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EMOTIONAL HEALTH

Rochester Early Childhood Assessment Partnership 2016-2017 Twentieth Annual Report

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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 2016-2017 – UPK

Students

- ❖ Academically, as measured by the COR Advantage, students made as much as two years' gains. However, as we have reported in previous years, students are still entering UPK well behind developmental expectations set for four year old children. Even though students are making great gains throughout the school year, only 57% of UPK students are ready to transition to kindergarten as defined by COR Advantage.
- ❖ A screening evaluation administered in the fall is the Brigance III. The Brigance III measures the *Language Development*, *Cognitive Development*, and *Physical Development* of children in six month increments. Similar to previous reports (Infurna et al., 2016), we found that 65% of UPK students enter the school year functioning within the normal developmental range. However, 35% of students were identified as being at-risk and possibly in need of a more formal evaluation and/or close monitoring.
- ❖ The social-emotional health of our UPK children was measured by the T-CRS. At the fall reporting period, 77% of students were found to have no social-emotional risks. At the spring reporting period, 79% of students were found to have no social-emotional risks.
- ❖ For the fourth consecutive year, RECAP analyzed the relationship between attendance, school readiness, and social-emotional well-being. Students attending greater than 90% of the time were more school ready than their peers attending less than 90% of the time. Socially, no statistical difference was found across the four domains of the T-CRS (*Task Orientation*, *Behavior Control*, *Assertiveness*, and *Peer Social Skills*) and time spent in the classroom.

Classrooms

- ❖ The 2016-2017 school year marked the second consecutive year the ECERS-3 was implemented. Growth was made in all six of the ECERS-3 domains. The total mean for UPK teachers (n=105) was 5.4, up .2 from the previous year.
- ❖ RECAP teachers continued to maintain a high level of classroom quality as measured by the CLASS. Growth was made in the *Emotional Support*, *Classroom Organization*, and *Overall* domains. The mean *Overall* score increased to 5.6, up .2 from the previous year.

RECAP's Major Findings for 2016-2017 – EPK

Students

- ❖ With the 2016-2017 school year serving as a baseline for full day/full year programming, three year old students made significant gains across the *Language, Literacy, and Communication*, *Physical Development and Health*, *Mathematics*, and *Creative Arts* domains of the COR Advantage.

- ❖ EPK students completed the 2016-2017 school year with higher means across all COR Advantage domains than UPK students entered the school year with in the fall (See Figure 3 of 2016-2017 RECAP Annual Report).
- ❖ Student academic growth was shown to be effected by attendance. Students attending greater than 80% of the time made more gains on the COR Advantage than their peers not attending as frequently.
- ❖ EPK student Brigance III screen status scores mirror those of the 2015-2016 cohort. Approximately 72% of three year old children entered EPK scoring within the normal and possibly gifted and talented domains.
- ❖ Student social-emotional health also grew throughout the academic year. The *Task Orientation*, *Assertiveness*, and *Peer Social Skills* domains of the T-CRS had moderately high effective sizes, showing growth between fall and spring reporting periods.
- ❖ Students attending greater than 80% of the time made significant growth in the *Assertiveness* domain of the T-CRS as compared to their peers not attending as frequently.

Classrooms

- ❖ For the second consecutive year, the ECERS-3 was implemented in all EPK classrooms (n=72). Slight regression was observed in all the domains of the ECERS-3, with the *Total Score* dropping from 5.3 in 2015-2016 to 5.2 in 2016-2017.
- ❖ In 2016-2017, EPK teachers (n=72) showed growth in the CLASS, with gains being made in the *Emotional Support*, *Instructional Support*, and *Overall* domains. The Overall score for EPK teachers was 5.3, up from 5.2 the previous year.

RECAP's Major Findings for 2016-2017 – Family Perspectives

Families (FTRQ-Family)

- ❖ Family perspectives were measured by piloting The Family and Provider/Teacher Relationship Quality questionnaire (FPTRQ). For RECAP purposes, the title was shortened to Family and Teacher Relationship Quality questionnaire (FTRQ – Family). Families were asked to rate their perceptions of their relationship with their child's teacher.
- ❖ Significant growth was reported by families completing the questionnaire at fall and spring reporting periods (n=367). *The Practices/Collaboration*, *Practices/Responsiveness*, *Practices/Communication*, *Practices/Family-focused concern*, *Practices (all subscales)*, and *Attitudes (all subscales)* all showed significant growth from fall to spring reporting.

Families (FTRQ-Teacher)

- ❖ The FTRQ –Teacher measure focuses on how teachers work with families of the children in their classroom. Fall and spring reporting by classroom teachers showed growth in most of the subscales of the questionnaire (*Knowledge/Family Specific*, *Practices/Collaboration*, *Practices/Responsiveness*, *Practices/Communication*, *Practices (all subscales)*, *Attitudes/Commitment*, and *Attitudes (all subscales)*).

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

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

- ❖ Professional development for teachers and program administrators in the use of child screening measures, assessments, and rating scales and the interpretation of reports.
- ❖ Efficient and user-friendly data collection and feedback reports, with reports looped back to teachers and directors. Primarily this is accomplished using COMET[®] system reports, which provide instant feedback, and paper reports, when desired, at the child, classroom, program, and system levels.
- ❖ Training teachers and observers on fidelity implementation and quality indicators of the standards assessed with the Early Childhood Environment Rating Scale, third edition (ECERS-3) and the Classroom Assessment Scoring System (CLASS).
- ❖ Twice monthly review and planning meetings with community-based organizations, ABC Head Start, RCSD, and other early education community leaders and evaluators to analyze and synthesize available information, recommend changes, and monitor the systematic quality of early education in Rochester.
- ❖ Quarterly Community Advisory Group meetings to facilitate support and direction from and to the community.
- ❖ Community presentations of 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.

Consistently, RECAP uses reliable and valid measures to assess program quality and student outcomes. Throughout RECAP's 23-year history, the ECERS (or its updated version, the ECERS-3) was used 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 are different. Therefore, for the 2012-2013 school year, all RECAP classrooms were observed with the CLASS instrument, as well as the ECERS-R. The 2015-2016 school year marks the fourth year that the CLASS instrument was used to assess all RECAP classrooms.

To measure levels of students' competencies and needs within academic, motoric, and non-cognitive or social/emotional domains, the Child Observation Record - Advantage (COR-Advantage) and the Teacher-Child Rating Scale (T-CRS) were completed in the fall and again in the spring. In keeping with national trends, state requirements, and local needs and for screening children early in the school year, the Brigance Early Childhood Screen III (Brigance III) was used for the second time this year. Children's attendance and parental participation were also recorded by school staff, primarily teachers, each school day.

The level of parents' perceived involvement with multiple facets of their children's education was evaluated using the Family Involvement Questionnaire (FIQ). The FIQ is a parent completed questionnaire. Parents report their time spent in their children's pre-k classrooms, with their children's teachers, and participating in educational activities with their children at home. The FIQ was completed by parents at the beginning and at the end of the school year. Teacher-parent communications were recorded by pre-k programs via the web-based COMET Informatics system.

Table 1 below summarizes the screening and assessment measures collected and the total number of assessments completed during the 2016-2017 school year.

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

RECAP 2016-2017 Variables, Measures, Number Assessed and Methods			
Variables	Measures	Completed Assessments in 2016-2017	Method
Classroom Environment Quality	ECERS-3	177	Classroom Observation by Independent Observer
Quality Teacher and Student Interactions	Classroom Assessment Scoring System (CLASS)	199	Classroom Observation by Independent Observer
Academic, Motor, and Social	COR Advantage (COR +)	3,251	Teacher Observation
School, Emotional, and Behavioral Adjustment	Teacher-Child Rating Scale (T-CRS)	2,894	Teacher Observation
Academic Skills, Physical Development, and Health	Brigance Early Childhood Screen III	2,841	Child Direct Performance
Family Engagement	Family and Teacher Relationship Quality (FTRQ) – Family Questionnaire	843	Parent Survey
Family Engagement	Family and Teacher Relationship Quality (FTRQ) – Teacher Questionnaire	89	Teacher Survey

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

Table 2. RECAP UPK Student Demographics

RECAP UPK 2016-2017 UPK Student Demographics (n=2321)		
Gender	Male	50%
	Female	50%
Race/Ethnicity	Black/African American	56%
	White Caucasian	12%
	Hispanic/Latino	23%
	Asian	4%
	Native American	<1%
	Other	4%

Table 3. RECAP EPK Student Demographics

RECAP EPK 2016-2017 EPK Student Demographics (n=1309)		
Gender	Male	50%
	Female	50%
Race/Ethnicity	Black/African American	62%
	White Caucasian	11%
	Hispanic/Latino	22%
	Asian	3%
	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 Early Childhood Environmental Rating Scale (ECERS). 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 the nationally recognized observation instrument for assessing and evaluating the early childhood classroom environment. In 2015, the ECERS developers released the ECERS-3, which represented a major revision of the ECERS-R. Upon its release, RECAP adopted ECERS-3 to assess EPK and UPK classrooms. Each year for the past two years, several training opportunities have been scheduled to permit teachers to learn more about the new ECERS-3.

Independent observers score 35 ECERS-3 items on a 7-point scale, where 1 indicates “Inadequate” quality and 7 represents “Excellent” quality. The items are organized into 6 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 has shifted the focus of the observation from materials to how teachers use the materials found 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, which focus on concept development, and the elimination of parent related items, as they were not directly assessed, but were instead 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 almost all UPK (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 ranging from “very good” to “excellent” (5.8-6.2 out of 7) on the ECERS-R for the past ten years. For each of the past eight years, the average ECERS-R score was 6.1 or higher (Infurna et al., 2015).

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 an “exemption” from the annual ECERS-R assessment by achieving overall scores of at least 6.5 for five consecutive years. Exempt teachers were not 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 had mastered the ECERS-R standards. Therefore, in 2012-2013 the “exempt” criterion changed to require a total ECERS-R score of at least 6.2 for three consecutive years, which is the current criterion for an “exempt” designation. Teachers retain their exemption status for three years, at

which time another observation is completed. If classroom quality is scored as 6.2 or higher, the “exempt” status is in place 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. In 2016-2017, 22 UPK teachers had exempt status.

ECERS-3 Aggregate Results for 2016-2017

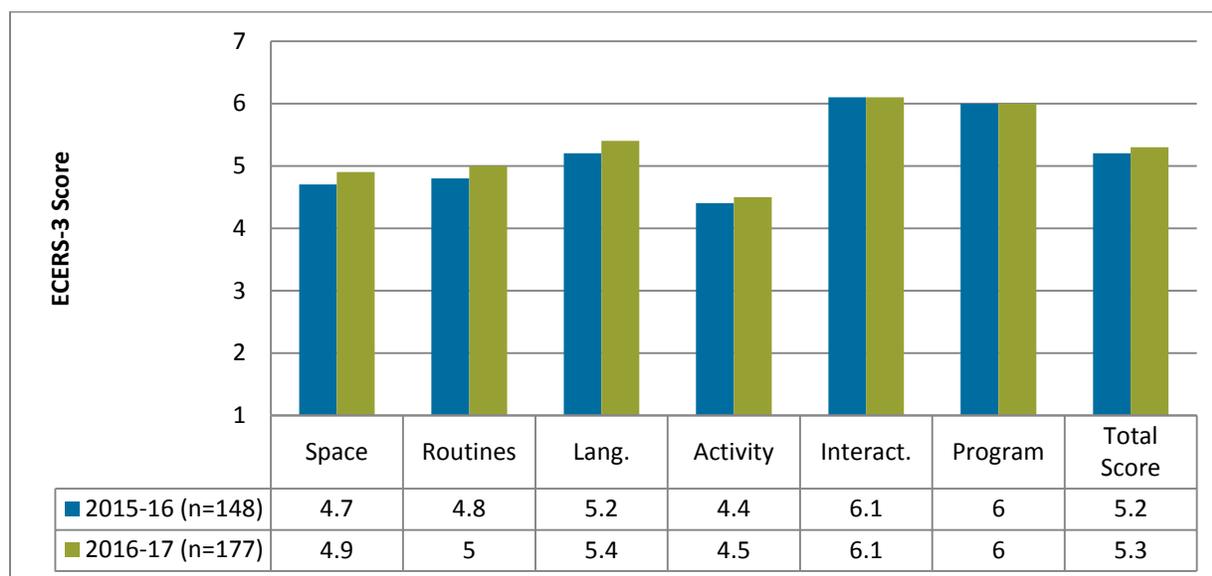
For over 10 years, the Rochester community was witness to “very good” to “excellent” ECERS-R scores, a reflection of the quality programming offered to UPK children and their families. In 2015-2016, with the new release of the ECERS-3, program scores dipped slightly. The lower ECERS-3 scores, in part, were a reflection of the transition to using the new tool to observe the quality of programming in both EPK and UPK classrooms. In 2016-2017, the ECERS-3 community scores rose slightly, with UPK classrooms showing growth both in the subscale scores and overall mean score.

This year (2016-2017) marked the second year of community wide implementation of the ECERS-3. In total, 177 EPK and UPK classrooms were assessed by the ECERS-3. The overall mean score for the community was 5.3, a negligible increase from the previous year mean of 5.2. Figure 1 reports a comparison of Rochester 2015-2016 and 2016-2017 ECERS-3 scores for all observed classrooms. Overall, four subscales saw increases from the previous year (*Space*, *Routines*, *Language*, and *Activity*). Two of the subscales (*Interactions* and *Program*) remained the same.

The following sections are separated by program, beginning with EPK classrooms. As previously noted, this year an additional 25 EPK classrooms were opened. Figure 2 reports a comparison of 2015-2016 and 2016-2017 ECERS-3 for EPK classrooms subscale and overall mean scores. A comparison of 2015-2016 and 2016-2017 ECERS-3 scores for UPK classrooms is reflected in Figure 3.

UPK program results follow EPK program scores. Figure 4 depicts a comparison of scores between 2016-2017 EPK and UPK classroom programming. As noted in Figure 4, *t*-test analyses indicated that UPK Language, Activity, and Total Mean score subscales were significantly higher than their EPK classroom peers.

Figure 1. Previous Two Years of Combined EPK/UPK ECERS-3 Subscale and Total Means



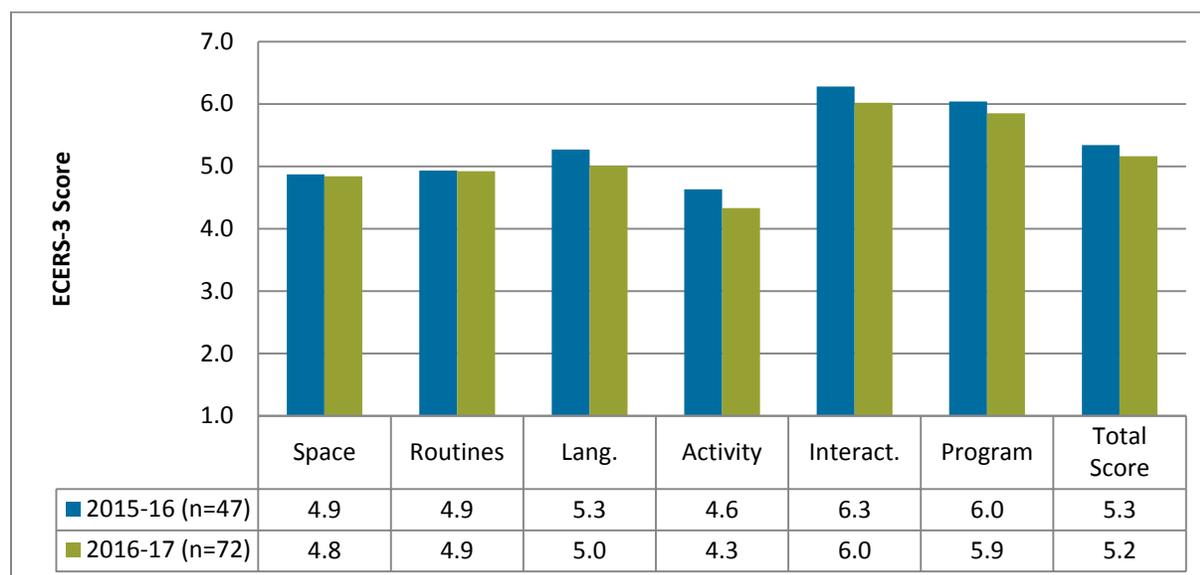
As noted, a slight increase of subscale scores was observed during the 2016-2017 school year. Even with the addition of 25 new EPK classrooms, scores slightly rose in the *Space*, *Routines*, *Language*, *Activity*, and *Total Score* subscales. The *Space* subscale measures the physical layout and furnishings within the classroom. The *Routines* subscale measures the personal care and safety procedures in place for the children. The *Language* subscale measures vocabulary expansion, book use, and print awareness items. The *Activity* subscale measures fine motor, art, dramatic play, and math concepts.

ECERS-3 Results: 2016-2017 EPK Programming

EPK programming expanded by 25 new classrooms and 400 new students in the 2016-2017 school year. Infurna et al., (2016) noted that this expansion required a mammoth undertaking of professional development for newly hired teachers. Rochester City School District, as well as Children’s Institute staff, provided new teacher ECERS-3 training throughout the school year. Children’s Institute held four sessions of Introductory ECERS-3 Training for all new teachers. After teachers received their ECERS-3 results, they were encouraged to attend an ECERS-3 Interpretation Workshop for an individualized review of their classroom observation. Overall, six ECERS-3 trainings were offered to EPK and UPK teachers throughout the school year. In addition to formal training sessions, RECAP’s “Collaborative Review” process is considered a major opportunity for professional development and continuous learning on the ECERS-3.

For 2016-2017, the overall mean score for EPK ECERS-3 programming was 5.2 (see Figure 2).

Figure 2. Comparison of 2015-2016 with 2016-2017 EPK ECERS-3 Scores



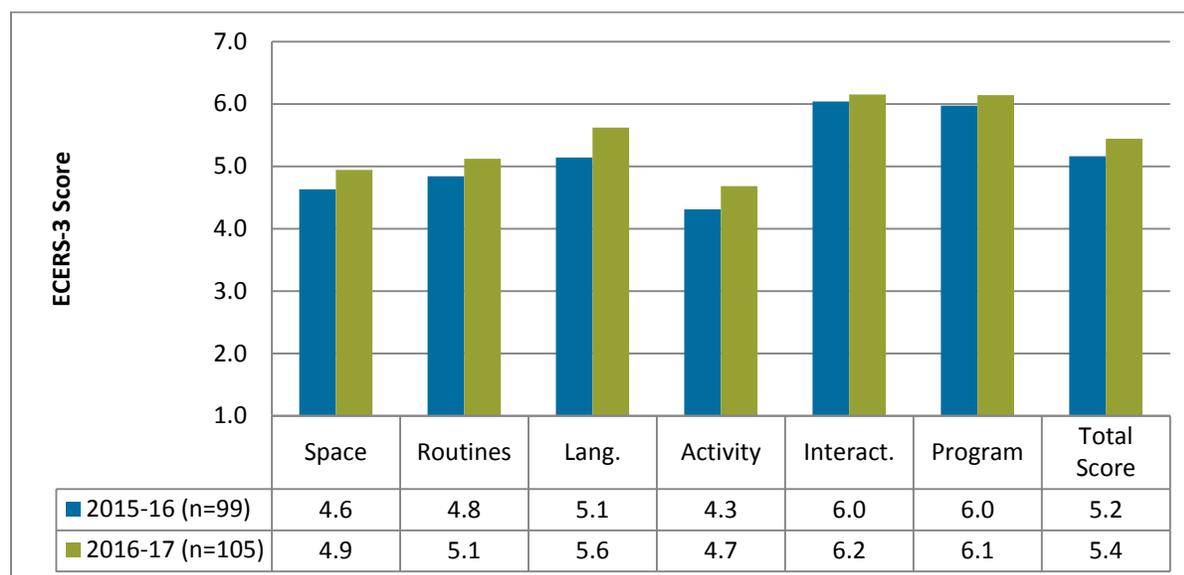
With the expansion of EPK programming, scores dropped slightly from the 2015-2016 school year (See Figure 2). Originally marked as a benchmark of continuous improvement for program quality, and with the addition of 25 classrooms, the 2016-2017 school year will serve as a “new” benchmark for EPK programming moving forward. In the aggregate, all but one of the subscales lost ground (*Routines*) in 2015-2016.

The slight difference in scores from the previous year could be due to a number of factors. First, 25 additional teachers were hired in 2016 and close to 50 were hired in 2015. With such an influx of new EPK teachers new learning must occur. We have observed that it frequently takes three to five years of focused training and attention for new teachers to improve their performance. Also, in addition to 72 new EPK classroom teachers being hired over the past two years, over 1100 new children were enrolled in new EPK programming for the first time. Children as young as 2 years and 7 months began EPK programming in September, 2016. For some children enrolled in structured programming for the first time the initial shock and lack of awareness could also have been a cause for the lower ECERS-3 scores as reported for 2016-2017. In sum, at this time RECAP staff are not concerned about the slight downturn in EPK ECERS-3 results.

ECERS-3 Results: 2016-2017 UPK Programming

For the 2016-2017 school year, the *Total* mean score for UPK teachers rose to 5.4 (see Figure 3), up 0.2 points from last year.

