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CHILD DEVELOPMENT

SPECS for Include Me from the Start

include me
...from the start!

Program Evaluation Research Report
[2010-2014]

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SPECS
Scaling Progress in
Early Childhood Settings

In 2010, the **Arc of Pennsylvania** administered a new statewide training & technical assistance initiative in Pennsylvania intended to assist children with significant disabilities (with parent partnerships) for inclusion into regular education classrooms in their neighborhood schools. The initiative is called *"Include Me From the Start" (IMFS).* IMFS provided intensive training and technical assistance to about 30 (initially) school districts statewide to ensure that 150 children entering either kindergarten or first grade received their education in general education classrooms. The initiative is administered independently, but funded by, the **PA Department of Education**. The objectives of this initiative are to: 1) include the children early and make it less likely they will be segregated throughout their school-age years, and 2) help build inclusion capacity within the students' school districts.

A critical component of the program has been the independent **SPECS (Scaling Progress in Early Childhood Settings) program evaluation outcomes research conducted by the Division for Early Childhood Partnerships of the Office of Child Development at the University of Pittsburgh under the direction of Dr. Stephen J. Bagnato.** SPECS methods are geared toward authentic assessments in natural settings to document quality, impact and practical results and for continuous quality improvement The initiative is an outgrowth of litigation and a legal settlement (Gaskin v. Commonwealth of Pennsylvania, 2009) that alleged and then determined that the state was failing to educate students with disabilities in the least restrictive environment.

In the original IMFS initiative during the 3-year pilot period, the *Include Me From the Start* (IMFS) initiative of Arc of Pennsylvania provided high quality consultation on adaptive programming to teachers in inclusive settings for children with severe-profound disabilities in kindergarten and first grade. The associated SPECS program evaluation research is designed to determine the impact, functional academic and social-behavioral outcomes, and programmatic elements for successful inclusion.

The overarching goal of *Include Me from the Start* is to facilitate the successful inclusion of children with significant disabilities in their neighborhood schools. Consultants assist districts and schools to implement inclusive practices by collaborating with, supporting, and mentoring teachers and parents.

The summary results of the SPECS independent program evaluation have demonstrated the clear impact of the initiative (detailed in yearly reports from--2010-2011; 2011-2012; 2012-2013), as summarized in the following bulleted outcome statements and accompanying representative graphs on changes in teaching practices and improvements in childrens' learning:
- **Demographic information was collected on 68 children in year 1 and the number increased to 111 children in year 2, ranging in age from 5 years, 1 month to eight years, 4 months. The mean age of the children was 6 years, 4 months.**
- **On average, teachers received approximately 37 hours of consultation each month (9.3 hours per week)**

- *Children progressed over the course of the intervention (Exhibit 3).*
  - The largest gains on the *Children's Learning and Progress Scale (CLPS)* from pretest to posttest were in the area of Sociability and Sensory/Cognitive Awareness (which includes appropriate attention and responding). Scores increased an average of 4.5 points from the pretest to the posttest in these two subscales.
  - Results revealed that children enrolled across multiple years gained skills across domains to a greater extent than 1 year participants. Mean gains for children across two years ranged from 4 to 10 points, compared to 1.5 to 4.5 points for children enrolled in the second year only.
  - An additional assessment, the Vineland Social Emotional Early Childhood Scale (SEEC) revealed that children made significant gains on the Interpersonal Subscale (n=91), mean scores increased by 9 points.
- *Inclusive practice, as measured by the Inclusive Classroom Profile (ICP), improved during the course of the intervention (Exhibits 1 & 2).*
  - Based on the consultants' observations, classrooms improved on all subscales with three of those subscales reaching significance: Adult Involvement in Peer Interactions, Support for Social Communication and most notably, Membership.
  - Independent observations by members of the SPECS research team were completed concurrently with Consultant observations.
  - Direct observational ratings by members of the independent evaluation team increased in all instructional and inclusion practices domains over the 3 years.

