The logo for Children's Institute is located in the top left corner, featuring the text "children's institute" in a white, lowercase, sans-serif font on a dark blue background. Below the logo is a decorative graphic consisting of a vertical yellow bar on the left and a series of small, light green dots that form a curved path across the top and bottom of the page. The dots start at the top left, curve to the right, and then curve back down to the bottom right.

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STRENGTHENING SOCIAL AND
EMOTIONAL HEALTH

Rochester Early Childhood Assessment Partnership 2017-2018 Twenty-First Annual Report

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Table of Contents

Acknowledgments	i
Executive Summary	ii
Introduction to RECAP	1
Program Quality – ECERS-3	5
Program Quality – CLASS	9
Student Performance – Academics	18
Brigance	18
Child Observation Record-Advantage (COR+)	21
UPK Special Education	26
Dose of Programming	29
Teacher-Child Rating Scale (T-CRS)	31
Student Outcomes and Attendance	35
Family Perspectives	46
Recommendations	67
Presentations and Publications	71
References	72

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Program partners include: Action for a Better Community's Early Education Division, Early Childhood Education Quality Council Centers, including: Asbury Day Care Center, Baden Street Centers, Community Child Care Center, Creative Beginnings Lakeside Early Learning Center, Friendship Children's Center, Ibero Early Childhood Services, Oregon Leopold Day Care Center, Richard M. Guon Child Care Center at Monroe Community College, Rochester Childfirst Network, St. Paul's Child Care Center, and Volunteers of America Children's Center, Florence S. Brown Pre-K School, Rochester City School District Montessori Academy, Rochester City School District Rochester Early Childhood Education Center, Rochester Preschool-Parent Program, all other Rochester City School District programs, YMCA programs, and the following independent child care centers: Caring and Sharing Child Care Center, The Community Place of Greater Rochester, Family Resource Centers, Generations Child Care Centers, Little Hearts Child Care, and Sunshine Village Child Care Centers.

We thank the teachers, adult family educators, 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 contribute valuable information and share their insight with the RECAP 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 and especially Nancy Kaplan, its chair, 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

RECAP's Major Findings for 2017-2018 – Expanded Prekindergarten (EPK; for 3-year-olds)

Students

- As measured by the Brigance Early Childhood Screen (Brigance), 75% of incoming three-year olds were functioning in *normal* and *possibly talented* range. This finding is similar to that of the 2016-17 school year, in which 73% of incoming three-year olds were within the same range (Infurna et al., 2017)
- Similar to their UPK peers, EPK students made significant gains in all the Child Observation Record Advantage (COR)+ domains, especially on the COR+ Overall (effect size, $d=2.0$)
- Socially and emotionally, we found similar outcomes in EPK as we did with Universal Prekindergarten (UPK) students. The *Assertiveness* domain of the T-CRS showed the largest gain ($d=.25$), with negligible gains in *Task Orientation*, *Behavior Control*, and *Peer Social Skills*

Classrooms

- Overall, 76 EPK teachers were observed with the Early Childhood Environment Rating Scale – Third edition (ECERS-3). The overall ECERS-3 score rose slightly from the previous year, to 5.4 on a 7-point scale.
- Similar to previous years, the Classroom Assessment Scoring System (CLASS) overall score remained high and the same at 5.4 (n=76) on a 7 point scale.

RECAP's Major Findings for 2017-2018 – Universal Prekindergarten (UPK; for 4-year-olds)

Students

- Approximately 65% of entering UPK students scored within the *normal* and *possibly talented* ranges on the Brigance Early Childhood Screen III.
- Students made significant gains in overall cognitive development as evidence by COR+ in all domains, especially on the *COR+ Overall* ($d=2.3$).
- Similar to previous (COR+) results, 55% of UPK students are ready to transition successfully to kindergarten (Infurna et al., 2017) at the end of UPK
- Measured by the Teacher-Child Rating Scale (T-CRS), a teacher completed measure of social and emotional behaviors, students made moderate gains on the *Assertiveness* ($d=.36$). As reported in previous RECAP reports, students also made marginal gains in *Peer Social Skills* and *Task Orientation* (Infurna et al., 2017)
- Students who attended a full year of EPK programming in 2016-17 and transitioned to UPK (EPK go UPK) this year outperformed their peers who only attended UPK in 2017-18.

- EPK go UPK students were more likely to be kindergarten ready (61%) than their peers who only attended UPK (50% ready).

Classrooms

- 176 UPK teachers received ECERS-3 ratings. A record number (27) of UPK teachers were exempt from observations due to consistently high prior performance. ECERS-3 scores decreased slightly from the previous year. The overall ECERS-3 score was 5.2 (n=96 observations).
- Seven UPK teachers earned a CLASS exemption due to consistently high prior performance
- The overall CLASS score for UPK teachers (n=122) rose to all-time high of 5.8. Similarly, the *Instructional Support* domain increased .6 of a point, to 4.6. The *Classroom Organization* domain increased to 6.3

RECAP's Major Findings for 2017-2018 – Family Perspectives and Relationship Quality

Families (FTRQ-Family)

- This year we had the largest number of returned surveys thus far.
- Families who submitted pre and post questionnaires reported improved relationships with teachers in the following areas: family-specific knowledge, collaboration, responsiveness, communication, family-focused concern, commitment, and respect. Families didn't report a change in understanding context.
- When the perspectives of families and teachers were compared, families scored *Knowledge/Family-specific* and *Attitudes/Respect* higher than teachers.
- The *Family Self-reported Relationship Quality* score increased from 4.3 to 4.5 for families who submitted pre and post questionnaires.
- We found no strong correlations between the constructs/subscales and self-reported relationship quality of the *FTRQ – Family* and the change scores of the COR+
- Families of children who were categorized as kindergarten ready by the COR+ scored relationship quality better overall and in the specific areas of: family-focused concern, commitment, and understanding context.
- EPK families are more likely to submit a survey than UPK families
- By the end of the year, 94% of families reported reading to their child at least once a week and 33% were reading daily.
- 93% of families were satisfied or very satisfied with the books being sent home with their children.
- By the end of the year, 95% of families reported being able to talk to at least one person from school about their concerns and 47% were able to talk to more than three people.
- 77% of families give their child's teacher a grade of A
- The grade of A given to the district's pre-kindergarten program increased from 67% in the fall to 72% in the spring.

Teachers (FTRQ-Teacher)

- Teachers who submitted pre and post questionnaires reported improved relationships with families in the following areas: family-specific knowledge and collaboration. Teachers didn't report a change in responsiveness, communication, commitment, openness to change, or respect.
- When the perspectives of families and teachers were compared, teachers scored ***Practices/Collaboration*** and ***Attitudes/Commitment*** higher than families.

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 (RCSD), Center for Governmental Research (CGR), Action for a Better Community (ABC), County of Monroe 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-kindergarten (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 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 collaborated with many partners, including 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 the interpretation of reports.
- Efficient and user-friendly data collection and feedback reports, with reports looped back to teachers and directors using COMET[®] system reports, which provide instant feedback, and paper reports, when desired, at the child, classroom, program, and system levels.
- Training for teachers, administrators and observers on fidelity implementation and quality indicators of the standards assessed with the Early Childhood Environment Rating Scale, third edition (ECERS-3) and the Classroom Assessment Scoring System (CLASS).
- Twice monthly review and planning meetings with community-based organizations including: ABC Head Start, RCSD, University of Rochester Medical Center (URMC) Department of Pediatrics, Children's Institute 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 aggregate results to facilitate understanding of outcomes for pre-kindergarten children and to support informed decision making.

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

RECAP uses reliable and valid measures to assess program quality and student outcomes. Throughout RECAP's 24-year history, the ECERS (or its updated version, the ECERS-3) has been implemented to study classroom quality. Starting seven 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 were different. Therefore, starting the 2012-2013 school year, all RECAP classrooms were observed with the CLASS instrument, as well as the ECERS-R. The 2017-18 school year marks the sixth 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 or COR+) was completed three times -- fall, early winter and spring. The Teacher-Child Rating Scale (T-CRS) was 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 also used as a screening tool within the first 90 days that students began their pre-k year.

Table 1 below summarizes the screening and assessment measures collected and the total number of assessments completed during the 2017-2018 school year.

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

RECAP 2017-18 Variables, Measures, Number Assessed and Methods			
Variables	Measures	Completed Assessments in 2017-18	Method
Classroom Environment Quality	ECERS-3	176	Classroom Observation by Independent Observer
Quality Teacher and Student Interactions	Classroom Assessment Scoring System (CLASS)	191	Classroom Observation by Independent Observer
Academic, Motor, and Social	COR Advantage (COR +)	2978	Teacher Observation
School, Emotional, and Behavioral Adjustment	Teacher-Child Rating Scale (T-CRS)	2909	Teacher Observation
Academic Skills, Physical Development, and Health	Brigance Early Childhood Screen III	2668	Child Direct Performance
Family Engagement	Family and Teacher Relationship Quality (FTRQ) – Family Questionnaire	2347	Parent Survey
Family Engagement	Family and Teacher Relationship Quality (FTRQ) – Teacher Questionnaire	162	Teacher Survey
Family Engagement	Family and Teacher Relationship Quality (FTRQ) – Director Survey	13	Director Survey

RECAP student demographic information is presented in Table 2 (EPK) and Table 3 (UPK).

Table 2. RECAP EPK Student Demographics

RECAP 2017-18 EPK Student Demographics (n=1457)		
		Percent
Gender	Male	49.4
	Female	50.6
Race/Ethnicity	Black/African American	57
	White Caucasian	7
	Hispanic/Latino	30
	Asian	5
	Native American	1
	Other	< 1

Table 3. RECAP UPK Student Demographics

RECAP 2017-18 UPK Student Demographics (n=2458)		
		Percent
Gender	Male	50.4
	Female	49.6
Race/Ethnicity	Black/African American	58
	White Caucasian	11
	Hispanic/Latino	25
	Asian	4
	Native American	1
	Other	< 1

Program Quality – ECERS-3

For 20+ years, RECAP has documented the quality of pre-kindergarten classroom environments in the Rochester area using the family of Early Childhood Environment Rating Scale (ECERS) tools. In 2005, 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. The ECERS-R was nationally recognized as a leading observation-based instrument for assessing and evaluating the early childhood classroom environment. In 2015, the ECERS developers released the ECERS-3, which represents a major revision of the ECERS-R. Upon its release, RECAP adopted ECERS-3 to assess EPK and UPK classrooms. Teachers were offered multiple opportunities to attend training presentations to learn more about the ECERS-3 for the past three years.

The ECERS-3 consists of 35 items that are scored by independent observers on a 7-point scale, with 1 indicating “Inadequate” quality and 7 representing “Excellent” quality. The 35 items are organized in six subscales: Space and Furnishings, Personal Care Routines, Language and Literacy, Learning Activities, Interactions, and Program Structure. Unlike the ECERS-R, which required close attention to the number of accessible materials provided to children within the classroom, the ECERS-3 shifted the focus of the observation from materials to how teachers use the materials within their classrooms to engage and stimulate student learning, with an emphasis on pre-academics and interactions (Harms, Clifford, & Cryer, 2015). Other changes incorporated in the ECERS-3 include five new items in the Language and Literacy subscale, three new math items in the Learning Activities subscale, and the elimination of parent related items, as they were not directly assessed, but completed based on observer-teacher interview and typically showed little variation among teachers.

From the beginning of its use in RECAP, the ECERS and, subsequently, the ECERS-R, consistently showed that most four-year-old classrooms in Rochester achieved at least “good” (≥ 5.0) quality, 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 resulted in an average rating within the “very good” to “excellent” range (5.8-6.2 out of 7) on the ECERS-R for the ten years prior to the ECERS-3 implementation. For the last eight years of ECERS-R use, the average score for all RECAP teachers was 6.1 or higher (Infurna et al., 2017).

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 receive “exemptions” from the annual ECERS-R assessment by achieving overall scores of at least 6.5 for five consecutive years. Teachers with this “exempt” status were no longer required to have an ECERS-R observation for the following three 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 mastered the ECERS-R standards. Therefore, in 2012-2013 the “exempt” criterion was changed to require a total ECERS-R score of at least 6.2 for three consecutive years. Similar to earlier “exempt” status procedures, teachers retain their exemption status for three years, at which time an observation is completed. If classroom quality is scored as 6.2 or higher the

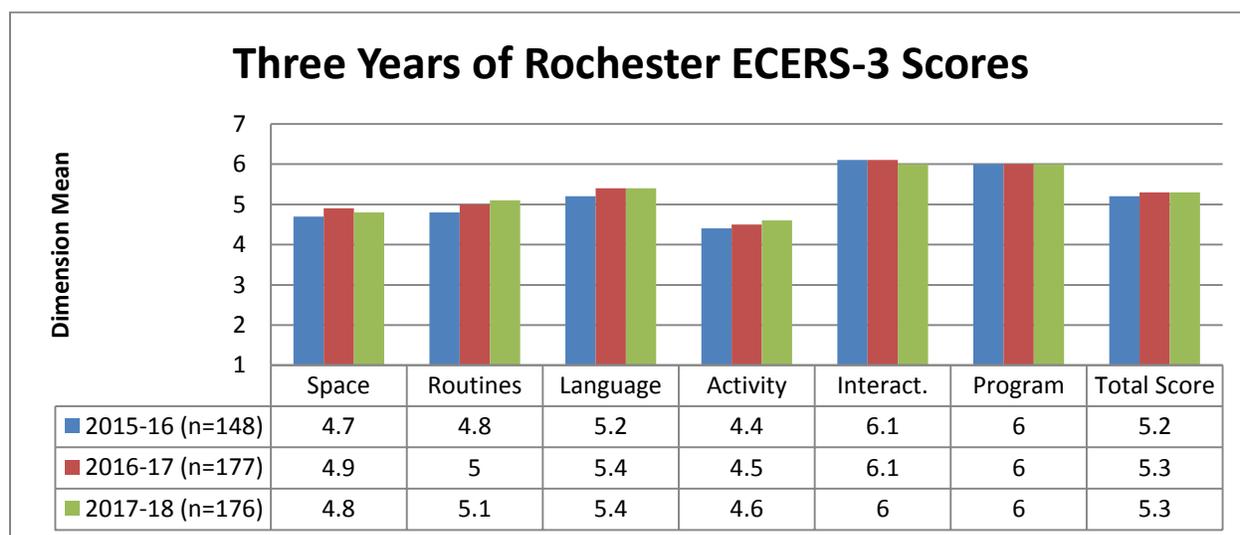
“exempt” status is retained for an additional 3 years. If classrooms do not meet the 6.2 threshold, they are observed annually until they meet the exemption criteria again. For the 2017-18 school year, 27 UPK teachers achieved exempt status on the ECERS-3.

ECERS-3 Aggregate Results for 2017-2018

As noted, for over 10 years, RECAP classrooms had “very good” to “excellent” ECERS-R scores, a reflection of the quality programming offered to four-year old children and their families in Rochester. In 2015-16, with the new release of the ECERS-3, program quality scores decreased and have remained lower. The lower ECERS-3 scores, in part, are a reflection of the transition to using the new tool with more robust criteria. In 2017-18, the ECERS-3 community scores remained consistent with the previous year’s scores. The ECERS-3 total score for 176 classrooms is a mean of 5.3.

The 2017-18 year marked the third year of community wide implementation of the ECERS-3. In total, 176 classrooms were assessed by the ECERS-3. Figure 1 depicts scores over the three years of implementation.

Figure 1. Three years of RECAP ECERS-3 Scores for both EPK and UPK classrooms combined



ECERS-3 scores have remained consistent with the previous two years. Overall, the ***Routines*** and ***Activity*** subscale rose slightly from the previous year, while the ***Space and Interaction subscales scores negligibly went down***. The ***Language and Program*** subscales remained the same. It is important to note that 40 new EPK and UPK teachers were hired at the beginning of and throughout 2017-18. New teacher activity did not cause a fluctuation in scores. This may be a result of assistance from Technical Support Teachers (TST) who mentor and coach new teachers as they transition into the classroom.

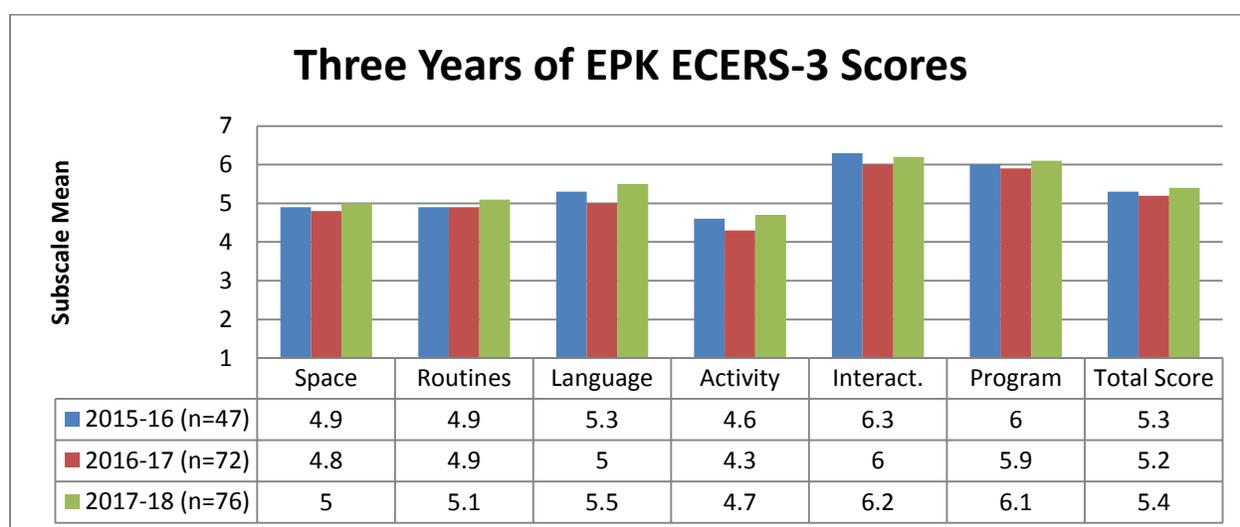
The following sections are separated by program, beginning with EPK classrooms. Figure 2 reports on three years of EPK ECERS-3 scores. Figure 3 depicts three years of UPK ECERS-3 scores. A summary and recommendations section follows Figure 3.

ECERS-3 Results: 2017-2018 EPK Programming

For the second consecutive year, the Rochester community experienced growth in EPK programming for the 2017-18 school year. In total, an additional four classrooms were observed compared to last year.

Figure 2 depicts three years of EPK ECERS-3 scores in Rochester. The greatest growth was observed in the *Language* subscale, with scores climbing to 5.5, up .5 from the previous school year. Also showing great growth from the previous year was the *Activity* subscale, with scores rising to 4.7, up from 4.3 the previous year. The overall *Total Score* of the ECERS-3 rose to 5.4, up .2 from 2016-17.

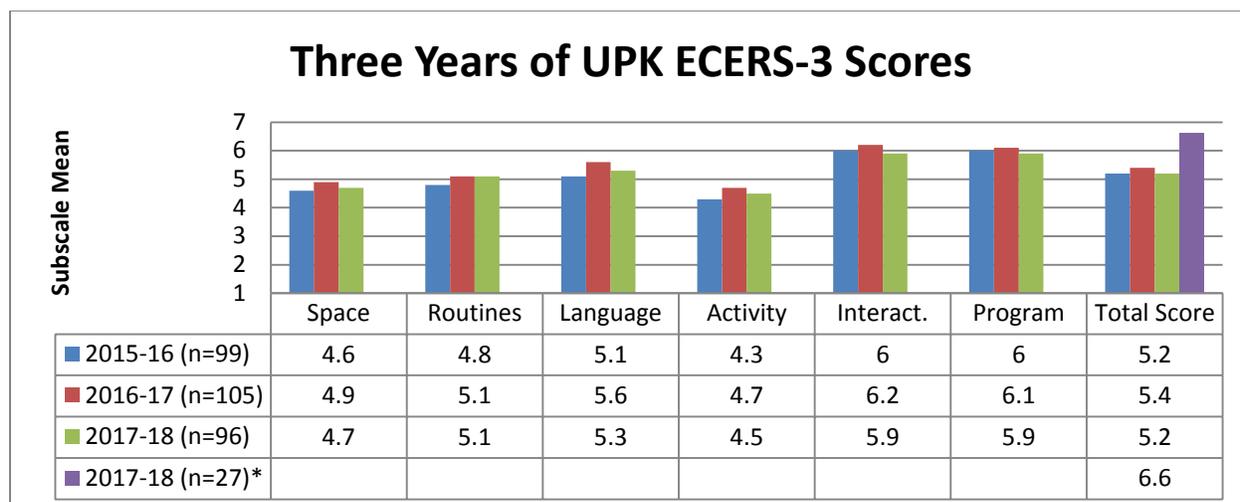
Figure 2. Three Years of Rochester EPK ECERS-3 Scores



As previously noted, the slight expansion of programming did not negatively affect observed classroom quality in EPK classrooms. A possible explanation for increased classroom quality may be due to the professional development offerings provided by the Rochester City School District and Children’s Institute.

ECERS-3 Results: 2017-2018 UPK Programming

Since the implementation of the ECERS-3 in 2015-16, a record number of UPK teachers earned exemption status in the ECERS. Overall, 27 UPK teachers were exempt from having an ECERS-3 observation. For teachers to reach “exemption” status, they must average a total mean score of ≥ 6.2 for three consecutive years. The increased number of exempt teachers may have resulted in the decreased ECERS-3 scores from the previous year. UPK ECERS-3 scores dropped slightly from the 2016-17 school year. Overall, the ECERS-3 *Total Score* declined to 5.2, down .2 from the 2016-17 school year.

Figure 3. Three Years of Rochester UPK ECERS-3 Scores

Note: * exempt teacher ECERS-R/ECERS-3 Total Score (n=27)

With the fewest amount of observations since the ECERS-3 was implemented in 2015-16, subscale scores dropped in all but one (*Routines*). The *Space*, *Language*, *Activity*, *Interaction*, and *Program* subscales all dropped slightly from the previous year.

Overall, both the EPK and UPK ECERS-3 subscale and Total mean scores were good. According to Harms, Clifford, and Cryer (2015), a score ≥ 5 on any subscale is considered ‘good’. Scores moving towards 7 are considered ‘excellent’. It is difficult to compare Rochester early childhood education programming with other programs across the country due to the relatively new release of the ECERS-3, and little empirical studies focused on the ECERS-3 (Infurna et al., 2017).

Summary and recommendations:

As previously noted, the 2017-18 school year marked the third year of ECERS-3 implementation in the Rochester early education community. Figures 1-3 detail RECAP EPK and UPK classrooms’ scores on the ECERS-3 standards. At the current time, due to the recent release of the ECERS-3, limited empirical research on program quality is available. It is difficult to put in context the global comparison of program quality with the Rochester community. Harms et al. (2015) report that scores of ≥ 5 on the individual subscales suggest ‘good’ quality programming. In total, four of the six subscale averages were greater than 5. That suggests the program quality in Rochester, as measured by the ECERS-3, is ‘good’.