Figure 3. 2015-2016 and 2016-2017 UPK ECERS-3 Scores

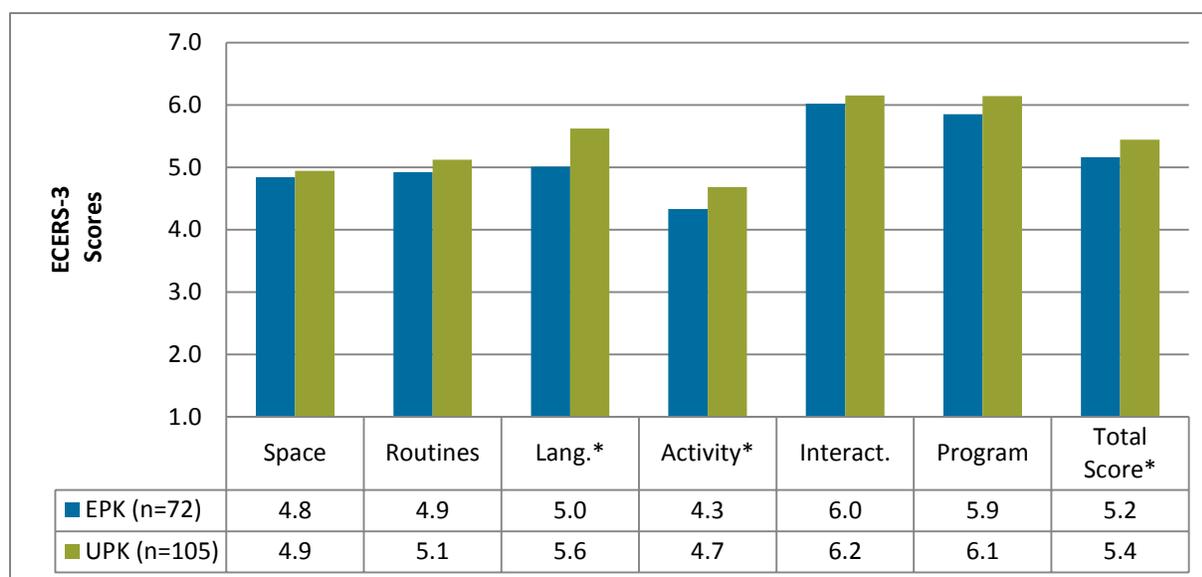


ECERS-3 observers of UPK programs saw growth across all six subscales of the ECERS-3 (see Figure 3) in 2016-2017. The greatest growth (0.5) was made in the *Language* subscale. The *Language* subscale is made up of five items; 1) helping children expand vocabulary, 2) encouraging children to use language, 3) staff use of books with children, 4) encouraging children’s use of books, and 5) becoming familiar with print. Similar to items in the Instructional Support (*Language Modeling* and *Quality of Feedback*) domain of the CLASS, UPK teachers were observed to spend a dedicated amount of time working on language expansion and book use in the classroom.

The *Space* and *Routines* subscales each increased by 0.3 from the previous school year. The *Activity* subscale rose by 0.4, up to 4.7. The *Interaction* and *Program* subscale saw slight increases of 0.2 and 0.1 from the previous year of 6.0 and 6.1 respectively. The *Total* mean rose by 0.2, up to 5.4 for the 2016-2017 school year. In sum, year over year UPK classrooms improved on every subscales on the ECERS-3.

Comparison of RECAP UPK and EPK ECERS-3 Scores

Figure 4. Comparison of EPK and UPK ECERS-3 Subscale and Mean Scores



Note: *significant $p < .05$

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’. It is difficult to compare Rochester early childhood education programming with other programs across the country due to the relatively recent release of the ECERS-3, and the paucity of empirical studies focused on the ECERS-3 (Infurna et al., 2016).

A *t*-test analysis revealed that UPK program scores in the *Language*, *Activity*, and *Total Score* were significantly higher than those of the EPK program. That might be attributed to several factors. As noted, the addition of 72 new EPK teachers over the past two years is likely to have created a headwind for EPK results as there were a greater number of first time teachers working in the prek environment. Second, the *Language* subscale of the ECERS-3 focus is on language and print awareness. Some incoming children into the EPK program do not turn three years old until December of the academic year. Developmentally and cognitively children in the EPK program may not be ready to focus on print awareness type of activities and expanded vocabulary opportunities. Finally, in the course of the three-hour ECERS-3 observation, some EPK teachers were not observed reading to their children nor encouraging their children to read. This would result in the lowest possible score on some *Language* subscale items.

Summary and recommendations

As previously noted, the 2016-2017 school year marked the second year of ECERS-3 implementation in the Rochester community. Figures 1-4 detail RECAP EPK and UPK classrooms’ scores on the new 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 comparison of program quality within the Rochester community to other communities. 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 across the Rochester community were greater than 5. That suggests program quality as measured by the ECERS-3 is ‘good,’ not excellent.

Teachers, administrators and RECAP observers and evaluators recognize that improvements can be made with EPK and UPK programming and professional development in Rochester. The continuous improvement framework that RECAP incorporates has led to many discussions about the growth of classroom quality in the future. Developmentally appropriate professional development opportunities have been scheduled for the upcoming 2017-2018 school year. For example, to support both veteran and new EPK and UPK teachers, a series of in-depth professional development opportunities have already been created that focus on; 1) enhanced language, literacy, and print awareness training for teachers that enriches student learning, 2) on-going opportunities for teachers to attend professional development that scaffold their learning-scope and sequence training, and 3) enhanced support to new EPK and UPK teachers focused on the *Space and Furnishings*, *Personal Care Routines*, *Language and Literacy*, and *Learning Activities* subscales of the ECERS-3.

Program Quality – CLASS

Classroom Assessment Scoring System (CLASS)

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

To be more specific, 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.)

In essence, the CLASS provides the standards and assessment protocol needed to enhance the overall understanding of how high quality early childhood programs, specifically EPK and UPK classrooms, should function. The CLASS also provides teachers, school district administrators, and others in early childhood education with additional information regarding the interactive climate of the 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 newly implemented ECERS-3. As a result, the CLASS is fully integrated within RECAP. By using both the CLASS and the ECERS-3, a more comprehensive picture of the classroom quality has emerged, making it easier for RECAP and its partners to identify and address areas of classroom quality that need improvement.

CLASS UPK and EPK Combined Results

This is the fifth year since the CLASS was fully implemented in all UPK (n=127), and for the second year for EPK classrooms (n=72). Combined results of UPK and EPK (n=199) are provided in the remainder of this section and disaggregated results from 3 year-old EPK and 4 year-old UPK classes are discussed later sections.

The *Overall* CLASS mean for EPK and UPK classrooms combined was 5.5, see Table 4 The *Emotional Support* domain mean was 6.5 indicating that Rochester community early childhood teachers provide a nurturing, caring, and warm learning environment for their children. The *Classroom Organization* mean was 6.1, 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.

Relative to the other domains, the *Instructional Support* domain mean is weakest at 4.0. Historically, this domain has needed an emphasis. Professional development has focused on this domain and specifically on the *Concept Development* dimension (see Figure 5).

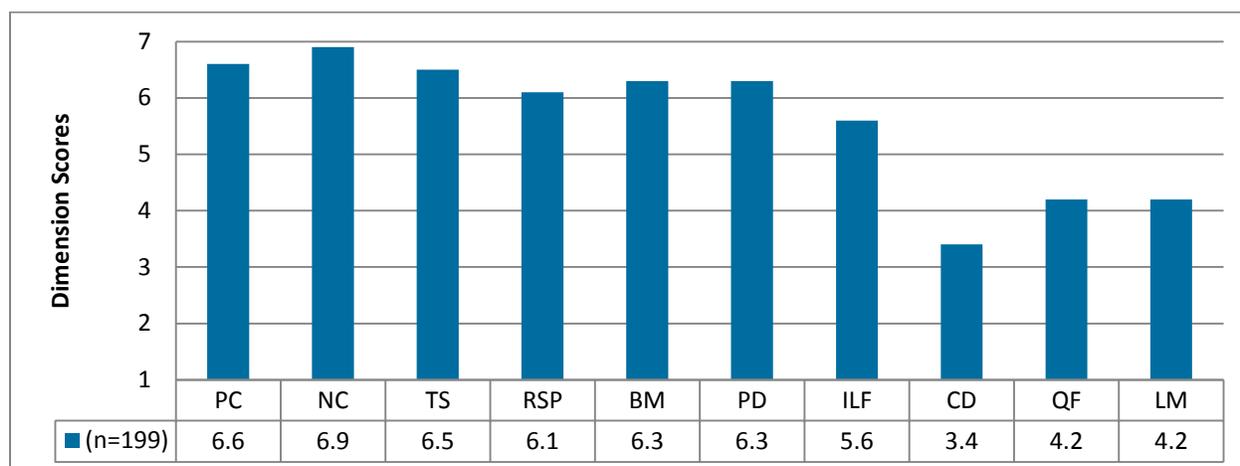
Table 4. Combined UPK & EPK CLASS Scores by Bomain

Domain (n=199)	Mean	Std. Dev.
Emotional Support	6.5	0.5
Classroom Organization	6.1	0.7
Instructional Support	4.0	1.1
Overall CLASS Score	5.5	0.7

Figure 5 reports the combined 10 dimension scores that make up the CLASS. Of note, and noted in by Infurna et al., (2016), the *Instructional Learning Formats* dimension is slightly lower than the other dimensions in the *Classroom Organization* domain. The *Instructional Learning Formats* dimension measures how teachers facilitate and provide developmentally appropriate activities that are engaging within the context of learning opportunities occurring in the classroom.

The *Concept Development* dimension of the CLASS had the lowest mean of 3.4, a slight increase from 3.3 in 2015-2016. The *Concept Development* dimension measures how teachers use instructional discussions and activities to promote higher-order thinking skills of students' in their classrooms. Specifically, the *Concept Development* dimension is made up of four unique items; 1) *analysis and reasoning*, 2) *creating*, 3) *integration*, and 4) *making connections to the real world*. Historically, the *Concept Development* dimension in the Rochester community has been the weakest observed dimension (Infurna et al., 2016).

Figure 5. Combined UPK & EPK 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

As observed in the past, the *Emotional Support* domain dimensions continue to be rated very high in quality (*Positive Climate*, *Negative Climate*, *Teacher Sensitivity*, and *Response to Student Perspectives*). We observed minimal growth in the *Positive Climate* and *Teacher Sensitivity* dimensions from the previous year. The *Emotional Support* domain measures the warm and nurturing environment established by the adults in the classroom. Out a possible score of 7, there is little room to grow within the *Positive Climate* and *Negative Climate* dimensions as teachers are doing exceptionally well.

The *Classroom Organization* domain's dimensions remain very high quality so showing growth will be difficult. The *Behavior Management* and *Instructional Learning Formats* dimensions saw minimal growth from the previous year. The *Productivity* dimension remained the same 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 and they make good use of materials available to them in the classroom.

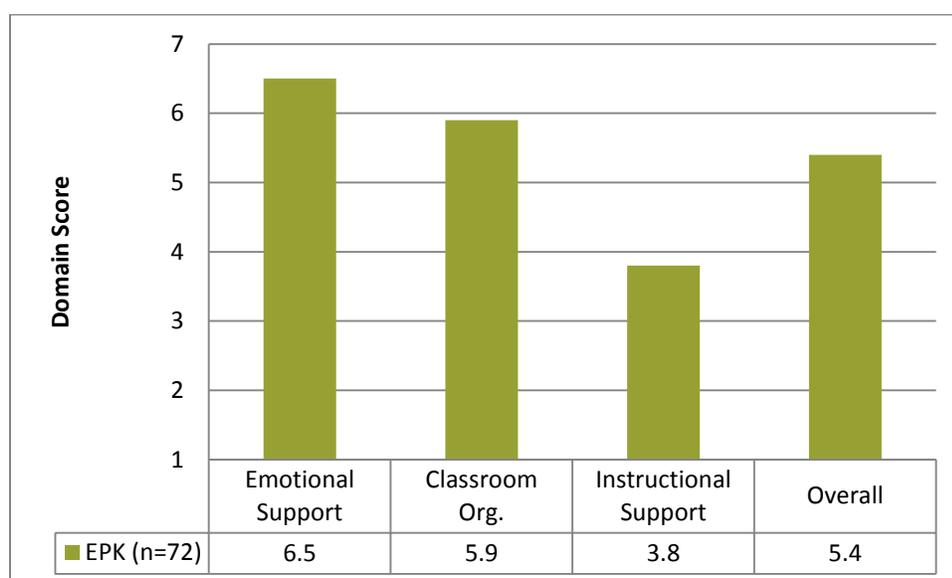
As previously noted, the *Instructional Support* domain of the CLASS has historically been the weakest in the Rochester community. The *Concept Development* and *Quality of Feedback* dimensions rose slightly in 2016-2017; the *Language Modeling* dimension dropped slightly.

EPK CLASS Performance

The 2016-2017 academic year was the second year the CLASS was used to assess all RECAP EPK classrooms. Seventy-two CLASS observations were conducted across RCSD, Head Start, and Community Based Organizations (CBOs). Figure 6 shows EPK CLASS domain mean scores. Overall, EPK classroom quality was observed to be quite high. The *Emotional Support* domain mean was 6.5. The *Classroom Organization* domain mean was 5.9, while the *Instructional Support* domain mean was 3.8. The *Overall* CLASS mean for the 72 EPK classroom observations was 5.4. Due to the recent expansion of three-year old programming in New York State, no CLASS reporting from other sites is available at the time this report was written, so comparisons of Rochester’s EPK classroom quality with that of other communities must be postponed.

Figure 7 depicts EPK CLASS dimension mean scores. Figure 8 compares the previous two years of EPK CLASS domain mean scores.

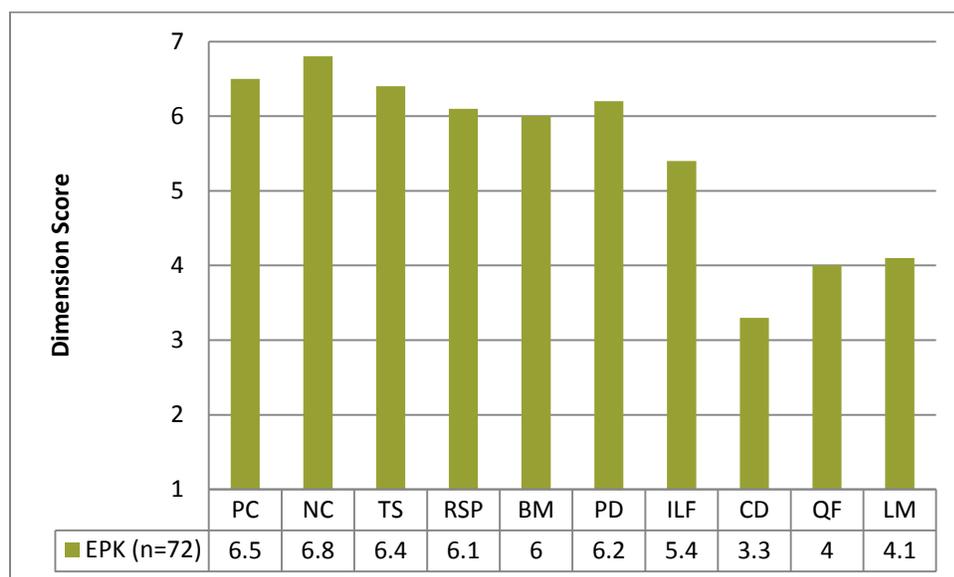
Figure 6. EPK CLASS Domain Means



Many of the EPK dimension means rose from the 2015-2016 school year. The dimensions making up the *Emotional Support* domain remained consistent from the previous year. The *Positive Climate* and *Response to Student Perspectives* dimensions remained the same. The *Negative Climate* dimension dropped slightly to 6.8. The *Teacher Sensitivity* dimension rose to 6.4 from the previous school year.

The dimensions making up the *Classroom Organization* domain (*Behavior Management*, *Productivity*, and *Instructional Learning Formats*) remained the same from the previous year. The most growth was made in the *Instructional Support* domain. The *Concept Development* dimension rose to 3.3, up 0.2 from the previous year. The *Quality of Feedback* dimension rose by 0.3, to 4.0. The *Language Modeling* dimension rose to 4.1 (see Figure 7).

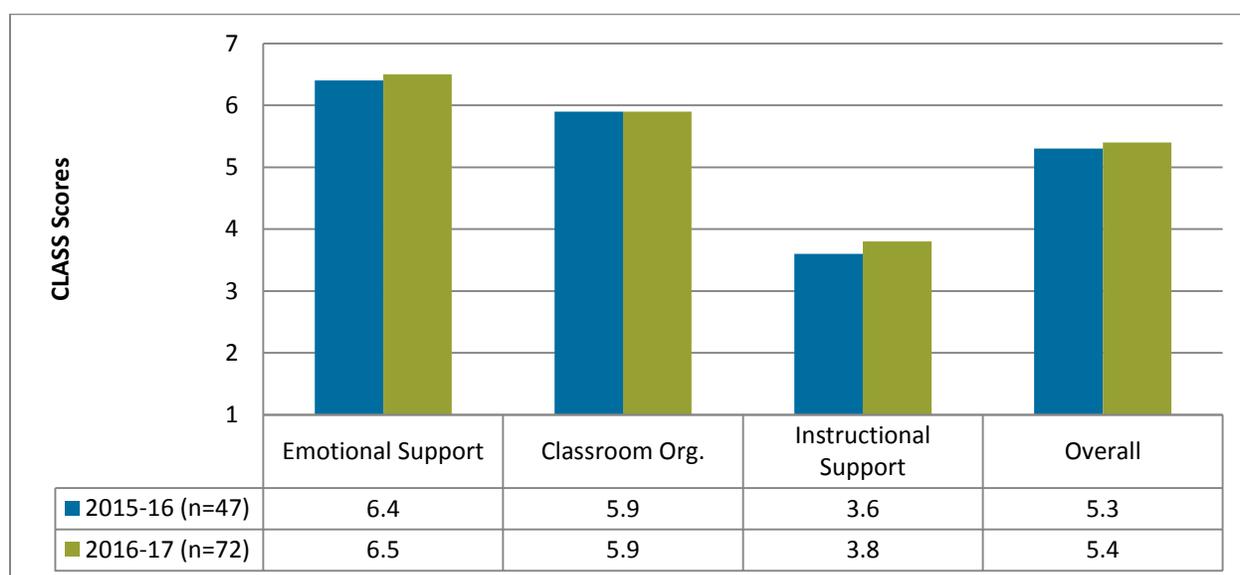
Figure 7. EPK CLASS Dimension Means



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

Figure 8. Comparison of 2015-2016 and 2016-2017 EPK CLASS Domain Means



Observed program quality as measured by the CLASS rose slightly in the *Emotional Support* and *Instructional Support* domains. The *Overall* CLASS mean also rose slightly from the previous year. The *Classroom Organization* domain of the CLASS remained the same. The increase of the *Instructional Support* domain is a bright spot for EPK programming in Rochester. The professional development and training opportunities provided by the Rochester City School District proved to be quite fruitful in preparing new RECAP teachers for the 2016-2017 school year.

UPK CLASS Performance

The 2016-2017 school year marked the fifth consecutive year the CLASS observational instrument was used to assess all RECAP UPK classrooms. In total, 127 UPK classrooms were observed. Figure 11 depicts the five year comparison of CLASS scores in the Rochester community for only UPK classrooms. In 2016-2017, the *Emotional Support* and *Classroom Organization* domain scores slightly rose by .1 each. The *Instructional Support Domain* mean remained the same with a score of 4.0. The *Overall* CLASS mean showed growth from the previous year, rising to an all-time high of 5.6. Figure 10 reports the dimension means for UPK classrooms. Figure 11 reports the 2016-2017 CLASS comparison between EPK and UPK programming.

Figure 9. 5 Years of UPK CLASS Domain Means

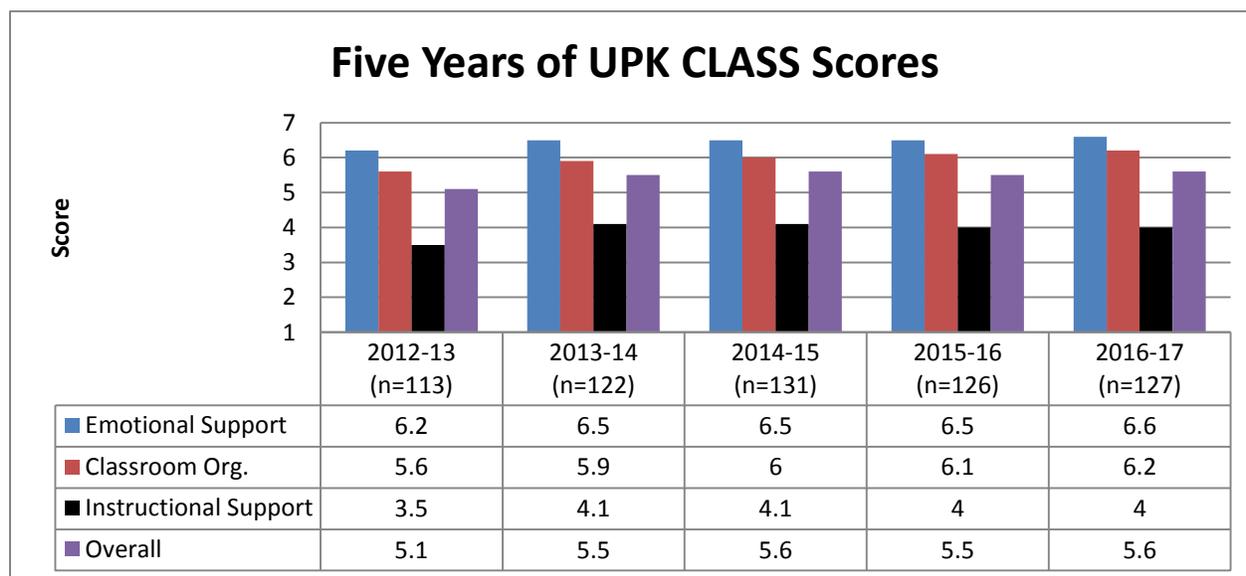
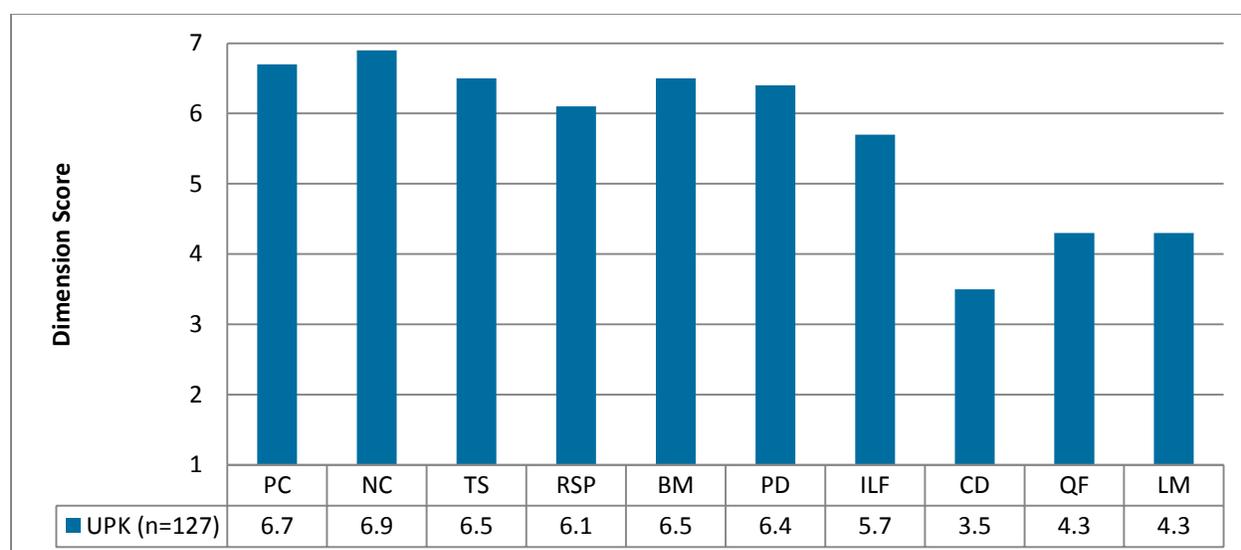


Figure 10 shows results by CLASS dimension. The dimension scores comprising the *Emotional Support* domain remained at or above 6.0. As in previous years, the *Negative Climate* dimension remained the strongest dimension by maintaining a near perfect average of 6.9. The *Positive Climate* dimension maintained its consistently high score of 6.7. *Teacher Sensitivity* increased slightly from the previous year, while the *Regard for Student Perspective* mean for the 2016-2017 remained the same.