Exhibit 1: Independent observations of teacher progress in using inclusion practices--ICP Mean Scores, Year 2
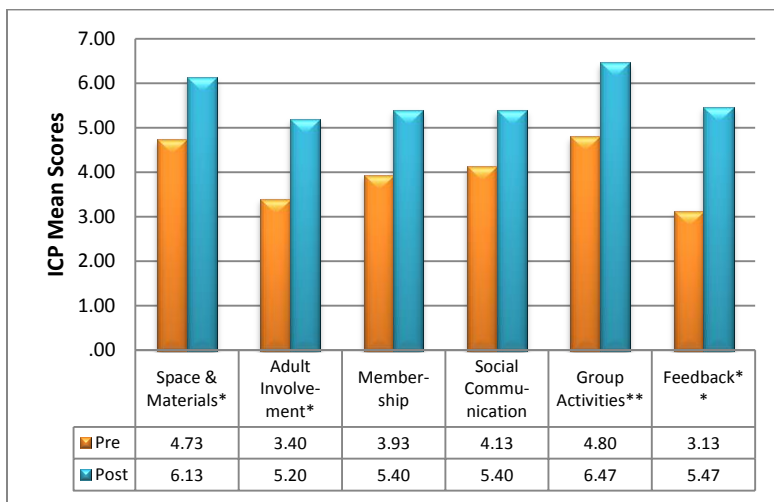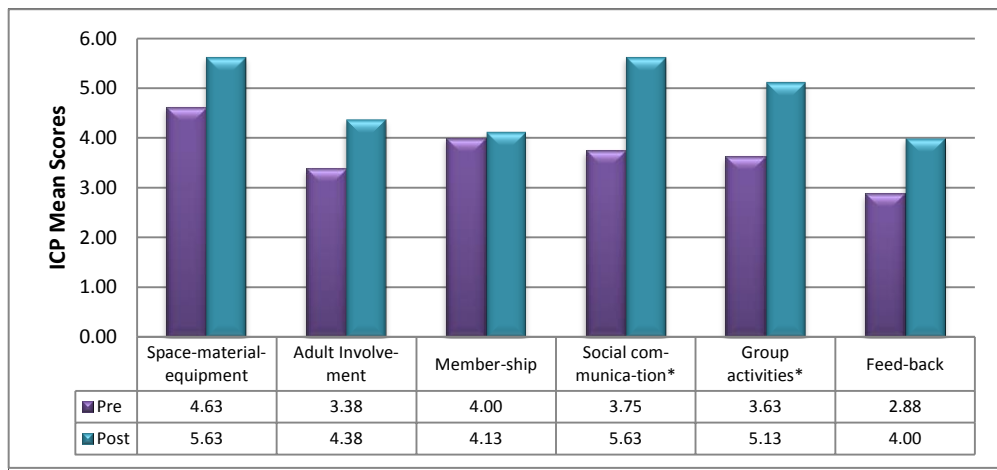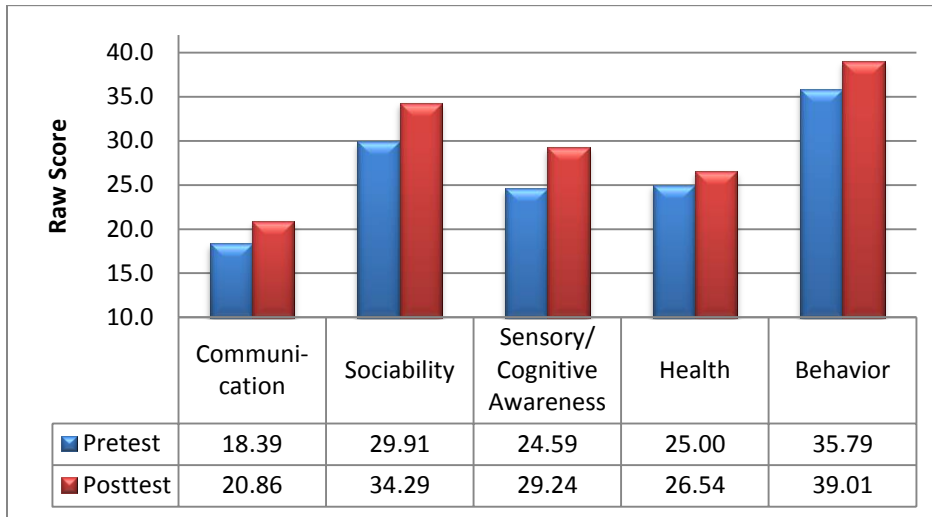

	Space & Materials*	Adult Involve-ment*	Member-ship	Social Commu-nication	Group Activities**	Feedback**
Pre	4.73	3.40	3.93	4.13	4.80	3.13
Post	6.13	5.20	5.40	5.40	6.47	5.47

Exhibit 2: Independent observations of teacher progress in using inclusion practices--ICP Mean Scores, Year 3

	Space-material-equipment	Adult Involve-ment	Member-ship	Social com-munica-tion*	Group activities*	Feed-back
Pre	4.63	3.38	4.00	3.75	3.63	2.88
Post	5.63	4.38	4.13	5.63	5.13	4.00

* Significant difference from pre to post-test (p<.01)

- ***Parents reported their knowledge of education law, child rights, available supports and ability to locate resources improved during the course of the intervention.***
  - The most frequently reported benefit by parents was consultant support to the teacher in the form of knowledge about how to include their child in the classroom.
  - Parents also appreciated the objective, third party perspective of the consultant about their child in the classroom setting. With the same frequency, parents reported the positive impact consultants had in supporting them in the inclusion process. Parents most often report concerns regarding whether their child's needs will be met and if he/she will be accepted and understood by teachers and peers.