We recognize improvements can be made among programs in the Rochester community. The continuous improvement model framework that RECAP incorporates has led to many discussions about the growth of classroom quality in the future. Targeted professional development is scheduled for the upcoming 2017-18 school year.

To support both veteran and new EPK and UPK teachers, a series of professional development opportunities created to focus on; 1) Space and Furnishings, 2) Personal Care Routines, and the 3) Learning Activities subscales of the ECERS-3. The Space and Furnishings subscale items are focused on the physical layout of the classroom setting. Specific professional development

opportunities focused on the Space and Furnishings subscale should be placed on creating more space in the classroom that allows space for students and teachers to engage in more gross motor activities. Similarly, gross motor equipment should be provided to all teachers to ensure that all teachers have the opportunities to engage their students in gross motor activities in the classroom when they may not have the opportunity to go outside and play or are provided an indoor space to play. We also recommend more training opportunities for teachers focused on proper toileting/ methods for children.

For the third consecutive year, the Learning Activities subscale received the lowest rating. This subscale is made up of individual items focused on how teachers incorporate science, mathematics, art, and fine motor activities into daily programming.

Specific recommendations:

- *Increased focus on the **Learning Activities** subscale, with a specific emphasis on; 1) blocks, 2) nature/science, 3) math materials and activities, and 4) understanding written numbers*

Our specific recommendations with regard to the Learning Activities subscale are focused on the blocks, nature/science, math materials and activities, and understanding written numbers items. The blocks item takes into consideration the different types of blocks (unit and large hollow) found in the classroom. It is not only important to have enough blocks located in the block area for at least three children to use, it is also important that children are provided ample time (at least 1 hour) during the ECERS-3 observation. Similarly, the nature/science item is focused on the number (at least 15) of science materials located in the classroom from 5 clearly listed categories; 1) living things, 2) natural objects, 3) factual books, 4) tools, and 5) sand or water play. A more detailed description of nature/science materials can be found on page 56 of the ECERS-3 manual (Harms et al., 2015).

The ECERS-3 manual specifies items to be located in a classroom in order to provide sufficient cognitive stimulation to children. Math materials and other specific recommendations are found on page 58 of the ECERS-3 manual (Harms et al., 2015). Training opportunities should be focused on how classroom staff asks children questions about math and math concepts that stimulate reasoning and feedback loops.

Classroom Assessment Scoring System (CLASS)

The Classroom Assessment Scoring System – Pre-k (CLASS) (Pianta, La Paro, & Harme, 2008) is an observational tool used to illuminate the complex ways in which the relationships among 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.

Highly trained and reliable (interrater reliability $[a/(a+d)] \geq .85$) independent observers use the CLASS to assess program quality by rating classrooms on 10 dimensions from which three domains were empirically derived: ***Emotional Support***, ***Classroom Organization***, and ***Instructional Support*** (Pianta et al., 2008). CLASS dimensions are rated on a 1-to-7 scale, with

1 indicating the dimension 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, making it consistent with the other 9 dimensions.)

The CLASS provides the standards and assessment protocol needed to enhance the overall understanding of how high quality early childhood programs should function. The CLASS also provides teachers, school district administrators, and others in early childhood education with additional information regarding the interactive climate of early childhood classrooms. Use of the CLASS enhances RECAP's understanding of those classroom quality domains which are not rigorously assessed as part of the ECERS-3. Using both the CLASS and the ECERS-3 provides a more comprehensive picture of the classroom quality and facilitates greater efficiency in identifying and addressing areas of classroom quality which need improvement as well as areas of strength.

CLASS UPK and EPK Combined Results

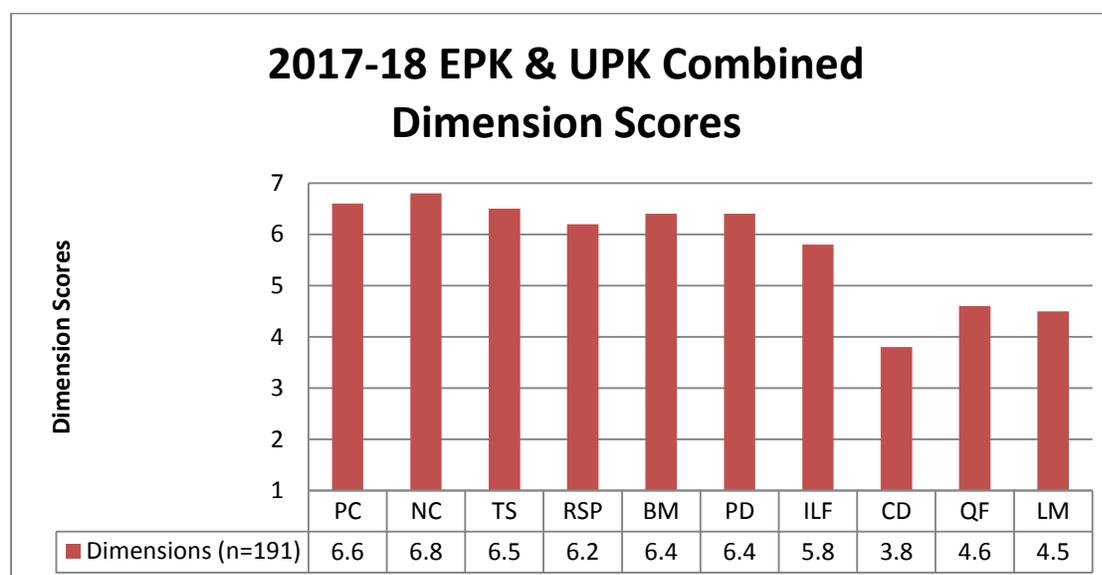
This is the sixth year since the CLASS was fully implemented in all UPK (n=115) classrooms. It was also the third year that the CLASS was fully implemented in all EPK (n=76) classrooms. Combined results of EPK and UPK (n=191) are provided in the remainder of this section and disaggregated results from 3 year-old EPK and 4 year-old UPK classes are discussed in subsequent sections.

The **Overall** CLASS mean for EPK and UPK classrooms combined was 5.7, a slight increase from the previous year of 5.5. Table 4 depicts the combined domain scores of RECAP classrooms in Rochester. The **Emotional Support** domain mean was 6.6, indicating that Rochester community early childhood teachers provide a nurturing, caring, and warm learning environment for their children. This is a slight increase from the previous year Emotional Support domain mean of 6.5. The **Classroom Organization** mean was 6.2, suggesting that pre-k teachers maintain a productive classroom environment within which children are able to follow the daily routine without many classroom behavior issues. Again, this was a slight increase from the previous year Classroom Organization mean of 6.1.

Similarly to the other two domains, the **Instructional Support** domain rose to 4.3, a .3 increase from the previous year. Although the Instructional Support domain has historically been scored as having neither high nor low quality, this year's mean is the highest recorded in RECAP since full implementation began six years ago. As will be discussed in a later section, a greater emphasis was placed on focused Instructional Support professional development for Rochester teachers. A focused, concise, and collaborative professional development initiative was implemented this academic year as a means to provide teachers with a greater understanding of concept development, language modeling, and quality of feedback tools to be implemented during daily instructional and non-instructional times.

Table 4. Combined EPK & UPK CLASS Scores by Domain

Domain (n=191)	Mean	Std. Dev.
Emotional Support	6.6	0.5
Classroom Organization	6.2	0.8
Instructional Support	4.3	1.3
Overall CLASS Score	5.7	0.8

Figure 4. Combined EPK & UPK CLASS Scores by Dimension

Note:

PC = Positive Climate, NC = Negative Climate (reverse scored 8-1), TS = Teacher Sensitivity, RSP = Regard for Student Perspectives, BM = Behavior Management, PD = Productivity, ILF = Instructional Learning Formats, CD = Concept Development, QF = Quality of Feedback, LM = Language Modeling

Figure 4 depicts the 10 dimension scores that make up the CLASS. The *Positive Climate*, *Negative Climate* (reverse scored), *Teacher Sensitivity*, and *Regard for Student Perspective* dimensions make up the *Emotional Support* domain. Scores in these four dimensions have remained consistent over the course of the past couple of years (Infurna et al., 2017). The *Emotional Support* domain measures the warm and nurturing environment established by the adults in the classroom. Out of a possible score of 7, there is little room to grow within the *Positive Climate* and *Negative Climate* dimensions as teachers are implementing these practices exceptionally well.

The *Classroom Organization* dimensions of the CLASS (*Behavior Management*, *Productivity*, and *Instructional Learning Formats*) all increased by .1 from the previous year. This domain suggests that as a whole our EPK and UPK teachers have well-established classroom routines in

which little time is wasted due to lack of preparation. They are well prepared for daily activities, and make good use of the materials available to them in the classroom.

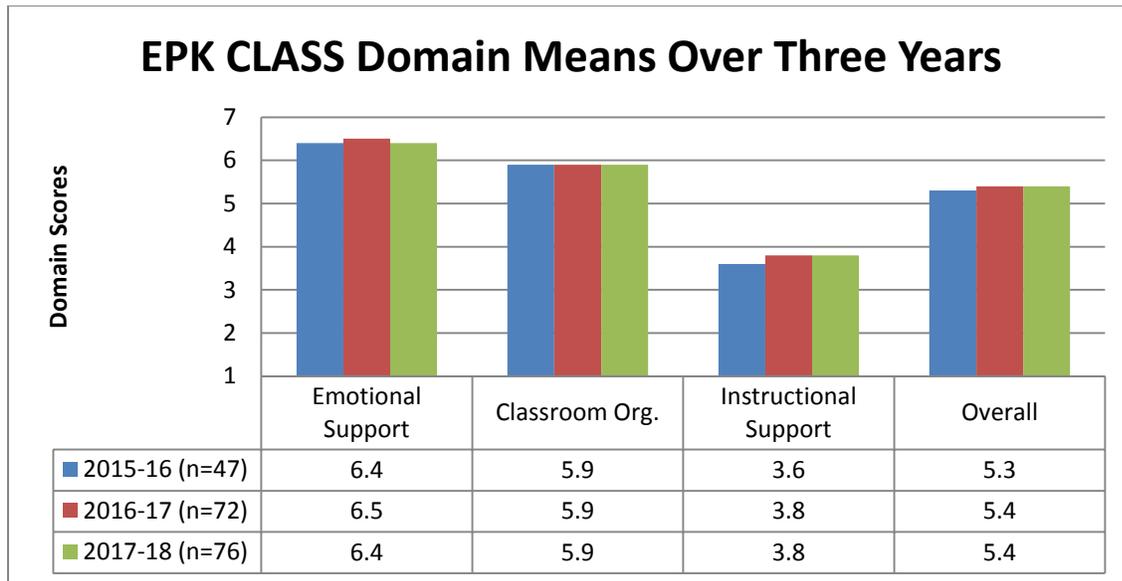
As previously noted, the ***Instructional Support*** domain of the CLASS has historically been the weakest in the Rochester community. However, the largest growth among dimensions came from the *Concept Development* and *Quality of Feedback* dimensions, which both grew .4 respectfully from the previous year. Similarly, the *Language Modeling* dimension grew by .3 from the previous year. A recommendation from the previous school year was to provide teachers more opportunities for professional development focused on *Concept Development*, *Quality of Feedback*, and *Language Modeling*.

EPK CLASS Performance

The 2017-18 academic year was the third year the CLASS was used to assess all RECAP EPK classrooms. In total, 76 CLASS observations were conducted across RCSD, and community based organizations (CBOs). Figure 5 shows EPK CLASS domain mean scores over the past three years. Overall, EPK classroom quality is observed to be quite high. The ***Emotional Support*** domain mean was 6.4, a slight drop from the previous year. The ***Classroom Organization*** domain mean was 5.9, while the ***Instructional Support*** domain mean was 3.8, both remaining the same from the previous year. The ***Overall*** CLASS mean for the 76 EPK classroom observations was 5.4, consistent with the previous year. In 2017-18, eighteen new EPK teachers received a CLASS observation. Their scores mirrored those of returning EPK teachers. The consistency of EPK CLASS domain scores, in part, can be attributed to the ample amount of professional development offerings and new teacher training offered to new RECAP teachers. Also, the ongoing support for new teachers provided by Technical Support Teachers (TSTs) in RCSD is critical assistance for new and veteran teachers.

Similar to last year, due in part to the recent implementation of full-day three-year old programming by New York State Education Department, CLASS outcomes from other school districts were unavailable at the time this report was written. Therefore we are unable to report comparisons of Rochester's EPK classroom quality with other communities.

Figure 5. EPK CLASS Domain Means Over Three Years

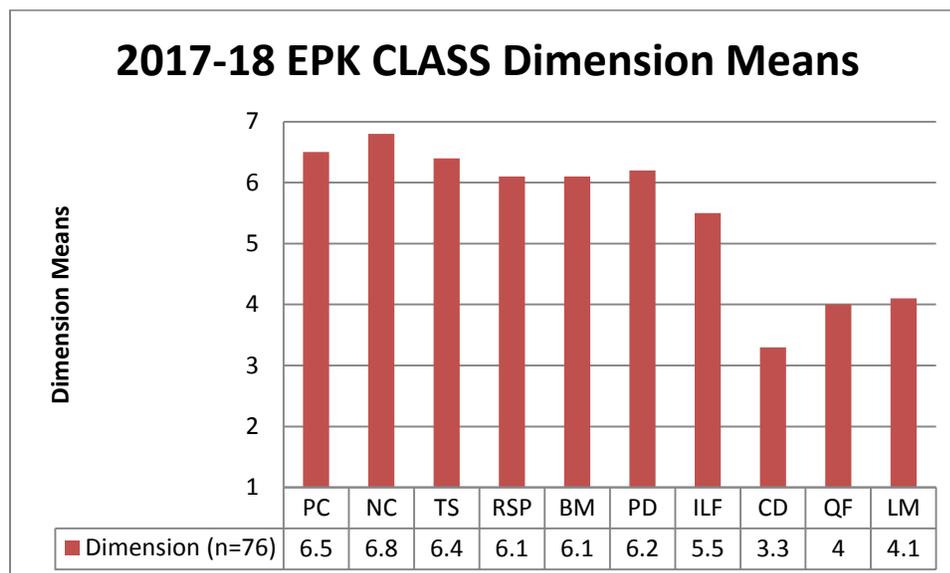


All but two of the EPK dimension averages rose from the previous school year. The dimensions making up the *Emotional Support* domain remained consistent from the previous year. There were no reported differences in the *Positive Climate*, *Negative Climate*, *Teacher Sensitivity*, and *Regard for Student Perspectives* dimensions. The scores were similar to the previous two year's scores.

Two dimensions that make up the *Classroom Organization* domain (*Behavior Management* and *Instructional Learning Formats*) increased by .1. The *Productivity* dimension remained the same from the previous year.

Similar to the *Emotional Support* domain, the dimensions of the *Instructional Support* domain did not change (see Figure 5; Infurna et al., 2017).

Figure 6. EPK CLASS Dimension Means



Note:

PC = Positive Climate, NC = Negative Climate (reverse scored 8-1), TS = Teacher Sensitivity, RSP = Regard for Student Perspectives, BM = Behavior Management, PD = Productivity, ILF = Instructional Learning Formats, CD = Concept Development, QF = Quality of Feedback, LM = Language Modeling

UPK CLASS Performance

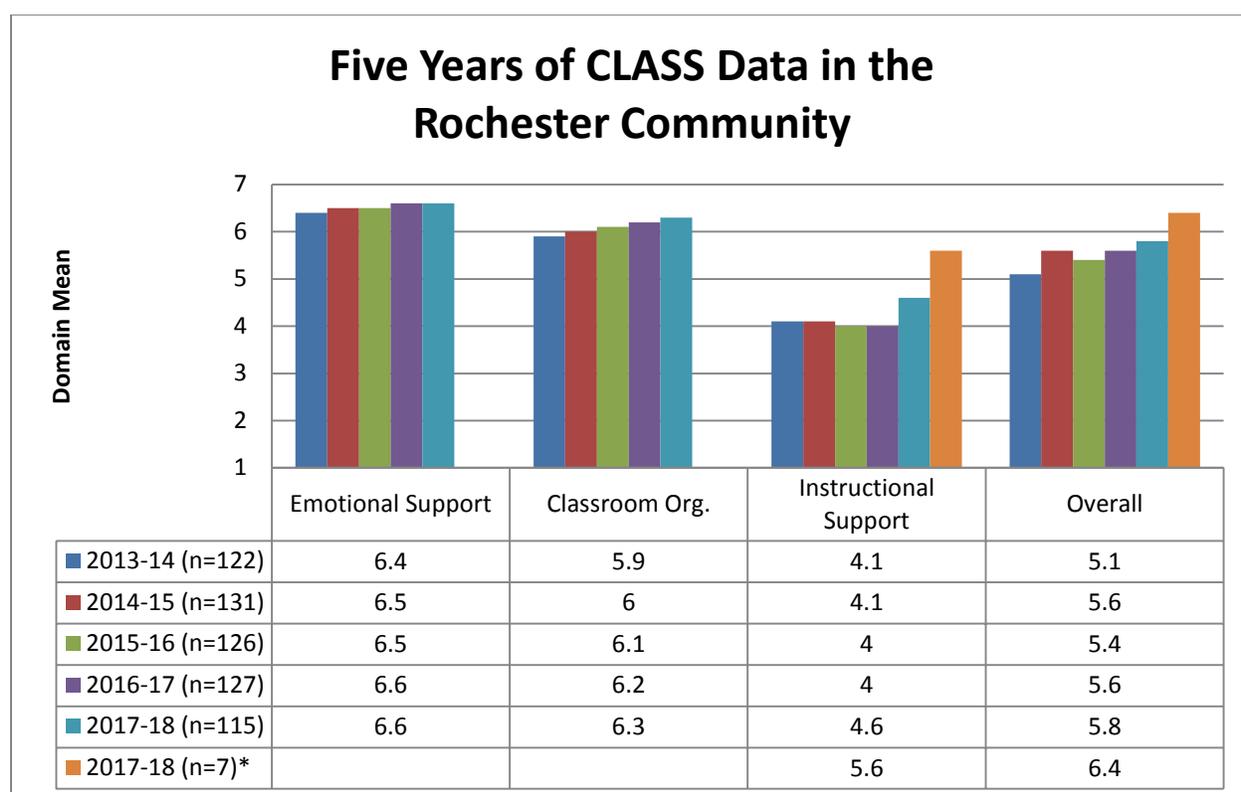
The 2017-18 school year marked the sixth consecutive year the CLASS observational instrument was used to assess all RECAP UPK classrooms. In total, 115 UPK classrooms were observed. Overall, there are 122 UPK classrooms, however this year marked the first year that RECAP teachers were eligible to receive a CLASS exemption. For a RECAP teacher to receive a CLASS exemption, they must meet the following criteria:

1. Complete at least 85% of their Child Observation Record Advantage Items (COR+)
2. Complete student Brigance assessments
3. Complete student T-CRS assessments
4. Maintain at least a 6.2 CLASS Overall mean for three consecutive years, and
5. Maintain at least a 5.0 Instructional Support Domain mean for three consecutive years.

Seven UPK teachers met these criteria. Teachers who receive a CLASS exemption will be exempt from CLASS observations for two consecutive years. However, even though the seven teachers are exempt, their three year **CLASS Overall** mean and **Instructional Support** mean are included for reporting purposes where noted n=122.

Figure 7 represents the five year comparison of CLASS scores in the Rochester community for UPK classrooms. In 2017-18, the **Emotional Support** domain remained the same, with a score of 6.6. The **Classroom Organization** domain score rose slightly, by .1, to 6.3. The greatest growth was made in the **Instructional Support** domain, which rose to 4.6, a .6 increase from the previous year. The **Overall** CLASS mean showed growth from the previous years, rising to an all-time high of 5.8. With the inclusion of imputed teacher exempt scores, the UPK CLASS **Overall** mean remained the same, at 5.8.

Figure 7. 5 Years of UPK CLASS Domain Means



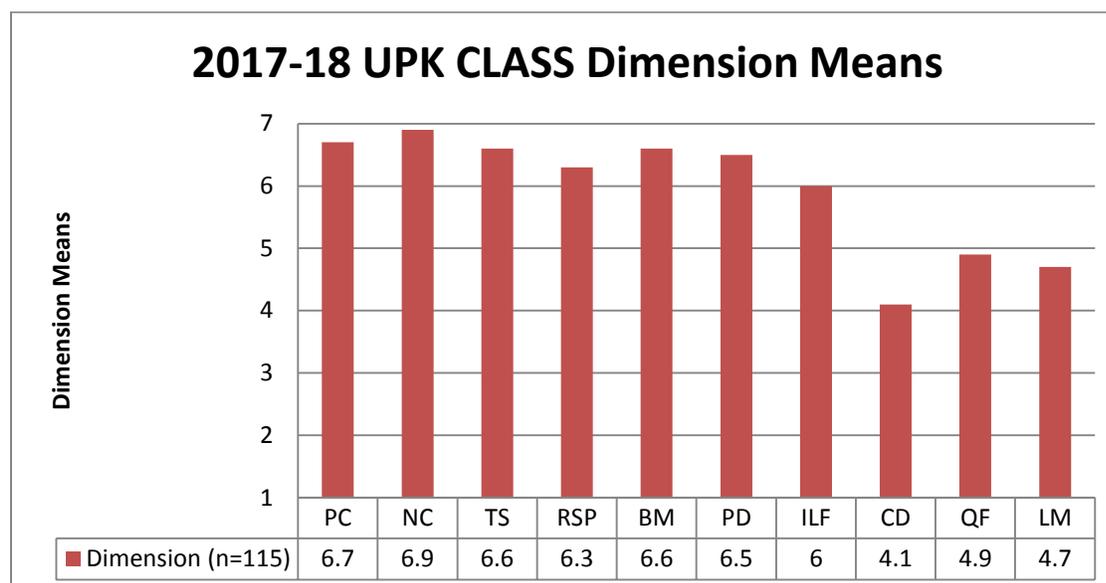
Note: * exempt teacher scores

Figure 8 shows results by CLASS dimension. The dimension scores comprising the *Emotional Support* domain remained at or above 6.0. As in previous years, the *Negative Climate* dimension remained the strongest dimension by maintaining a near perfect average of 6.9. The *Positive Climate* dimension maintained its consistently high score of 6.7. *Teacher Sensitivity* increased slightly from the previous year and the *Regard for Student Perspective* mean increased by .2 to 6.3.