Results associated with the second domain of the CLASS, *Classroom Organization*, saw a slight increase of 0.1 from the 2015-2016 school year, to 6.2 for the 2016-2017 school year. This year marks the highest mean score the *Classroom Organization* domain has been observed to have in five years. The *Behavior Management* dimension saw an increase of .3, with a score of 6.5. *Productivity* and *Instructional Learning Formats* dimensions increased by .1 each from the previous year, to 6.4 and 5.7 respectively.

Instructional Support continues to be the weakest domain for UPK classrooms (mean = 4.0). For the past five years this domain has been a focal point for professional development and training. From last year to this year, scores on one dimension (*Language Modeling*) dropped slightly from 4.4 to 4.3, *Concept Development* increased slightly from the previous year. *Quality of Feedback* rose from 4.1 to 4.3.

Figure 10. 2016-2017 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

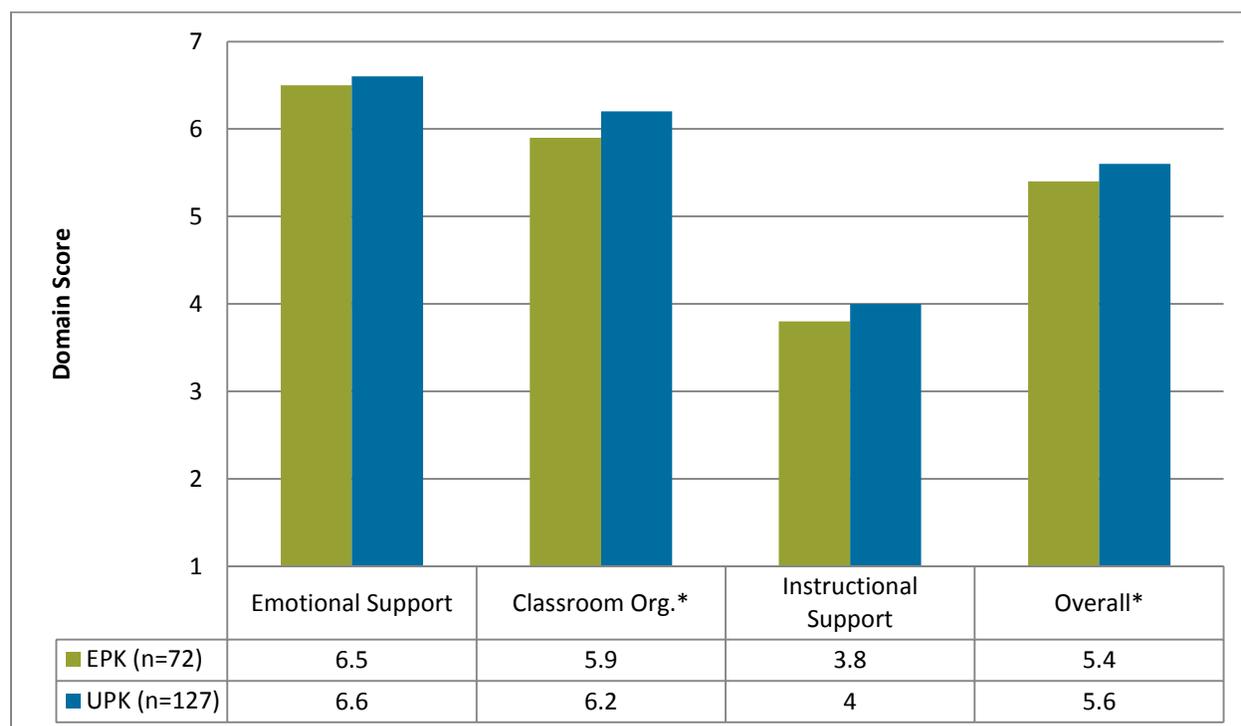
PD = Productivity

ILF = Instructional Learning Formats

CD = Concept Development

QF = Quality of Feedback

LM = Language Modeling

Figure 11. CLASS Domain Comparison Between EPK and UPK

Note: * significant $p < .05$

Overall, both EPK and UPK programming was observed to be of very good quality as measured by the CLASS. A *t*-test analysis revealed that UPK **Classroom Organization** and **Overall** mean scores were significantly higher than that of their EPK peers. This could be due to students enrolled and attending EPK programming were attending their first structured classroom environments, thus causing the lower observed quality of the **Classroom Organization** domain. Establishing classroom routines and using time efficiently could be more difficult for both children and teachers in RECAP EPK programming for the first time. Developmentally, three-year old children may need more time spent focused on establishing classroom routines, such as hand-washing and toileting procedures.

Summary and recommendations

The 2016-2017 saw program quality rise across the community and among both EPK and UPK programming. Specific to UPK programming, the 2016-2017 school marked the highest quality observed in the **Emotional Support**, **Classroom Organization**, **Overall** domains. It is evident that program quality in the Rochester community is “very good” to “excellent”. However, it is important to note that **Instructional Support** domain has shown little growth over the course of the past three years. Significant growth was made between the 2012-13 and 2013-14 school years. Since then, scores have remained consistent between 4.0 and 4.1.

Taking into consideration the growth observed between the 2015-2016 and 2016-2017 school years, it is still recommended that professional development be focused on the **Instructional Support** domain of the CLASS. Specifically, a greater emphasis needs to be placed on the

Concept Development dimension. It has been documented in recent RECAP discussions that a focus of the 2017-2018 school professional development committee will be on-going and scaffolded professional development on the items making up the *Concept Development* dimension.

Specific recommendations

- ❖ *Increased focus on Instructional Support with additional professional development offerings provided by the PD committee and Technical Support Teachers/*
- ❖ *As an incentive and in recognition of teacher mastery, allow EPK and UPK teachers “exemption” status, similar to the reported ECERS exemption status-thus focusing more resources on teachers and programs in need of more support.*
- ❖ *Provide specific professional development with a focus on the **Concept Development** dimension (analysis and reasoning, creating, integration, and connections to the real world).*
- ❖ *Continue to bridge Pyramid Model strategies into **CLASS** professional development offerings*

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

UPK Student Performance on the Brigance III

In the fall 2016, UPK teachers administered the Brigance III to their students. Results showed that 65% of students were functioning either within the normal range or as possibly talented (levels 3 and 4). The Brigance III identified 35% of the incoming pre-k students as being at-risk and possibly in need of a more formal evaluation or close monitoring (levels 1 and 2). Table 5 shows the breakdown of the UPK students' overall developmental status based on the Brigance III screen.

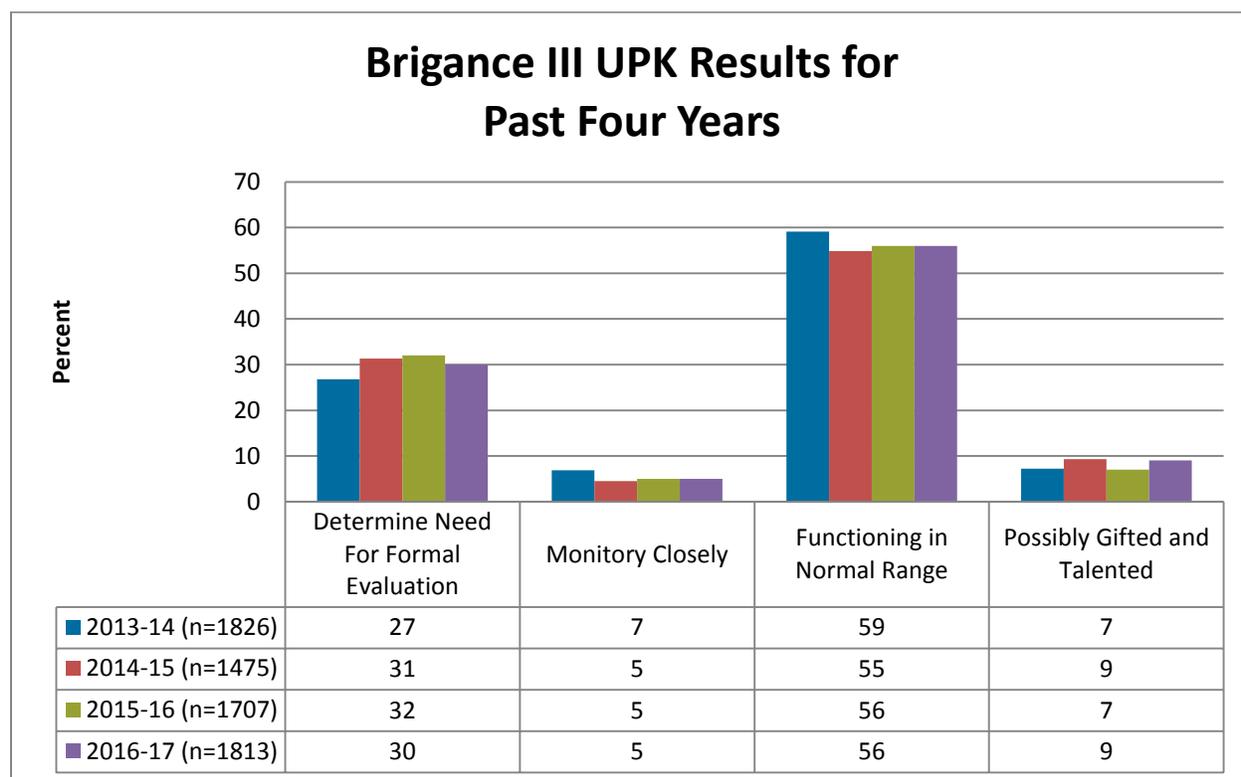
Table 5. UPK Brigance III Screening 2016-2017

2016-2017 RECAP Annual Report: RCSD UPK Brigance Scores				
Screen Status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
May be in need for further evaluation	547	30	547	30
Monitor closely	84	5	631	35
Within normal range	1016	56	1647	91
Possibly talented	166	9	1813	100

Table 6. Four Years of UPK Brigance III Results

Brigance III UPK Results for Four Consecutive Years	2013-14 (n=1826)	2014-15 (n=1475)	2015-2016 (n=1707)	2016-2017 (n=1813)
Screen Status				
Determine Need For Formal Evaluation	27	31	32	30
Monitory Closely	7	5	5	5
Functioning in Normal Range	59	55	56	56
Possibly Gifted and Talented	7	9	7	9

Table 6 depicts UPK Brigance III results for the past four consecutive years. UPK students have entered UPK *Functioning in the Normal Range/Possibly Gifted and Talented* screen status levels at >62% each of the past four years. However, even though UPK students are entering programming at a high rate of normality, it is not reflected in COR+ school readiness. In 2016-2017, 65% of UPK students were either considered *Functioning in the Normal Range/Possibly Gifted and Talented* in the fall, yet only 57% of students were considered developmentally ready to transition to kindergarten according to HighScope's definition of school readiness.

Figure 12. Four Years of UPK Brigance III Results

Similar to the 2015-2016 school year, about a third of entering pre-k students were already showing signs of delayed developmental readiness. This is a substantial portion of the pre-k population. It further supports the COR's assessment that many children are entering pre-k significantly behind where they should be developmentally.

EPK Student Performance on the Brigance III

Table 7 represents EPK Brigance III screening results for the 2016-2017 school year. Of note, a greater percentage of entering EPK students (71%) are within normal ranges and or possibly talented, as compared to the UPK cohort (65%).

Similar to results from the previous year, parent initiative again 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. The same can be said about the upcoming 2017-2018 school year in which EPK programming will not be expanding, thus leaving 1200 seats available for about 3000 three year old children.

EPK also has enrolment criteria which include income. Only children from low-income homes can participate. Such criteria, where impoverished children are those selected, would typically lead to predictions of poorer performance, which did not occur. Another possibility is that there is a critical period between when impoverished children move from three to four years of age

and working with three year old children may help them maximize their growth and not as likely to be delayed as four year olds. Otherwise put, there is less need for developmental remediation. With the 2015-2016 year serving as a comparison, similar results were observed both years.

Table 7. EPK Brigance III Screening 2016-2017

2016-2017 RECAP Annual Report: RCSD EPK Brigance Scores				
Screen Status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Need for further evaluation	255	24.8	255	24.8
Monitor closely	39	3.8	294	28.6
Within normal range	676	65.8	970	94.4
Possibly talented	58	5.6	1028	100.0

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 renditions of the tool were released, RECAP implemented the updated version to assess young children in the community. The 2016-2017 school year marked the third 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 children's 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. A more detailed description of the COR+ can be found in Appendix A.

Consistent with last year, teachers completed the COR+ in the fall, winter, and spring. By administering the COR+ in the fall, teachers were able to quickly identify and address problem areas that their students displayed. The second winter administration of the COR+ gave administrators, teachers, and parents insights into student growth and development. Administrators took the data and provided additional professional development for teachers of struggling students. The third administration in late spring allowed the assessment of individual student growth, provided insights regarding students' preparedness for kindergarten, and facilitated sharing this information with parents. The three administration periods also provided RECAP with the ability to examine growth rates for the entire pre-k sample.

Teachers completed the COR+ for their students using the online COR+ website (coradvantage.com), which processes and tabulates the data and, instantly produces child summary reports. These reports show raw and percentile scores for individual children for the nine skill areas. Since longitudinal data are not retained on the website, COR scores were transferred to the COMET system for archival and longitudinal purposes.

The COR+ domain scores represent the average of the item scores for that domain. Individual item scores represent the highest student performance observed during a specified time period. Domain scores are calculated only when 75% of all possible items in a category have a score for the time period. For children transitioning to kindergarten in 2016-2017, school readiness, as defined by HighScope, is indicated by an average score of at least 3.75 in each domain and an overall average of at least 4.0.

The following text, tables and figures depict the growth of both EPK and UPK RECAP cohorts on the COR+ for the 2016-2017 school year.

COR Advantage and Universal Pre-Kindergarten (UPK)

Table 8 depicts results from UPK children at the fall, winter / mid-year, and spring times of assessment. The *Physical Development & Health*, *Approaches to Learning*, and *Social-Emotional Development* domains had the highest fall means. For the third consecutive fall reporting period, the *Physical Development & Health* domain had the highest initial mean (M=3.3). This domain measures gross motor and fine motor development, as well as personal care and healthy behaviors.

(Note: It is hypothesized by the RECAP team the *Physical Development & Health* domain may represent a good benchmark against which other domains can be compared to assess when children, as a group, are developmentally “on-track” and where community effort needs to be focused prior to and within UPK.

For example, the average fall score for *Language, Literacy and Communication* is 2.7. The difference between *Physical et al* and *Language et al* is $(2.7-3.3) = -0.6$. To index this difference to the *Language et al* standard deviation (also 0.6) we can derive a standard (z) score that can be compared across domains $(-0.6/0.6 = -1.0)$. **This particular result suggests upon entry into UPK ~85% of our prek students are behind where they should be in regards to *Language, Literacy and Communication* skills.) and of the total ~15% have very significant delays.)**

Table 8. 2016-2017 UPK COR+ Advantage Student Performance Throughout School Year

COR Advantage Domain	Fall 2016			Winter 2017			Spring 2017			Fall-Spring Change			Effect Size (d)
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Change	SD	
Approaches to Learning	2036	2.9	0.7	1902	3.7	0.8	1855	4.4	0.8	1704	1.5	0.8	1.9
Social Emotional Development	2023	2.9	0.7	1894	3.7	0.8	1866	4.4	0.8	1702	1.5	0.8	1.9
Physical Development & Health	2049	3.3	0.7	1917	4.2	0.8	1893	5	0.8	1733	1.7	0.9	1.9
Language, Literacy & Communication	2027	2.7	0.6	1886	3.6	0.7	1779	4.2	0.8	1628	1.4	0.7	2.0
Mathematics	1908	2.7	0.7	1781	3.7	0.8	1705	4.4	0.8	1523	1.6	0.8	2.0
Creative Arts	1976	3	0.8	1833	3.9	0.7	1711	4.6	0.8	1563	1.6	0.8	2.0
Science & Technology	1922	2.8	0.7	1770	3.7	0.7	1628	4.4	0.9	1477	1.6	0.9	1.8
Social Studies	1970	2.7	0.7	1831	3.6	0.8	1712	4.4	0.9	1558	1.7	0.8	2.1
Overall score	1981	2.9	0.6	1811	3.8	0.7	1700	4.5	0.7	1559	1.6	0.6	2.7
	Freq.	%		Freq.	%		Freq.	%					
Kindergarten Readiness*	26	1.3		336	19		965	57					

*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

By the winter assessment, *Mathematics* showed a significant increase from the beginning of the school year, with children making a full point gain. *Physical Development & Health*, *Language, Literacy and Communication*, *Creative Arts*, *Science & Technology*, as well as *Social Studies* made gains of .9 over the same time period. Most importantly, 336 children (19%) made sufficient gains to qualify them as being kindergarten ready at mid-year and 965 (57%) were ready for kindergarten at the end of the year, which is a 3% gain over last year.

During the spring assessment *Physical Development & Health* and *Social Studies* made significant gains from the winter 2016 assessment period. Of note, the *Overall Score* grew by another .7 of a point from the winter 2017 assessment period.

Overall, students made large and significant gains from fall to spring (see Figure 13). The overall score change score effect size ($d=2.7$) is huge! Due to a lack of published COR+ results, it is impossible to compare Rochester's four-year old students' results with those from others across the state or nationally. However, this gain is similar to other years growth on the COR+ in Rochester. Figure 14 reports on UPK COR+ change scores for the past three years.

Figure 13. UPK COR+ Student Fall/Spring Domain Means

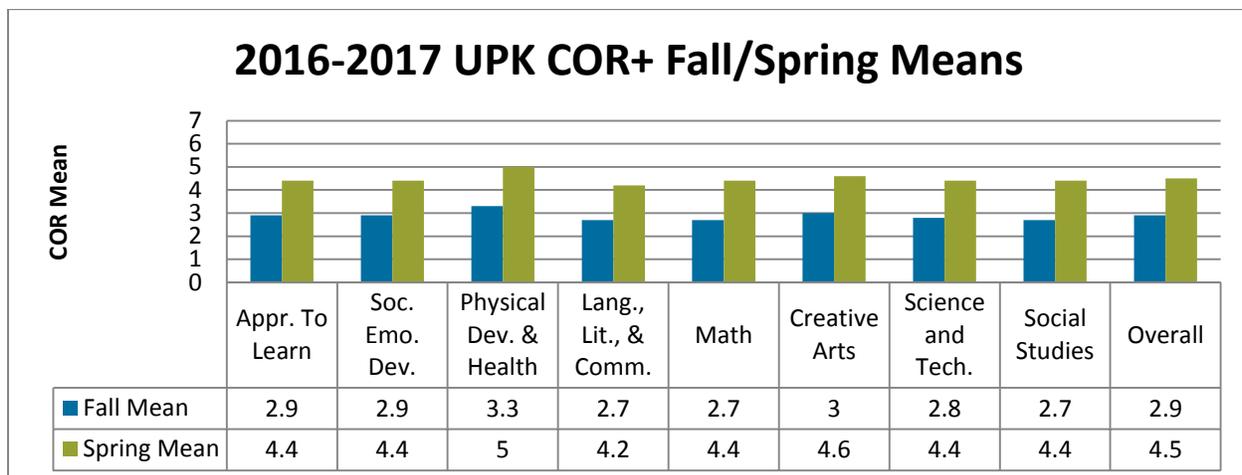


Figure 14. Three Years of UPK COR+ Growth Scores

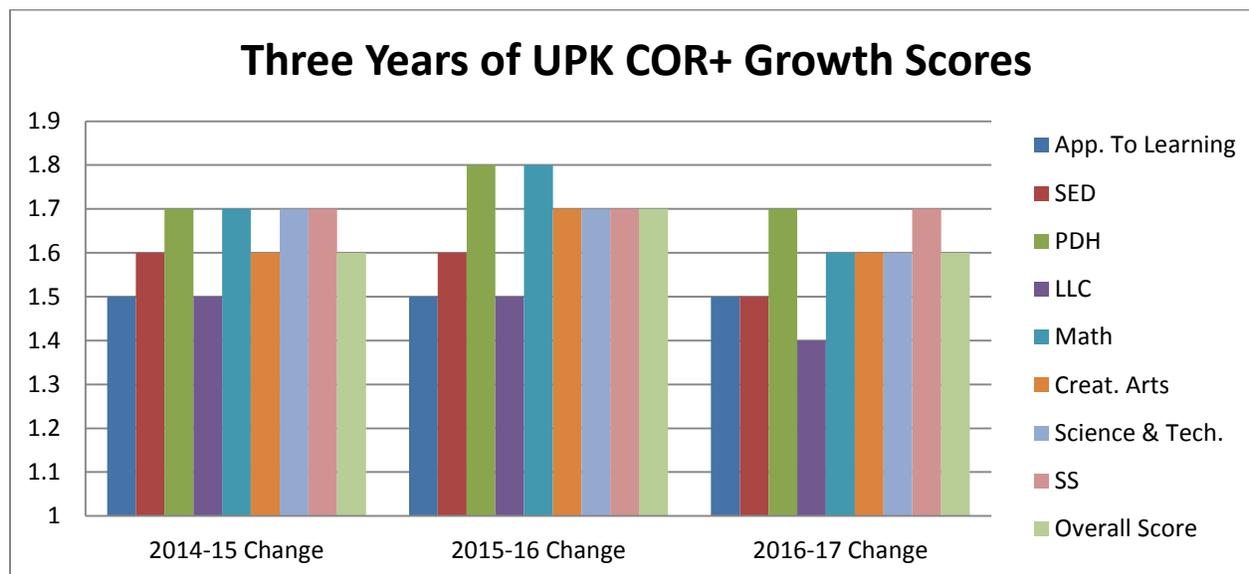


Figure 14 depicts COR+ domain change scores over the past three years. Since COR+ was implemented in RECAP as a measure to gauge student growth three years ago, we can start to see some initial trends in growth over time. Relatively little change movement can be observed over the course of the past three years. The 2014-15 school year served as a benchmark year for the implementation of COR+. The *Approaches to Learning* and *Social Studies* domain change scores over three years have remained the same. The *Social Emotional Development*, *Physical Development & Health*, *Mathematics*, *Creative Arts*, *Science and Technology*, and *Overall Score* change scores have seen at best marginal fluctuations in scores. However, the 2015-2016 growth across all the domains was the highest of the three academic years, where in 2016-2017 change scores remained the same or went down.