Exhibit 3: Mean gains on the School Leaning & Progress Scale in year 3

	Communi-cation	Sociability	Sensory/ Cognitive Awareness	Health	Behavior
■ Pretest	18.39	29.91	24.59	25.00	35.79
■ Posttest	20.86	34.29	29.24	26.54	39.01

*Significant differences on all subscales from pre to post-test (p<.001).

In summary, the initiative in its pilot phase: promoted positive changes in teaching practices; facilitated effectively the inclusion of children with severe disabilities in their neighborhood schools: and supported parents in the process. Inclusive practices by teachers improved significantly and children progressed in early learning and social-behavioral competencies over the course of the 3-years. IMFS consultants provided intensive and effective consultation and the Arc of PA collaborated in positive ways with the school districts to set the stage, model, and justification for expansion to other grades and school districts beyond the pilot phase.

SPECS FOR IMFS RESEARCH SUMMARY: BEYOND THE GASKIN DECISION PILOT (2013-2014)

Based upon overtures by school districts and parents of children with disabilities not in the original pilot initiative, the Arc of PA and its *Include Me from the Start* (IMFS) model has expanded the initiative to include students across elementary, middle and high school. In order to meet the needs of the program throughout grade levels, new assessments have been put into place.

In past years, the authentic assessments used were appropriate for the early primary grades and for completion by individuals (i.e., teacher, parents, consultants, team members) who are familiar, knowledgeable, and informed about the each child's skills and progress. Based on the expanded focus of the IMFS initiative, SPECS relied on the authentic assessment framework, but either designed, selected, and modified new measures and processes for the SPECS for IMFS program evaluation research for grades Pre-K to High School which would be sensitive to document impact, quality, and outcomes of the IMFS initiative.

BRIEF SUMMARY PROFILE OF OVERARCHING IMFS OUTCOMES

During the 2013-2014 school year (October 2013-June 2014), the following overarching outcomes are most prominent for the IMFS initiative in its 4th year:

- *Teachers (n= 127) showed significant improvements in the use of targeted inclusion and instructional practices for students with disabilities during IMFS consultation.*
- *IMFS (Arc of PA) consultants provided tailored and individualized degrees of intensive mentoring to teachers to facilitate improvements in their instructional, social interactive, classroom organizational, and adaptive practices and strategies (i.e., average= 37 hours per month/9.3 hours per week) and improve the positive climate in their classrooms.*
- *IMFS consultants modelled the use of behavioral, instructional, and peer cooperative supports which most significantly enabled the teachers to support the learning progress of their children.*
- *Overall, the mentoring support and consultations received by the teacher has affected improvement in the overall emotional, organizational, and instructional elements of quality in these educational environments.*
- *Teacher's positive expectations for children's learning increased and facilitated increases in childrens' engagement in classroom learning activities, particularly in reading and math.*
- *Students showed significant progress in their acquisition of all specific learning competencies (e.g., reading, math, motivation, and intellectual) and in the extent to which that progress was generally but not universally observable in daily classroom and home activities, suggesting consistent skill development in some areas, less generalized in others; longer teacher-student engagement (1 vs 2 years) in IMFS might improve those skills.*
- *The average highest student gains were observed in reading and problem-solving skills over the year with a high percentage of children moving from the lowest to highest performing groups in their classrooms*

DETAILED SUMMARY ANALYSIS OF SPECIFIC IMFS OUTCOMES

New SPECS Outcome Measures for the Expanded IMFS Initiative

The *Functional Outcomes Classification of Assets for Learners (FOCAL; Bagnato & McKeating, 2013) and the FOCAL Progress* were specifically designed and are being used to assess student competencies. It is based on the US Department of Education, Office of Special Education (OSEP) framework for mandated reporting of status and progress of young children at entry and exit from early intervention programs and is modified to fit students of all ages from Pre-K to High School. The FOCAL uses a seven point Likert index so that teachers and consultants can classify status and progress of students in learning and functional skills. The FOCAL is comprised of six domains: Social-emotional, Knowledge, Effective Actions, Self-regulation and Academics.

In addition, the FOCAL form includes the **Academic Competence Scale (ACS; Frank M Gresham, Stephen N. Elliott, 2008)** from the *Social Skills Improvement System* (SSIS) for students from

Kindergarten through Grade 12; the ACS is used by teachers to estimate and document the level of learning competencies displayed by each student in comparison to the ranking in their classroom.

To evaluate inclusive classroom practice, the **Classroom Effective Practices Inventory (CEPI; McKeating & Bagnato, 2013)** was adapted from Essential Best Practices in Inclusive Schools by Jorgensen, McSheehan and Sonnenmeier (2011), with permission from the first author. The CEPI consists of six domains: Expectations, Membership & Participation, Instruction & Supports, Social Relationships, Communication, and Self Determination & Futures Planning. It uses a 4 point Likert scale (0-3) so that the teaching team and consultants can rate observational evidence of inclusive practices in the classroom.