Results associated with the second domain of the CLASS, *Classroom Organization*, saw a slight increase of 0.1 from 2016-17 to 6.3. This year marks the highest mean score in six years for the *Classroom Organization* domain. The *Behavior Management* dimension saw an increase of .1, with a score of 6.6. *Productivity* increased to 6.5, and *Instructional Learning Formats* dimension increased by .3 to 6.0.

The greatest growth was made in the *Instructional Support* domain. The *Instructional Support* domain increased to 4.6, a historically significant improvement from previous school year. This domain has been a focal point of professional development for the past six years. From last year to this year, the *Concept Development* dimension rose to 4.1, an increase of .6 points. The *Quality of Feedback* dimension rose to 4.9, also an increase of .6 points from the previous year. The *Language Modeling* dimension rose by .4 points to 4.7.

Figure 8. 2017-18 UPK CLASS Means by Dimension



Note:

PC = Positive Climate, NC = Negative Climate (reverse scored 8-1), TS = Teacher Sensitivity, RSP = Regard for Student Perspectives, BM = Behavior Management, PD = Productivity, ILF = Instructional Learning Formats, CD = Concept Development, QF = Quality of Feedback, LM = Language Modeling

Summary and recommendations:

In 2017-18, classroom quality, as measured by CLASS, increased among Rochester RECAP partners. Notably, in the UPK program, 2017-18 marked the highest level of quality observed in the *Classroom Organization* and *Instructional Support* domains, as well as the Overall CLASS mean.

The large growth in the *Instructional Support* domain may be attributed to collaborative community programming efforts including 1) additional professional development offerings for teachers, 2) ongoing support from Technical Support Teachers (TSTs), and 3) continuity of teaching teams within UPK classrooms.

Within the national early childhood education community, Rochester's early childhood education program, specifically UPK programming, far exceeds others in regards to classroom quality and teacher-child interactions. In 2008, Mashburn and colleagues found the *Instructional Support* domain mean to be low (mean = 2.1 out of 7) across an 11-state study. Similarly, a national Head Start study found teacher-child interactions measured by *Instructional Support* to be just as low (mean = 2.3; Moiduddin, Aikens, Tarullo, West, & Xue, 2012). Most recently, research conducted in Georgia's Pre-K programming found similar results (mean = 2.5; Peisner-Feinberg, Schaaf, Hildebrandt, & Pan, 2015). As reported in Figure 7, Rochester's UPK *Instructional Support* domain mean was 4.6.

Across the country, a large emphasis has been placed on the importance of high-quality professional development for early childhood educators (Mashburn et al., 2008; Moiduddin et al., 2012; Peisner-Feinberg et al., 2012; Early, Maxwell, Ponder, & Pan, 2017; Infurna et al., 2017). This emphasis can in part be due to the reported low quality of early childhood

programming (Love et al., 2003; Mashburn et al., 2008; Yoshikawa et al., 2013; Early et al., 2017).

High quality ongoing professional development opportunities along with mentoring and coaching may positively influence the quality of early childhood programming. More specifically, professional development focused on the ***Emotional Support*** and ***Instructional Support*** domains of the CLASS have been linked to an increase in those scores (Early et al., 2017). The focus of professional development efforts on these two domains in particular was suggested by research indicating that an ***Emotional Support*** domain score greater than 5.0 and an ***Instructional Support*** domain score greater than 3.25 is needed for pre-k programming to meaningfully contribute to cognitive and social-emotional functioning of three and four year old children (Burchinal, Vandergrift, Pianta, & Mashburn, 2010).

In 2017-18, 98% of UPK classrooms and 97% of EPK classrooms had mean scores over 5.0 in the ***Emotional Support*** domain of the CLASS. Similarly, 86% of UPK classrooms and 54% of EPK old classrooms were had mean scores greater than 3.25 in the ***Instructional Support*** domain.

Unlike the continuity with teaching teams in UPK programs, 18 new EPK teachers were hired in 2017-18. Despite this staff turnover, the consistency of EPK program quality is documented and may be attributed to the quality, depth, and intensity of professional development and technical support.

It is evident that program quality in the Rochester community is “very good” to “excellent”. In order to continue early childhood program excellence in the Rochester community, we have specific recommendations for the 2018-19 school year.

Specific recommendations:

- *Increased focus on ***Instructional Support*** with additional professional development offerings provided by the professional development committee and Technical Support Teachers*
- *Continue the exemption status protocol introduced during the 2017-18 school year.*
- *Provide additional professional development trainings focused on the ***Concept Development*** dimension (analysis and reasoning, creating, integration, and connections to the real world).*

Student Performance - Academics

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 2012-13. 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 released a new edition of the Brigance called the Brigance® Early Childhood Screen III. This version contains new content and more closely aligns with the 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 an enhanced curriculum. 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

Table 5 represents EPK Brigance III screening results for 2017-18. A greater percentage of entering EPK students (75%) were within normal ranges and or possibly talented, as compared to the UPK cohort (65%).

Similar to results from the previous year (Infurna et al., 2017), parent initiative may play a role in the discrepancy between EPK and UPK children due to the registration requirements needed for EPK programming. Unlike UPK programming in which all four-year old students have the opportunity to attend, EPK slots are limited to approximately 1200. Registration timeliness is critical in enrolling children for EPK.

Table 5. EPK Brigance III Screening Results 2017-2018

2017-18 EPK Brigance Screening Status Results				
Screening Status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1- Determine need for formal evaluation	216	23	216	23
2- Monitor closely	21	2	237	26
3- Functioning in normal range	614	67	851	92
4- Possibly talented and may need enhanced work	70	8	921	100

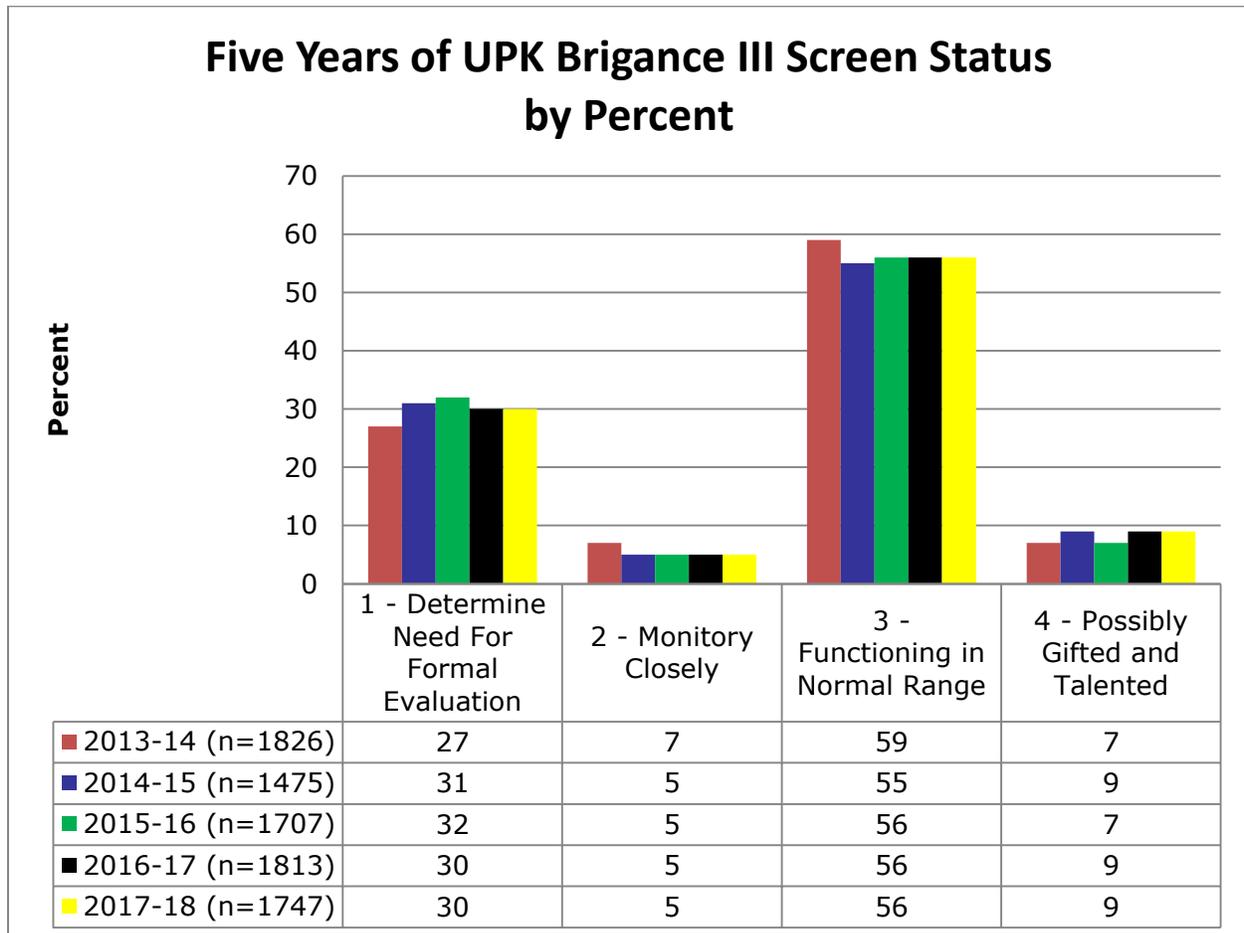
UPK teachers administered the Brigance III to 1747 students. Table 6 provides the frequency distribution and percent of students functioning in each of the four screening status levels. Overall, 65% of entering UPK students were functioning within the normal or possibly gifted and talented range (Infurna et al., 2017) at the time of screening. See Table 7 and Figure 9 for the previous five years of UPK Brigance III outcomes.

Table 6. UPK Brigance III Screening Results for 2017-2018

2017-18 UPK Brigance Screening Status Results				
Screening Status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1- Determine need for formal evaluation	531	30	531	30
2- Monitor closely	79	5	610	35
3- Functioning in normal range	979	56	1589	91
4- Possibly talented and may need enhanced work	158	9	1747	100

Table 7. Five Years of UPK Brigrance III Results

UPK Brigrance III Results by Percent for Five Consecutive Years					
Screening Status	2013-14 (n=1826)	2014-15 (n=1475)	2015-16 (n=1707)	2016-17 (n=1813)	2017-18 (n=1747)
1 - Determine Need For Formal Evaluation	27	31	32	30	30
2 - Monitory Closely	7	5	5	5	5
3 - Functioning in Normal Range	59	55	56	56	56
4 - Possibly Gifted and Talented	7	9	7	9	9

Figure 9. Five Years of UPK Brigrance III Screen Status by Percent

Child Observation Record (COR)

For over two decades, the Rochester early education community has used the Child Observation Record (COR) to evaluate student performance throughout the school year. As new versions of the tool were released, RECAP implemented them to assess young children in the community. The 2017-18 school year marked the fourth consecutive year RECAP implemented the COR Advantage (COR+), the newest edition of the COR.

The COR+ is a developmentally appropriate observational measure that authentically assesses approaches to learning, social and emotional development, physical development and health, language and literacy, mathematics, creative arts, science and technology, and social studies. Teachers observe children for at least six weeks and record observations of their students' functioning using 34 items. Each item is scored on a 7-point sequenced scale, with each point representing a level of children's growth along a developmental continuum.

Teachers completed the COR+ in the fall, winter, and spring. In the fall, teachers were able to identify and address problem areas that their students displayed. The winter administration of the COR+ provided administrators, teachers, and parents insights into student growth and development. Administrators used the data to inform professional development for teachers of struggling students. The spring administration of COR+ measured individual student growth, provided insights regarding students' preparedness for kindergarten, and was shared with parents. The three administration periods also provided RECAP with the ability to examine growth rates for the entire pre-k sample.

The COR+ category scores represent the average of the item scores for that category. Individual item scores represent the highest student performance observed during a specified time period. Category scores are calculated only when 75% of all possible items in a category have a score for the assessment period. HighScope defines school readiness as an overall COR+ average ≥ 4.0 and an average score ≥ 3.75 in each of the eight domains.

The following text, tables and figures report the growth of EPK and UPK RECAP cohorts on the COR+ for the 2017-18 school year.

COR Advantage and Expanded Pre-Kindergarten (EPK)

The 2017-18 marked the second year the COR+ was used to assess three-year old child growth within RECAP. The 2016-17 school year served as a benchmark for full implementation.

Table 8 reports EPK student performance at fall, winter and spring assessments. At the beginning of the year, like UPK students, EPK students performed best on the ***Physical Development & Health*** category (M=2.9) which was greater than all the others categories by at least .4 of a point.

Significant and meaningful gains (range $d=1.4$ to 1.8 ; median= 1.7) were made by EPK students over the course of the school year. Overall, all the change scores by category increased at least .9 points, illustrating that EPK children made significant gains. Similar to their UPK peers, the ***Physical Development & Health*** category continues to be one of the highest ratings for EPK children.

Table 8. 2017-2018 EPK COR+ Advantage Student Performance

2017-18 EPK Fall, Winter, Spring, & Change Scores													
Domain	Fall 2017			Winter 2018			Spring 2018			Change (Fall-Spring)			Effect Size (<i>d</i>)
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
App. to Learning	1014	2.5	0.7	996	3.1	0.7	1017	3.5	0.7	897	1.0	0.8	1.4
Social Emotional Dev.	1014	2.4	0.7	990	3.1	0.7	1006	3.5	0.8	891	1.2	0.8	1.7
Physical Dev. & Health	1017	2.9	0.6	997	3.5	0.6	1018	3.9	0.7	900	1.0	0.8	1.7
Lang., Lit., & Comm.	1010	2.3	0.5	984	2.8	0.5	1008	3.1	0.6	884	0.9	0.6	1.8
Math	970	2.2	0.6	937	2.9	0.6	945	3.2	0.6	819	1.0	0.7	1.7
Creative Arts	983	2.4	0.7	929	3.2	0.7	959	3.6	0.7	826	1.2	0.7	1.7
Science and Tech.	953	2.3	0.6	933	3.0	0.6	957	3.3	0.7	809	1.0	0.7	1.7
Social Studies	962	2.4	0.6	967	3.0	0.7	990	3.3	0.8	836	1.0	0.7	1.7
COR Overall	989	2.4	0.5	925	3.1	0.5	961	3.4	0.6	837	1.0	0.6	2.0

EPK students made substantial growth during the school year. Figure 10 depicts fall/spring COR+ category means for the 2017-18 school year. The most relative growth was made in *Language, Literacy & Communication* ($d=1.8$). All other categories saw an effect size of 1.7, except for *Approaches to Learning* ($d=1.4$)

Figure 10. EPK COR+ Student Fall/Spring Category Means

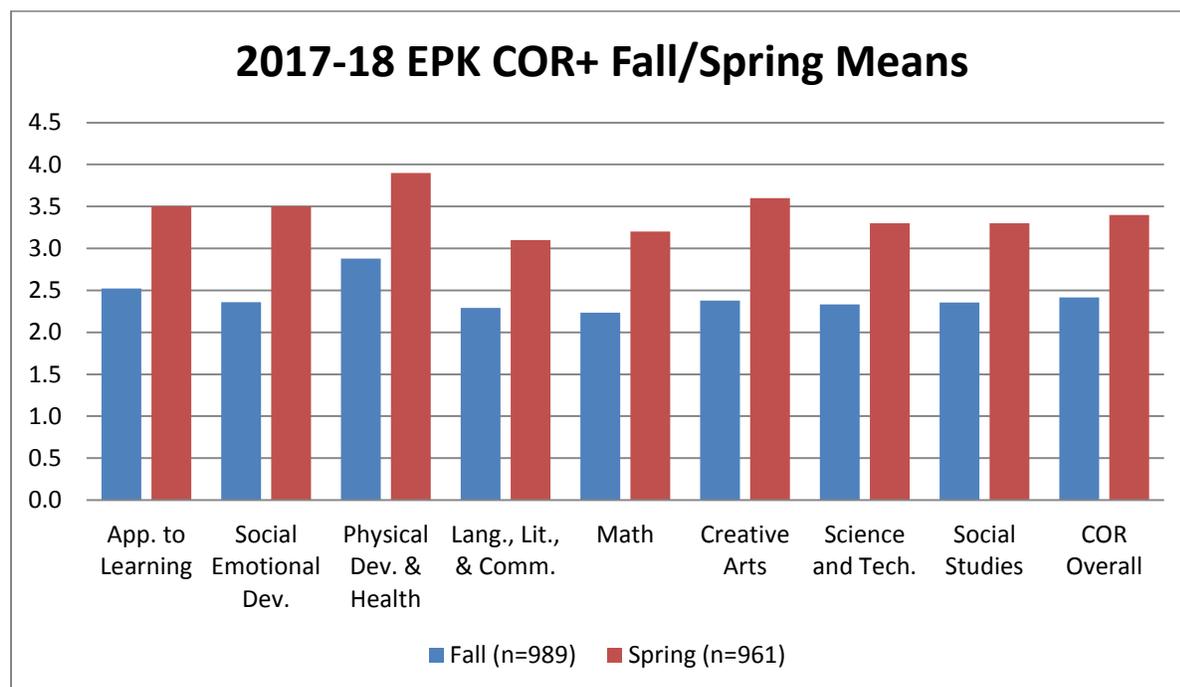


Table 9. 2017-2018 UPK COR+ Advantage Student Performance

2017-18 UPK Fall, Winter, Spring, & Change Scores													
Category	Fall 2017			Winter 2018			Spring 2018			Change (Fall-Spring)			Effect Size (<i>d</i>)
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	1964	3.0	0.7	1899	3.7	0.7	1890	4.4	0.8	1721	1.4	0.8	2.0
Social Emotional Dev.	1962	2.9	0.7	1913	3.7	0.8	1898	4.3	0.9	1724	1.3	0.8	1.9
Physical Dev. & Health	1999	3.4	0.7	1935	4.2	0.7	1889	5.0	0.9	1751	1.5	0.9	2.1
Lang., Lit., & Comm.	1954	2.8	0.6	1903	3.6	0.7	1879	4.1	0.8	1719	1.3	0.7	2.2
Math	1850	2.8	0.7	1775	3.7	0.7	1736	4.3	0.8	1573	1.5	0.7	2.1
Creative Arts	1880	3.2	0.8	1804	4.0	0.7	1767	4.5	0.7	1609	1.4	0.8	1.8
Science and Technology	1881	2.9	0.7	1706	3.7	0.7	1721	4.4	0.9	1570	1.5	0.9	2.1
Social Studies	1944	2.9	0.7	1778	3.7	0.8	1818	4.3	0.9	1642	1.5	0.9	2.1
COR Overall	1885	3.0	0.6	1777	3.8	0.6	1763	4.4	0.7	1607	1.4	0.6	2.3
School Ready	28	1%		364	20%		975	55%					

*According to High Scope criteria, children are ready for kindergarten if each COR+ domain score is ≥ 3.75 and the overall score is ≥ 4.0

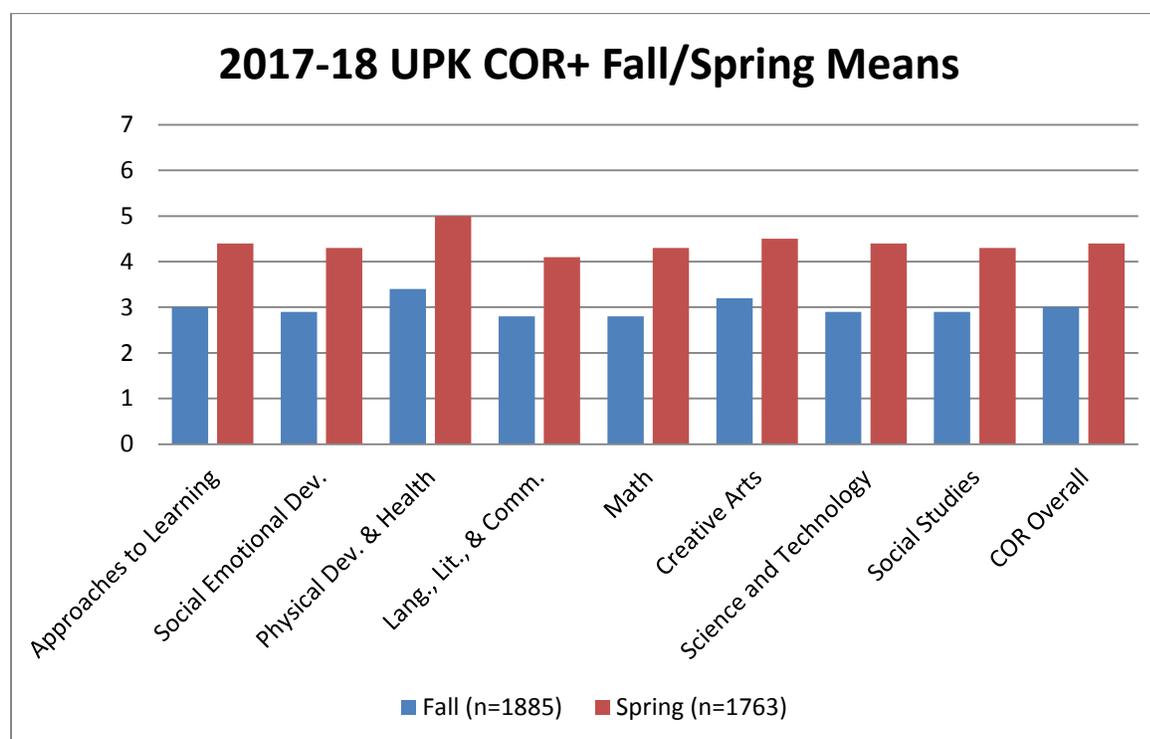
Table 9 reports UPK student performance at fall, winter and spring assessments. Similar to previous years, the **Physical Development & Health** category had the highest overall mean of 3.4. **Creative Arts** and **Approaches to Learning**, as well as the **COR+ Overall** mean were all over 3.0. Of note, 28 students met the HighScope school readiness criteria in the fall.

At the winter assessment, **Mathematics** showed the largest increase from the fall, with students growing by almost a full point (.9). All other categories except **Approaches to Learning** grew by at least .8 of a point. A large increase of students met school readiness criteria (n=364).

During the spring assessment, **Physical Development & Health**, **Mathematics**, **Science and Technology**, and **Social Studies** domains all grew by 1.5. Of note, the **COR+ Overall Score** grew by 1.4 over the course of the school year.

Students made very large and significant gains from the fall to spring (see Figure 11). The **COR+ Overall** change score effect size (2.3) is very large. Unfortunately, due to the lack of national empirical results we cannot compare Rochester students with their peers in other states.