In summary, UPK student growth has remained consistent over the course of the past three years. RCSD and Children’s Institute continue to offer professional development training on the COR+ for both veteran and newly hired RECAP teachers.

2016-2017 UPK student results parallel those of previous years (Infurna et al., 2016). UPK children in Rochester make very substantial gains during the pre-k year; 57% 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 domains over the course of an academic year, the gains are not sufficient enough for many to meet school readiness benchmarks.

A 10-month full-day developmentally appropriate high quality program is not able to prepare many children for the rigors of 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” to successfully make the leap to kindergarten unless

elementary administrators, kindergarten teachers and materials are ready to meet our children where they are. For many children any curriculum and instruction not realistically and developmentally aligned with and targeted for children’s instructional needs and “present” levels of functioning will result in frustration and learning failure.

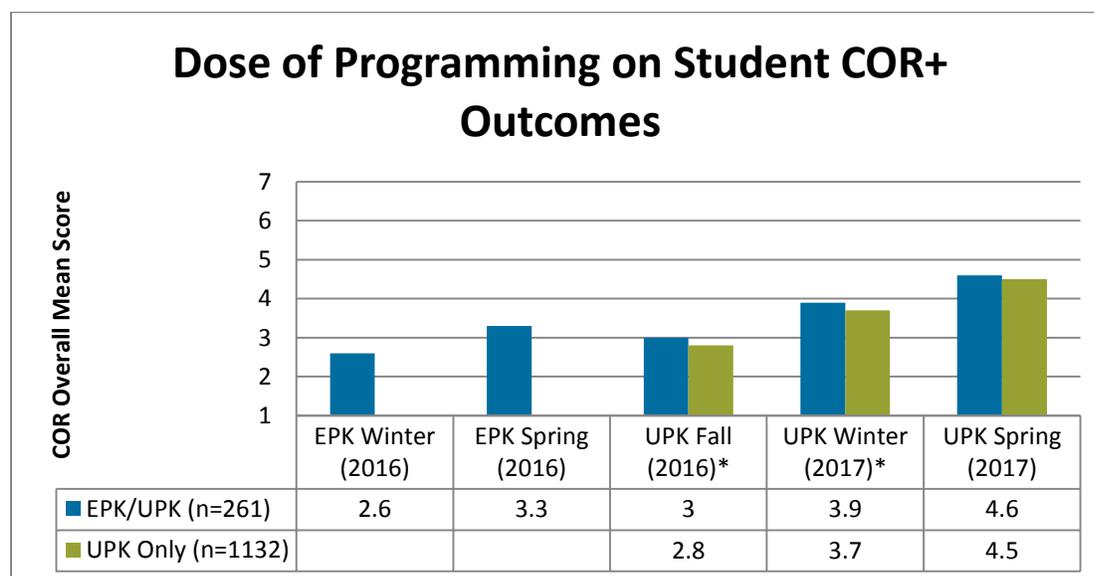
A second way to mitigate a more successful transition to kindergarten is to further expand summer learning in the Rochester community. As documented by RECAP over the past 4 years, students going from prek into kindergarten and attend intensive high quality summer learning programming, such as that provided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

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.

Dose of Programming on COR+ and Social Emotional Outcomes

With the expansion of three year old student programming in the 2015-2016 school year, we were able to follow students that were previously enrolled in EPK programming that participated in UPK programming for the 2016-2017 school year. Figure 15 depicts COR+ outcomes based on dose of programming.

Figure 15. Dose of Programming on COR+ Growth



Note: * significant $p < .05$

In total, there were 261 RECAP students that had complete data from both EPK and UPK years of attendance. For this sample, the 261 students have complete COR+ data from EPK, fall/spring T-CRS data in EPK, and complete COR+ data and T-CRS data in UPK. A *t*-test analysis revealed that students that participated in EPK had significantly higher UPK COR+

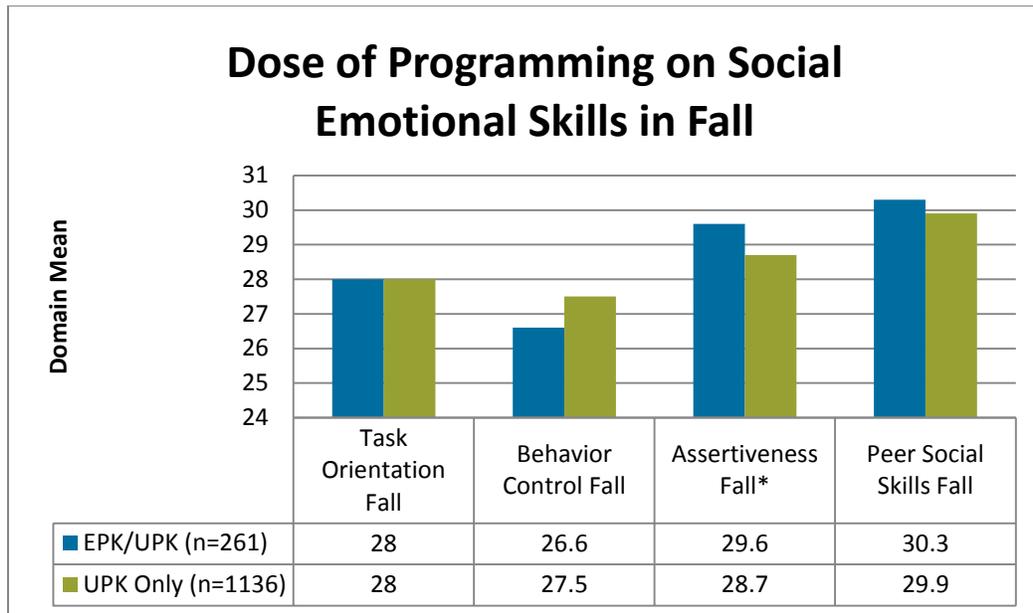
Overall means at fall and winter reporting. However, at spring the gains those students had compared to their peers are no longer visible at the end of the school year. Table 9 depicts COR+ scores for the same sample of students.

Table 9. Dose of Programming on COR+ Growth

2016-2017 Dose of Programming on COR+ Outcomes													
	EPK Winter (2016)		EPK Spring (2016)		UPK Fall (2016)		UPK Winter (2017)		UPK Spring (2017)		Change Score (UPK Year)	Std Dev	Effect Size (d)
	Mean	SD	Mean	SD	Mean*	SD	Mean*	SD	Mean	SD	Mean		
EPK/UPK (n=261)	2.6	0.6	3.3	0.7	3	0.4	3.9	0.6	4.6	0.8	1.6	0.7	2.3
UPK Only (n=1132)					2.8	0.5	3.7	0.7	4.5	0.8	1.6	0.7	2.3

Note: * significant $p < .05$

Dose of programming for students entering UPK in 2016-2017 showed significantly higher COR+ Overall Fall and Winter mean scores. However, by the end of the UPK year, the advantage those students had that participated in EPK are no longer visible. Even though students that had previously been enrolled in EPK programming entered the UPK year significantly higher, both groups exhibited the same amount of growth over the course of the 2016-2017 school year. Figure 16 and Table 10 depict dose of programming and social emotional outcomes as measured by the T-CRS.

Figure 16. Dose of Programming on Social Emotional Growth Fall

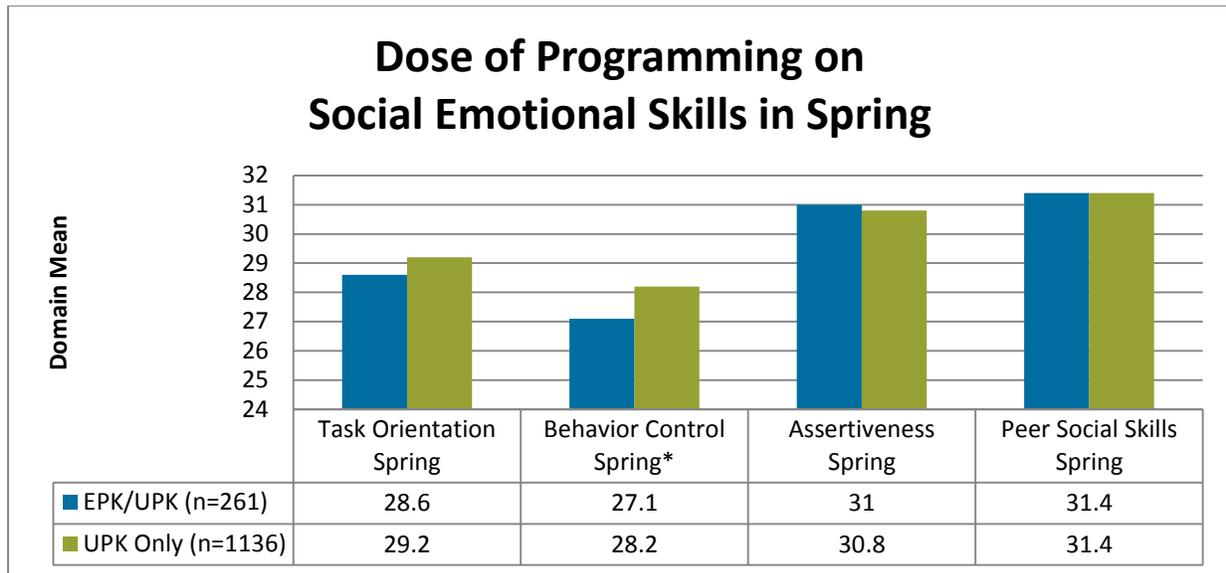
Note: * significant $p < .05$

Students transitioning to UPK programming in the fall were relatively similar to each other. The only difference between groups was in the *Assertiveness* domain of the T-CRS. Students entering UPK that previously were enrolled in EPK programming feel more comfortable in their classroom environment, better able to participate in classroom discussions, and less anxious and worried in their environment.

Table 10. Dose of Programming on Social Emotional Growth Fall

2016-2017 Dose of Programming on Fall Social Emotional Skills (UPK Means Only)								
	Task Orientation Fall		Behavior Control Fall		Assertiveness Fall*		Peer Social Skills Fall	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
EPK/UPK (n=261)	28	6.2	26.6	7.3	29.6	5.1	30.3	5.7
UPK Only (n=1136)	28	6.1	27.5	6.8	28.7	5.7	29.9	5.6

Note: * significant $p < .05$

Figure 17. Dose of Programming on Social Emotional Growth Spring

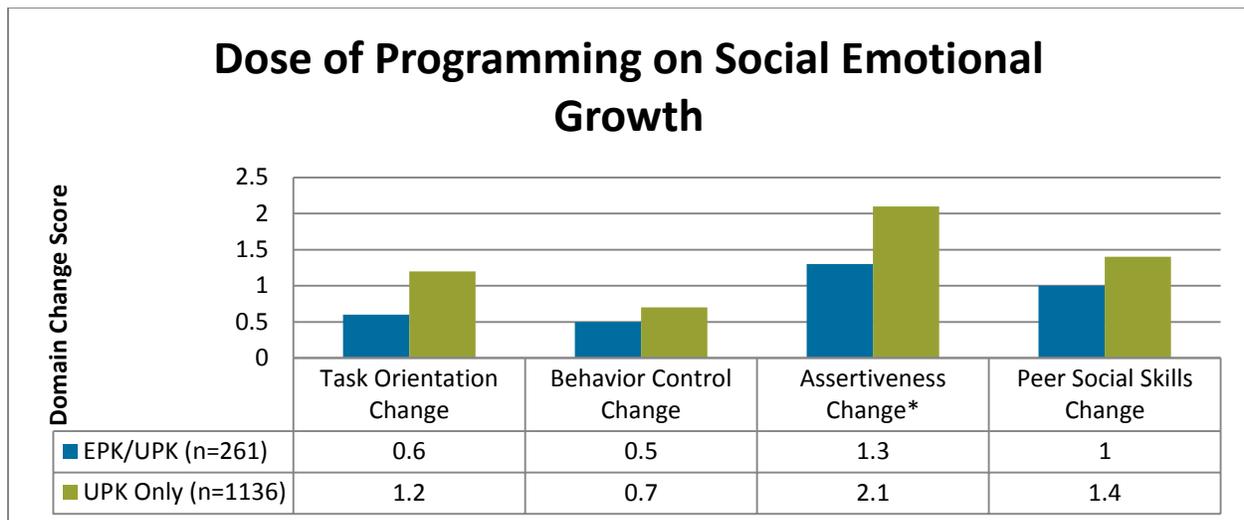
Note: * significant $p < .05$

Students entering UPK programming that were previously enrolled in EPK programming entered in the fall having a lower **Behavior Control** mean score than their peers that were not previously enrolled in EPK programming. At spring data collection, UPK only students had a significantly higher **Behavior Control** mean score compared to their UPK peers that had previously been enrolled in EPK programming.

Table 11. Dose of Programming on Spring Social Emotional Growth

2016-2017 Dose of Programming on Spring Social Emotional Skills (UPK Means Only)								
	Task Orientation Spring		Behavior Control Spring*		Assertiveness Spring		Peer Social Skills Spring	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
EPK/UPK (n=261)	28.6	6.7	27.1	7.5	31	4.8	31.4	5.8
UPK Only (n=1136)	29.2	6.4	28.2	7.1	30.8	5.4	31.4	5.7

Note: * significant $p < .05$

Figure 18. Dose of Programming on Social Emotional Change Scores

Note: * significant $p < .05$

Dose of programming for students entering UPK after being enrolled in EPK programming did not have as great effect on their social emotional functioning compared to their peers only enrolled in UPK programming. Students with only UPK program experience showed more growth compared to their peers that had been previously enrolled in EPK programming. Specifically, UPK only students expressed significant growth in *Assertiveness* over the course of the school year.

Table 12. Dose of Programming on Social Emotional Growth Change Scores

2016-2017 Dose of Programming on Social Emotional Skill Change Scores (UPK Means Only)								
	Task Orientation Change		Behavior Control Change		Assertiveness Change*		Peer Social Skills Change	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
EPK/UPK (n=261)	0.6	4.9	0.5	4.8	1.3	4.8	1	5
UPK Only (n=1136)	1.2	5.6	0.7	5.8	2.1	5	1.4	5.1

Note: * significant $p < .05$

COR Advantage and Expanded Pre-Kindergarten (EPK)

The 2016-2017 academic year marked the first full school year the COR+ was used to evaluate three-year old child growth within RECAP. However, starting in January 2016 EPK programming started and provided a half school year of effort. Due to some start-up issues, some selection biases and the fact that the first year of funding and programming was for 50% of a school year, the RECAP team believes the 2016-2017 school year's performance will be the most appropriate benchmark to evaluate student and programmatic progress in the future.

Table 13 reports EPK students' performance at fall, winter and spring on the COR+ domains. At the beginning of the year, like UPK students, EPK students performed best on the ***Physical Development & Health*** domain (M=2.9) and was greater than all the other domains by at least half a point.

Significant and meaningful gains (range $d=1.4$ to 1.8 ; median= 1.6) were made by EPK students over the course of the school year. Overall, all the change scores by domain rose by at least 1.1 points, showing that our EPK children made significant gains throughout the course of the academic school year. Similar to their UPK peers, the ***Physical Development & Health*** domain continues to be one of the highest rated domains for EPK children. The previous half-year results were similar for the ***Physical Development & Health domain***, therefore, EPK children demonstrated their best performance in gross and fine motor skills and personal care routines.

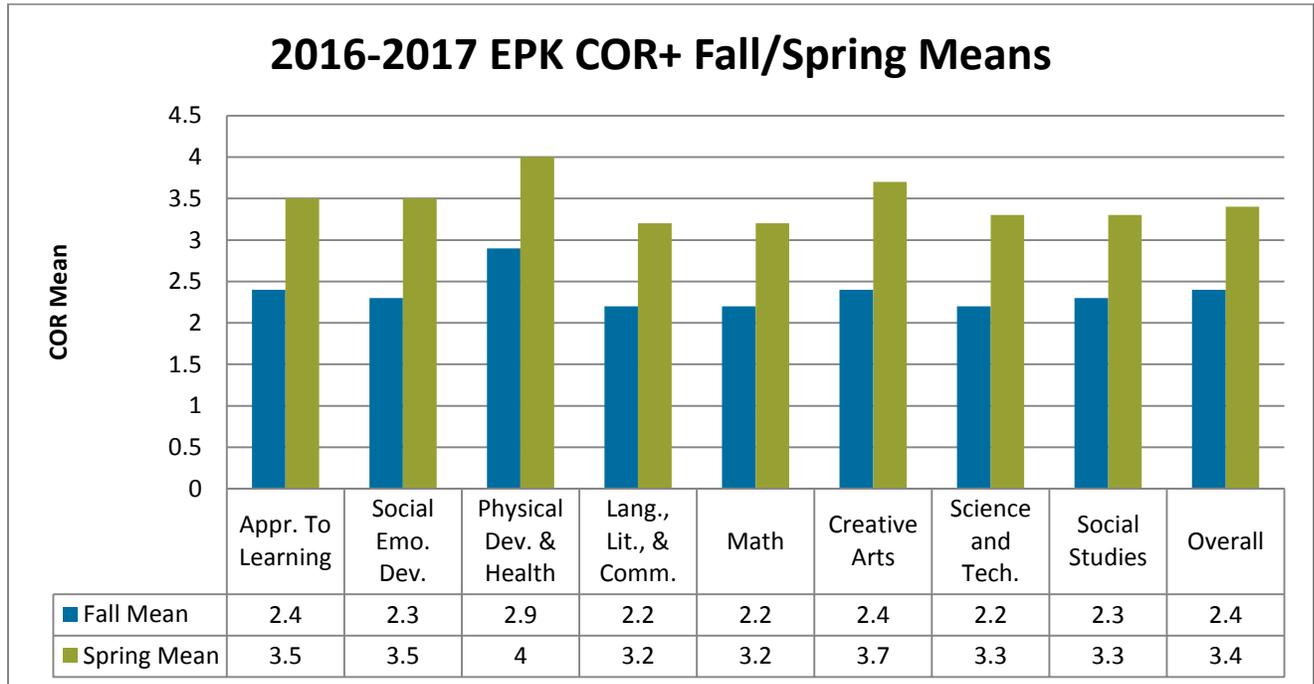
Table 13. 2016-2017 RECAP Annual Report on EPK COR+ Advantage Scores

COR Advantage Category	Fall 2016			Winter 2017			Spring 2017			Fall-Spring Change			Effect Size (d)
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Change	SD	
Approaches to Learning	1006	2.4	0.7	991	3	0.6	948	3.5	0.7	857	1.1	0.8	1.4
Social Emotional Development	1009	2.3	0.8	998	3.1	0.7	954	3.5	0.7	860	1.2	0.8	1.5
Physical Development & Health	1015	2.9	0.7	1009	3.5	0.6	969	4	0.6	867	1.1	0.7	1.6
Language, Literacy & Communication	1011	2.2	0.6	972	2.8	0.5	940	3.2	0.6	849	1	0.6	1.7
Mathematics	965	2.2	0.6	918	2.8	0.5	899	3.2	0.6	805	1.1	0.7	1.6
Creative Arts	976	2.4	0.7	934	3.2	0.7	887	3.7	0.7	804	1.3	0.8	1.6
Science & Technology	963	2.2	0.7	905	2.9	0.6	897	3.3	0.7	802	1	0.7	1.4
Social Studies	979	2.3	0.8	943	2.9	0.7	924	3.3	0.7	822	1.1	0.8	1.4
Overall score	970	2.4	0.6	921	3	0.5	903	3.4	0.5	809	1.1	0.6	1.8
	Freq.	%		Freq.	%		Freq.	%					
Developmental Readiness for UPK*	0	0		0	0		49	5					

*Extrapolating from High Scope criteria and indexing on Physical Development & Health, RECAP hypothesizes that EPK children are developmentally on tract for UPK when each COR+ domain score is ≥ 3.25 and the overall score is ≥ 3.5

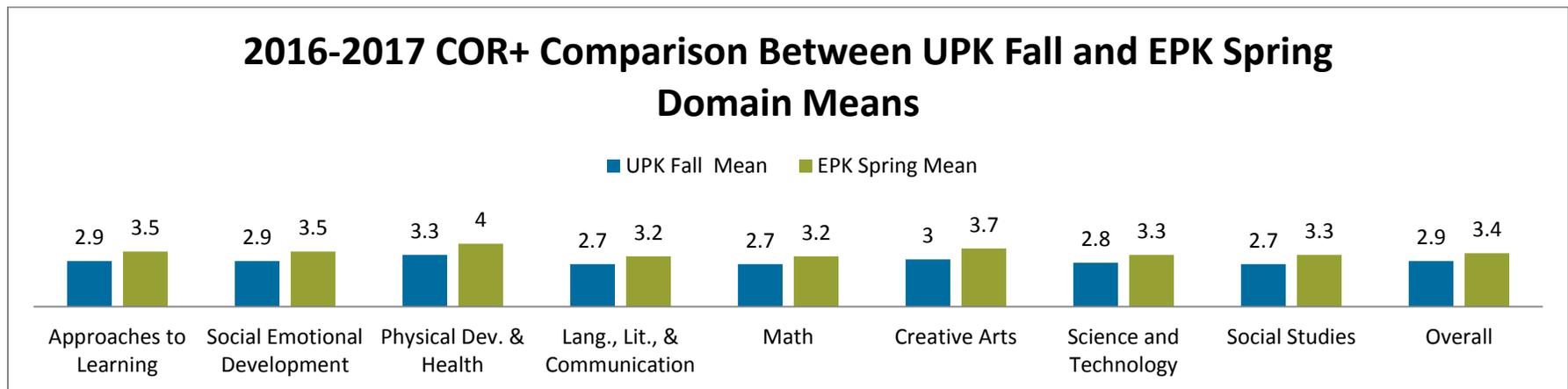
As noted, EPK students made substantial growth over the course of the school year. Figure 19 depicts fall/spring COR+ domain means for the 2016-2017 school year. The most relative growth was made within *Language Literacy & Communication* (d=1.7) and *Physical Health & Development, Mathematics* and *Creative Arts* domains (d=1.6).