Finally, the **Classroom Assessment Scoring System (CLASS; Pianta, etal., 2010)** is a nationally field-validated authentic observational measure designed to assess teacher-student interactions, classroom organization, and instructional "best practices" in everyday classroom activities and settings. The CLASS is used by SPECS team members to independently document status and changes in teacher practices in 4 major domains encompassing 11 specific subdomains: Emotional Support, Instructional Support, and Classroom Organization.

Teacher: Inclusion Practices & Perceptions

Classroom Effective Practices Inventory (CEPI)

The CEPI consist of a total of 6 domain-areas which are scored on a Likert type scale ranging from 0 (not yet met); 1 (partially met); 2 (usually met); and 3 (fully met). These domains are briefly summarized below:

- *Expectations:* includes a total of 7 items describing whether a set of behaviors about the adult in the classroom (e.g., teacher uses description of students focus on abilities and needs; student goals reflect content standards; use appropriate language and vocabulary; etc.).
- *Membership and Participation:* includes a total of 7 items and describes the characteristic of the classroom environment in terms of accessibility, accommodations, inclusive delivery of services, if students are or are not pulled out of the classroom, students' participation in school routines, and ways students have opportunity to participated in classroom instructions)
- *Instruction & Supports:* includes 8 items describing how and what types of supports are offered to the students in relation to learning styles; material used; recognition and reinforcements; feedback provided; behavioral supports; and if data-based decision making is used.
- *Social Relationships:* includes a total of 7 items describing who and how support is provided; interaction with peers; building social support networks; strength-based approach; and socializations.

- *Communication:* includes a total of 5 items that rate the mode of communication used by teachers; how they facilitated interactions; and/or if bullying occurs etc.
- *Self-Determination & Future Planning:* includes a total of 6 items describing if the teachers facilitate students self-expression; participation in their IEP plans; graduation planning; etc.

Between 2013 and 2014 school year a total of 127 Teachers/Adults were rated on the Classroom Effective Practice Inventory (CEPI). In total about 85% of the total teachers/adults participating (or N=106) in IMFS had both 2013 (entry) and 2014 (exit) CEPI observations. The CEPI observations were conducted and completed by 15 IMFS Consultants. The classrooms adult to child ratio based on the most often occurring value (i.e., the mode) suggest that on an average the ratio was 1 adult/teacher (mean adult/child ration= 1.5; range=1 to 5 adults) for an average class size containing about 21 children (range=4 to 32 children).

CEPI Pre and Post Comparisons

Exhibit 4 summarizes the mean CEPI scores for the pre (entry) and the post (exit) time points. It also shows, the mean percent score point-change for both the mean scores and the standard deviation (Std. Deviation). The latter can be used as an indicator of how different or equal are the CEPI performance across the teachers, between the entry and the exit observation.

*Exhibit 4:* **Mean Total Scores and Standard Deviations by CEPI Domains and Time Points (N=106)**

CEPI Domain	Entry Mean	Exit Mean	Mean Score Point Change	Mean Std. Deviation Change
Expectations[†]	14.9	15.5	*4%*	*-20%*
Participation**	13.1	14.1	*7%*	*-7%*
Instruction Supports**	15.5	16.9	*9%*	*-26%*
Relationships**	12.0	14.1	*17%*	*-22%*
Communication**	8.9	8.3	*-6%*	*-20%*
CEPI Sum Score**	64.4	68.4	*6%*	*-27%*

*Note [†] symbol indicate that differences were marginally significant (p=<0.08); and ** indicates that differences were statistically significant (p=<0.05)*

The mean time span between the entry and exit observation time points was of 131 days or approximately 6 months. Over this time period the teachers' performance on the CEPI measures increased on an average by 1.4 points and overall by 4 mean score points (or about 6% change). It is worth noticing that the average standard deviation of the mean scores (i.e., the variability in score differences across the teachers) decrease overall by -20%; indicating that the teachers' CEPI mean scores tended to be much closer together, and that much of the entry level differences had been bridged. Exhibit 5 below provides a graphic comparison of the teachers'

CEPI mean scores and percent-points changes across the CEPI domains between entry and exit time-period.

Exhibit 5: Teachers' CEPI Progress Mean Score and Percent-Point Change (N=106)