Figure 11. UPK COR+ Student Fall/Spring Category Means



UPK Special Education Student COR+ Outcomes

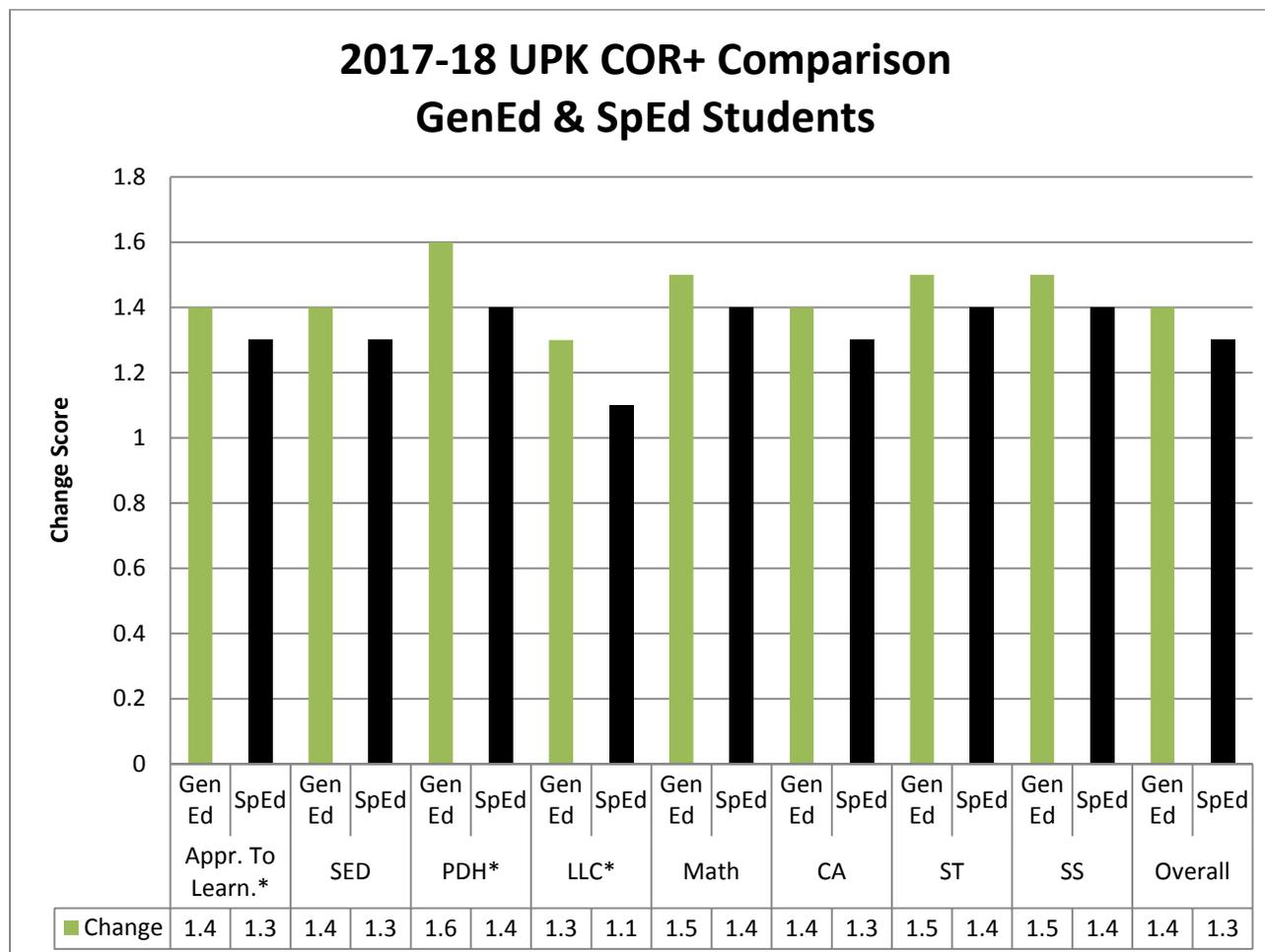
Special Education programming was of special interest to the Rochester community and RECAP in 2017-18. The following section reports on UPK student COR+ outcomes, reporting on both general education and special education students. Table 10 depicts COR+ outcomes for general education and special education students. Significant differences in outcomes are reported in all the categories in the fall and spring. However, *t*-test analyses only revealed significant differences in three change score categories (*Approaches to Learning, Physical Development and Health, and Language, Literacy, and Communication*).

Table 10. UPK COR+ Comparison Between General and Special Education Students

2017-18 UPK General Education and SpEd COR+ Comparison										
COR+ Categories	Stud.	Fall			Spring			Change		
		N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Appr. To Learn	Gen Ed	1525	3.1*	0.6	1604	4.5*	0.8	1470	1.4*	0.8
	SpEd	223	2.7	0.6	229	3.9	0.9	212	1.3	0.7
Social Emotional Dev.	Gen Ed	1524	3.0*	0.7	1604	4.4*	0.8	1466	1.4	0.8
	SpEd	225	2.5	0.7	237	3.8	0.9	218	1.3	0.7
Physical Dev. & Health	Gen Ed	1559	3.5*	0.7	1597	5.1*	0.8	1495	1.6*	0.9
	SpEd	230	3.3	0.7	235	4.6	0.9	222	1.4	0.9
Lang., Lit., & Comm.	Gen Ed	1518	2.9*	0.6	1589	4.2*	0.8	1460	1.3*	0.7
	SpEd	222	2.6	0.5	232	3.6	0.9	216	1.1	0.7
Math	Gen Ed	1429	2.9*	0.6	1470	4.4*	0.8	1331	1.5	0.7
	SpEd	204	2.5	0.6	206	3.9	0.8	187	1.4	0.7
Creative Arts	Gen Ed	1455	3.2*	0.8	1499	4.6*	0.7	1366	1.4	0.8
	SpEd	211	2.9	0.8	210	4.3	0.8	197	1.3	0.8
Science and Technology	Gen Ed	1444	3.0*	0.6	1453	4.4*	0.9	1323	1.5	0.8
	SpEd	203	2.7	0.6	209	4.1	0.9	191	1.4	0.9
Social Studies	Gen Ed	1500	3.0*	0.7	1533	4.4*	0.9	1383	1.5	0.9
	SpEd	222	2.6	0.6	227	4.0	1	210	1.4	0.9
Overall Score	Gen Ed	1419	3.1*	0.6	1459	4.5*	0.7	1312	1.4	0.6
	SpEd	200	2.7	0.5	205	4.0	0.7	189	1.3	0.7

Note: * statistical difference between category means $p < .05$

Figure 12. UPK COR+ Change Score Comparison between General and Special Education Students



Note: * significant $p < .05$; Appr. To Learn = Approaches to Learning, SED = Social Emotional Development, PDH = Physical Development and Health, LLC = Language, Literacy, and Communication, Math = Math, CA = Creative Arts, ST = Science and Technology, SS = Social Studies, Overall = COR Overall

Summary and recommendations:

2017-18 UPK student results parallel those of previous years (Infurna et al., 2017). UPK children in Rochester make very substantial gains during the pre-k year; 55% are ready for kindergarten. As previously noted, pre-k children in the community are starting with tremendous gaps and needs, specifically in the areas of Math, Social Studies, and Language, Literacy, and Communication. Although the children are able to demonstrate significant gains across all COR+ categories during an academic year, the gains are not sufficient enough for approximately half of the students to achieve school readiness benchmarks.

A 10-month full-day developmentally appropriate high quality program is not able to prepare many children for kindergarten. Our reality is that even with all the positive classroom stimulation, opportunities for growth, and individualized instruction, too many of our pre-k

children are still “not ready” for kindergarten unless elementary administrators, kindergarten teachers and materials are ready to meet children’s individual needs.

A second way to mitigate a more successful transition to kindergarten is to further expand summer learning in the Rochester community. As documented by RECAP over the past 4 years, students who transition from pre-k into kindergarten by attending an intensive high quality summer learning programming, such as that provided by summerLeap, do not lose academic skills but rather make significant gains through August (Infurna et al., 2017; Lotyczewski & Hightower (2015, 2016, 2017).

Third, starting intensive developmentally appropriate stimulation and programming earlier, such as Expanded Prekindergarten for 3-year olds, which is described below, is another part of our community’s strategy to help our children be school ready.

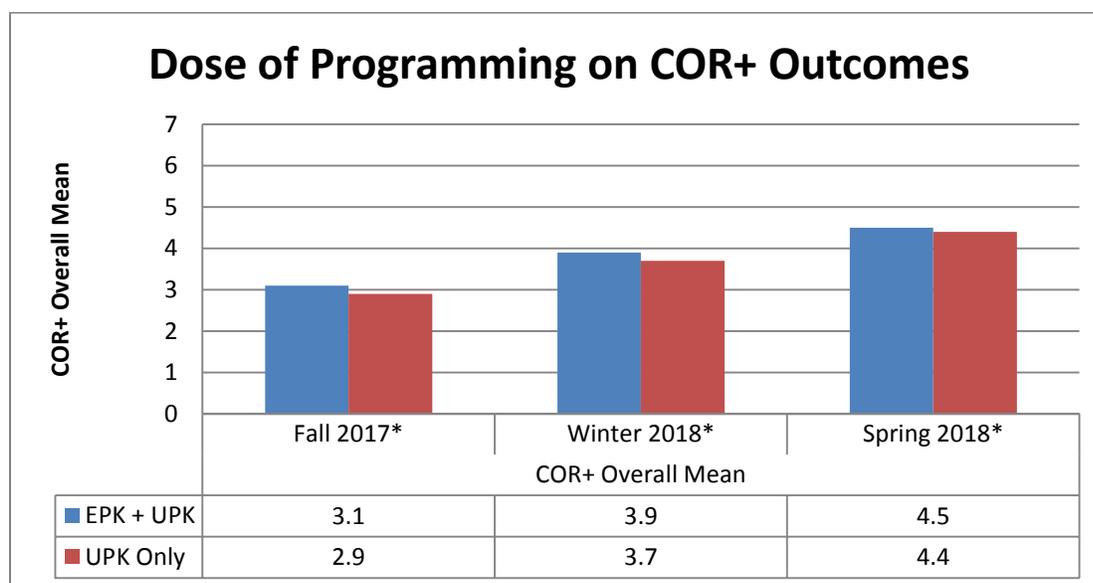
Fourth, we now have three years of Expanded Prekindergarten program implementation in the Rochester community. We are able to identify students that enrolled in EPK programming who transitioned to UPK programming (EPK go UPK). We will be better able to monitor dose of programming as a means to improving student outcomes in UPK before children transition to kindergarten. Similarly, the positive reported effects of two years of programming before kindergarten (see Figure 13; Table 11) may provide the Rochester community additional support if the community is interested in requesting additional EPK student slots.

Dose of Programming

The 2017-18 school year provided RECAP with valuable “dose of programming” data not previously available. In 2016-17, the first full year of EPK programming was provided to approximately 1200 three-year old children in Rochester City School District thanks to New York State Education Department funding. A majority of children enrolled in EPK programming during 2016-17 also participated in UPK programming in 2017-18. The following figures and tables report on how dose of programming affected UPK student outcomes.

Figure 13 depicts dose of programming between students that were enrolled in EPK and UPK (2 years of programming) compared to their peers that were only enrolled in UPK programming for the 2017-18 school year. A *t*-test analysis revealed that students who participated in both EPK and UPK programming outperformed their peers on the COR+ Overall score at fall, winter, and spring. This is a significant finding in the field of early childhood education.

Figure 13. Dose of Programming on COR+ Categories



Note: * significant $p < .0001$

Table 11 depicts EPK and UPK student and UPK only student COR+ data. EPK + UPK students outperformed their UPK only peers in all eight categories in the fall, winter, and spring.

Table 11. Comparison of 1 and 2 Years of Prekindergarten Participation on COR+ Outcomes

2017-18 Comparison of 1 and 2 Years of Prekindergarten Participation on COR+ Categories												
COR+ Category	Fall 2017				Winter 2018				Spring 2018			
	EPK Go UPK		UPK Only		EPK Go UPK		UPK Only		EPK Go UPK		UPK Only	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Approaches to Learning	785	3.1*	1003	2.9	775	3.8*	1085	3.7	774	4.5*	1116	4.3
Social Emotional Dev.	787	3.1*	1002	2.9	784	3.9*	1087	3.7	777	4.4*	1121	4.2
Physical Dev. & Health	797	3.6*	1026	3.4	790	4.3*	1105	4.2	772	5.1*	1117	4.9
Lang., Lit., & Comm.	783	2.9*	1000	2.8	784	3.7*	1080	3.5	771	4.2*	1108	4
Math	749	3.0*	939	2.7	744	3.8*	993	3.6	721	4.4*	1015	4.2
Creative Arts	757	3.3*	956	3.1	753	4.1*	1014	3.9	729	4.6*	1038	4.5
Science and Technology	764	3.0*	953	2.8	716	3.8*	954	3.6	715	4.5*	1006	4.3
Social Studies	783	3.0*	989	2.8	742	3.8*	997	3.6	744	4.5*	1074	4.3
COR Overall	759	3.1*	960	2.9	746	3.9*	992	3.7	732	4.5*	1031	4.4

Note: * significant $p < .001$

Table 12. Relationship Between Dose of Programming and Kindergarten Readiness

2017-2018 Dose of Programming			
Student Type	Number Kindergarten Ready	Number Not Ready	Total
EPK + UPK	443	289	732
UPK Only	532	499	1031
Total	975	788	1763

Table 12 depicts school readiness results based on dose of programming. Students attending two years of programming (EPK + UPK) are more likely (61%) to be ready to transition to kindergarten than their UPK only peers (50%), as measured by the COR+. This finding is supported by previous empirical studies that report students who attend two years of prekindergarten programming are more ready to make a successful transition to kindergarten (Huang, 2017; Patel, Corter, Pelletier, & Bertrand, 2016; Reynolds et al., 2014).

Student Performance – Social Emotional

Teacher-Child Rating Scale (T-CRS)

Assessing student social and emotional functioning is an integral part of the RECAP assessment system. RECAP uses the Teacher-Child Rating Scale (T-CRS) for this purpose. The TCRS 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 screen to identify students with needs and as a tool to track population trends, changes in students’ social and emotional development, and the impact of pre-k programs in Rochester. Table 13 reviews EPK initial risk status in the fall. Table 14 shows EPK risk status in the spring. Table 15 reviews EPK pre/post T-CRS scores. Social emotional well-being of UPK students was also assessed by the T-CRS. Table 16 compares UPK student initial risk status (at or below the 15th percentile, approximately 1 standard deviation) as measured by the fall administration. Table 17 depicts risk status at spring assessment. Table 18 reports UPK T-CRS pre/post scores.

EPK

Social emotional well-being of EPK students was also assessed by the T-CRS. Table 13 reviews EPK student fall risk count. Table 14 reports on EPK student spring risk counts, followed by Table 15 reviewing EPK student fall, spring, and subscale effect sizes.

Overall, 63% of three-year old children entered programming with no observed risks, with that number positively growing to 65% in the spring (See Table 14). Of note, 18% of students were observed to have at least two risks in the spring. That number went up from the fall, where only 15% of students were observed to have multiple risks.

Table 13. 2017-2018 EPK Student Risk Count in Fall

2017-18 EPK T-CRS Fall Risk Count				
# of risk	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	621	63	621	63
1	216	22	837	85
2	80	8	917	93
3	47	5	964	98
4	21	2	985	100

Table 14. 2017-2018 EPK Student Risk Count in Spring

2017-18 EPK T-CRS Spring Risk Count				
# of risk	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	527	65	527	65
1	146	18	673	83
2	90	11	763	94
3	45	5	808	99
4	8	< 1	816	100

Table 15 represents EPK student fall, spring, and effect size for the 2017-18 school year. Similar to the previous year of full implementation, EPK students made marginal growth in the *Task Orientation* and *Behavior Control* subscales of the T-CRS. Moderate growth was made in *Assertiveness*, and minimal growth in *Peer Social Skills*. As with the cohort of UPK students, the largest effect was in *Assertiveness*.

The *Assertiveness* subscale of the T-CRS is made up of eight items. Four positive and four negative items are scored on a 1-5 Likert scale by the classroom teacher in the fall and spring. The four positive items that make up *Assertiveness* are; the student 1) participates in classroom discussions, 2) is able to verbalize point of view under pressure, 3) shares own ideas without prompts, and 4) comfort with leading (Perkins & Hightower, 2002). Much of what is observed may be due to the development and expansion of a child's vocabulary. A student placed in an environment in which they need to be able to verbalize their thoughts will, in essence, positively improve their ability to communicate with their peers and adults in the classroom. The four negative items that make up the *Assertiveness* subscale are; if a child 1) is withdrawn, 2) seems anxious, 3) appears nervous or tense in the environment, and 4) not expressive of feelings.

Table 15. EPK Student 2017-2018 T-CRS Fall and Spring Means with Effect Size

2017-2018 EPK T-CRS Fall and Spring Means					
Domain	Fall 2017 (n=985)		Spring 2018 (n=816)		<i>d</i> *
	Mean	Std Dev	Mean	Std Dev	
Task Orientation	27.4	5.9	28.2	6.1	0.04
Behavior Control	26.6	6.9	26.6	7.1	0.05
Assertiveness	28.1	5.7	30.0	6.0	0.25
Peer Social Skills	29.8	5.6	30.9	5.7	0.13

UPK

Table 16. UPK Social-Emotional Risk Factors for Fall 2017-2018

2017-2018 UPK T-CRS Fall Risk Count				
# of risk	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	1478	77	1478	77
1	218	11	1696	88
2	113	6	1809	94
3	102	5	1911	99
4	13	1	1924	100

As has been documented in previous RECAP reports, approximately 75%-80% of UPK students enter with no social-emotional risks as measured by T-CRS (Infurna et al., 2017). Table 16 reports UPK initial fall risk in 2017-18. Overall, 77% of UPK students entered programming with no observed risks in the fall. Also, 12% of UPK students began programming with at least two observed risks. Table 17 depicts spring risk counts for 1667 UPK students who also had fall data. The number of students with no observed risks went up to 80%. Of note, only 9% of students were observed to have multiple risks. When referring to UPK student growth on the *Social Emotional Learning* domain of the COR+, students made the least amount of growth throughout the course of the school year. This may be due to student assertiveness and peer social abilities. Even though students did not grow as much in the *Social Emotional Learning* category of COR+, they did make sufficient gains on the T-CRS *Assertiveness* and *Peer Social Skills* subscales.

Table 17. UPK Social-Emotional Risk Factors for Spring 2017-2018

2017-2018 UPK T-CRS Spring Risk Count				
# of risk	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	1340	80	1340	80
1	183	11	1523	91
2	87	5	1610	96
3	52	3	1662	99
4	5	< 1	1667	100

Table 18 reports on UPK student fall and spring T-CRS domain means, as well as effect sizes. Again, as has been reported in previous years, the growth on the *Assertiveness* subscale is moderate. Similarly, growth on the *Task Orientation* and *Peer Social Skills* subscales is also small (Infurna et al., 2017). Minimal change is observed in *Behavior Control*. This may be due to the fact that for many (~ 1000) students this is their first year in a structured early childhood program, in which four-year old student behaviors do not change much over the course of a 10 month program. For some students, the classroom may not meet their developmental needs, in which classroom routines and structures may be difficult for them to comprehend and follow.

Table 18. UPK Student T-CRS Fall and Spring Means with Effect Sizes

2017-2018 UPK T-CRS Fall and Spring Means					
Domain	Fall 2017 (n=1927)		Spring 2018 (n=1667)		<i>d</i>
	Mean	Std Dev.	Mean	Std. Dev.	
Task Orientation	27.9	6.2	29.2	6.3	0.21
Behavior Control	27.1	7.1	28.1	7.2	0.12
Assertiveness	28.9	5.3	30.9	5.4	0.36
Peer Social Skills	29.9	5.6	31.5	5.7	0.27

Student Outcomes and Attendance

UPK Student Attendance and Outcomes

The following section provides a summary of student outcomes and attendance for UPK students only. EPK student attendance and outcomes will be discussed later in this report. Similar to previous analyses conducted on attendance (Infurna et al., 2017; 2016), this section will provide UPK student outcomes based on attendance, COR+, school readiness, and social-emotional adjustment measured by the T-CRS.

Attendance groupings were determined based on New York State Education Department definitions of attendance as follows: Low Attendance = <80%, Moderate Attendance = 81 – 89%, and High Attendance = >90%.

Table 25 represents UPK student fall COR+ based on attendance. Similar to previous analyses conducted on student attendance and COR+ outcomes, students attending more than 90% of the time outperformed their peers in all categories and the COR+ overall score (Infurna et al., 2017).

EPK Student Attendance and Outcomes

The following section provides a summary of student outcomes and attendance for EPK students. Similar to previous analyses conducted on attendance (Infurna et al., 2017; 2016), this section will provide EPK student outcomes based on attendance in COR+ and social-emotional risk measured by the T-CRS. Attendance grouping were determined based on New York State Education Department definitions of chronic attendance. The following tables provide EPK student outcomes on the COR+ and T-CRS. Table 19 reports EPK student COR+ outcomes in the fall by attendance group. Similarly, Tables 20 and 21 report EPK student COR+ outcomes in the spring and by growth from fall to spring respectfully.

Table 19. Fall EPK Student COR+ Outcomes by Attendance Group

2017-2018 RECAP Annual Report EPK COR+ Attendance Scores at Pre										
COR+ Domains	Low Group (<=80%)			Moderate Group (81%-89%)			High Group (>=90%)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	200	2.5	0.7	319	2.6	0.7	316	2.6	0.7	2.5
Social Emotional Development	200	2.3	0.7	319	2.4	0.6	316	2.4	0.6	1.3
Physical Development and Health	200	2.8	0.6	318	2.9	0.7	314	2.9	0.6	1.0
Lang., Lit., and Communication	200	2.3	0.5	319	2.3	0.5	316	2.3	0.5	1.3
Mathematics	198	2.2	0.6	314	2.3	0.6	314	2.3	0.6	1.0
Creative Arts	199	2.4	0.6	311	2.4	0.6	307	2.5	0.7	0.7
Social Studies	198	2.3	0.6	317	2.4	0.6	314	2.4	0.6	0.8
Science and Technology	197	2.3	0.6	304	2.4	0.5	306	2.4	0.6	2.0
COR+ Overall Pre	200	2.4	0.5	319	2.5	0.5	316	2.5	0.5	1.7

In the fall, no differences were detected between EPK students on the COR+ based on attendance group.