Figure 19. EPK COR+ Student Fall/Spring Domain Means



Unlike the previous year, in which EPK programming began in January, 2016, it is possible to show growth over the course of a full academic year for 2016-2017. Figure 20 depicts beginning UPK fall entry domain mean scores compared to end-of year EPK spring domain mean scores. Our three-year children are leaving EPK programming with greater cognitive and social-emotional development scores/outcomes than UPK students evinced at entry in September, 2016. While these results are very positive and encouraging, it will be important to record growth (or lack thereof) for EPK children as they enter UPK next year to see what the summer months have facilitated.

Figure 20. Comparison of Fall UPK and Spring EPK COR+ Outcomes



Performance and Student Attendance

UPK

For the fourth consecutive year, UPK student attendance and achievement, as measured by the COR+, were analyzed. Similar to previous years, three attendance groups were identified for analyses: 1) students attending fewer than 80% of the time, i.e., severely chronically absent, 2) students attending between 81%-89% of the time, i.e., chronically absent, and 3) students attending at least 90% of the time. UPK COR+ growth over the course of the school year is reported in Table 14 and Figure 21.

Table 14. UPK Student Attendance and COR Advantage Means

2016-2017 RCSD UPK COR Advantage Fall, Winter, Spring, and Change Scores Based on Percent of Days Attended												
Days Attended	N	Fall 2016		N	Winter 2017		N	Spring 2017		N	COR Change Scores	
		Mean	Std Dev		Mean	Std Dev		Mean	Std Dev		Mean	Std Dev
80% or fewer	614 33%	2.82 ^b	0.57	641 35%	3.64 ^b	0.70	718 37%	4.33 ^c	0.81	600	1.55 ^b	0.73
81%-89%	561 30%	2.92 ^a	0.50	558 30%	3.80 ^a	0.59	567 29%	4.51 ^b	0.66	558	1.59 ^{ab}	0.59
90% or greater	665 36%	2.95 ^a	0.51	649 35%	3.87 ^a	0.57	659 34%	4.60 ^a	0.70	655	1.65 ^a	0.57
Total	1840			1848			1944			1793		

Note: Means with different letters are significantly different from each other at $p < .05$

Consistent with previous results (Infurna et al., 2016), students that attend at least 90% of the time make greater gains over the course of the school year compared to their peers who are severely chronically absent. This result becomes more evident as the school year progressed. At the fall 2016 reporting period, students attending more than 81% of the time performed better overall than their severely chronically absent peers. This pattern persisted into the winter 2017 reporting period as well. However, at the spring 2017 reporting period, a more stratified relationship between student attendance and outcomes becomes clear. Student's attending more than 90% of the time outperform their peers only attending 81%-89% of the time. In turn, students that attend 81%-89% of the time are rated more highly than their peers attending less than 80% of the time. In terms of growth for students with complete fall 2016 and spring 2017 data, students attending greater than 90% of the time made significantly larger gains throughout the course of the school year than their severely chronically absent peers.

Figure 21. UPK COR+ Means Based on Attendance

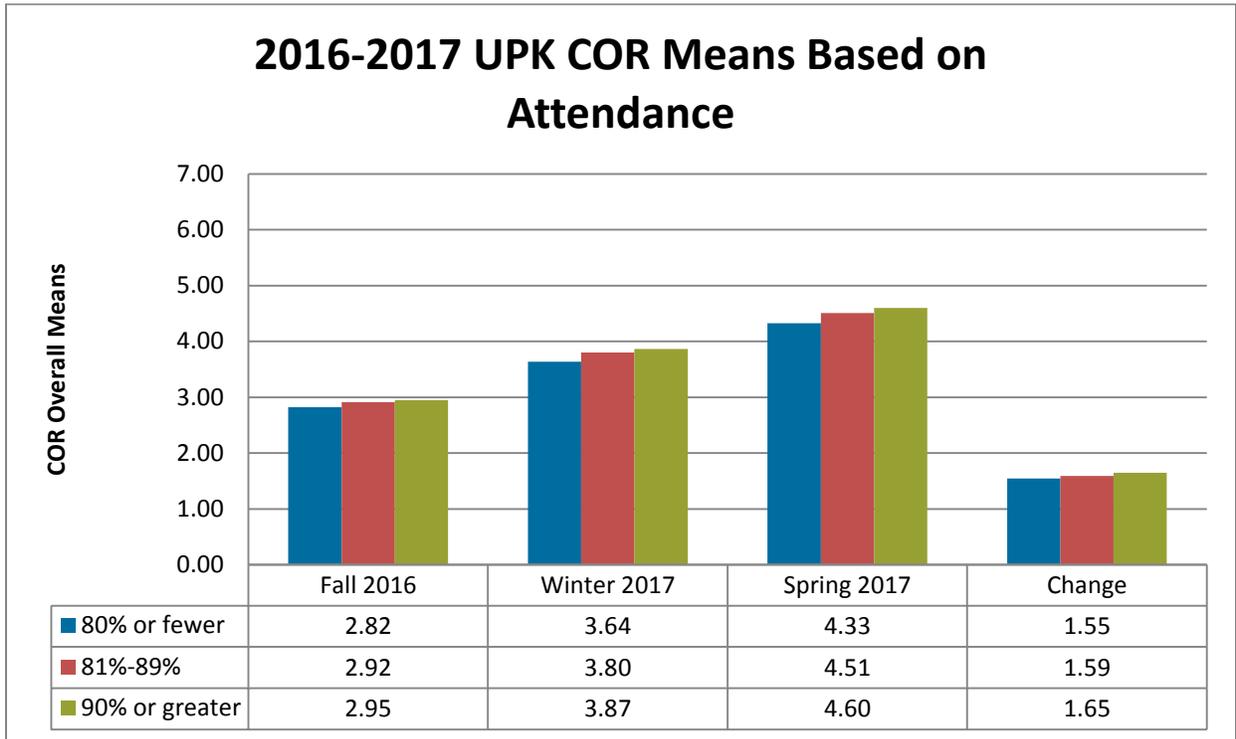


Table 15 reports on UPK student kindergarten readiness based on student attendance.

Table 15. UPK Student Kindergarten Readiness Based on Student Attendance

2016-2017 RCSD UPK Kindergarten Readiness by COR Advantage and Attendance								
	Severely Chronically Absent <=80%		Chronically Absent 81%-89%		High Attending >=90%		Total	Percent
	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Kindergarten Ready	302	49	285	57	371	65	958	57
Not Kindergarten Ready	313	51	217	43	197	35	727	43
Totals	615	100	502	100	568	100	1685	100

For the third consecutive year, RECAP has maintained the same definition of school readiness, which was adopted from HighScope. HighScope defines school readiness as having COR+ scores of at least 3.75 in each domains and at least 4.0 for the COR+ overall mean. We have repeatedly found that kindergarten readiness has been related to program attendance rates, with high attenders more likely to meet the criterion (65%), followed by moderate attenders (57%) and poor attenders (49%). These results mirror those found by Infurna et al. (2016), in which a majority of students in the moderately attending and high attending groups are kindergarten ready, as compared to their peers with poorer attendance patterns.

EPK

EPK student attendance and COR+ growth during the school year is reported in Table 16 and Figure 22.

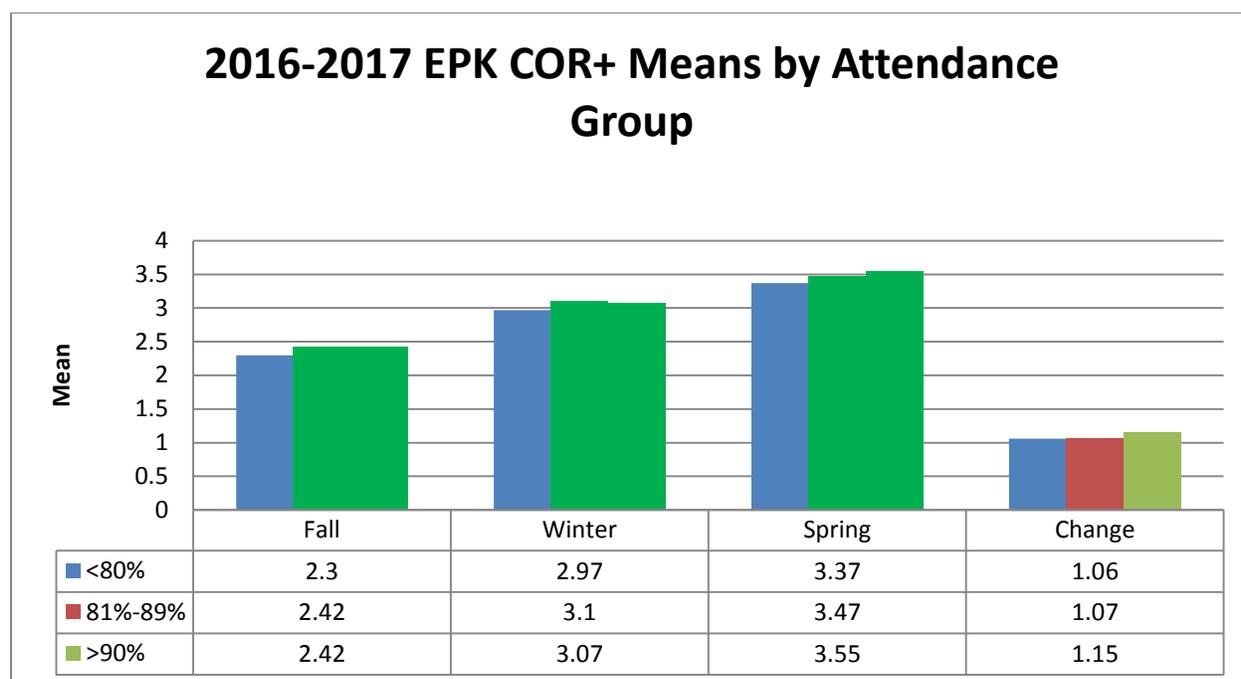
Table 16. EPK Student Attendance and COR+ Advantage Means

2016-2017 RCSD EPK COR Advantage Fall, Winter, Spring, and Change Scores Based on Percent of Days Attended												
Days Attended	N	Fall		Winter			Spring			COR Change Scores		
		Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
80% or fewer	386 42%	2.30 ^b	0.61	397 44%	2.97 ^b	0.51	401 44%	3.37 ^b	0.57	317	1.06 ^a	0.63
81%-89%	257 28%	2.42 ^a	0.47	250 28%	3.10 ^a	0.47	247 27%	3.47 ^a	0.51	242	1.07 ^a	0.53
90% or greater	268 29%	2.42 ^a	0.46	261 29%	3.07 ^a	0.43	271 29%	3.55 ^a	0.50	262	1.15 ^a	0.53
Total	911			908			919			821		

Note: Means with different letters are significantly different from each other at $p < .05$

Students attending at least 81% of the time perform better than their severely chronically absent peers at fall, winter, and spring times of reporting. No statistically significant differences in change scores were found among the three attendance groups. Our results indicate that three year old children make similar gains throughout the course of an academic year, regardless of their percent of days attended during the school year.

Figure 22. 2016-2017 EPK COR+ Means Based on Attendance



Student Performance – Social Emotional

Teacher-Child Rating Scale (T-CRS)

Assessing 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 17 compares UPK student initial risk status (at or below the 15th percentile, approximately 1 standard deviation) as measured by the fall and spring administration of the T-CRS for the 2016-2017 program year. Table 18 reviews UPK pre/post T-CRS scores. Table 19 presents UPK T-CRS change scores. Social emotional well-being of EPK students was also assessed by the T-CRS. Table 20 reviews EPK pre/post T-CRS scores. Table 21 shows EPK T-CRS change scores. Table 22 reviews EPK student risk-status.

UPK Student Emotional Health

Table 17. UPK Social-Emotional Risk Factors for Fall & Spring 2016-2017 School Year

Number of Risks	Risk Count	Percent
	<i>Fall (n=2040)</i>	
No Risk	1562	77
1 Risk	230	11
2 Risks	131	6
3 Risks	98	5
4 Risks	19	1
	<i>Spring (n=1694)</i>	
No Risk	1341	79
1 Risk	200	12
2 Risks	85	5
3 Risks	63	4
4 Risks	5	<1

Table 17 represents UPK student pre/post risk status during the 2016-2017 school year. Risk is determined by a score(s) below the 15% percentile for any of the four T-CRS domains (*Task Orientation*, *Behavior Control*, *Assertiveness*, and *Peer Social Skills*). Over three quarters of incoming UPK students entered pre-k with no risk factors. Spring UPK risk assessment followed a similar trend. In total, 79% of UPK students who were assessed in the spring are transitioning to kindergarten without an assessed social emotional risk; 21% of our children have one or more risk at the end of UPK.

Table 18 reports UPK T-CRS pre/post scores for the 2016-2017 school year. Overall, students made significant gains in all four subdomains of the T-CRS over the course of the school year.

Table 18. 2016-2017 RECAP UPK Pre & Post T-CRS Scores

2016-2017 RECAP UPK Pre / Post T-CRS Scores							
Variable	Pre (fall)			Post (spring)			<i>t</i>
	N	Mean	SD	N	Mean	SD	
Task Orientation	2040	27.8	6.2	1704	28.8	6.6	8.09*
Behavior Control	2040	27	7	1704	27.6	7.3	4.34*
Assertiveness	2040	28.8	5.6	1704	30.5	5.4	14.77*
Peer Social	2040	30	5.8	1704	31.1	5.9	9.91*

Note: * significant $p < .01$

Table 19 provides UPK T-CRS change scores and effect size. Overall, UPK students made significant gains across all four of the T-CRS subdomains. The *Behavior Control* and *Task Orientation and Peer Social* subdomains of the T-CRS have small effect sizes, at .11, .20 and .23 respectively. The *Assertiveness* subdomain shows a moderate effect size ($d=.36$) of reported growth over the course of the 2016-2017 school year.

For the second consecutive year, children's' *Assertiveness* and *Peer Social Skills* domains show the most change. This could be due to children enrolled in UPK programming may be attending a structured high-quality program for the first time, in which their abilities to interact with peers would show much growth over the course of the school year.

Table 19. 2016-2017 RECAP Annual Report UPK T-CRS Change Scores

2016-2017 RECAP Annual Report UPK T-CRS Change Scores				
Variable	N	Mean	SD	Effect Size (d)
Task Orientation	1704	1.1	5.5	0.20
Behavior Control	1704	0.6	5.6	0.11
Assertiveness	1704	1.8	5	0.36
Peer Social	1704	1.2	5.2	0.23

EPK Student Emotional Health

As noted and to repeat, social emotional well-being of EPK students was also assessed by the T-CRS. Table 20 reviews EPK pre/post T-CRS risk scores. Table 21 shows EPK T-CRS change scores. Table 22 reviews EPK student risk-status.

Overall, EPK student's showed significant growth from pre to post across all four T-CRS subdomains (*Task Orientation, Behavior Control, Assertiveness, and Peer Social*). Table 20 summarizes risk frequencies between fall and spring reporting periods. .

Table 20. EPK Student Risk Count at Fall/Spring Reporting

Number of Risks	Risk Count	Percent
	<i>Fall (n=854)</i>	
No Risk	521	61
1 Risk	176	21
2 Risks	94	11
3 Risks	44	5
4 Risks	18	2
	<i>Spring (n=854)</i>	
No Risk	549	64
1 Risk	168	20
2 Risks	83	10
3 Risks	34	4
4 Risks	20	2

Overall, over 60% of EPK students entered programming with no observed risk. In the spring, approximately 3% more children were observed to have zero risks.

Table 21. 2016-2017 RECAP Annual Report EPK T-CRS Pre & Post Scores

2016-2017 EPK T-CRS Pre / Post Scores							
Variable	Pre			Post			<i>t</i>
	N	Mean	SD	N	Mean	SD	
Task Orientation	1118	26.7	6	887	28.1	6.8	5.85*
Behavior Control	1118	25.8	7	887	26.3	7.8	1.65
Assertiveness	1118	27.6	5.7	887	29.9	5.9	11.48*
Peer Social	1118	29.1	5.7	887	30.8	6.5	7.38*

Note: * significant $p < .01$

Table 22. 2016-2017 RECAP Annual Report EPK T-CRS Change Scores

2016-2017 RECAP Annual Report EPK T-CRS Change Scores				
Domain	N	Mean	SD	Effect Size (d)
Task Orientation	887	1.2	5.8	0.21
Behavior Control	887	0.4	6.3	0.06
Assertiveness	887	2	5.1	0.39
Peer Social	887	1.5	5.8	0.26

EPK students made moderate, but significant gains in *Task Orientation*, *Assertiveness*, and *Peer Social Skills*. Unlike their UPK peers, EPK student growth in *Behavior Control* was marginal and not significant.

For the second consecutive year, the pattern of change for the EPK students was similar to UPK students, the largest gains were made on assertive skills followed by peer social skills and task orientation with behavior control showing no changes. A greater concerted effort may be needed on specific professional development targeted on how to better work with children expressing challenging and difficult behaviors in the classroom.

Student Social Emotional Well-Being and Attendance

Similar to the COR+ for more academic areas, social emotional well-being and performance as measured by the T-CRS was analyzed in relation to attendance patterns. As previously mentioned in the COR+ section, attendance data was analyzed using three groups: 1) lower than 80% attendance – severely chronically absent, 2) 81%-89% attendance – chronically absent, and 3) 90% or greater attendance. Table 23 reports on UPK student attendance and growth on the T-CRS. Table 24 depicts EPK student attendance and growth on the T-CRS. For the purpose of

these analyses, only students that had both fall and spring data were analyzed. Student-Newman-Keuls post-hoc testing was used to compare the T-CRS change score means among the three groups. Figures 23 – 26 depict UPK T-CRS domain mean scores at fall and spring by attendance group. Figures 27—30 depict EPK T-CRS domain mean scores at fall and spring by attendance group.