CEPI Pre-Post Comparisons (N=102)
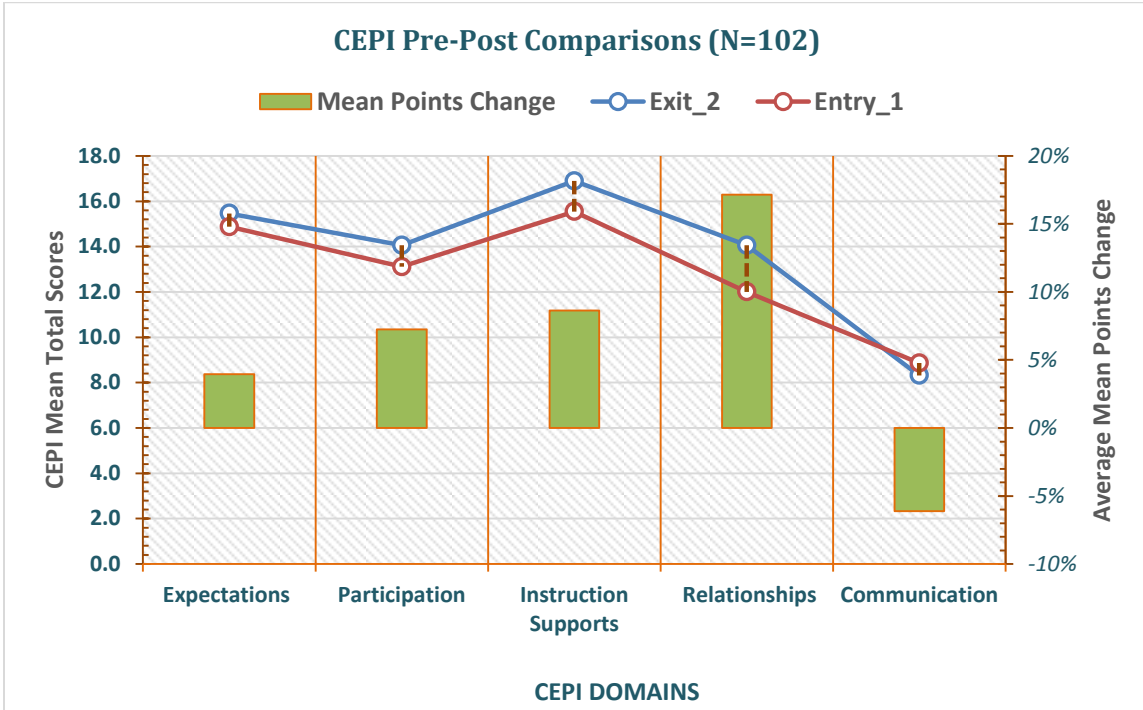
Overall, the mean CEPI sum score at exit increased by 6% points (or from mean at entry = 64.4; to meant at exit=68.4). This suggests that on average the teachers improved from not yet or partially to usually or fully evidencing the expected set of behaviors/strategies. This change is best captured by tallying the occurrences of the "not-yet" (or rating of 0 on the CEPI) and "partially" (or rating of 1 on the CEPI) between the entry and exit time-points. These changes across the CEPI Domains is illustrated in Exhibit 6 below.

Exhibit 6: Frequency of Rating 0 (not yet) and 1 (partially) by Time-points and CEPI Domains 2013-14 (N=106).
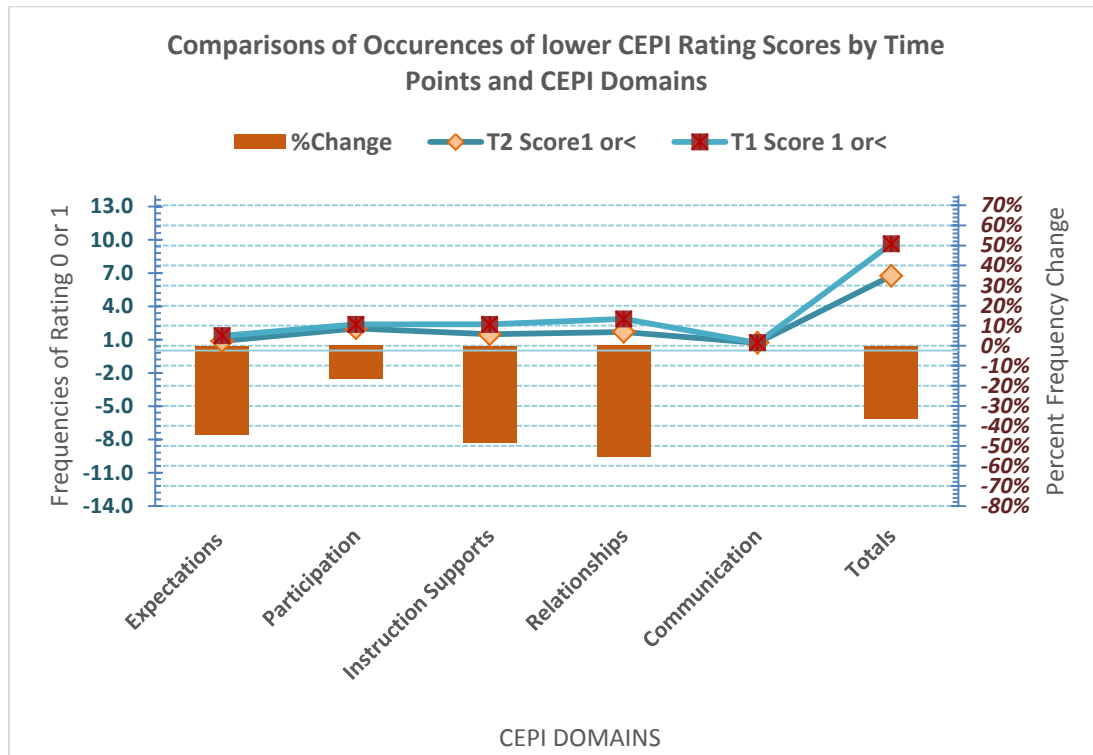
The above graph helps to visualize how teachers had fewer occurrences of lower rating scores on the CEPI at exit when compared with those at entry. The graphs also shows that there is **room for improvement especially in the "communication" domain** (i.e., the mode of communication used; facilitating interactions, etc.) and the "participation domain (i.e., accessibility, accommodations, inclusive delivery of services, or if students are or are not pulled out of the classroom; participation in school routines, and opportunity to participate in classroom instructions). On the other hand**, teachers made larger gains in the domains of "social relationships"** (i.e., who and how support is provided; interaction with peers; building social support networks; strength-based approach; socializations) and **"instructions and support"** (i.e., how and what types of supports are offered to the students in relation to learning styles; material used; recognition and reinforcements; feedback provided; behavioral supports; and if data-based decision making is used).