Table 20. Spring EPK Student COR+ Outcomes by Attendance Group

2017-2018 RECAP Annual Report EPK COR+ Attendance Scores at Post										
COR+ Domains	Low Group (<=80%)			Moderate Group (81%-89%)			High Group (>=90%)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	200	3.4b	0.8	319	3.6a	0.6	314	3.6a	0.7	4.09*
Social Emotional Development	200	3.4b	0.9	316	3.6ab	0.7	314	3.6a	0.8	2.69*
Physical Development and Health	200	3.8a	0.8	319	4.0a	0.6	316	3.9a	0.6	2.2
Lang., Lit., and Communication	199	3.0b	0.7	317	3.2a	0.6	315	3.2a	0.6	9.03*
Mathematics	197	3.1b	0.7	313	3.3a	0.6	311	3.3a	0.6	13.42*
Creative Arts	197	3.6b	0.7	317	3.7a	0.6	308	3.7a	0.7	3.89*
Social Studies	200	3.3a	0.8	318	3.4a	0.8	314	3.3a	0.7	1.45
Science and Technology	199	3.2b	0.8	319	3.4a	0.6	313	3.4a	0.7	5.76*
COR+ Overall Post	200	3.4b	0.7	319	3.5a	0.6	316	3.5a	0.6	5.4*

Note: Means with a different letter are statistically different from each other, * significant $p < .05$

In the spring, many differences were detected on COR+ outcomes based on attendance group. Implementing an (SNK) analysis, statistical differences were found between groups in *Approaches to Learning, Social Emotional Development, Language, Literacy, & Communication, Mathematics, Creative Arts, Science and Technology, and COR+ Overall*. Students attending more than 80% of the time outperformed their peers who attended less frequently.

Table 21. EPK Student COR+ Change Scores by Attendance Group

2017-2018 RECAP Annual Report EPK COR+ Change Scores by Attendance Group										
COR+ Domains	Low Group (<=80%)			Moderate Group (81%-89%)			High Group (>=90%)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	200	0.9	0.9	319	1.0	0.8	314	1.0	0.8	0.3
Social Emotional Development	200	1.1	0.8	316	1.2	0.8	314	1.2	0.7	0.53
Physical Development and Health	200	1.0	0.9	318	1.0	0.8	314	1.0	0.7	0.18
Lang., Lit., and Communication	199	0.7b	0.6	317	0.9a	0.6	315	0.9a	0.6	3.89*
Mathematics	195	0.8b	0.7	308	1.0a	0.6	309	1.0a	0.7	5.49*
Creative Arts	196	1.2	0.7	310	1.3	0.7	301	1.2	0.7	2.49
Social Studies	198	1.0	0.8	316	1.0	0.8	312	1.0	0.7	0.69
Science and Technology	196	1.0	0.8	304	1.1	0.7	303	1.1	0.7	1.89
COR+ Overall Change	200	1.0	0.6	319	1.0	0.6	316	1.0	0.5	1.64

Note: Means with a different letter are statistically different from each other, * significant $p < .05$

Table 21 depicts EPK student growth over the course of the 2017-18 academic year. EPK students who attended more than 80% outperformed their less attending peers in two categories, *Language, Literacy, and Communication* and *Mathematics*. No other differences in growth were detected by the SNK analysis. The following tables report on EPK student outcomes on the T-CRS by attendance group.

Table 22. EPK T-CRS Scores by Attendance Group at Fall

2017-2018 EPK T-CRS Scores by Attendance Group at Fall							
T-CRS Domain	Low (n=179) (≤80%)		Moderate (n=283) (81%- 89%)		High (n=293) (≥90%)		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	27.4	6.2	28.6	5.7	27.7	6.2	3.0
Behavioral Control	26.8a	7.4	27.7a	6.5	26.2b	7.2	3.5*
Assertiveness	27.3b	6.1	28.4ab	6.5	29.2a	5.6	5.3*
Peer Social Skills	29.8	5.7	30.7	5.2	30.3	5.9	1.7

Note: Means with a different letter are statistically different from each other, * significant $p < .05$

Table 22 depicts EPK student fall outcomes on the T-CRS by attendance group. The highest attending group had the lowest detected mean within the *Behavioral Control* subscale. In contrast, the highest attending group outperformed their peers in the *Assertiveness* subscale.

Table 23. EPK T-CRS Scores by Attendance Group at Spring

2017-2018 EPK T-CRS Scores by Attendance Group at Spring							
T-CRS Domain	Low (n=163) (≤80%)		Middle (n=253) (81%-89%)		High (n=255) (≥90%)		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	27.2b	7.2	28.5ab	7.1	28.9a	7.0	3.1*
Behavioral Control	26.2	8.1	26.9	7.6	26.8	7.6	0.5
Assertiveness	29.2b	5.4	30.1ab	6.0	30.9a	5.6	4.57*
Peer Social Skills	30.5	6.6	31.5	6.2	31.2	6.6	1.0

Note: Means with a different letter are statistically different from each other, * significant $p < .05$

In Table 23, the highest attending group outperformed their peers on the *Task Orientation* and *Assertiveness* domains in the spring.

Table 24. EPK T-CRS Change Scores by Attendance Group

2017-2018 EPK T-CRS Change Scores by Attendance Group							
T-CRS Domain	Low (n=157) (<=80%)		Middle (n=246) (81%-89%)		High (n=253) (>=90%)		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	-.6b	5.3	0.0b	5.5	1.2a	5.3	6.3*
Behavioral Control	-0.8b	5.5	-0.8b	5.9	.7a	5.9	5.2*
Assertiveness	1.2	5.6	1.7	5.5	1.7	5.0	0.5
Peer Social Skills	0.2	5.4	0.8	5.2	1.0	5.4	1.1

Note: Means with a different letter are statistically different from each other, * significant $p < .05$

Table 24 reports that the high attending EPK students made greater gains in *Task Orientation* and *Behavior Control* than their lower attending peers. It is interesting to note that the lowest attending group actually lost ground in *Task Orientation* and *Behavior Control*, while showing minimal growth in *Peer Social Skills*. Similarly, the middle attending group lost ground in *Behavioral Control* and showed no change in *Task Orientation*.

UPK Student Outcomes and Attendance

Table 25. Fall UPK Student COR+ Outcomes by Attendance Group

2017-2018 RECAP Annual Report UPK COR+ Attendance Scores at Fall Assessment										
COR+ Categories	Low Group ($\leq 80\%$)			Moderate Group (81%-89%)			High Group ($\geq 90\%$)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	406	2.9c	0.6	593	3.0b	0.6	603	3.2a	0.7	17.3*
Social Emotional Development	407	2.9c	0.6	593	3.0b	0.7	602	3.1a	0.8	12.7*
Physical Development and Health	407	3.3c	0.7	595	3.5b	0.7	604	3.6a	0.7	15.1*
Lang., Lit., and Communication	406	2.7c	0.6	592	2.8b	0.6	598	3.0a	0.6	24.9*
Mathematics	400	2.7c	0.6	583	2.8b	0.7	595	3.0a	0.7	24.3*
Creative Arts	401	3.1b	0.8	591	3.2b	0.8	598	3.3a	0.8	8.8*
Social Studies	404	2.8c	0.6	588	2.9b	0.7	589	3.0a	0.8	11.2*
Science and Technology	403	2.8c	0.6	589	2.9b	0.7	595	3.0a	0.7	14.1*
COR+ Overall Fall	407	2.9c	0.5	595	3b	0.6	604	3.1a	0.6	21.2*

Note: Means with a different letter are statistically significant from each other

Note: * significant $p < .05$

Table 26. Spring UPK Student COR+ Outcomes by Attendance Group

2017-2018 RECAP Annual Report UPK COR+ Attendance Scores at Spring										
COR+ Categories	Low Group (≤80%)			Moderate Group (81%-89%)			High Group (≥90%)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	407	4.3b	0.8	594	4.4b	0.8	602	4.5a	0.8	8.0*
Social Emotional Development	407	4.2b	0.9	594	4.4a	0.8	604	4.4a	0.8	4.9*
Physical Development and Health	406	5.0b	0.8	595	5.0b	0.8	604	5.1a	0.8	3.3*
Lang., Lit., and Communication	407	4.0c	0.8	595	4.2b	0.8	603	4.3a	0.8	16.7*
Mathematics	400	4.2c	0.8	580	4.3b	0.8	590	4.5a	0.7	13.3*
Creative Arts	402	4.5b	0.7	588	4.6a	0.7	596	4.6a	0.7	6.3*
Social Studies	390	4.2c	0.9	574	4.4b	0.9	585	4.5a	0.9	12.2*
Science and Technology	396	4.3b	0.9	576	4.3b	0.9	578	4.5a	0.9	9.2*
COR+ Overall Spring	407	4.3c	0.7	595	4.4b	0.7	604	4.6a	0.7	11.3*

Note: Means with a different letter are statistically significant from each other; * significant $p < .05$

Table 26 reports UPK student COR+ outcomes based on attendance at spring reporting. Again, similar to the fall, high attending students outperformed their peers on all domains except **Social Emotional Development** and *Creative Arts*.

Table 27. UPK Student COR+ Change Scores by Attendance Group

2017-2018 RECAP Annual Report UPK COR+ Attendance Change Scores										
COR+ Categories	Low Group (<=80%)			Moderate Group (81%-89%)			High Group (>=90%)			F Value
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	
Approaches to Learning	406	1.4a	0.7	592	1.3a	0.8	601	1.4a	0.8	1.2
Social Emotional Development	407	1.4a	0.8	592	1.4a	0.8	602	1.3a	0.8	3.3
Physical Development and Health	406	1.7a	0.9	595	1.5a	0.9	604	1.5a	0.9	2.9
Lang., Lit., and Communication	406	1.3a	0.7	592	1.4a	0.7	597	1.3a	0.7	0.6
Mathematics	393	1.5a	0.8	572	1.5a	0.7	581	1.5a	0.7	0.3
Creative Arts	396	1.4a	0.9	584	1.4a	0.8	590	1.3a	0.8	1
Social Studies	389	1.4a	0.9	571	1.5a	0.9	578	1.5a	0.9	0.9
Science and Technology	393	1.5a	0.9	570	1.4a	0.8	570	1.5a	0.9	0.5
COR+ Overall Change	407	1.4a	0.6	595	1.4a	0.6	604	1.4a	0.7	0.4

Table 27 depicts UPK student COR+ change scores based on attendance. No significant differences are reported among the three attendance groups. This is an interesting finding. Students attending more frequently enter UPK having a slight advantage over their less frequently attending peers. However, regardless of their attendance, UPK students experienced similar growth across all categories and overall COR+.

Table 28. UPK Student School Readiness by Attendance Group

UPK Kindergarten Readiness by COR+ and Attendance								
Readiness	Low attending (≤80%)		Moderately attending (81%-89%)		High attending (≥90%)		Total	Percent
	Freq.	Percent	Freq.	Percent	Freq.	Percent		
K Ready	197	48	340	57	378	63	915	57
Not Ready	210	52	255	43	226	37	691	43
Totals	407	-	595	-	604	-	1606	100

Table 28 depicts UPK Student school readiness by attendance group. Again, similar to previous reports, higher attending students are more ready to transition to kindergarten than their less attending peers (Infurna et al., 2017).

UPK Student Attendance and T-CRS Outcomes

The following three tables depict UPK student T-CRS outcomes by attendance group. The attendance groups are determined using the same method as described in UPK student and COR+ outcomes. Table 29 depicts outcomes in the fall based on attendance. Table 30 reports outcomes in the spring based on attendance. Finally, Table 31 reports growth over the school year by attendance group.

Table 29. 2017-2018 UPK T-CRS Scores by Attendance Group at Fall

2017-2018 UPK T-CRS Scores by Attendance Group at Fall							
Domain	Low (n=717) ≤80%		Middle (n=639) 81%-89%		High (n=645) ≥90%		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	27.6	6.2	28.1	6.1	28.0	6.2	1.4
Behavioral Control	27.1	7.1	27.4	6.9	26.7	7.4	1.2
Assertiveness	28.2b	5.5	28.9a	5.3	29.3a	5.1	7.7*
Peer Social Skills	29.4b	5.7	30.2a	5.5	30.1a	5.6	4.0*

Note: * significant $p < .05$, Means with a different letter are statistically different from each other

High attending students entered UPK outperforming their peers in the *Assertiveness* and *Peer Social Skills* subscales. Students who attend more frequently are more readily able to adapt to their surroundings by positively interacting with their peers and by advocating for themselves.

Table 30. 2017-2018 UPK T-CRS Scores by Attendance Group at Spring

2017-2018 UPK T-CRS Scores by Attendance Group at Spring							
Domain	Low (n=556) <=80%		Middle (n=616) 81%-89%		High (n=590) >=90%		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	29.0	6.6	29.0	6.6	29.8	6.5	2.7
Behavioral Control	28.6	7.3	27.8	7.5	27.8	7.5	1.9
Assertiveness	30.0c	5.9	30.8b	5.2	31.6a	5.2	12.28*
Peer Social Skills	30.9b	5.7	31.7a	5.7	31.7a	6.0	3.5*

Note: * significant $p < .05$, Means with a different letter are statistically different from each other

Similar to fall outcomes, in the spring, students who attend more often outperform their peers outperform *Assertiveness* and *Peer Social Skills*. Attendance has a larger effect on student *Assertiveness*, in which the high attending group outperformed the middle group, which also outperformed the lowest attending group. The *Assertiveness* domain is made up of eight items (4 positive and 4 negative). The positive items reflect a student's comfort level with participation in classroom discussions, being viewed as a leader, and being able to more positively self-advocate. The negative items reflect areas of anxiety, nervousness, and a sense of being withdrawn from classroom activities (Hightower & Perkins, 2010). Similarly, *Peer Social Skills* outcomes are reflected upon how often a child attends school. The *Peer Social Skills* domain measures how well the child is liked by their peers, as well as how they interact (Hightower & Perkins, 2010). It is evident that a lack of attendance affects a child's social skills and interaction with other students.

Table 31. UPK Student T-CRS Change Scores by Attendance Group

2017-2018 UPK T-CRS Change Scores by Attendance Group							
T-CRS Domain	Low (n=458) ≤80%		Middle (n=598) 81%-89%		High (n=575) ≥90%		F Value
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Task Orientation	1.5a	5.3	0.8b	5.1	1.6a	5.3	4.0*
Behavioral Control	1.5a	5.8	0.3b	5.1	0.8b	5.8	6.3*
Assertiveness	1.9	5.2	1.8	4.4	2.2	4.8	0.8
Peer Social Skills	1.8	5.3	1.5	4.9	1.4	5.1	0.7

Note: * significant $p < .05$, Means with a different letter are statistically different from each other

The most growth among students occurred in *Task Orientation* and *Behavioral Control*. The lower attending group of children showed significant growth in *Task Orientation* and *Behavior Control* over the course of the school year. This may be for two reasons. First, they entered the school year functioning lower than the middle attending group. Lack of attendance did not reflect problematic behavioral issues because they outperformed the high attending group in the fall. They adapted to and tolerated the limits imposed on them similar to their higher attending peers. Second, their lack of attendance may not have hindered how well they adjusted compared to their peers.

Family Perspectives

Family and Provider/Teacher Relationship Quality Measures

In 2015, Early Childhood Development Initiative’s (ECDI) Family Engagement Committee searched for early childhood family engagement models that would inform improvement of practices in Rochester early care and education programs. The committee found that early education researchers had identified that high quality provider/teacher relationships can enable family engagement resulting in families and staff becoming authentic partners in facilitating children’s development and early learning.

The early education researchers at Westat and Child Trends developed the Family and Provider/Teacher Relationship Quality (FPTRQ) measures as part of a four-year project, sponsored by the Administration of Children and Families’ Office of Head Start (OHS) and the Office of Planning, Research, and Evaluation (OPRE); both agencies belong to the United States Department of Health & Human Services. This initiative’s goal was to assess the quality of family and provider/teacher relationships in early care and education (ECE) settings for children aged 0-5 (Kim et al., 2015). Kim et al., (2015) assumed that the relationship between families and teachers is bi-directional, stating “...families may be more likely to become engaged and involved in their children’s development and learning activities when they feel supported, understood, and empowered by programs and providers/teachers and when they are better able to balance work and family responsibilities. At the same time, providers and teachers may become more sensitive and responsive to the needs of families as parents become more involved and engaged in programs.” Historically, family involvement has been assessed using contact hours, but relationship quality can be measured beyond the contact hours metric. This project gave high priority to making the measures appropriate for ethnically, racially, and culturally diverse populations across different types of ECE settings, for families at any income level, and for families who are Spanish-speakers. This mirrors the diversity of children and families served by RECAP in the city of Rochester.

Kim et al., (2015) cite a variety of studies which found “that the role of parents in supporting their children’s social-emotional and cognitive development is far greater than the influence of their children’s participation in ECE programs.” These authors’ literature review also found a small body of research suggesting that family and provider/teacher relationships can contribute to the child’s school readiness, improve parent-child relationships, and improve parental self-efficacy. Relationships between families and teachers that are positive, mutually respectful, and collaborative increase children’s school readiness, increase positive family engagement, and strengthen the home-program connection, all of which contribute to children’s school success.

In 2016-17, the RECAP Assessment Team, with the ECDI Family Committee’s recommendation, implemented the distribution of three of five questionnaires from the FPTRQ project: the Parent, Teacher and Director measures. For simplicity and because Expanded Prekindergarten (EPK) and Universal Prekindergarten (UPK) have certified teachers, RECAP shortened the “provider/teacher” title to “teacher” and generalized the “parent” measure to be more inclusive by labeling it the “family” measure, thus changing the questionnaire title to ***Family and Teacher Relationship Quality – Family*** measure (***FTRQ – Family***).

The ***FTRQ – Family*** measure asks caretakers general questions about how they interact with their children’s teachers; for example, how easy or difficult it is for them to reach their child’s teacher and how comfortable they feel talking with the teacher. The ***FTRQ – Teacher*** measure asks teachers general questions about how they interact with their students’ families; for example, how easy or difficult it is for parents to reach them and how often parents share information about their home life. The ***FTRQ – Director*** measure asks program directors general questions about their ECE environment, children enrolled in the program, and about how the program supports family and teacher relationships; for example, how the program communicates with parents and information provided to parents about services.

In 2016-17, we asked:

- Are these measures valuable, usable, and psychometrically sound?
- Does this measure detect changes in the relationship quality as perceived by families?
- Does this measure detect changes in the relationship quality as perceived by teachers?

We found the answer to these questions was yes; please refer to the 2016-17 RECAP Annual Report for further explanation.

In 2017-18, we ask:

- What does the data for 2017-18 reveal and how does it compare to the data from 2016-17 and to the field study conducted by the authors?
- Is there a relationship between family engagement and child outcomes? To answer this we will explore the relationship between the constructs and subscales of the ***FTRQ – Family*** and the change scores and kindergarten readiness from the COR Advantage (COR+).

FTRQ – Family

To better understand which relationship was being assessed, RECAP families are directed to consider the child’s main teacher (not aides or assistant teachers), when answering the questions. In 2017-18 RECAP used the researchers’ short version of their measure, reducing the number of questions from 67 to 25. RECAP eliminated the demographic questions (7-14) on the short form, as had been done with the original measure, because that information was collected elsewhere. RECAP retained question number ten (“On a scale of 1 to 5, where 1 is the worst you can imagine and 5 is the best you can imagine, how would you describe your relationship with your child’s teacher?”) from the original form in contrast to the authors because RECAP planned to use this data in the analyses. The questions from the ***FTRQ – Family*** measure were rated on a 1-4 Likert scale, with 4 being the most desirable score. The ***FTRQ – Family*** measure’s 26 questions, along with sixteen additional questions that were added at the request of the Rochester City School District (RCSD) to gather information about specific RCSD initiatives, were put on scan forms.

The instrument assesses three constructs: ***Knowledge***, ***Practices***, and ***Attitudes***, containing eight subscales, which describe family and teacher relationship quality from the family perspective. The constructs and subscales are defined by Kim et al., (2015):

The ***Knowledge*** construct includes 1 subscale: ***Family-specific Knowledge***, which is defined as “knowledge and an understanding of families’ cultures; the context in which they live; situations that affect them; and their abilities, needs, and goals”.

The ***Practices*** construct includes 4 subscales: ***Collaboration***, ***Responsiveness***, ***Communication***, and ***Family-focused Concern***. The ***Collaboration*** subscale addresses collaboration and engagement between families and teachers “through joint goal setting, decision-making, and following up on this decision-making process through the development of action plans”. The ***Responsiveness*** subscale is defined as engaging “in sensitive, flexible, and responsive support of families’ identified needs and goals”. The ***Communication*** subscale is defined as promoting “positive, two-way communication that is responsive to families’ preferences” and teachers’ personal boundaries. The ***Family-focused Concern*** subscale is defined as “communication that demonstrates interest in the family as a unit”.

The ***Attitudes*** construct includes 3 subscales: ***Commitment***, ***Understanding Context***, and ***Respect***. The ***Commitment*** subscale is defined as “sensitivity to the needs of children, parents, and families; intrinsic motivation, or viewing work as “more than a job;” and being sincere, honest, encouraging, accessible, and consistent in interactions” with families and children. The ***Understanding Context*** subscale is defined as “having an appreciation for the broader context in which children’s development and families’ lives are situated and viewing the family as a unit, rather than focusing on the individual child”. The ***Respect*** subscale is defined as “valuing the child and the family; being non-judgmental courteous/welcoming, and non-discriminatory; being accepting of divergent opinions of families (e.g., on managing children’s behavior/how to socialize children); and being considerate and patient with families when trying to elicit changes in their behavior”.

In 2016-17, the ***FTRQ – Family*** measure was completed by families mostly from community-based organizations (CBOs) for both the pre and post distributions. In 2017-18, the ***FTRQ – Family*** was distributed to each child enrolled in one of RECAP’s 209 prekindergarten classes and collected from both CBO classrooms and RCSD school-based classrooms. There were five classrooms at one CBO that did not participate. A total of 3336 forms were distributed as a pre-test in November 2017 and a total of 3230 forms were distributed as a post-test in May 2018. The ***FTRQ – Family*** was made available in both English and Spanish.

Subscale and construct scores were computed for a respondent if more than approximately 90% of questions within the construct or subscale were answered. No subscale contained more than four questions, therefore all questions needed answers for a given respondent’s survey to be included in a subscale score (this includes the ***Knowledge*** construct as it is both a construct and a subscale). The ***Practices*** and ***Attitudes*** constructs, however, contained 13 and nine questions respectively, so a respondent could have at most one missing answer and still be included in these construct scores. If exactly one answer was missing from either the ***Practices*** or ***Attitudes*** construct, the average score of the other questions replaced the missing value and then means were computed. Not including a particular respondent in one subscale did not prevent the same respondent from being included in other constructs or subscales as long as at least approximately 90% of questions were answered. This scoring differed from the measure’s authors’ scoring. The authors did not calculate a construct or subscale score if any questions were unanswered. RECAP’s survey inclusion procedure is reflected in the varying sample sizes among constructs and subscales from a low of 539 in the spring of 2016-17 to a high of 1386 in the fall of 2017-18. In 2017-18, rates of return were approximately 42% for the fall and 30% for the spring.