UPK

Figure 23. UPK Task Orientation Growth

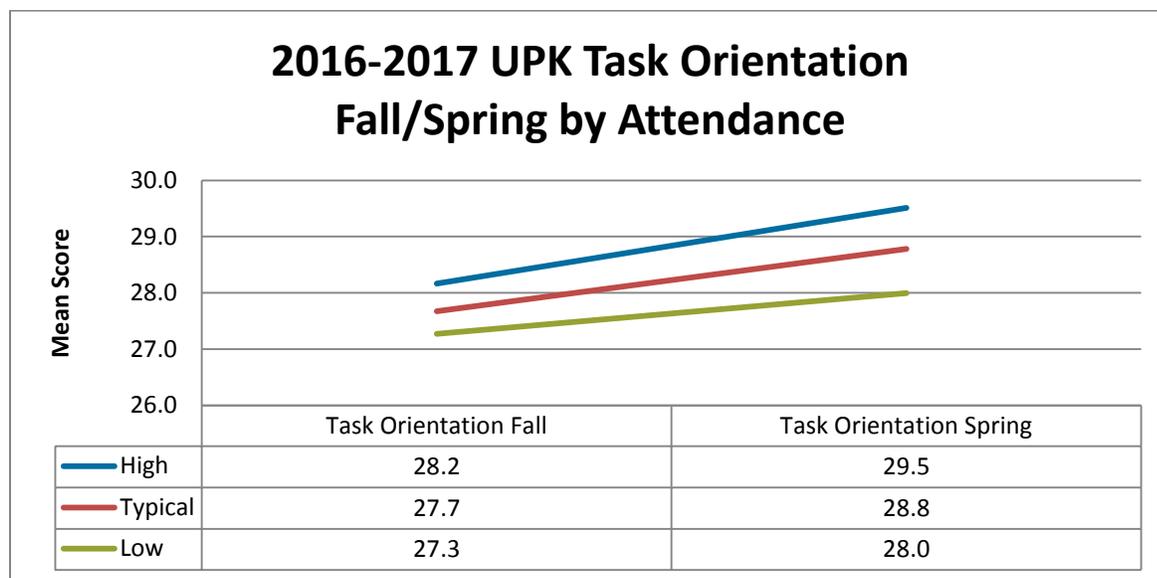


Figure 24. UPK Behavior Control Growth

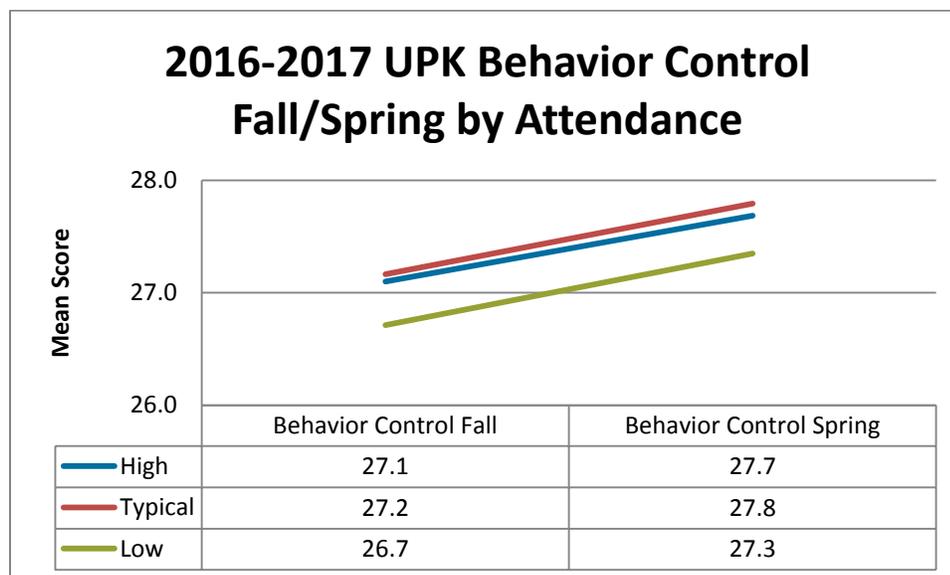


Figure 25. UPK Assertiveness Growth

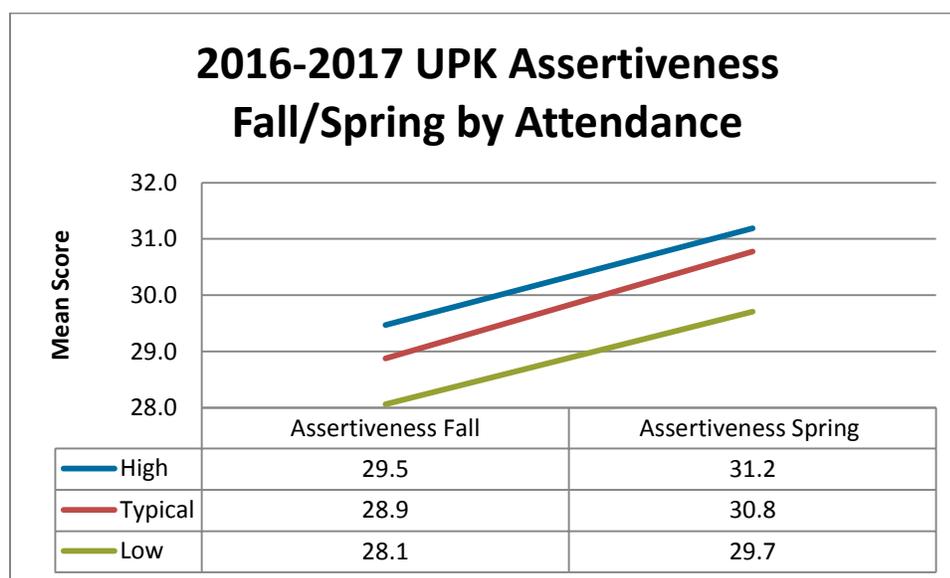


Figure 26. UPK Social Skills Growth

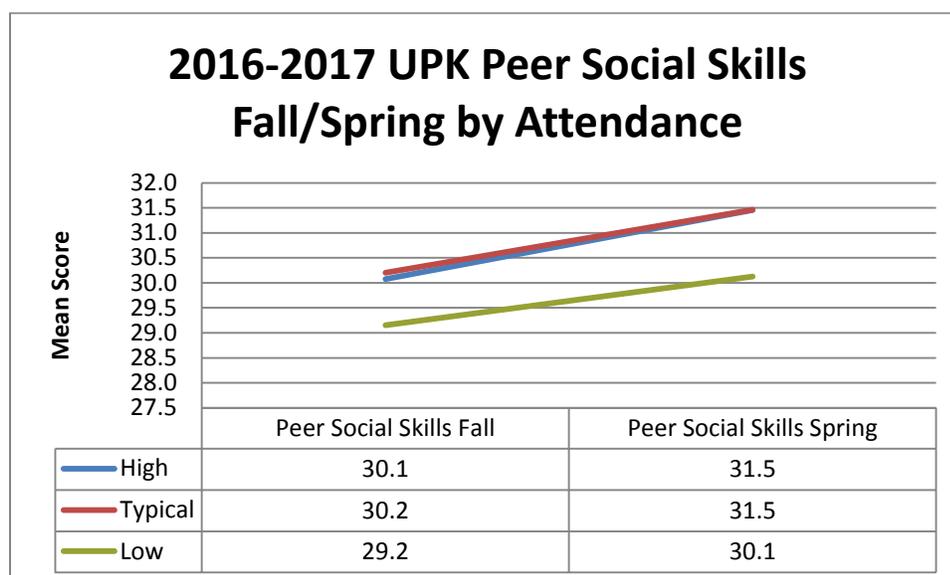


Table 23. UPK T-CRS Growth and Attendance at Fall

2016-2017 RCSD UPK T-CRS Domain Fall Scores Based on Days Attended									
Days Attended	N	Task Orientation		Behavior Control		Assertiveness		Peer Social Skills	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80%	540	27.3 ^b	6.2	26.7 ^a	7.0	28.1 ^b	5.8	29.2 ^b	5.8
81%-89%	514	27.7 ^{a,b}	6.0	27.2 ^a	6.8	28.9 ^a	5.5	30.2 ^a	5.6
90% or greater	649	28.2 ^a	6.2	27.1 ^a	7.3	29.5 ^a	5.4	30.1 ^a	5.6

Note: Means with different letters are significantly different from each other at $p < .05$

UPK students that attend >90% of the time had a significantly higher *Task Orientation* domain mean at entry compared to their peers. Students attending >80% of the time had significantly higher *Assertiveness* and *Peer Social Skills* mean scores compared to their less attending peers (<80%). The *Behavior Control* mean was not significantly different between the three attendance groups.

Table 24. UPK T-CRS Growth and Attendance at Spring

2016-2017 RCSD UPK T-CRS Domain Spring Scores Based on Days Attended									
Days Attended	N	Task Orientation		Behavior Control		Assertiveness		Peer Social Skills	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80%	540	28.0 ^b	6.8	27.3 ^a	7.5	29.7 ^b	5.7	30.1 ^b	6.4
81%-89%	514	28.8 ^a	6.3	27.8 ^a	6.9	30.8 ^a	5.3	31.5 ^a	5.4
90% or greater	649	29.5 ^a	6.5	27.7 ^a	7.4	31.2 ^a	5.2	31.5 ^a	5.7

Note: Means with different letters are significantly different from each other at $p < .05$

At spring data reporting, UPK students attending >80% of the time had significantly higher *Task Orientation*, *Assertiveness*, and *Peer Social Skills* means compared to their peers attending <80% of the time. The *Behavior Control* mean score was not significantly different between the three attendance groups.

Table 25. UPK T-CRS Growth and Attendance Change Scores

2016-2017 RCSD UPK T-CRS Domain Change Scores Based on Days Attended									
Days Attended	N	Task Orientation Change		Behavior Control Change		Assertiveness Change		Peer Social Skills Change	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80% or fewer	540	0.73 ^a	6.01	0.64 ^a	5.95	1.65 ^a	5.58	0.98 ^a	5.73
81%-89%	514	1.11 ^a	5.13	0.63 ^a	5.45	1.90 ^a	4.67	1.26 ^a	4.91
90% or greater	649	1.35 ^a	5.35	0.58 ^a	5.40	1.72 ^a	4.64	1.38 ^a	4.89

Note: Means with different letters are significantly different from each other at $p < .05$

For our sample of 1,703 UPK students, change scores did not differ based on the frequency of the days they attended UPK programming. Infurna et al., (2016) reported similar findings in which student social emotional growth is consistent among UPK students, regardless of time spent in programming. Students attending >80% entered the school year with higher mean scores across the four domains of the T-CRS compared to their peers attending <80%. Students attending >90% exhibited the most growth in *Task Orientation* and *Peer Social Skills*. *Behavior Control* saw minimal differences in growth, while the moderately attending group made more growth in *Assertiveness* than the >90% attendance group and <80% attendance group.

EPK

Table 26 depicts EPK student T-CRS growth and attendance at fall. Table 27 depicts EPK student T-CRS growth and attendance at spring. Table 28 reports on EPK student T-CRS change scores and attendance.

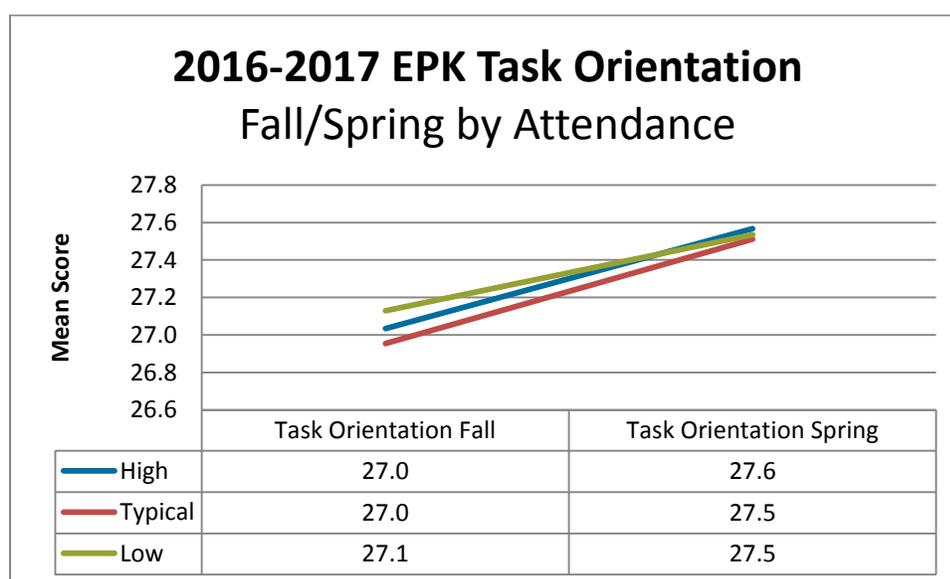
Figure 27. EPK Task Orientation Growth

Figure 28. EPK Behavior Control Growth

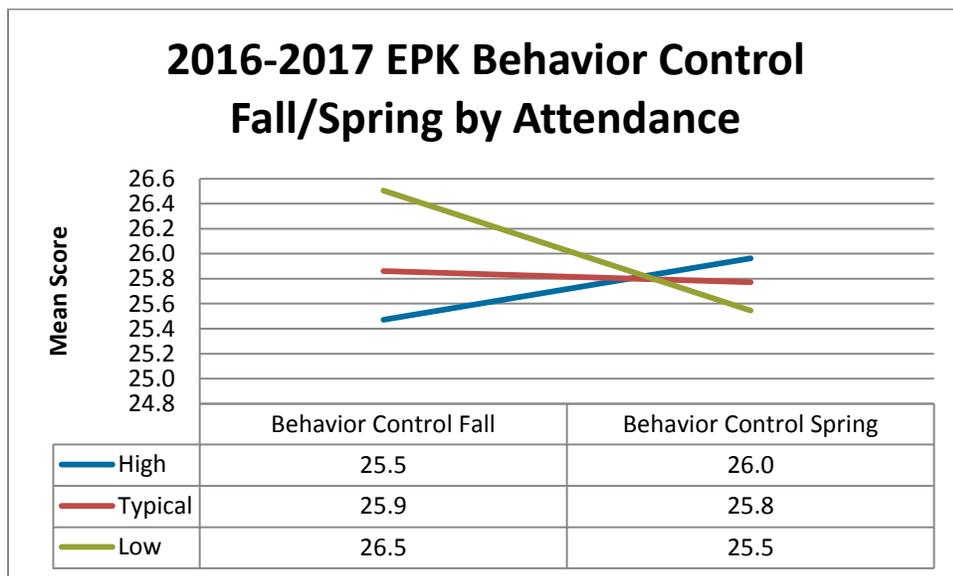


Figure 29. EPK Assertiveness Growth

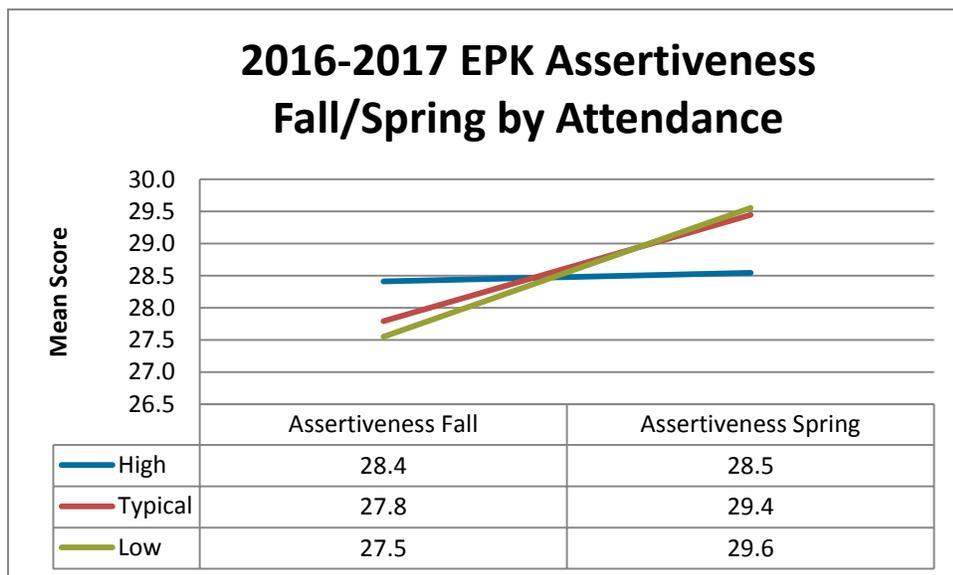
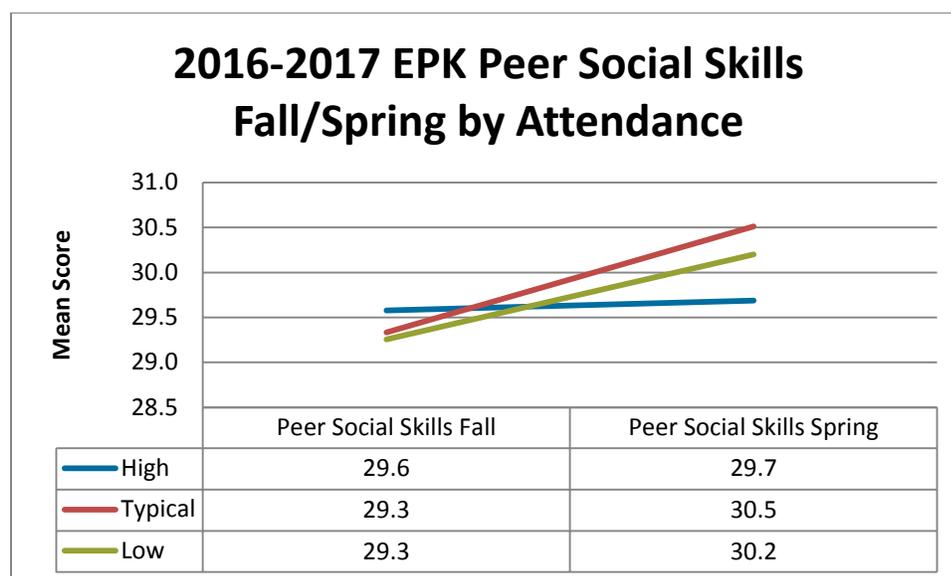


Figure 30. EPK Peer Social Skills Growth**Table 26. EPK T-CRS Fall Means and Attendance**

2016-2017 RCSD EPK T-CRS Domain Fall Scores Based on Days Attended									
Days Attended	N	Task Orientation		Behavior Control		Assertiveness		Peer Social Skills	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80%	382	27.1 ^a	5.6	26.5 ^a	6.7	27.5 ^a	5.4	29.3 ^a	5.7
81%-89%	237	27.0 ^a	5.6	25.9 ^a	6.6	27.8 ^a	5.6	29.3 ^a	5.4
90% or greater	268	27.0 ^a	6.0	25.5 ^a	7.2	28.4 ^a	5.5	29.6 ^a	5.4

Note: Means with different letters are significantly different from each other at $p < .05$

At fall entry, EPK student T-CRS domain means were not statistically significant from each other based on attendance.

Table 27. EPK T-CRS Spring Means by Attendance

2016-2017 RCSD EPK T-CRS Domain Spring Scores Based on Days Attended									
Days Attended	N	Task Orientation		Behavior Control		Assertiveness		Peer Social Skills	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80%	382	27.5 ^a	8.0	25.5 ^a	8.8	29.6 ^a	7.5	30.2 ^a	7.9
81%-89%	237	27.5 ^a	7.2	25.8 ^a	8.0	29.4 ^a	6.4	30.5 ^a	7.2
90% or greater	268	27.6 ^a	8.5	26.0 ^a	9.2	28.5 ^a	8.2	29.7 ^a	8.6

Note: Means with different letters are significantly different from each other at $p < .05$

EPK student spring T-CRS domain scores were not statistically significant from each other based on attendance.

Table 28. EPK T-CRS Change Scores by Attendance

2016-2017 RCSD UPK T-CRS Domain Change Scores Based on Days Attended									
Days Attended	N	Task Orientation Change		Behavior Control Change		Assertiveness Change		Peer Social Skills Change	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
80%	382	0.4 ^a	10.0	-1.0 ^a	10.9	2.0 ^a	9.3	1.0 ^a	9.8
81%-89%	237	0.6 ^a	9.0	-0.1 ^a	10.2	1.7 ^a	8.9	1.2 ^a	8.8
90% or greater	268	0.5 ^a	10.3	0.5 ^a	11.4	0.1 ^a	10.3	0.1 ^a	10.1

Note: Means with different letters are significantly different from each other at $p < .05$

EPK student T-CRS change scores do differ from each other, however they are not statistically significant from one another based on attendance group. EPK student *Task Orientation* growth was similar based on attendance group. Students attending less than 90% of the time saw a decrease in *Behavior Control*. Students attending less than 80% of the time lost a full point in Behavior Control over the course of the academic year. The *Assertiveness* and *Peer Social Skills* domains did not differ from each other based on attendance.

However, it is interesting to note that at fall, the highest attending group had higher Assertiveness and Peer Social Skills mean scores compared to their peers, yet they exhibited the least amount of growth over the course of the school year. This could be due to a couple of reasons. First, those students that entered the school year with higher *Assertiveness* and *Peer Social Skills* means may have already been exhibiting positive behaviors in regards to communicating with their peers and teachers. Second, teachers may not have spent as much time working with their students that entered the school year with high scores in the *Assertiveness* and *Peer Social Skills* domains.

Family Perspectives

Family and Teacher Relationship Quality Measures

Context

Early Childhood Development Initiative's (ECDI) Family Engagement Committee and Nancy Kaplan, Chair, searched for family engagement models specific to early childhood. This committee found early education researchers, with funding from the Office of Planning, Research, and Evaluation (OPRE) and the Administration for Children and Families' Office of Head Start (OHS), had identified that high quality provider/teacher relationships can enable family engagement and can result in families and staff becoming more equal partners in facilitating children's development and early learning. Researchers developed and field tested measures that included key elements of quality relationship for families, providers/teachers, and program directors. ECDI suggested piloting these measures to potentially identify areas where supports and skill building are needed for both staff and families.

Background

The FPTRQ measures were developed by Westat and Child Trends as part of a four-year initiative, sponsored by OHS and OPRE, 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). 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 that may be Spanish speaking. This mirrors the diversity served by RECAP.

Kim et al., 2015 developed their measures after a process that included an extensive literature review, focus groups, the creation of a conceptual model, recommendations from a group of experts, a pilot study, several rounds of interviews with participants to improve survey design, and a field study (for three measures). The researchers' conceptual model evolved after the literature review and assumes that the relationship between families and teachers is bi-directional. Kim et al., (2015) found that "...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." Childtrends.org concurred, publishing that child outcomes are positively influenced by families who are involved and this can be assessed beyond actual contact hours. It is estimated that 60% of children in the U.S. under age five spend time regularly in early care and education centers; these children are watching how adults work together. The FPTRQ – Parent measure asks parents or caretakers general questions about how they interact with their children's teachers.

Questions

In 2016-2017, based on ECDI's recommendation and responding to the need for better input from families' perspectives, the RECAP team implemented three questionnaires from the array of measures made available from the Family and Provider/Teacher Relationship Quality (FPTRQ) project. Specific to this initial investigation were the following questions:

- Is the FPTRQ valuable, usable, and psychometrically sound?
- Does the FPTRQ detect changes in the relationship quality as perceived by families?
- Does the FPTRQ detect changes in the relationship quality as perceived by teachers?

FTRQ – Family

Measure

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***). To better understand what relationship was being assessed, RECAP families or caretakers were directed to consider the child's main teacher (not aides or assistant teachers), when answering the questions. The demographic questions (11-19) were eliminated as that information was collected elsewhere. Other than the changes noted above, the ***FTRQ – Family*** included the same questions contained in the researchers' full format measure. The questionnaire was formatted and put on a scan form. The questions in ***FTRQ – Family*** measure were rated on a 1-4 Likert scale, with 4 being the most desirable score.

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”.

Procedure

RECAP distributed the initial *FTRQ – Family* for each child enrolled in one of its 211 prekindergarten classes, with the exception of 5 classrooms at a Community Based Organization (CBO). For the final *FTRQ – Family*, RECAP distributed a survey for each child enrolled in the CBO agencies from the initial distribution as well as a limited number of Rochester City School District (RCSD) school based classrooms. Pre-test data were collected in November 2016 and post-test data were collected in May 2017. The *FTRQ – Family* was made available in both English and Spanish.

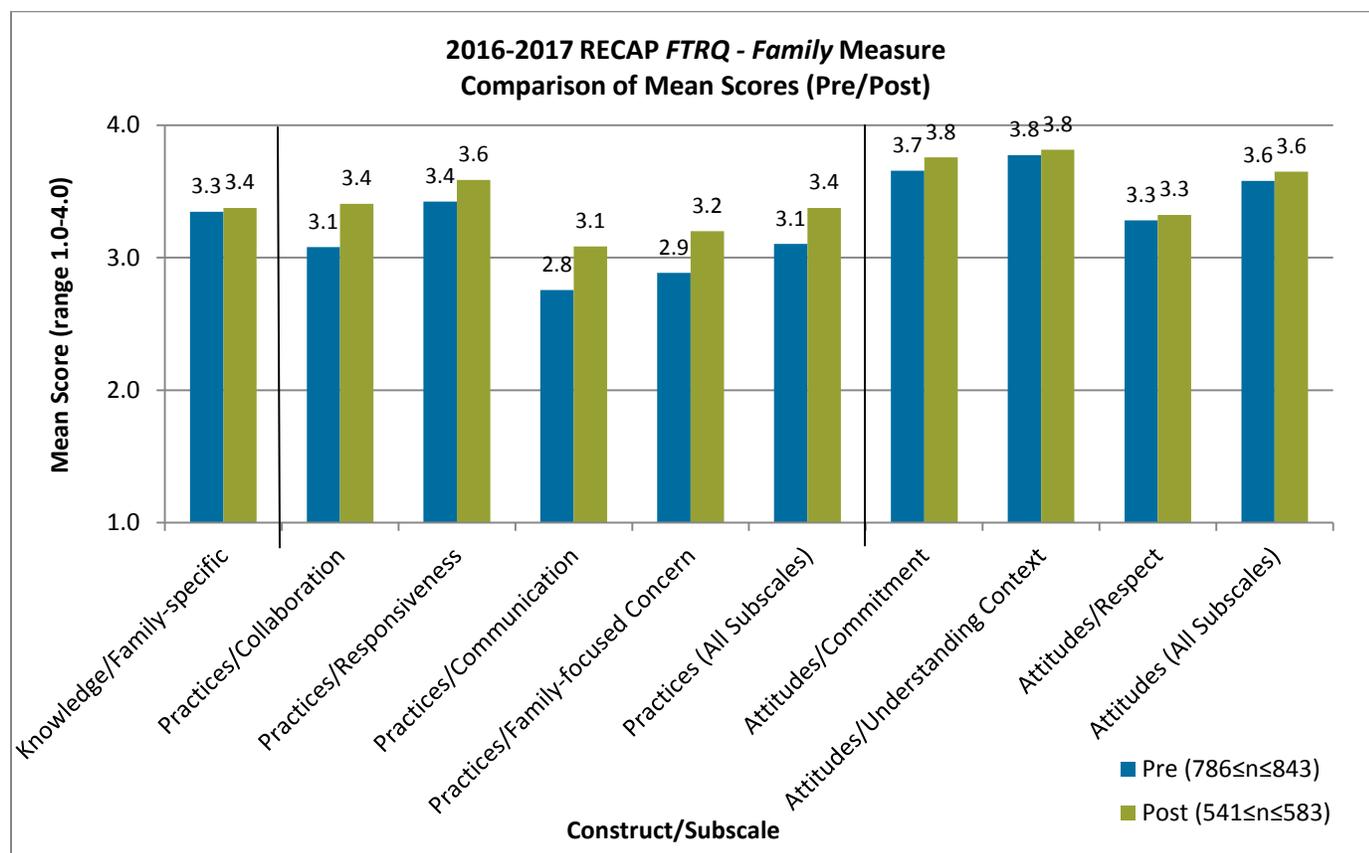
Individual subscale scores were computed if more than approximately 90% of questions were answered. If a subscale was missing between 1% and roughly 10% of answers, the average of the other questions was used to compute the subscale. If more than approximately 10% of questions per subscale were missing, the subscale score was not computed. This scoring differed from the authors’ scoring. The authors did not calculate a subscale score if any questions were unanswered within that subscale. RECAP sample sizes vary by subscale between 786 and 843 for the fall/pre data and between 541 and 583 for the spring/post data. Of families that participated in November, 26% were from Action for a Better Community (ABC) Head Start, 67% were from other Community Based Organizations and 7% were from Rochester City School District (RCSD) sites. Of families that participated in May, 28% were from ABC Head Start, 70% were from other Community Based Organizations, and 2% were from RCSD.