Classroom Assessment Scoring System (CLASS)

The independent CLASS observations by SPECS team members were conducted on a total of 11 teachers/classroom across 6 Pennsylvania School Districts. CLASS is a tool to observe and assess emotional, organizational, and instructional elements of quality in early childhood educational environments. The CLASS assesses the adult-child interactions in the classroom across 3 dimensions of **instructional support,** and these include:

1. Concept Development: instructional discussions and activities that focus on children's higher-order thinking skills and on understanding.
2. Quality Feedback: feedback that expands learning and encourages continued participation.
3. Language Modeling: the quality and amount of the teacher's use of language-stimulation and language-facilitation techniques.

In total, two CLASS observations were completed on the 6 K-3rd grade classroom and the 5 Elementary classrooms. Exhibit 7 below shows the average mean total scores and the mean scores comparisons between the first and second classroom observations time points across the three CLASS dimensions. The graph also includes the mean percent point changes between the two observations time-points.

Exhibit 7: Averaged Total Scores and Mean Scores by CLASS Dimensions and Observation Time Points (2013-14 School Year).
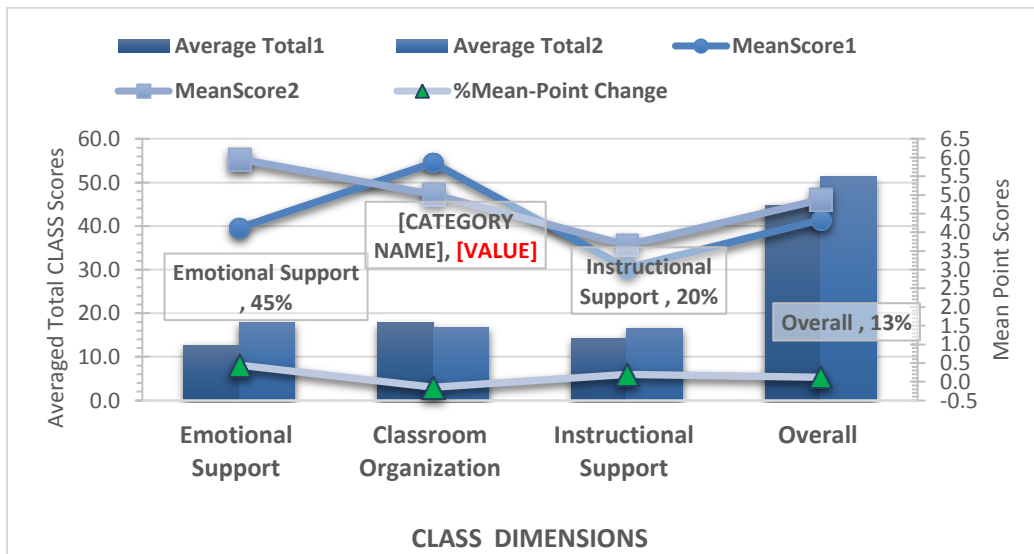

On average, the CLASS observations show a 13% mean-points changes between the two observation time points, demonstrating that overall there was a positive improvement in the adult-students classroom interactions. Similarly, Exhibit 8 shows the negative change in the "classroom organization" dimension of the CLASS is actually capturing the change in the area of **"negative climate" which should be expected to decrease as the other dimensions' performance improves.**