Figure 14 and Figure 15 presents the average (mean) score per question in 2016-17 and 2017-18 by construct and by subscale respectively. The greatest numerical mean change from pre-test to post-test among constructs is in ***Practices*** (All Subscales). The ***Attitudes*** (All Subscales) construct has the highest numerical mean question score among the constructs, but little change from pre to post. Pre-test scores were approximately the same for both years as were the post-test scores. Exceptions are ***Practices/Responsiveness*** and ***Attitudes/Commitment*** which started and ended lower in 2017-18 than in 2016-17. ***Attitudes/Understanding Context*** remained almost exactly the same from pre-test to post-test and over both years. ***Attitudes/Respect*** started and ended higher in 2017-18 than in 2016-17.

Figure 14. FTRQ – Family comparison of fall and spring mean question scores by construct for 2016-2017 and 2017-2018

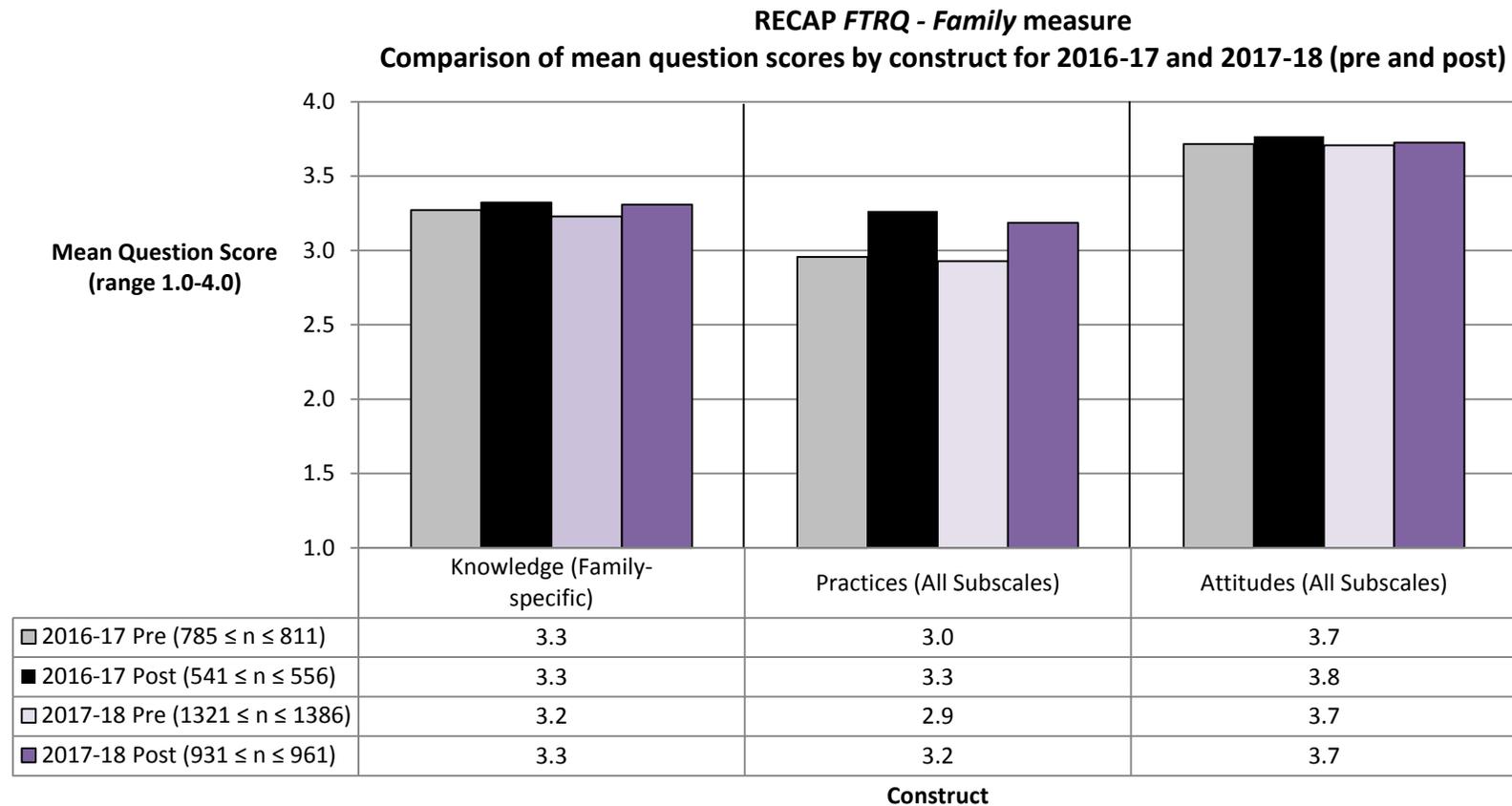
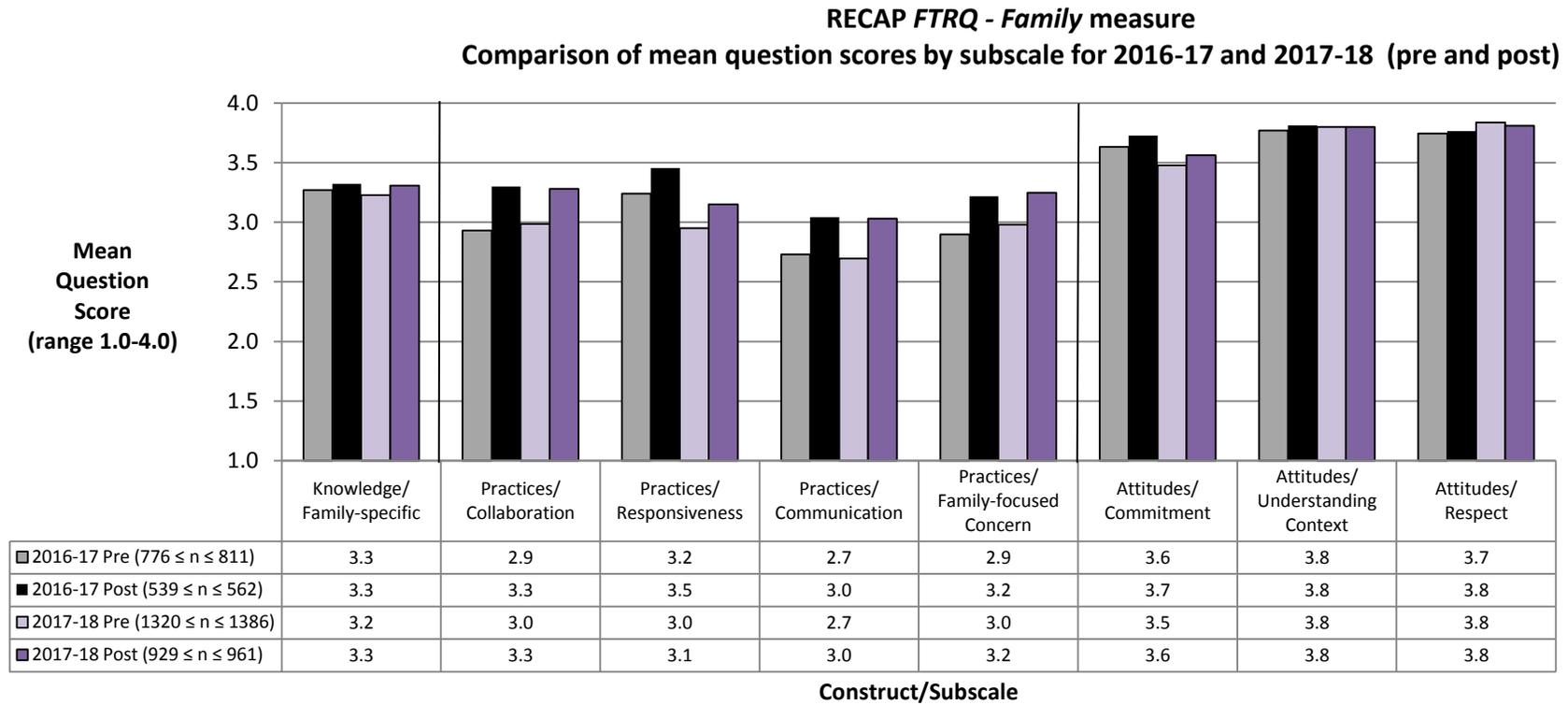
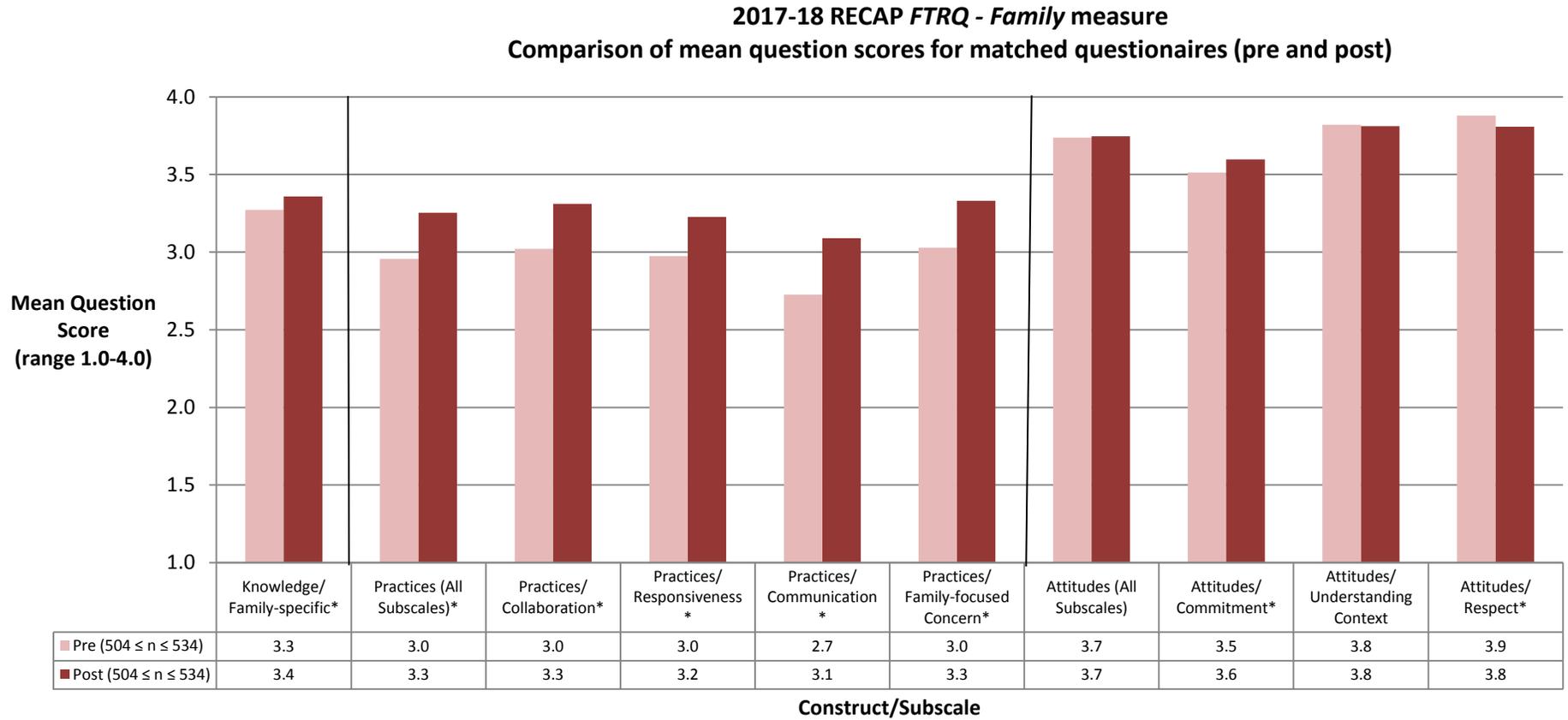


Figure 15. *FTRQ – Family* comparison of fall and spring mean question scores by subscale for 2016-2017 and 2017-2018



Analysis of the *FTRQ – Family* results, using data from only the families that submitted both a pre and post questionnaire (n=542) is presented in Figure 16. Comparison of the mean question scores using Student’s *t*-test, reveals statistically significant ($p < .05$) gains for all constructs and subscales except Attitudes (All Subscales) and Attitudes/Understanding Context. The Attitudes/Respect subscale revealed a statistically significant ($p > .05$) loss. The analyses were performed using mathcracker.com’s online tool.

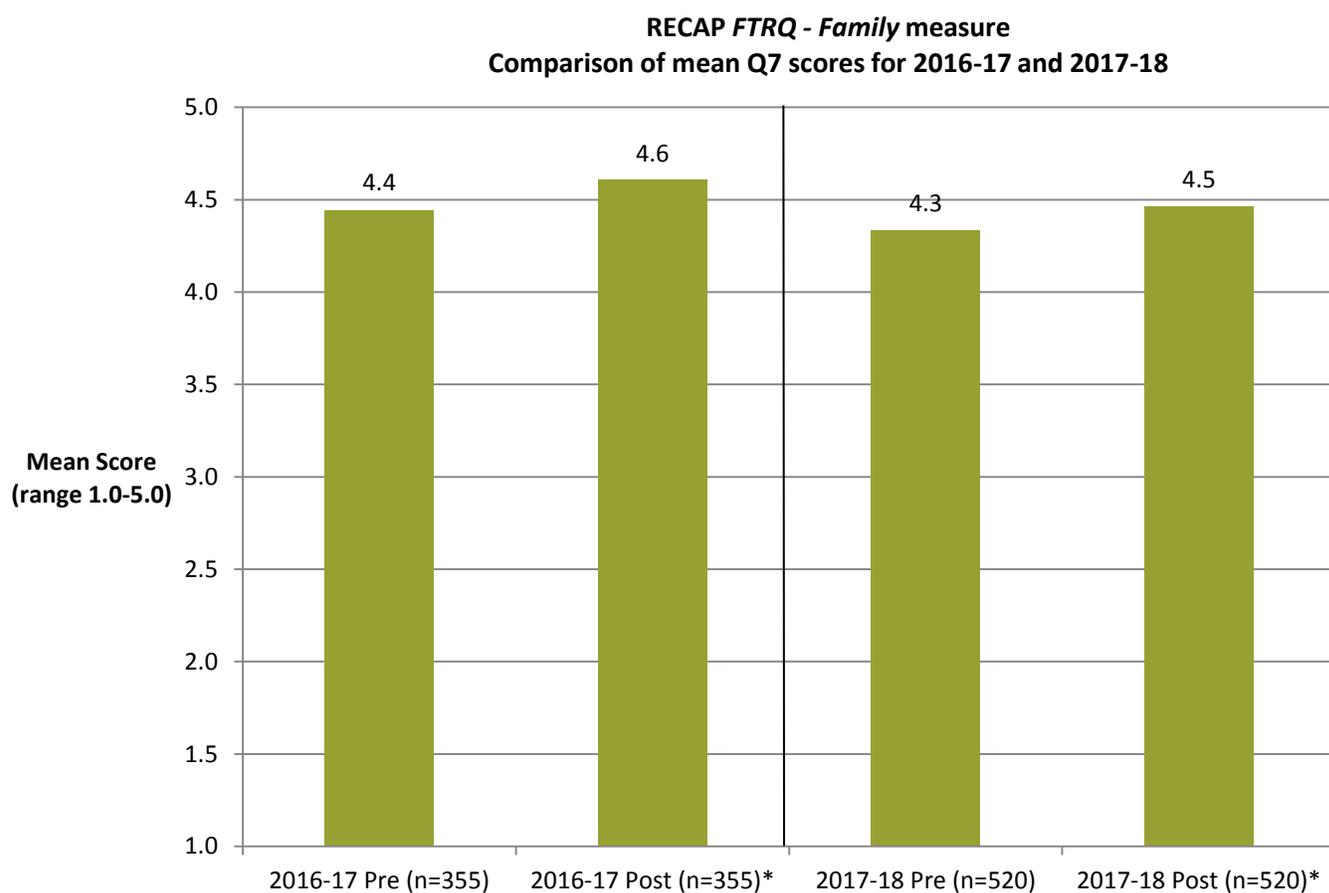
Figure 16. 2017-2018 FTRQ – Family comparison of mean question scores for matched questionnaire in fall and spring



*Difference in means from pre to post is significant at $p < .05$

Caretakers were asked in the fall and in the spring how they would describe their relationship with their child's teacher on a scale of 1-5 (1 being the worst and 5 being the best imaginable). Figure 17 shows the means of responses to this question for the past two years using only data from families that submitted both a pre and post questionnaire. Comparison of the pre-test and post-test scores within a given year using Student's *t*-test revealed statistically significant ($p < .05$) gains for caregiver-reported relationship quality. It should be noted that this question had lower starting and ending means in 2017-18 than in 2016-17. However, the growth during both years was significant.

Figure 17. *FTRQ* – Family comparison of fall and spring matched questionnaire caregiver-reported family and teacher relationship quality mean scores for matched questionnaires



Note: *Difference in yearly means from pre to post is significant at $p < .05$

RCSD-specific questions

RCSD developed 16 targeted questions which were added to the end of the *FTRQ* – Family measure to gather information about their initiatives with regard to books and technology and how families graded their children's preschool program.

At the time of the pre-test in November 2017, 94% (n=1380) of the respondent pre-kindergarten families reported reading to their child at least one to two times a week, with 38% of families reading together daily. Results were similar at the time of the post-test in May 2018. Ninety-four

(94) percent (n=962) of the respondent pre-kindergarten families reported reading to their child at least one time a week, with 33% of families reading together daily.

The pre-test results indicated that 79% of families (n=1346) were getting books sent home by staff at least monthly and 79% (n=1355) were satisfied or very satisfied with these books. The post-test results show an increase in these statistics. Ninety-four (94) percent (n=942) of families were getting books sent home by staff at least monthly and 93% (n=953) were satisfied or very satisfied with these books.

ReadyRosie is an online application that promotes family engagement during everyday activities. The majority of families reported having never used *ReadyRosie*: 76% (n=1323) in November 2017 with 60% (n=1324) never having heard of it and 70% (n=930) in May 2018 with 50% (n=909) never having heard of it. The families that reported having heard of *ReadyRosie* were most often informed by their child's teacher; this is true on both the pre- and post-tests.

With regard to school relationships, 92% (n=1339) of respondents said in November 2017 that they could talk with at least one person from their child's school about their concerns. Of this 92%, 44% could talk to more than three people about their concerns. Similarly, in May 2018, 95% (n=943) of respondents said they could talk with at least one person from school about their concerns and 47% could talk to more than three people.

On a scale of A to F, where A is the best grade, families were asked to rate six aspects of their child's prekindergarten program (in meeting their child's academic and social emotional needs and rating their child's teacher, parent liaison, principal or center director, and prekindergarten program). In November 2017, 72% (n=1359) of families gave their child's teacher a grade of A. That number increased to 77% (n=954) by May 2018. Teachers received the highest percentage of A's on both the pre- and post-tests compared to the other five categories. Parent liaisons (umbrella term for Adult Family Educators, Parent Coordinators, Family Navigators, etc.) and principals or center directors were given the least number of A's, 46% (n=1311) and 55% (n=1345) respectively in November and 47% (n=933) and 57% (n=953) respectively in May. These are the only two groups that received F's, but at very small percentages; all were $\leq 3\%$. Giving the child's prekindergarten program a grade of an A increased from 67% (n=1361) in November 2017 to 72% (n=960) in May 2018.

FTRQ – Teacher

The ***FTRQ – Teacher*** (developed by Kim et al., 2015) was distributed in conjunction with the ***FTRQ – Family*** in both the Fall and the Spring as an optional survey for teachers to complete. It is suggested by the measure's authors that when the ***Family*** and ***Teacher*** measures are examined at the same time, the quality of a relationship from two different perspectives can be compared as the subscales are mostly the same. As with the ***FTRQ – Family***, some background and demographic questions on the ***FTRQ – Teacher*** were omitted.

The ***FTRQ – Teacher*** eliminates the ***Family-focused Concern*** subscale in the ***Practices*** construct. In the ***Attitudes*** construct, the ***FTRQ – Teacher*** eliminates the ***Understanding Context*** subscale and adds the ***Openness to Change*** subscale. The ***Openness to Change*** subscale is defined as a “willingness to alter their normal practices in order to be sensitive to an individual child, parent, or family's needs, and a willingness to be flexible in varying their practices based

on input received from a parent/family member” (Kim et al., 2015). *FTRQ –Teacher* questions were rated on a 1-4 Likert Scale, with 4 being the most desirable score.

In 2016-17 and 2017-18, RECAP used the author’s full-length measure. As with the *FTRQ – Family* measure, RECAP allowed the *FTRQ – Teacher* measure’s construct and subscale scores to be computed if more than approximately 90% of questions were answered. *Practices* (All Subscales), *Practices/Collaboration*, and *Attitudes* (All Subscales) were calculated if no more than two answers were missing. *Knowledge/Family-specific* and *Attitudes/Openness to Change* were calculated if no more than one answer was missing. The four remaining subscales were required to have all questions answered to be calculated. For a construct or subscale that had an acceptable number of missing answers (as defined above), missing question scores were replaced with the average of the other questions within the particular construct or subscale and then means were calculated. This scoring differed from the authors’ scoring as the authors did not calculate a given construct or subscale score if any questions were unanswered. Omitting a particular respondent in one subscale did not prevent the same respondent from being included in other constructs or subscales as long as at least approximately 90% of questions were answered. You will see that RECAP sample sizes vary by construct and subscale from a low of 11 in the spring of 2016-17 to a high of 88 in the fall of 2016-17. In 2017-18, the rates of return were approximately 38% in the fall and 40% in the spring. The spring/post sample for the *FTRQ – Teacher* in the pilot year (2016-17) was small (n=11) and this limits the robustness and usefulness of the results from that point in time.

Figure 18 and Figure 19 show teachers’ average (mean) score per question for two years along with the authors’ field study results by construct and subscale respectively. The length of relationships in the field study is unclear, although the authors stated data were collected between January and April 2014. The length of family and teacher relationships would generally be 2 ½ months at the time of RECAP’s pre data collection and 8 ½ months at post data collection. The lowest numerical mean question score among constructs and the greatest mean change from pre to post was in *Knowledge/Family-specific*. Over all constructs and subscales, pre scores were approximately the same for these two years. The same is true for post scores. Exceptions are *Practices/Responsiveness*, *Attitudes/Commitment*, and *Attitudes/Respect* that all saw numerical changes from pre to post in 2016-17, but much less of a change or none at all in 2017-18. Field test results were similar to RECAP post test results in either 2016-17 or 2017-18 or both in every construct and subscale.

Figure 18. FTRQ – Teacher comparison of fall and spring mean question scores by construct for 2016-2017 and 2017-2018 with the authors’ field study mean score.