Results

RECAP assessed the factor structure and reliability of the *FTRQ – Family* using our pre-test data. The questions designated in the authors’ full format and short forms were used in principal components factor analysis and found to support the subscales as the developers hypothesized. Reliability testing was completed on the researcher defined subscales of both forms. Cronbach’s alphas ranged between 0.80 and 0.98 with a mean of 0.92 for the subscales on the full form and between 0.76 and 0.96 with mean of 0.85 for the subscales on the short form, which were similar to the statistics the developers presented. In sum, for both lengths of the measure, the factor structure suggested by the developers was sound and had alphas between good and excellent ($\alpha \geq 0.7$). These analyses answered the question, “Is the FPTRQ psychometrically sound?” Yes.

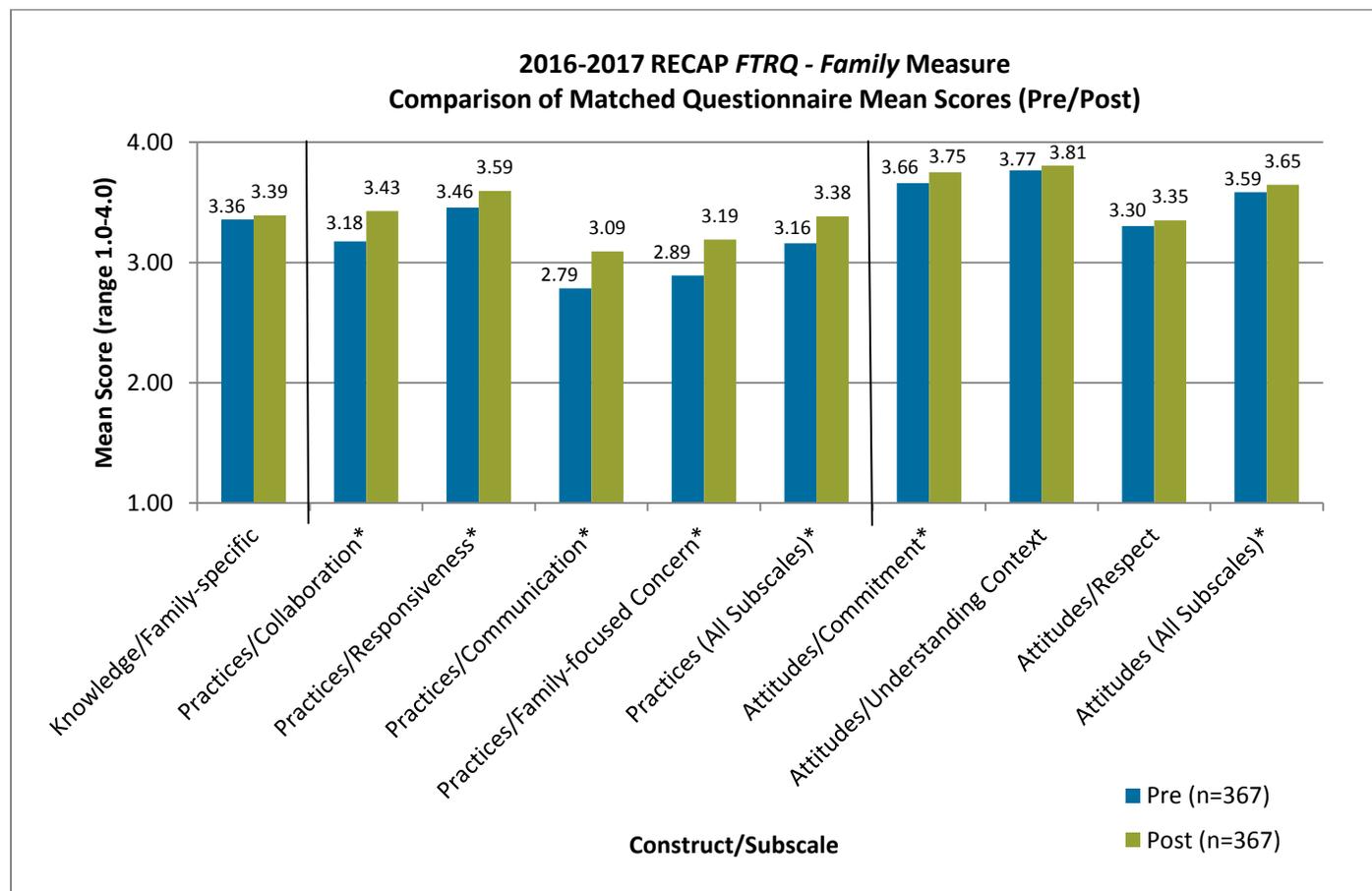
Figure 31 presents the average (mean) score per question by construct/subscale.

Figure 31. 2016-2017 FTRQ – Family Comparison of Fall and Spring Mean Scores



Analysis of the *FTRQ – Family* results, using data from only the families that submitted both a pre and post questionnaire (N=367) is presented in Figure 32. Comparison of the pre-test and post-test scores for this sample, using the Wilcoxon signed-rank test, reveals statistically significant ($p < .05$) gains for all subscales except Family-specific Knowledge, Understanding Context, and Respect. The Wilcoxon signed-rank test was performed using mathcracker.com because the distribution of the data was found to be non-normal. However, it is generally accepted with large samples to use a Student's *t*-test. The increases shown in Figure 2 were the same for both the Wilcoxon sign-rank test and the Student's *t*-test at $p < .05$.

Figure 32. 2016-2017 FTRQ – Family Comparison of Matched Questionnaire Fall and Spring Mean Scores

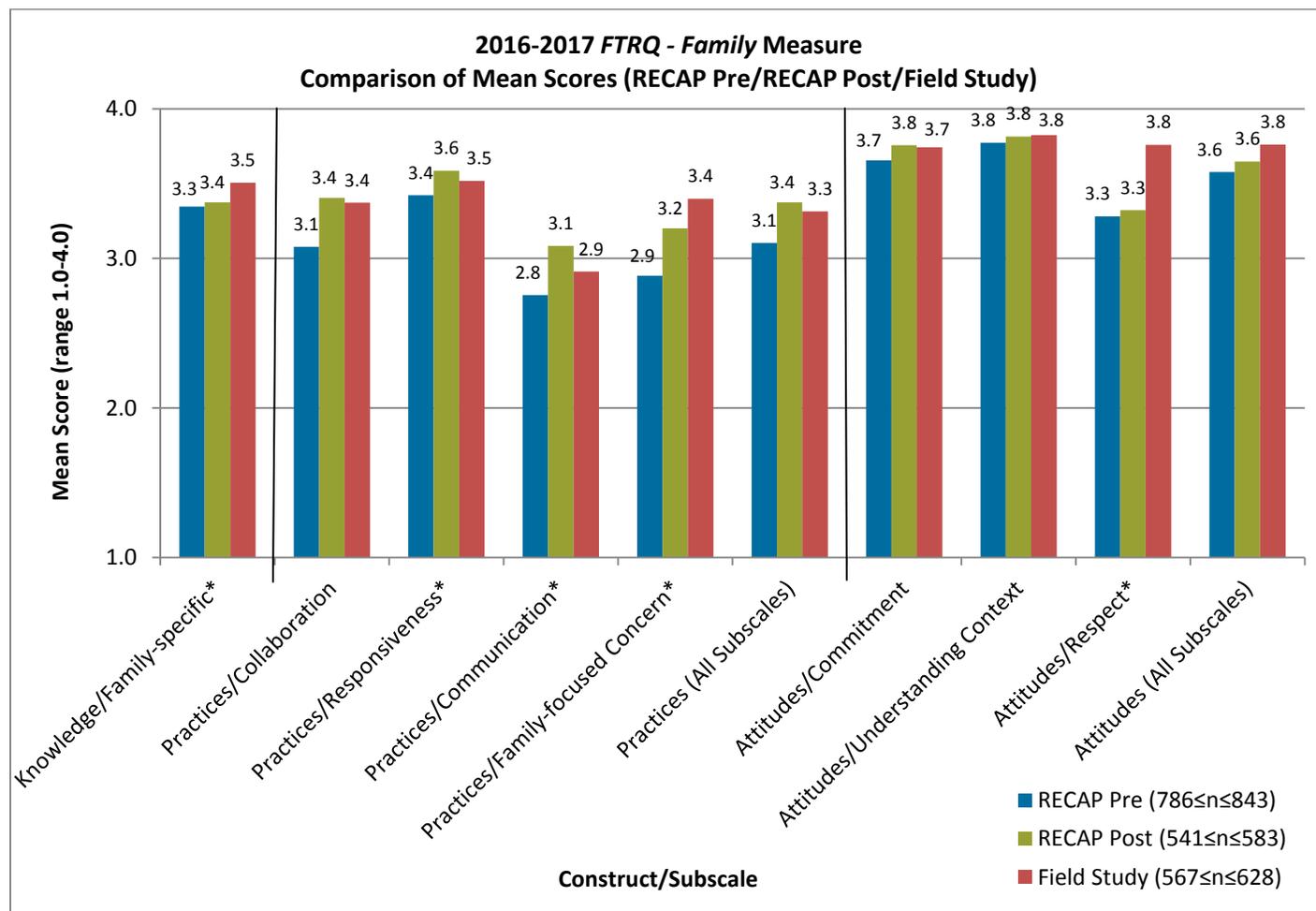


*Changes in means are significant at $p < .05$

These analyses, in part, answered the question, “Does the FPTRQ detect changes in the relationship quality as perceived by families?” Yes.

Figure 33 details *FTRQ – Family* (pre and post) compared to the results of the field study conducted by the tool’s developers (Kim et al., 2015). The field study used between 567 and 628 measures to calculate the subscale’s mean question score as the researchers did not include subscales that were incomplete. A student’s *t*-test for two means was performed using mathcracker.com. Rochester’s post-test mean scores were greater than the field study’s mean scores ($p < .05$) with regards to *Responsiveness* and *Communication*. The field study’s mean scores were greater than Rochester’s post-test scores ($p < .05$) with regards to *Family-specific Knowledge*, *Family-focused Concern*, and *Respect*.

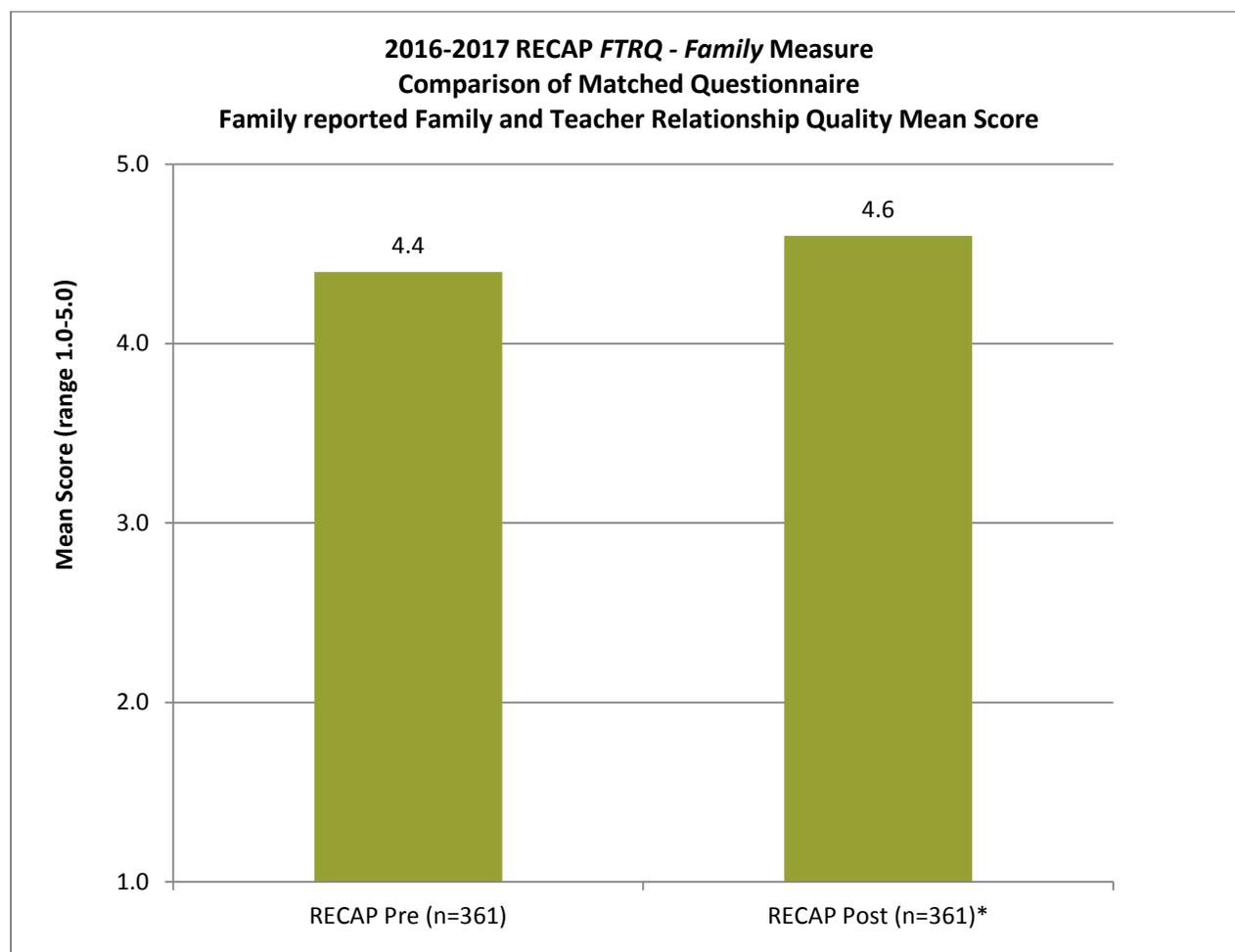
Figure 33. 2016-2017 FTRQ – Family Comparison of RECAP Fall, RECAP Spring, and Field Study Mean Scores



*Changes in means from RECAP Post to the Field Study are significant at $p < .05$

Families were also asked in the fall and in the spring, on a scale of 1-5 (1 being the worst and 5 being the best imaginable), how they would describe their relationship with their child's teacher. Figure 34 shows the results for this item using data from only families that submitted both a pre and post questionnaire ($n=361$). Comparison of the pre-test and post-test scores, using the Student's t -test, revealed statistically significant ($p < .05$) gains for family reported family and teacher relationship quality.

Figure 34. 2016-2017 *FTRQ* – *Family* Comparison of Fall and Spring Matched Questionnaire Self-reported Family and Teacher Relationship Quality Mean Scores



*Change in means are significant at $p < .05$

FTRQ – Teacher

Background

The *FTRQ – Teacher* (developed by Kim et al., 2015) was piloted in conjunction with the *FTRQ – Family* with a small volunteer group of teachers. It is suggested 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. Like the *FTRQ – Family*, some background and demographic questions on the *FTRQ – Teacher* were omitted.

Measure

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.

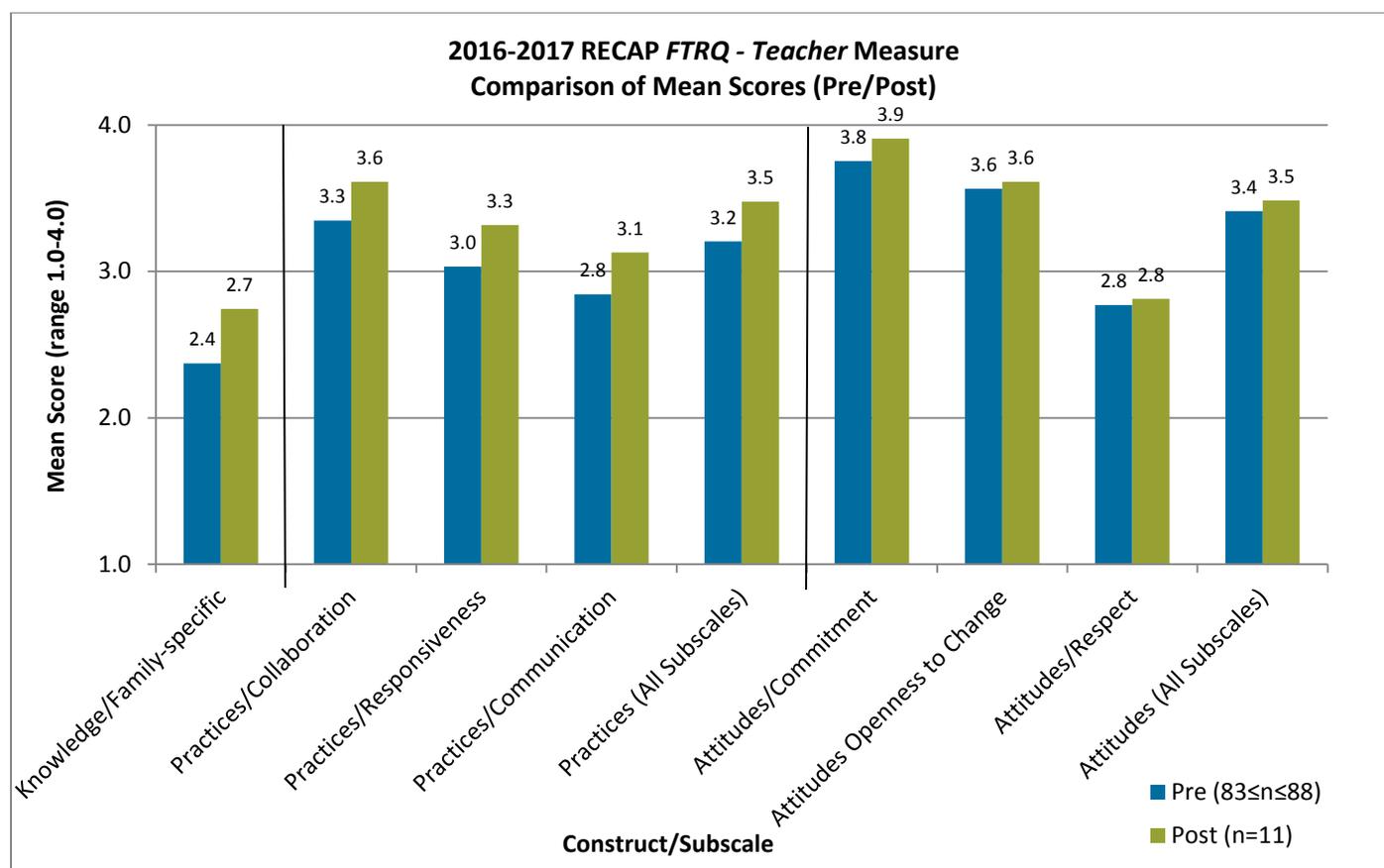
Procedure

The sample sizes vary across subscales as some partially completed sections were allowed. Teachers who participated in fall ($83 \leq n \leq 88$) included: 57% from ABC Head Start, 24% from Rochester Childfirst Network, 15% from Volunteers of America Children’s Center, and 4% from Ibero Early Childhood Services. Teachers who participated in spring ($n=11$) included: 73% from Rochester Childfirst Network and 27% from Ibero Early Childhood Services. The spring/post sample for the ***FTRQ – Teacher*** pilot was small ($n=11$) and this limits the robustness and usefulness of the results. It is anticipated that future FTRQ questionnaire collections will yield returns from which conclusions can be used with confidence.

Results

Figure 35 shows teachers’ average (mean) score per question by construct/subscale. Care must be taken to not over interpret this finding due to the small sample in the spring. Figure 35 is provided here as an exemplar of what can be analyzed in the future.