Exhibit 8: CLASS Mean Scores and Percent Mean-Points Changes by Observation Time Points and CLASS Dimension Areas (2013-14 School Year)
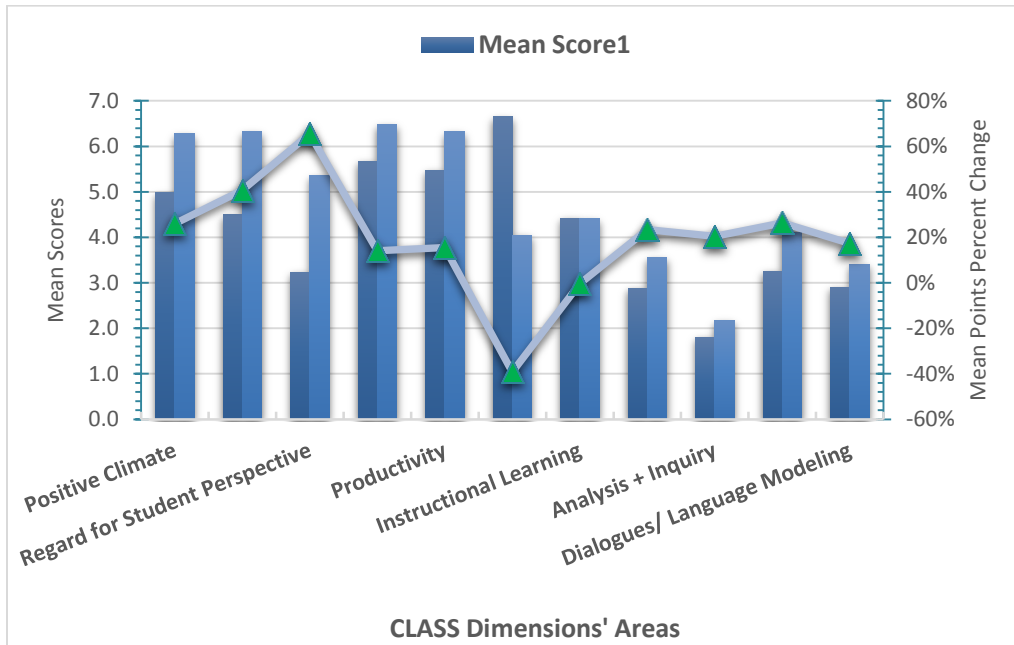
In the above graph is it is possible to see the change in the "***negative climate***" area, which as explained above is part of the "classroom organization" dimension. On the other hand, it is further possible to observe the positive improvements across all the other areas. Exhibit 9 shows the overall mean score in students' engagement for the K-to-3 and the Elementary classrooms. The student engagement was measured once for the K-to-3 classrooms and once in three of the five Elementary classrooms. Thus, it would be expected that the positive changes observed in the CLASS dimensions above would be reflected in an above average or higher mean score in students' engagement overall.

