses. Ray Giamartino, Ed.D., RCSD Chief of Schools, has served as editor and a leader in moving this study forward. Thanks to community leaders in this area, Stanley Schaffer, MD, Deborah Cory-Slechta, Ph.D. and Todd Jusko, Ph.D. at URMC Department of General Pediatrics, who have assisted in numerous ways, both in this report, but also over the course of many years in the endeavor of reducing lead poisoning.

Recommendations

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 have been demonstrated repeatedly. Below are additional recommendations that will hopefully lead to additional improvements.

Program

Provide classrooms with support and coaching to improve concepts assessed by the CLASS Instructional Support Scale. Based on the literature, there are at least two avenues that merit further consideration, i.e. improving teacher self-efficacy and a readiness to change.

Teacher self-efficacy is defined as a teacher's belief in his or her own capability to organize and execute courses of action required to successfully accomplish a teaching task. For instance, do UPK teachers feel they possess the skills necessary to positively influence classroom and student outcomes? On average, preschool teachers with higher self-efficacy have higher classroom quality and better academic performance from their students (Guo, Piasta, Justice, & Kaderavek, 2010; Justice, Mashburn, Hamre, & Pianta, 2008; Bullock, Coplan, & Bosacki, 2015). Teachers with higher self-efficacy provide greater emotional support for their students, see an increase of children's print awareness, and higher student vocabulary gains (Justice et al., 2008). Also, teachers with high self-efficacy are more satisfied with their jobs, experience less burnout, and remain in the field longer than their colleagues (Skaalvik & Skaalvik, 2010; 2014).

Student

The community and RCSD must focus on children birth-4. We must take to scale evidenced based home visitation models that have proved successful and take to scale (100% of all families who wish to participate)—3 year old UPK. Too many of our children are entering UPK delayed and this trend must be reversed.

Expand summer learning opportunities to all families who wish to participate. With the inclusion of the summer learning program at the conclusion of the 2014-2015 prek school year, we observed 63% of prek-go-kindergarten participants ready to transition to kindergarten. We must continue to increase the size of this program and continue to assess its apparent efficacy.

RCSD must limit the number of pre-k students dropped for poor attendance unless there are strong mitigating circumstances (eg. waiting list, move away). Students attending fewer than 80% of the time still made significant enough gains in academic and social and emotional performance areas to be kindergarten ready (377 out of 854 students 44%) at the end of the school year.

However, we, as a community, must increase prek student attendance – the better the student attendance, the better the results. UPK staff may benefit from training from RCSD Parent Engagement staff on effective methods to increase student attendance

Parents

Provide all UPK directors, teachers, and staff with comprehensive training on how to engage parents to work with their children at home and at school, and with the teacher.

General

Increase timeliness and completeness response rates across all sources for all measures.

Presentations and Publications

Brugger, L., & Van Wagner, G. (2015). *RECAP- A continuous quality improvement system for early education*. Presentation to New York State Association for the Education of Young Children (NYSAEYC) Annual Conference, Verona, New York.

Hightower, A D. (2015, March). *Assessment in Early Education: An overview of status and purpose*. Presentation to the New York State Early Education School Administrators Association

Infurna, C. J., Hightower, A. D., Montes, G., & Lotyczewski, S. (2015). *Using COR Advantage to Assess Universal Pre-Kindergarten Students in an Urban School District*. Poster presented at the 4th Annual HighScope Early Childhood Assessment and Evaluation Conference (October, 2015).

MacGowan, A. (2015). *RECAP- A continuous quality improvement system for early education*. Presentation to the:

Universal Pre-K Policy Advisory Council,
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Early Childhood Development Initiative.
Early Childhood Quality Council
RCN Annual Board Meeting

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