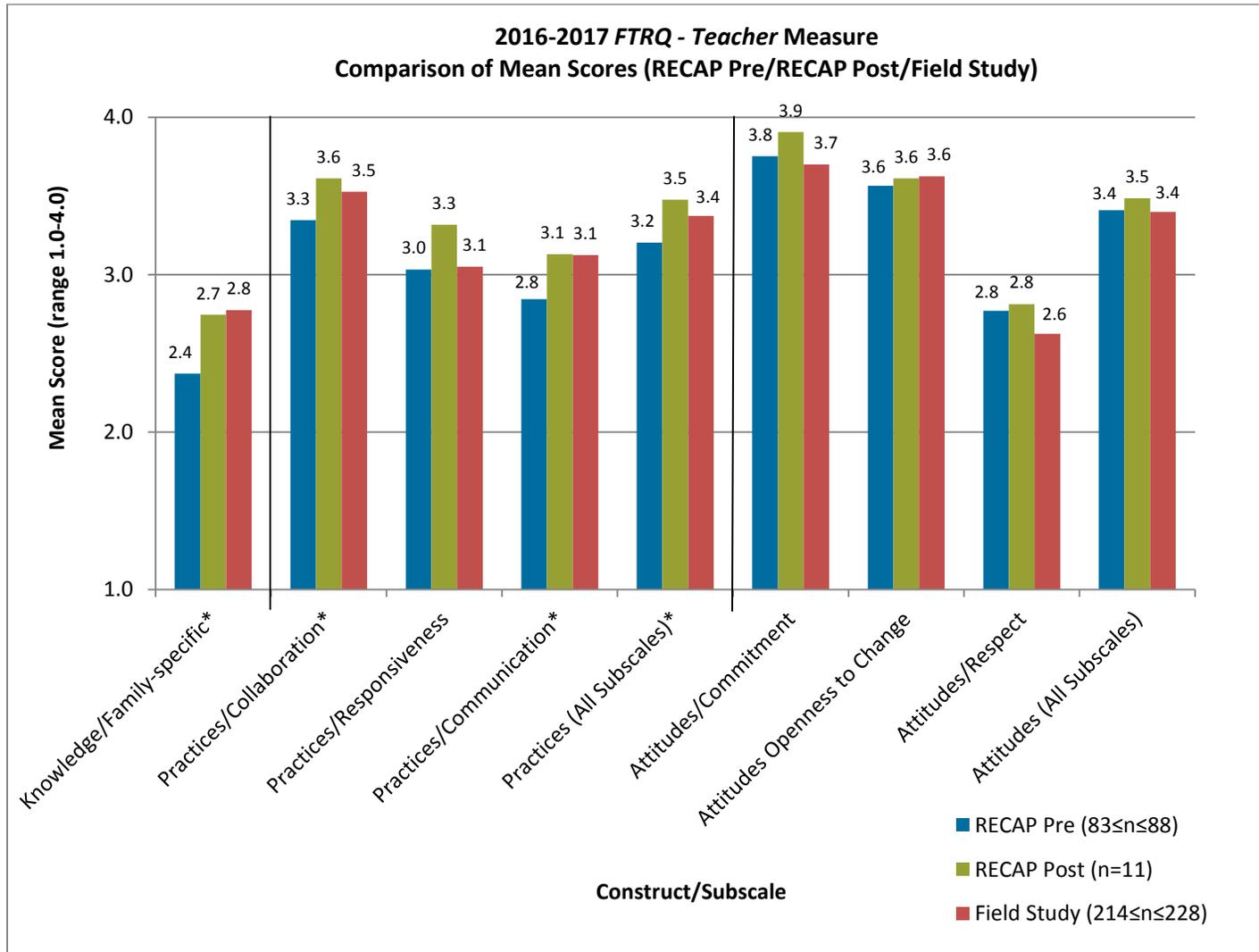
Figure 35. 2016-2017 *FTRQ –Teacher* Comparison of Pre and Post Mean Scores



RECAP's *FTRQ – Teacher* (pre and post) were compared to the results of the field study conducted by the tool's developers (Kim et al., 2015). The field study used samples between 214 and 228 for calculating the subscale's mean question score as the researchers did not include subscales that were incomplete. Because of the small sample (n=11) at post, significance testing between Rochester and the field study was not conducted.

With a larger sample size ($83 \leq n \leq 88$), Rochester's pre-test data was compared with the field study data using a *t*-test for two means on mathcracker.com. The length of relationships in the field study is unclear, although it is stated data was collected between January and April 2014. The length of family and teacher relationships at the time of RECAP's pre data collection would generally be 2 ½ months. That being said, the field study's mean scores were greater than Rochester's pre-test scores ($p < .05$) with regards to *Family-specific Knowledge*, *Collaboration*, *Communication*, and *Practices* (see Figure 36).

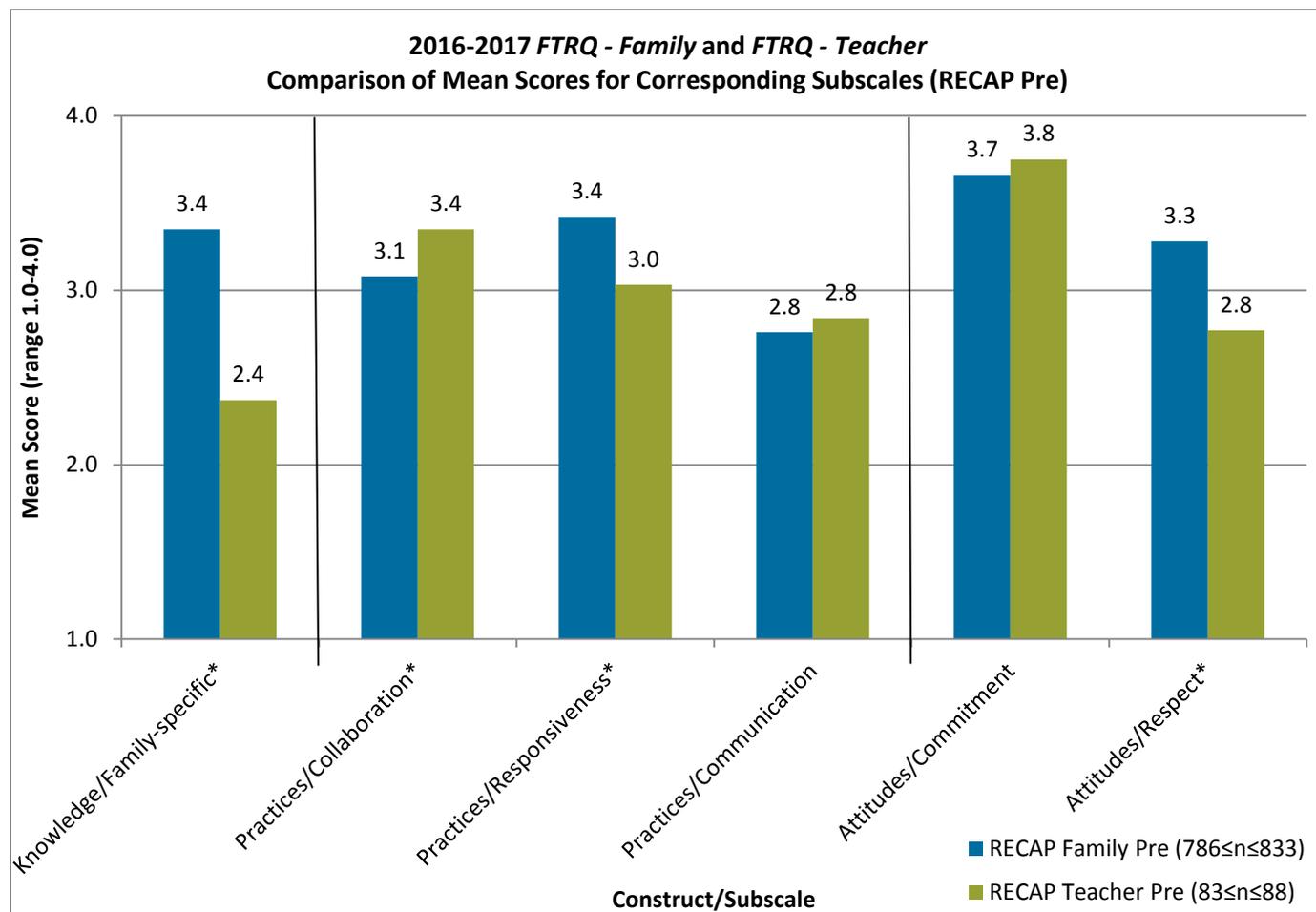
Figure 36. 2016-2017 *FTRQ* – Teacher Comparison of RECAP Pre, RECAP Post, and Field Study Mean Scores



*Changes in means from RECAP Pre to the Field Study are significant at $p < .05$

Several subscales for the *FTRQ* – *Family* and *FTRQ* – *Teacher* are the same. Figure 37 depicts the family and teacher perspectives in corresponding subscales for the fall/pre assessment. Figure 38 depicts the family and teacher perspectives in corresponding subscales for the spring/post assessment.

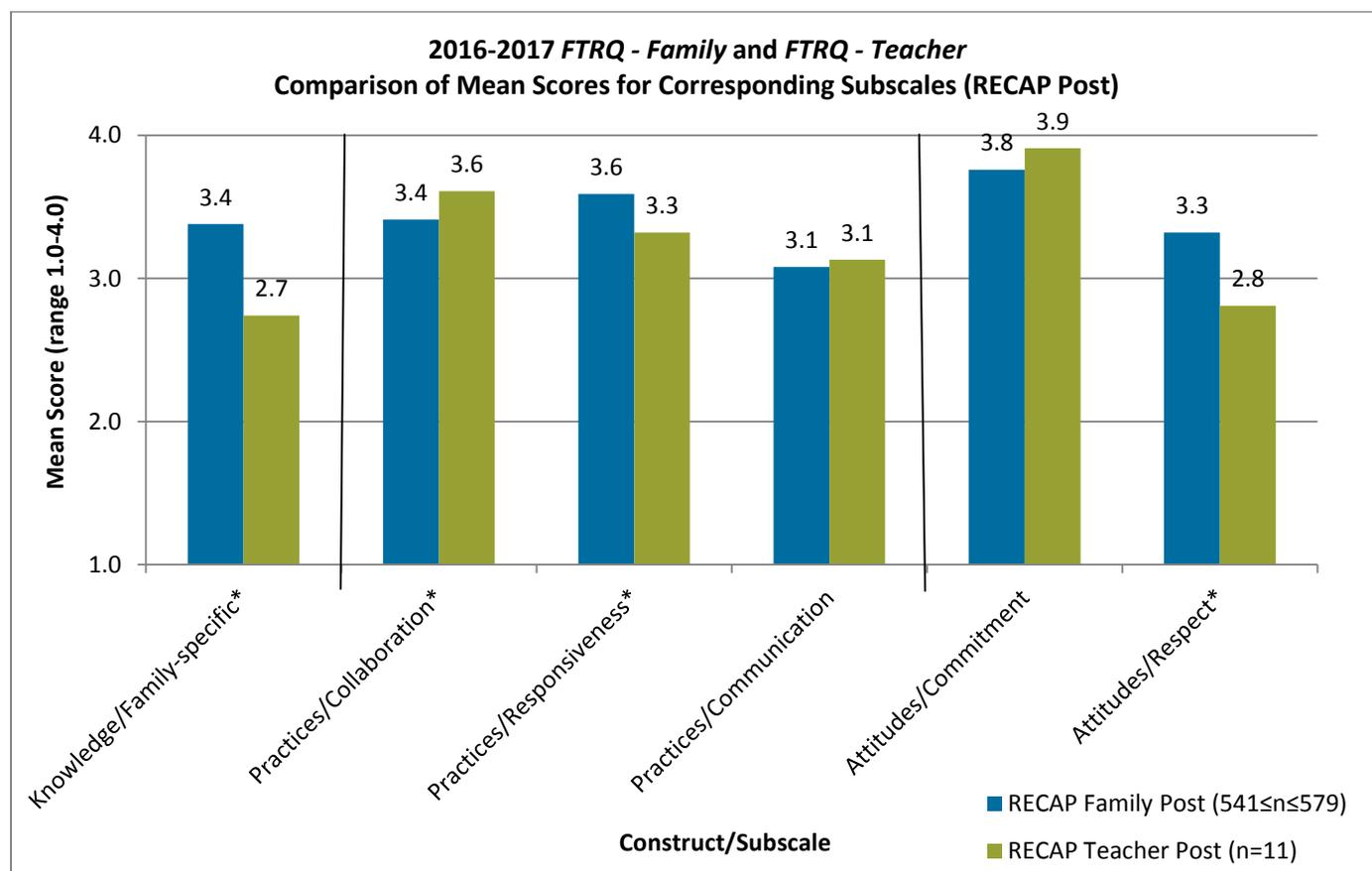
Figure 37. 2016-2017 FTRQ – Family and FTRQ – Teacher Comparison of RECAP Fall Mean Scores (November 2016)



*Changes in means are significant at $p < .05$

An independent two-sample *t*-test was performed using mathcracker.com on the fall/pre data. Figure 7 reveals that families responded more positively than teachers when asked questions about *Family-specific Knowledge*, *Responsiveness*, and *Respect*. Teachers responded more positively than families when asked questions about *Collaboration*. Significance testing was not done on the spring/post data due to the small sample size of teachers.

Figure 38. 2016-2017 FTRQ – Family and FTRQ – Teacher Comparison of RECAP Spring Mean Score (May 2017)



FTRQ – Director

Background

The *FTRQ – Director* (Kim et al., 2015) was piloted with a small volunteer group of directors. Like the *FTRQ – Family* and *FTRQ – Teacher* some questions on the *FTRQ – Director* were omitted as the information could be collected elsewhere.

Measure

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 4 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 this construct are answered yes or no, receiving a score of 1 or 0 respectively.

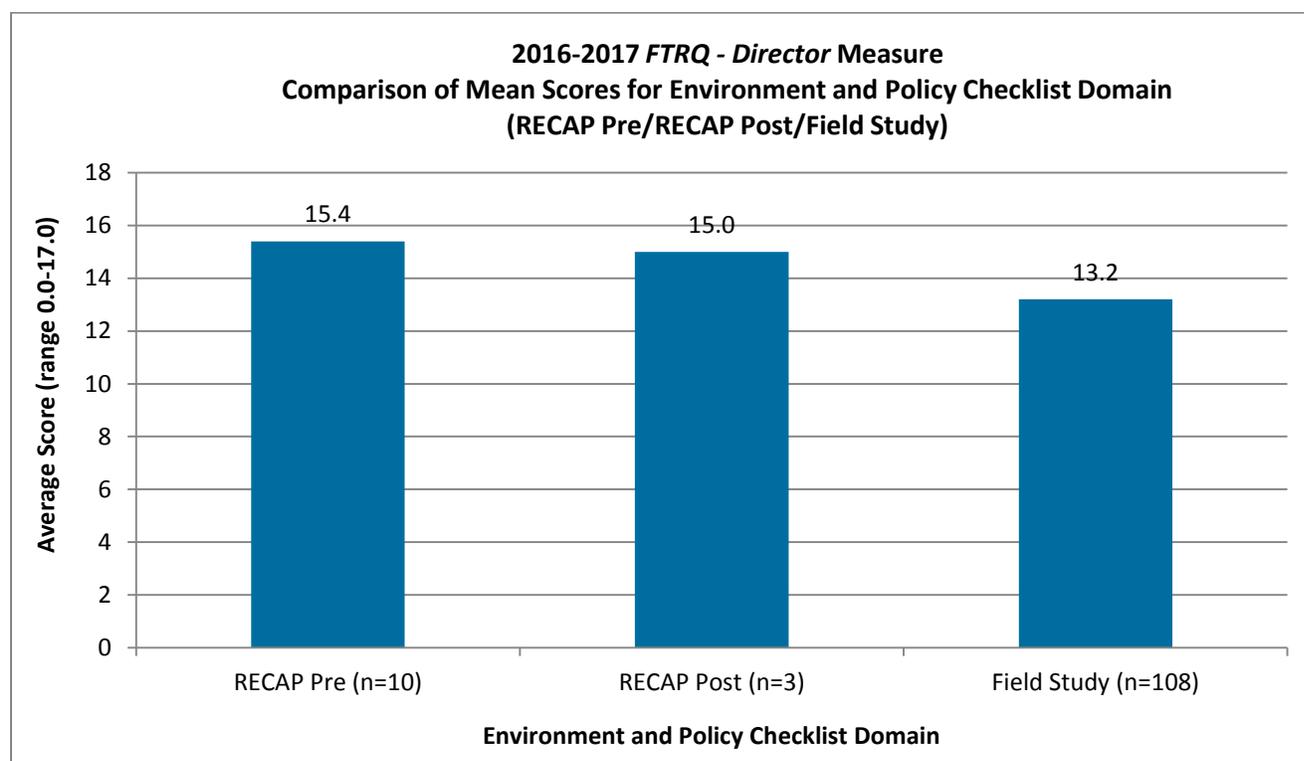
Procedure

The ***FTRQ - Director*** was completed by 108 directors in the national field study. Ten (10) RECAP directors in fall 2016 (pre), and three (3) in spring 2017 (post) participated as part of the pilot. The directors who participated in the fall included: 60% from ABC Head Start, 20% from Rochester Childfirst Network, 10% from Ibero Early Childhood Services, and 10% from Volunteers of America Children's Center; in the spring participants included: 64% from Rochester Childfirst Network and 33% from Ibero Early Childhood Services.

Results

We present the next figure for illustrative purposes due to the small numbers of directors who completed the questionnaire. Figure 39 displays ***FTRQ – Director*** RECAP (pre and post) and Field Study results.

Figure 39. 2016-2017 FTRQ – Director Comparison of RECAP Pre, RECAP Post, and Field Study Mean Scores for the Environment and Policy Checklist Domain



Parent Satisfaction Survey

RCSD gave a separate satisfaction survey to a subset of prekindergarten families to gather specific information about how they would grade their children’s EPK or UPK program and their use of books and technology.

Surveys were distributed to EPK and UPK families. Fifty-four (54) respondents were EPK families (20%) and 180 respondents were UPK families (65%). The remaining 42 surveys (15%) were not identified as either EPK or UPK. Surveys were provided in 2 languages; 265 were completed in English (96%) and 11 were completed in Spanish (4%). Surveys were distributed to 4 groups; 196 were completed at three CBO providers (71%) and 80 were completed at the “RCSD Transition to Kindergarten” event (29%).

On a scale of A to F, where A is the best grade, families were asked to rate 6 aspects of their child’s prekindergarten programs. On average, families gave their child’s teacher a grade of A- to A, their child’s principal or center director a grade of B+ to A-, and their child’s overall prekindergarten program a grade of A- to A. These results replicated satisfaction results reported by RECAP for more than the past decade. On average, families (n=233) described being satisfied to very satisfied with the books coming home (84%). More than half (57%) of the

families (n=158) reported not using “Ready Rosie,” a mobile phone application which is a specific source that promotes family engagement during everyday activities.

Summary

In conclusion, RECAP found from this newly implemented measure that:

- The FTRQ is usable and reliable in both the original full format and short form versions
- Families reported improved relationships with teachers in most areas over the 2016-2017 school year
- The pilot group of Teachers reported directionally improved relationships with families over the 2016-2017 school year
- When the perspectives of Families and Teachers are compared, they seem to have differing opinions about the specific areas of relationship strength and weakness. This can be used to initiate further inquiry and potential professional development.

Recommendations

In light of the positive reliability testing results and in response to feedback that the ***FTRQ – Family*** full format measure is too long, RECAP suggests implementing the short form for the 2017-2018 school year. In doing so, the ***FTRQ – Family*** will be reduced from 67 questions to 25 questions and be combined with some questions from the parent satisfaction survey to assess relationship quality, engagement, and satisfaction.

During 2017-2018 we also aspire to increase all sample sizes, but especially those from teachers and directors, which will allow for meaningful comparisons, more targeted professional development and community planning. In the future, we hope to investigate the possible link between relationship quality and student outcomes. After this investigation and as momentum grows for these measures, we anticipate using this valuable tool to identify actionable items to increase relationship quality and family engagement in the hopes this translates into better student outcomes.

Recommendations for 2017-2018

The efficacy of RECAP's continuous improvement system and the important role that feedback reports serve in continuing to inform the implementation of quality standards in classrooms have been repeatedly demonstrated. Below are recommendations that will hopefully lead to additional improvements.

Student

As a whole, the community and RCSD must continue to focus on all children birth-4. The community, schools, CBO's and families must work together to increase EPK and UPK student literacy. A focus of the 2016-2017 school year was the introduction of the Pyramid Model in all three and four year old classrooms with the intention to provide teachers and staff with tools and knowledge to work with and educate children where they are in order to provide more individualized instruction. The Ready Rosie app was introduced to provide families with more opportunities to be engaged with their children in age-appropriate and enriched learning. Principals, center directors, and administrators will review EPK/UPK teacher lesson plans, ensuring that teachers are developing and incorporating suitable literacy and language activities that scaffold to meet the individual needs of their children.

Approximately 25% of four year old children enter UPK with at least one observed social-emotional risk measured by the T-CRS (*Task Orientation, Behavior Control, Assertiveness, and Peer Social Skills*). By the end of the year, 20% of UPK still have at least one observed risk. A greater emphasis should be placed on the social-emotional well-being of our children, specifically as they prepare for the transition to kindergarten.

In 2016-2017, summer learning opportunities expanded to over 300 three and four year old children. Even with the large expansion, we must continue to increase the size of this program and continue to assess its apparent efficacy in maintaining the social-emotional and cognitive functioning of our children as they transition to kindergarten.

Program

The community will continue to place a greater emphasis on professional development training and opportunities focused on the ECERS-3 and CLASS. Specific training should be placed on the *Instructional Support* domain of the CLASS, with an emphasis on the *Concept Development* dimension, as well as the *Activity, Space, Routine, and Language* domains of the ECERS-3. Our community is fortunate to have technical support teachers as well as other staff that are able to provide teachers unique and specific professional development that meets their individual needs. A focus of the upcoming 2017-2018 Summer Institute professional development week will be on the new Teacher Track programming. Newly hired RECAP teachers will be taking part in an intensive and informational four day program introducing them to the CLASS, ECERS-3, COR+, Brigance, and T-CRS, as well as data entry and lesson planning.

The Family and Teacher Relationship Questionnaire (FTRQ) should be used as a method of gauging perceived relationship quality between families and teachers. This data collection will better help principals, center directors, and administrators understand the complexities of family engagement and areas of focus for the community, RCSD, and RECAP. FTRQ data should be used in collaboration with RMAPI and ROC the Future to better inform practice and decision-making for enhanced family engagement opportunities in our community and classrooms.

Parents

In light of the positive reliability testing results and in response to feedback that the ***FTRQ – Family*** full format measure is too long, RECAP suggests implementing the short form for the 2017-2018 school year. In doing so, the ***FTRQ – Family*** will be reduced from 67 questions to 25 questions and be combined with some questions from the parent satisfaction survey to assess relationship quality, engagement, and satisfaction.

During 2017-2018 we also aspire to increase all sample sizes, but especially those from teachers and directors, which will allow for meaningful comparisons, more targeted professional development and community planning. In the future, we hope to investigate the possible link between relationship quality and student outcomes. After this investigation and as momentum grows for these measures, we anticipate using this valuable tool to identify actionable items to increase relationship quality and family engagement in the hopes this translates into better student outcomes.

General

Increase the timeliness and completeness of response rates across all sources for all measures, specifically the COR Advantage.

Presentations

Infurna, C. J. (2016). *Using COR Advantage to Assess UPK Children*. HighScope International Conference. Detroit, MI.

Infurna, C. J. (2016). 2015-2016 RECAP Annual Report. RECAP Community Advisory Council Meeting. Rochester, NY.

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