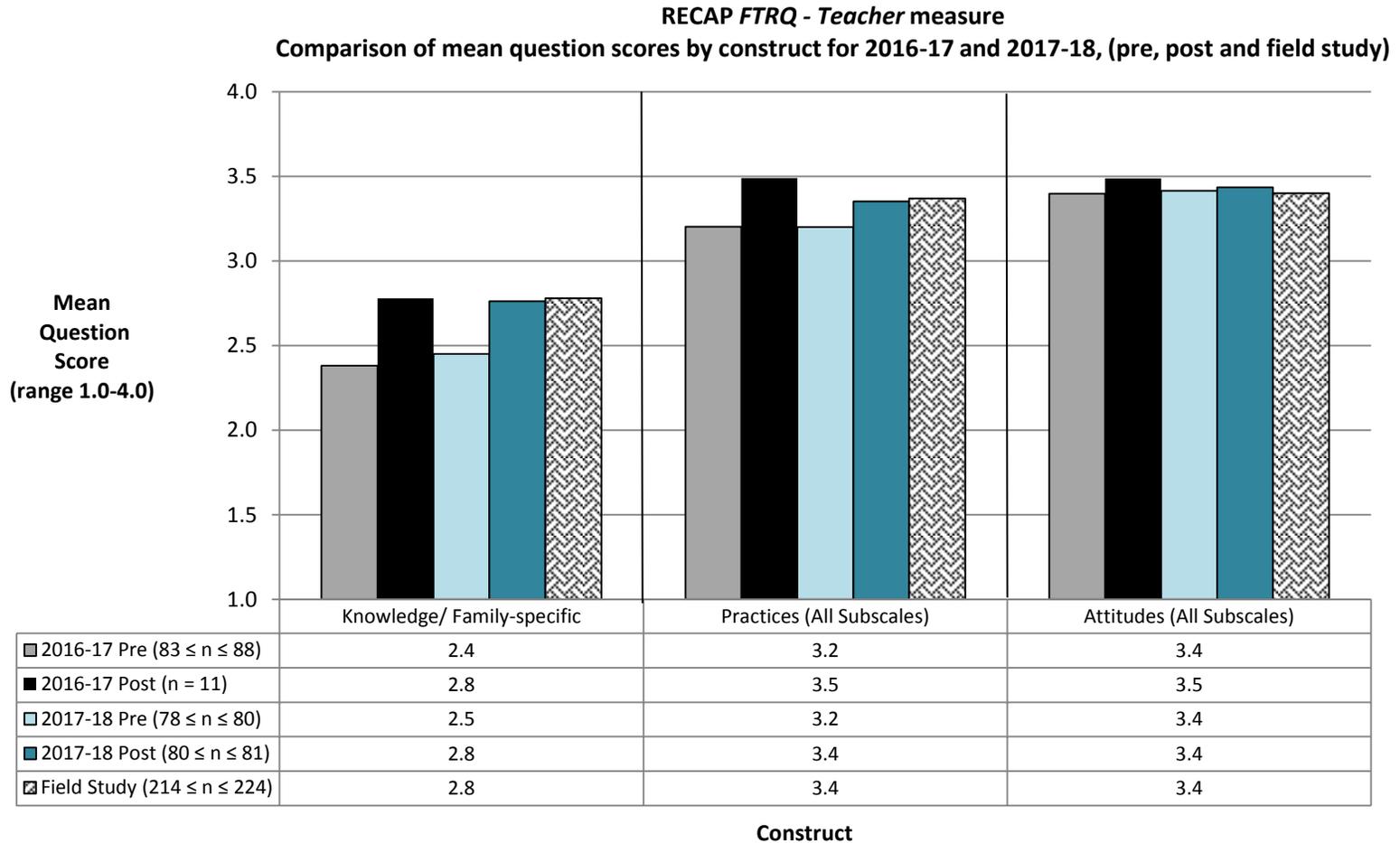
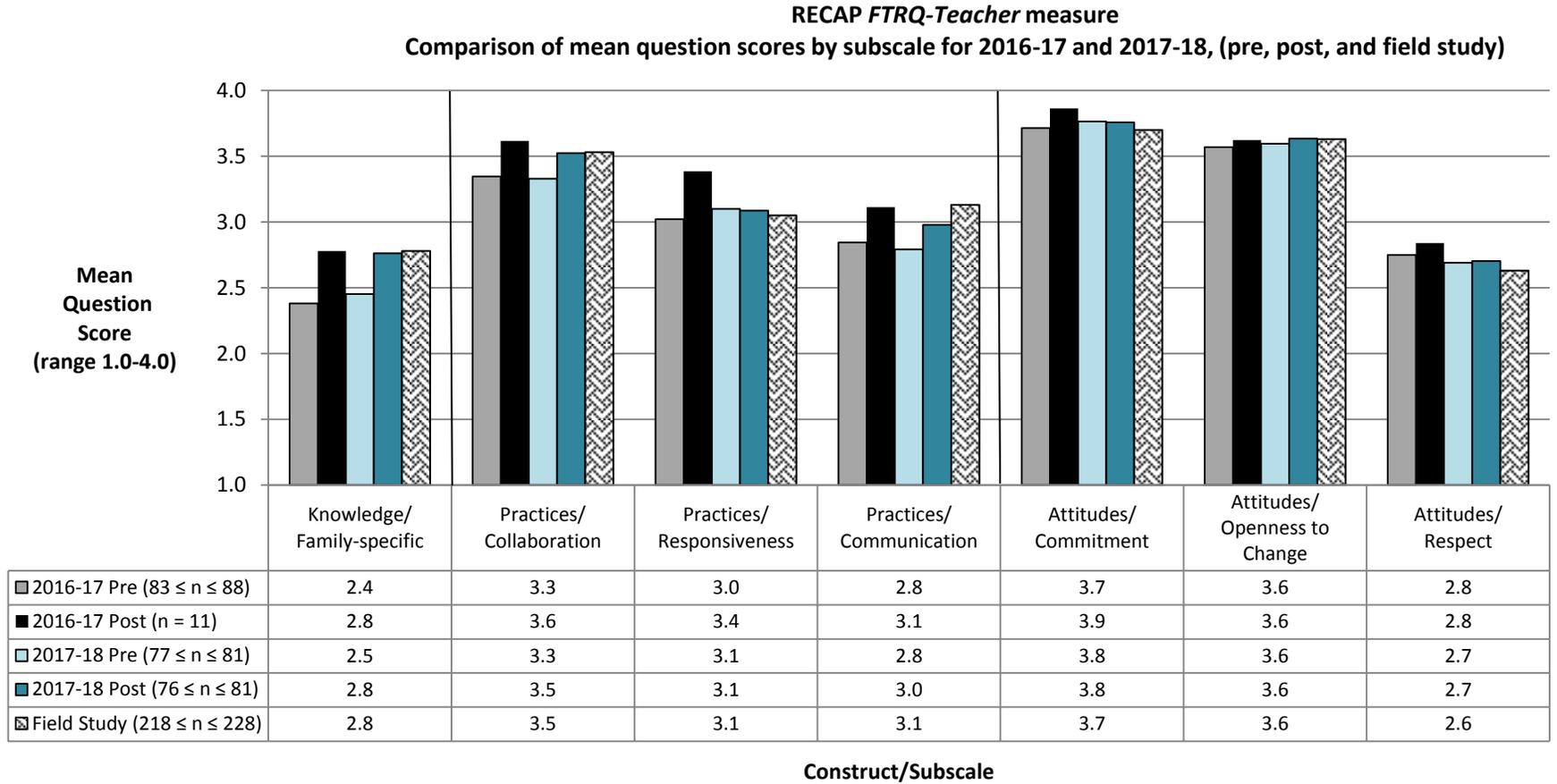
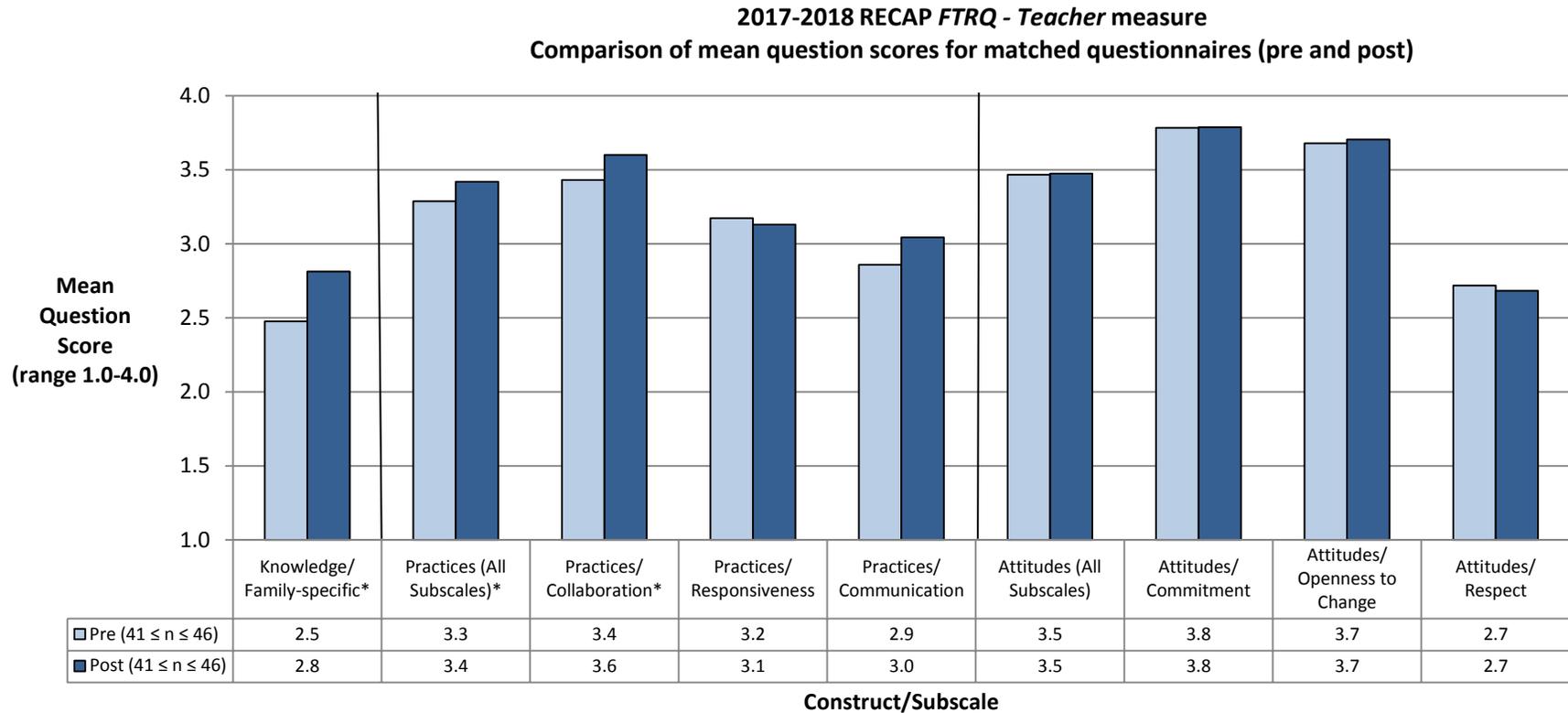


Figure 19. FTRQ – Teacher comparison of fall and spring mean question scores by subscale for 2016-2017 and 2017-2018 with the authors’ field study mean scores



Analysis of the *FTRQ – Teacher* results, using data from only the teachers who submitted both a pre and post questionnaire (n=46) is presented in Figure 20. Comparison of the pre-test and post-test scores using Student’s *t*-test, reveals statistically significant ($p<.05$) gains for Knowledge/Family-specific, Practices (All Subscales), and Practices/Collaboration. All other constructs and subscales showed no concrete differences from pre to post, however attention should be drawn to the fact that the sample size is relatively small. Analyses were performed using mathcracker.com’s online tool.

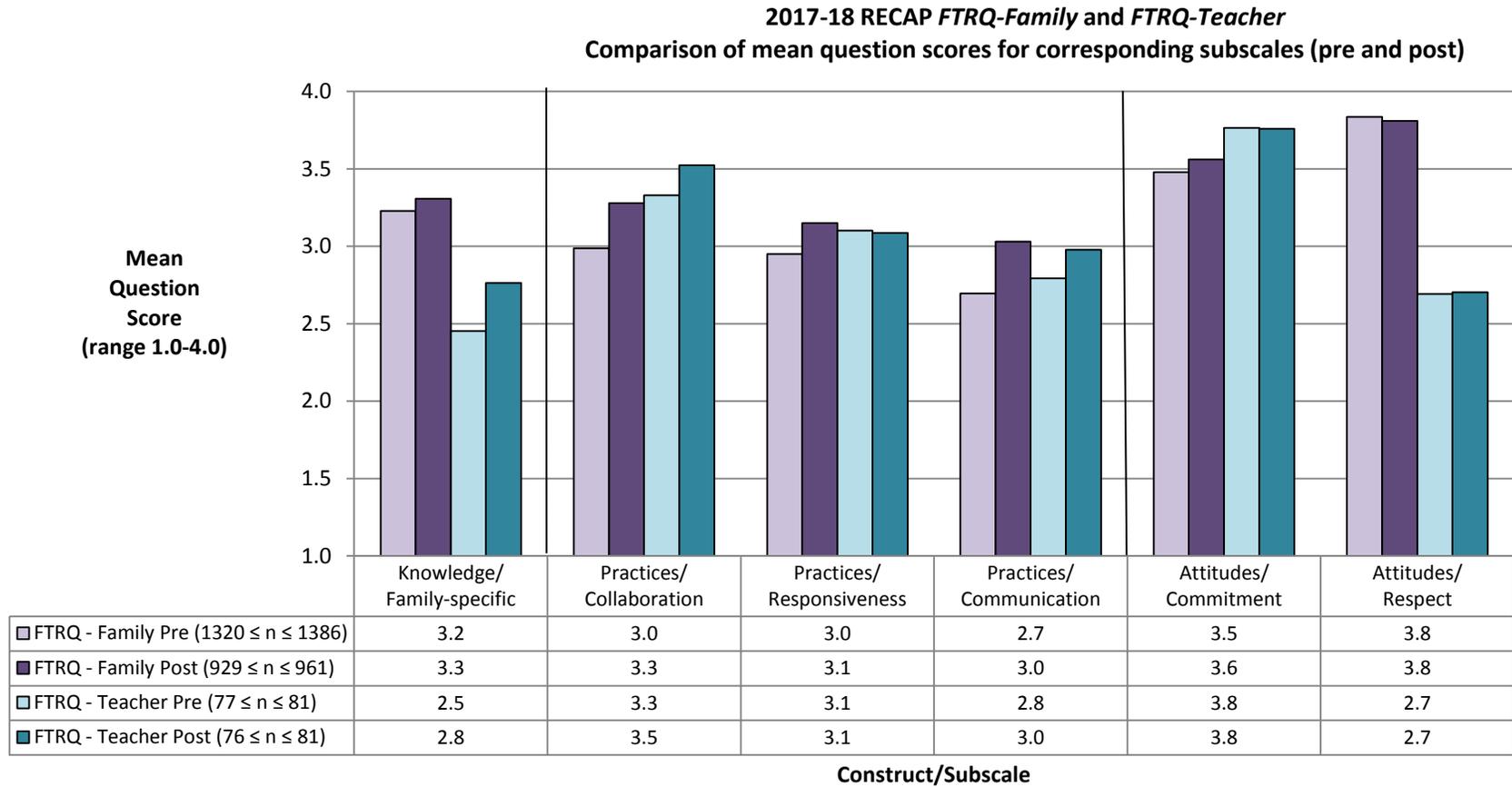
Figure 20. 2017-2018 FTRQ – Teacher comparison of mean question scores for matched questionnaires in fall and spring



Note: *Difference in means from pre to post is significant at $p<.05$

Several subscales for the *FTRQ – Family* and *FTRQ – Teacher* are the same. Please note any conclusions drawn from comparing these corresponding subscales are limited because families are completing the questionnaire about their child’s main teacher while the teacher is completing the questionnaire on an aggregate level about all the families of children in their classroom. Since the *FTRQ – Family* is not required there may be initial differences between the families that submit a survey and those that do not submit a survey that cannot be accounted for at this time. That being said, Figure 21 represents the family and teacher perspectives in corresponding subscales for the fall/pre and spring/post assessments. It would be natural to see growth from pre to post for the family measure and for the teacher measure and to see means for families and teachers be roughly the same at the time of pre-test and the same at the time of the post-test. *Practices/Communication* is the subscale that fits these expectations the best. For all other corresponding subscales, either there is no growth among families or teachers from pre to post (see *Practices/Commitment* where the *FTRQ – Teacher* pre and post means remain about the same) or pre-test and post-test means are not aligned between families and teachers (see *Knowledge/Family-specific* where the *FTRQ – Family* pre mean is 3.23 and the *FTRQ – Teacher* pre mean is 2.45) or both (see *Attitudes/Respect* where the *FTRQ – Family* mean decreases from pre to post and this group’s pre mean is 3.84 while the *FTRQ – Teacher* pre mean is 2.69, a difference of more than one point).

Figure 21. 2017-2018 FTRQ – Family and FTRQ – Teacher comparison of mean question scores (pre-November 2017 and post-May 2018)



An independent two-sample *t*-test was performed using mathcracker.com on the pre data and the post data. Table 32 shows that over the past two years, families have consistently responded more positively to teachers' family-specific knowledge and respectful attitude than the teachers have responded about themselves in these areas. In 2016-17, caregivers rated teachers as being more collaborative than teachers rated themselves, but this was flipped in 2017-18. The same is true of responsiveness, with the exception of the post-test in 2017-18 where it was found that the change in means could have been explained by chance. Changes in means explained by chance are also a possibility for communication over both years and commitment in 2016-17. In 2017-18, teachers rated their commitment higher than caregivers rated the commitment of their children's teachers.

Table 32. Significant increases in means when comparing the *FTRQ – Family* and *FTRQ – Teacher* from 2016-2017 and 2017-2018, collected during the fall and spring

<i>FTRQ – Family</i> and <i>FTRQ – Teacher</i> Measures						
Significance comparison of mean question scores for 2016-17 and 2017-18 (pre and post)						
Pre 2016-17	Knowledge/ Family-specific*	Practices/ Collaboration*	Practices/ Responsiveness*	Practices/ Communication	Attitudes/ Commitment	Attitudes/ Respect*
Post 2016-17	Knowledge/ Family-specific*	Practices/ Collaboration*	Practices/ Responsiveness*	Practices/ Communication	Attitudes/ Commitment	Attitudes/ Respect*
Pre 2017-18	Knowledge/ Family-specific*	Practices/ Collaboration*	Practices/ Responsiveness*	Practices/ Communication	Attitudes/ Commitment*	Attitudes/ Respect*
Post 2017-18	Knowledge/ Family-specific*	Practices/ Collaboration*	Practices/ Responsiveness	Practices/ Communication	Attitudes/ Commitment*	Attitudes/ Respect*
*Differences in means between <i>FTRQ – Family</i> and <i>FTRQ – Teacher</i> are significant at $p < .05$						
No difference between Family and Teacher means						
Family means are higher than Teacher means						
Teachers means are higher than Family means						

FTRQ – Director

The *FTRQ – Director* (Kim et al., 2015) was piloted with a small volunteer group of directors in 2016-17. In 2017-18, the *FTRQ – Director* was distributed to 67 school principals and center directors in November 2017 as an optional survey. Like the *FTRQ – Family* and *FTRQ – Teacher* some questions on the *FTRQ – Director* were omitted as the information could be collected elsewhere.

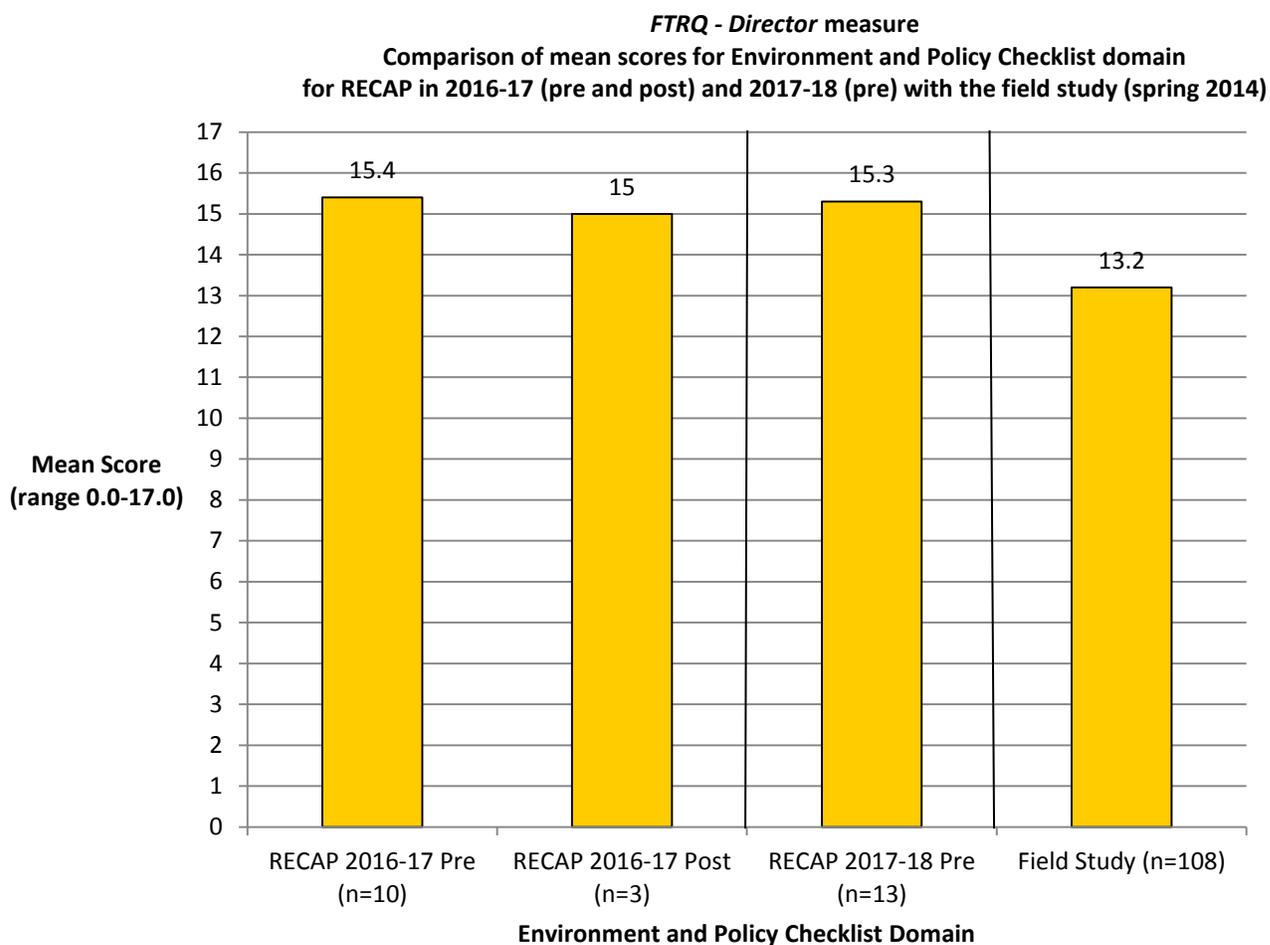
The *FTRQ - Director* asks questions about the educational and care environments, as well as program policies.

There are 3 constructs, containing 6 subscales that describe family and teacher relationship quality from the director perspective. The constructs are the *Environment and Policy Checklist*, *Communication Systems*, and *Information about Resources*. The *Environment and Policy Checklist* construct is the only construct containing separate domains and for which the authors provide comparison statistics. The four domains in this construct are: *Welcoming*, *Culturally-diverse information*, *Peer to peer support*, and *Ways to provide parenting information*. The *Welcoming* domain asks directors about family involvement in visiting and shaping their child's classroom. The *Culturally-diverse information* domain asks about having specific written material available to families with different languages and education levels. The *Peer to peer support* domain asks directors about providing opportunities for families to gather with other children's families. The *Ways to provide parenting information* domain asks about providing parenting information in workshops or classes or via bulletin boards. All questions in the *Environment and Policy Checklist* construct are answered yes or no, receiving a score of 1 or 0 respectively.

In November 2017, the *FTRQ - Director* was completed by 13 administrators, a return rate of 19%. Of the 13 respondents, 11 (85%) were center directors of community-based organizations and two (15%) were school principals. This same survey was completed by 108 directors in the national field study conducted by the authors of the measure.

We present the next figure for illustrative purposes only due to the small numbers of directors who completed the questionnaire. Figure 22 displays *FTRQ – Director* results for 2016-17 and 2017-18 along with Field Study results for reference.

Figure 22. *FTRQ* – Director Comparison of mean scores for the Environment and Policy Checklist domain for RECAP in 2016-2017 (pre and post) and 2017-2018 (pre) with the field study (spring 2014)



In 2017-18, RECAP explored the association between positive family-teacher relationships and positive child outcomes. The constructs and subscales and caregiver-reported relationship quality of the *FTRQ* – *Family* post-test (opinion survey completed by families) were used to measure the quality of family-teacher relationships. The COR Advantage (academic measure completed by teachers) change scores from period 1 (September 2017) to period 3 (June 2018) and kindergarten readiness score at period 3 were used to measure child outcomes.

An intercorrelation matrix was produced between the *COR+ Overall* change score and each of the constructs and subscales of the post-test *FTRQ* – *Family* and between the family-reported relationship score (the aforementioned Q7) and each of the constructs and subscales of the post-test *FTRQ* – *Family*. Results are displayed in Table 33. All *FTRQ* – *Family* constructs and subscales and family-reported relationship score have negligible or very weak correlations (range -0.03 to 0.13) with the *COR+ Overall* change score. From their literature review, Kim et al. (2015) expected those who expanded on their research to see moderate to high correlations between positive child outcomes (as RECAP defined by the *COR+ Overall* change score) and the *Practices/Communication* and *Attitudes/Respect* subscales, but the analysis of this year’s

data does not support this hypothesis. Weak, but statistically significant, relationships were found between *COR+ Overall* change and *Practices* (All Subscales), *Practices/Collaboration*, *Practices/Family-focused Concern*, and the caregiver-reported relationship score. The caregiver-reported relationship scores were moderately related to *Practices* (All Subscales), *Practices/Responsiveness*, *Practices/Family-focused Concern*, and *Attitudes/Commitment*.

The following provides a framework for interpretation of Pearson's correlation coefficients (Mukaka, 2012):

Size of Correlation Coefficient	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high (+/-) correlation
.70 to .90 (-.70 to -.90)	High (+/-) correlation
.50 to .70 (-.50 to -.70)	Moderate (+/-) correlation
.30 to .50 (-.30 to -.50)	Low (+/-) correlation
.00 to .30 (.00 to -.30)	No or very small (+/-) correlation

Table 33. Pearson’s correlation matrix between the *COR+ Overall* change scores, the caregiver-reported relationship score (Q7) and the constructs and subscales of the *FTRQ – Family*

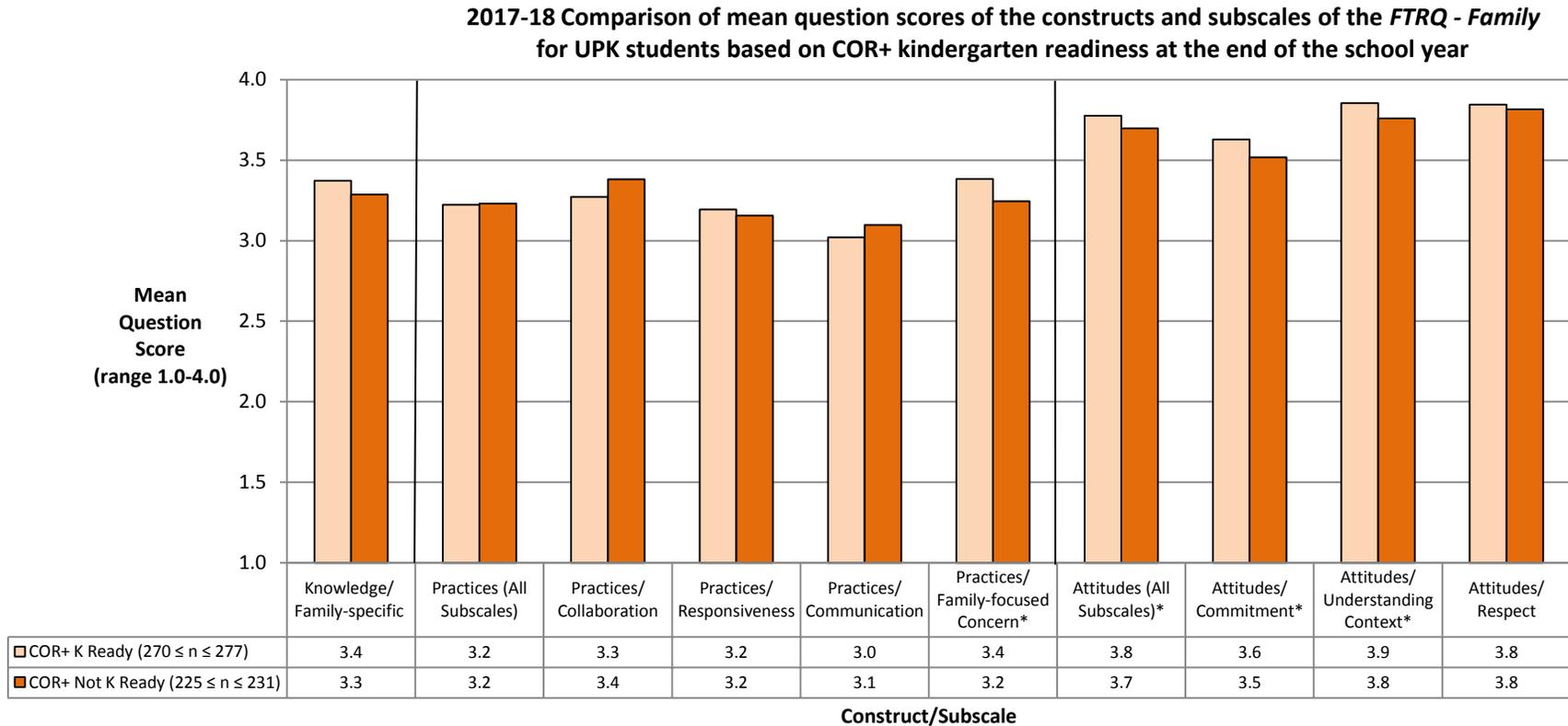
2017-18 Pearson correlation matrix for <i>COR+ Overall</i> change scores, the caregiver-reported relationship score, and the constructs and subscales of the <i>FTRQ - Family</i>												
	COR+ Overall Change Score	Knowledge/ Family-specific	Practices (All Subscales)	Practices/ Collaboration	Practices/ Responsiveness	Practices/ Communication	Practices/ Family-focused Concern	Attitudes (All Subscales)	Attitudes/ Commitment	Attitudes/ Understanding Context	Attitudes/ Respect	Caregiver -reported Relationship Score
COR+ Overall Change Score		0.03 (n=794)	0.10* (n=773)	0.07* (n=791)	0.07 (n=776)	0.04 (n=776)	0.12* (n=776)	0.00 (n=770)	0.05 (n=774)	-0.03 (n=780)	-0.02 (n=768)	0.13* (n=780)
Caregiver-reported Relationship Score	0.13* (n=780)	0.36* (n=904)	0.61* (n=888)	0.48* (n=900)	0.55* (n=891)	0.45* (n=886)	0.53* (n=890)	0.37* (n=884)	0.52* (n=888)	0.14* (n=895)	0.07* (n=881)	

*Correlations are statistically significant at $p < .05$

We compared the means of the *COR+ Overall* change score for groups of students whose families (a) completed the *FTRQ – Family* post (n=803), and (b) did not complete the *FTRQ – Family* post (n=1638), to see if these two groups had any initial differences. The mean *COR+ Overall* change score for the families that did complete the questionnaire was 1.26 and for those families that did not complete the questionnaire the mean change score was 1.31. The difference in the means was not statistically significant. Additionally, chi-square analyses were completed to determine whether caregivers of different student groups were more likely to submit the *FTRQ – Family* post questionnaire. No difference was found for the following student categories: gender (male, female), ethnicity (African American, Hispanic, other) or IEP status (yes, no). Families were found to be more likely to submit a questionnaire if the child was in EPK (three year olds) as opposed to UPK (four year olds).

RECAP asked, “Is there any difference in mean question scores of the *FTRQ – Family* constructs and subscales for students who are considered kindergarten ready by the *COR+*?” This was investigated using data from UPK students with a kindergarten readiness score at *COR+* period 3 (March - June 2018) and whose families completed *FTRQ – Family* measures at post (May 2018). The results are presented in Figure 23. There is an increase in *FTRQ - Family* mean question scores for UPK students who were kindergarten ready in the *Attitudes* construct and the *Practices/Family-focused Concern*, *Attitudes/Commitment*, and *Attitudes/Understanding Context* subscales. The Mann-Whitney U test was conducted on this data and the results were the same as those given by the Student’s *t*-test, except when using Mann-Whitney U, the *Practices/Family-focused Concern* subscale was not found to have a statistically significant difference in means for UPK students who were kindergarten ready versus students who were not kindergarten ready.

Figure 23. 2017-2018 Comparison of mean question scores on the post *FTRQ – Family* measure for UPK students that are ready and not ready for kindergarten as defined by COR+ at time 3

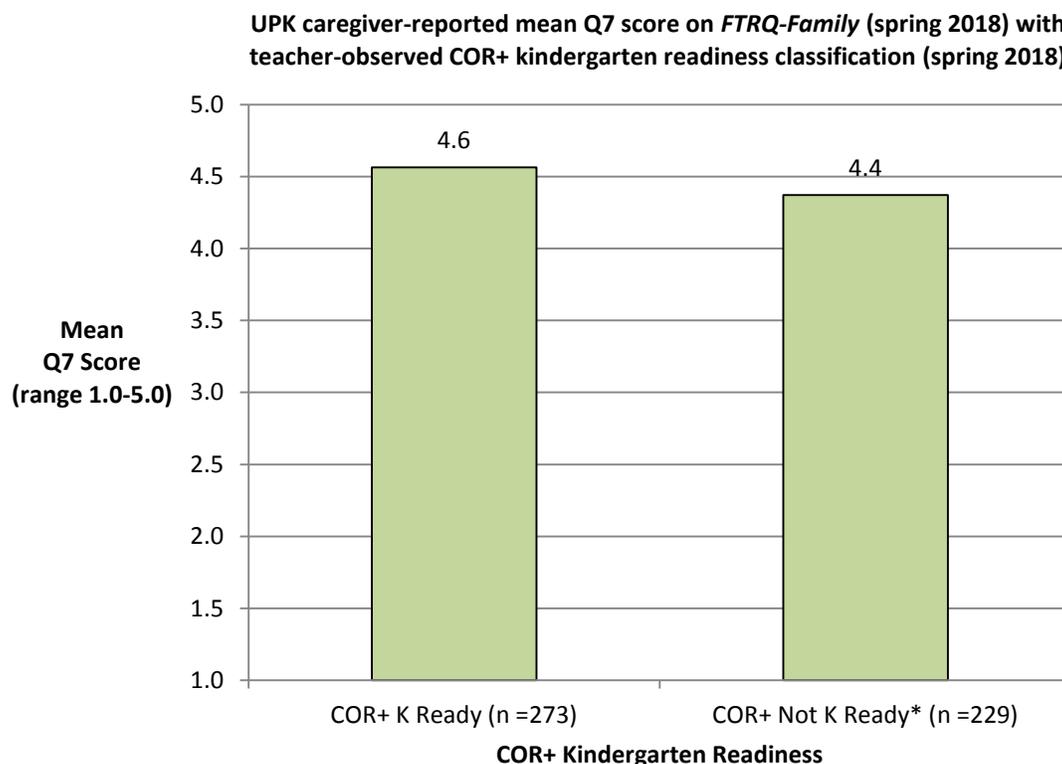


Includes only UPK students with completed *FTRQ – Family* measure at post

*Difference in means is significant at $p < .05$

Similarly, RECAP asked, “Is there any difference in the mean score of the caregiver-reported relationship question (Q7) within the *FTRQ – Family* measure for students who are considered kindergarten ready by the COR+?” This was investigated using data from UPK students whose families had submitted *FTRQ – Family* measures at post (May 2018) and had a kindergarten readiness score at COR+ period 3 (March - June 2018). The results are presented in Figure 24. Families of UPK students who are kindergarten ready have a higher mean score for the caregiver-reported relationship quality question on the *FTRQ – Family* compared with families of UPK students who are not kindergarten ready.

Figure 24. 2017-2018 Comparison of mean score for the caregiver-reported relationship quality question (Q7) on the post *FTRQ – Family* measure for UPK students that were and were not considered kindergarten ready at COR+ period 3



Includes only UPK students with completed *FTRQ – Family* measure at post

*Difference in means is significant at $p < .05$

In conclusion, RECAP found from these measures that:

- Families reported improved relationships with teachers in most areas by the end of the 2017-18 school year
- Teachers reported statistically significant improvement in relationships with families during the 2017-18 school year in three of the nine total constructs and subscales
- When the perspectives of families and teachers are compared, these groups seem to have differing opinions about the specific areas of relationship strength and weakness
- There are no strong correlations between the constructs and subscales and caregiver-reported relationship quality of the *FTRQ – Family* and the change scores of *COR+ Overall*
- There are increases in the means of question scores for four out of ten constructs and subscales and for the caregiver-reported relationship score of the *FTRQ – Family* for UPK students who are kindergarten ready versus UPK students who are not kindergarten ready as defined by the COR+

Recommendations

Recommendations for 2018-2019

The efficacy of RECAP's continuous improvement system and feedback reports is evident. Below are recommendations for additional program improvements which may positively impact child outcomes. The following section details three recommendations that should be at the forefront of programming for the upcoming academic year. Other recommendations are discussed, with background information provided to further support RECAP's continuous improvement system.

Expanding summer learning opportunities for three- and four-year-old children

In 2017-18, summer learning opportunities expanded to over 300 three and four year old children. We must continue to increase the size of this program and assess its efficacy in maintaining the social-emotional and cognitive functioning of our children over the summer period. Expansion in 2018 provided 6 weeks of 6 hour programming per day for 140 3-year-olds and 238 4 year olds. By mid-August, when summerLeap ended, 64% of 4-year-olds were ready for kindergarten. For the last three years summerLeap has significantly improved kindergarten readiness (range of readiness from 64 % to 77%) for those who were able to participate, but only 4.5% of 3 year olds and 7.7% of 4-year olds are presently served over the summer. Intensive summer programming, such as that provided by summerLeap, should be provided for all 3 and 4 year olds whose parents wish to have such programming for their children.

Family qualitative component

We recommend more in-depth conversations with parents and teachers to learn what each group views as family involvement and both the strengths and weaknesses of the caregiver-teacher relationship. We want to know what practices facilitate good relationships and what the stumbling blocks are to positive relationships. RECAP/ TRACC/SEL provide training of UPK-EPK staff to increase positive connections with families as measured by the FTRQ. Overall, 1386 families completed the FTRQ—Family short form in 2017-18, a large increase from the previous school year. Still, only approximately one third of families are completing the form. Speaking with and engaging families about the process may increase the number of completed forms in the future.

Predictive analytics

A recent study published by Lipsey, Farran, and Durkin (2018) on the effects of the Tennessee prekindergarten program found that children that children not attending prekindergarten programming caught up to and generally surpassed their peers that did attend prekindergarten programming on cognitive and social-emotional assessments in kindergarten through 3rd grade. Our recommendation is to explore how prekindergarten programming in Rochester is able to predict student outcomes at 3rd grade and beyond. Similarly, we would also recommend using

predictive analytic models to predict special education classifications at the preschool level. Rochester has a strong history of having one of the top prekindergarten programs in the country, yet fewer than 15% of children in 3rd grade are functioning at grade level.

Other Recommendations

Continued Pyramid Model implementation

The RECAP Team recommends continued, targeted work with the Pyramid Model, aimed at building teacher capacity with regard to responding to challenging behaviors. Monitor implementation of the practices using the TPOT, and monitor SEL outcomes (TCRS) for continued growth (2 years), as well as academic (COR) growth. We recommend a focused track of professional development opportunities for EPK/UPK teachers that assists with building their capacity to respond to challenging behaviors. Implementation will be monitored by collecting pre/post teacher (insert some type of pre/post data collection mechanism that will document teacher thoughts/feelings about the training).

Integration/enhance work across health/education and human service systems

Establish a structure to assess the ways RECAP is used in the Rochester community – from which a plan is developed to secure and enhance RECAP’s place across health, education and human service providers. Among questions which may be included are; which human service organizations and/or community collaborations is RECAP data currently being utilized? Which entities are missing RECAP data to inform whole child information and systemic needs?

What happens after prekindergarten?

Our ability to help students and teachers in the early elementary grades is hampered by a lack of information. While we have clear indications that social-emotional learning is extremely important in the prekindergarten years, and that it strongly influences later experience. We do not have a clear picture of what happens after prekindergarten. In order to improve our understanding—we recommend the administration of high quality social-emotional assessments for students in the years following prekindergarten. This information is best organized in cohort-based longitudinal databases.

Implement CLASS (and SEL measures) across k-3rd grade

The CLASS observation tool has been a mainstay of RECAP’s continuous improvement model for a decade. Beginning with a pilot implementation program, RECAP expanded CLASS observations in all UPK classrooms beginning in 2013. Since then, additional observations have been conducted in EPK classrooms, beginning in 2015. Our recommendation is to pilot the CLASS in k-3rd grade classrooms (inclusive of professional development).

A year 1 focus will be to target kindergarten classrooms in which teachers have volunteered participation. Offer CLASS introductory training to all K teachers. Provide additional

professional development on the CLASS tool based on year 1 pilot results. Maintain focus on low stakes and continuous improvement model, and introduce successive grade levels in year 2, 3, and 4.

Expand EPK programming

Analyses conducted during the 2017-18 academic year demonstrate that students attending two years of programming (EPK+UPK; n=732) outperform their UPK only attending peers on the COR+ and Brigance. Students attending two years of programming are more ready to transition to kindergarten than their UPK only attending peers. Our recommendation to the community is to build capacity within RCSD and CBO classrooms to provide more opportunities for 3-year old children to attend full-day programming

Focus efforts on language arts questions in ECERS-3

Our recommendation is to focus training on targeted items and specific quality indicators of the ECERS-3 tool related to language arts. Monitor ECERS-3 scores mid-assessment cycle to determine intervention needs and communicate to partners in real time. Monitor progress over three year period for tracking outcomes and professional development needs.

Connect PACE data to traditional RECAP data

We recommend to further investigation of protective elements and risk factors for preschoolers and families. Analyze the Pre-K Parent Appraisal of Childhood Experiences (PACE) data along with child attendance, cognitive outcomes measures by COR+, social-emotional outcomes measured by the T-CRS and family-teacher relationship ratings measured by the FTRQ.

Explore further impact of coaching on teaching practice; how does coaching impact student performance (whole child)

Explore further impact of practice-based coaching on teaching practices using the TPOT and student performance through the lens of the whole child. Our recommendation is to measure the quality of practice-based coaching support vs. general support by Technical Support Teachers (TSTs) related to teacher practices measured by the TPOT, and child outcomes measured by the COR+ and T-CRS by conducting a pilot in which EPK and/or UPK teachers will volunteer to participate in a year-long practice based coaching model using the TPOT and student outcomes as metrics of best coaching practices.

Special education outcomes

A wealth of information is available for each child classified as a student with a disability (SWD). This may be used to complement information from other sources; for example, for classified students, the relationship between social-emotional learning (SEL) in prek and subsequent experience as a student has not been studied. In fact, data from prek SEL may prove helpful in the work of the Committee on Special Education (CSE) in its work of evaluation and

classification. A greater understanding of students' issues in the prek years will certainly lead to more relevant and accurate assessments and evaluations, saving large expenditures for remediation in later grade levels. A prime example is students identified on the autism spectrum. Another area for fruitful review and educational refinement is the relationship between social-emotional learning, cognitive development, and the CSE goals for each individual student with a disability.

Impact of RAPP (other parent programs) on parent perceptions and child outcomes

We recommend the expansion of the Rochester Area Parent Program (RAPP) in support of caregivers of young children. With expanded participation and linking caregiver-teacher relationship quality, we would determine if these relationships and student outcomes are better, worse, or the same as children of caregivers not enrolled in RAPP.

Presentations

Hooper, R., MacGowan, A., Infurna, C. J., & Hightower, A. D. (2017). *Rochester Early Childhood Assessment Partnership 2016-2017 Twentieth Annual Report*. Presentation to Rochester City School District Board of Education.

Infurna, C. J., Strano, L., VanWagner, G., Breitung, D., & Perez, I. (2017). Presentation of RECAP 2016-17 Annual Report to Early Childhood Development Initiative (ECDI).

Infurna, C. J., (2017). *Rochester Early Childhood Assessment Partnership 2016-2017 Twentieth Annual Report*. Presentation to RECAP Community Partners and the RECAP Community Advisory Council.

Infurna, C. J., (2017). *Rochester Early Childhood Assessment Partnership 2016-17 Twentieth Annual Report*. Presentation to RECAP A-Team members.

Infurna, C. J., (2018). *ECERS-3 and CLASS outcomes*. Presentation to Technical Support Teachers.

Infurna, C. J., (2018). *Student Outcomes and Classroom Quality Report*. Presentation to Elementary School Principals.

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