Exhibit 9: Students' Engagement Mean Score and as a Percent of the CLASS Total Mean Score Average
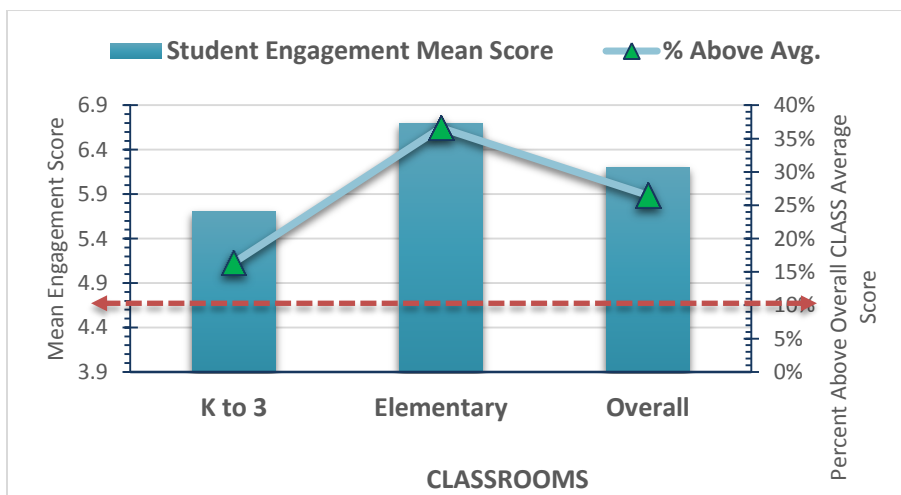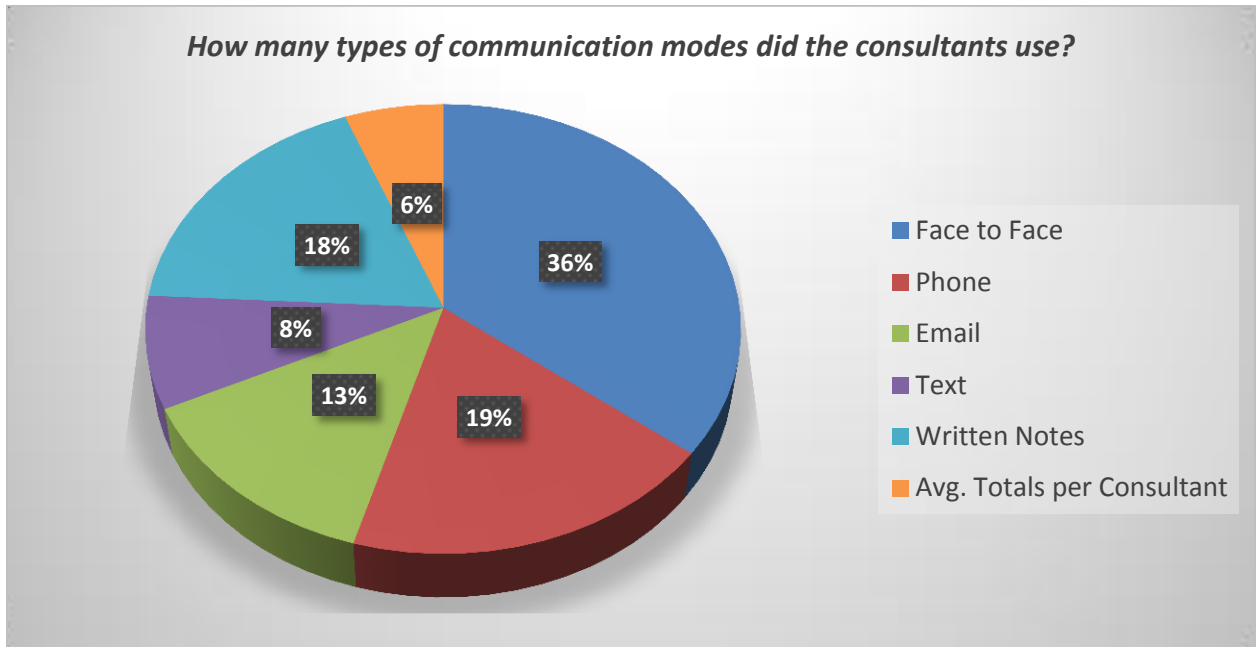
To explore in what ways the observed positive changes across the CLASS dimensions affected the students' engagement, the CLASS overall mean (mean=4.9) was used to compare and calculate the cumulative percent of the students' engagement mean score from this mean. As the above graph shows for both classrooms the students mean scores are above average, especially for the students in the Elementary classroom, whose engagement mean score is at 37% points above the overall CLASS mean score. The exploratory analysis of the CLASS on the selected sample of classrooms suggests that overall **the mentoring support and consultations received by the teacher has affected improvement in the overall emotional, organizational, and instructional elements of quality in these educational environments.** Moreover, the extent of observational changes in CLASS and CEPI performances between the two time points shows that by the second time point there were no classrooms who performed at or below a mean total CLASS/CEPI score of 38 and that many of the classrooms had moved to a higher performance on the CLASS/CEPI.

Consultant: Mentoring Activities

Between September 2013 and May 2014, the IMFS/Arc of PA consultants documented their mentoring activities (i.e., duration, time, modes, content, strategies) reported on a total of 138 teachers and children on the **SPECS Mentoring Monitor** (McKeating & Bagnato, 2012) within their consultation for IMFS to school districts.

On an average a total of 17.5 observation entries were completed on each teacher between 2013 and 2014 (Std. Dev. = 12.92; Range=1 to 113). This included multiple activity entries completed on the same date on the same teachers. A more precise count of observations and monitoring completed indicates that on average each of the 16 consultants completed about 5.5 observations per teacher per year (Std. Dev.= 2.5 observations; Range= 1 to 10 observations) over a mean total of 62 observation-days (Std. Dev. = 39.6 days; Range= 1 to 156 observation-days) during the 2013 and 2014 school. During these observations and consultations, the consultants interacted with regular education teachers (averaged contacts=7.3; Std. Dev.=7.4); special education teachers (averaged contacts=6.5; Std. Dev.=6); parents or guardians (averaged contacts=4; Std. Dev.= 6.8); and with related services professionals (averaged contacts=4.6; Std. Dev.=6.4). Overall, between 2013-14 school year the consultants had on an average a total of 45 individual contacts. Exhibit 10 shows the frequency distributions of the type of communication modes used.

Exhibit 10: Frequency percent distributions of communication modes used (2013-14 Data)

How many types of communication modes did the consultants use?

Legend:
- Face to Face — 36%
- Phone — 19%
- Email — 13%
- Text — 8%
- Written Notes — 18%
- Avg. Totals per Consultant — 6%

Face to face (36%), Phone consultations (19%) and Written-notes (18%) comprise 73% of the total types of communication modes the consultant used. Exhibit 11 shows the average amount of time (in minutes) the consultants spent in each of the communication modalities. Each consultant (N=16) completed on average about 13,156 minutes (or about 13.7 hours) of consulting time, over a period of the 2013-14 school year, with the majority (4,970 minutes or 82.8 hours; mean hours per consultant=5.2 hours) being face to face consultations.

Exhibit 11: Amount of time by type of consultation contacts (2013-14 Data)

What was the extent of consultation time and modes provided to teachers ?
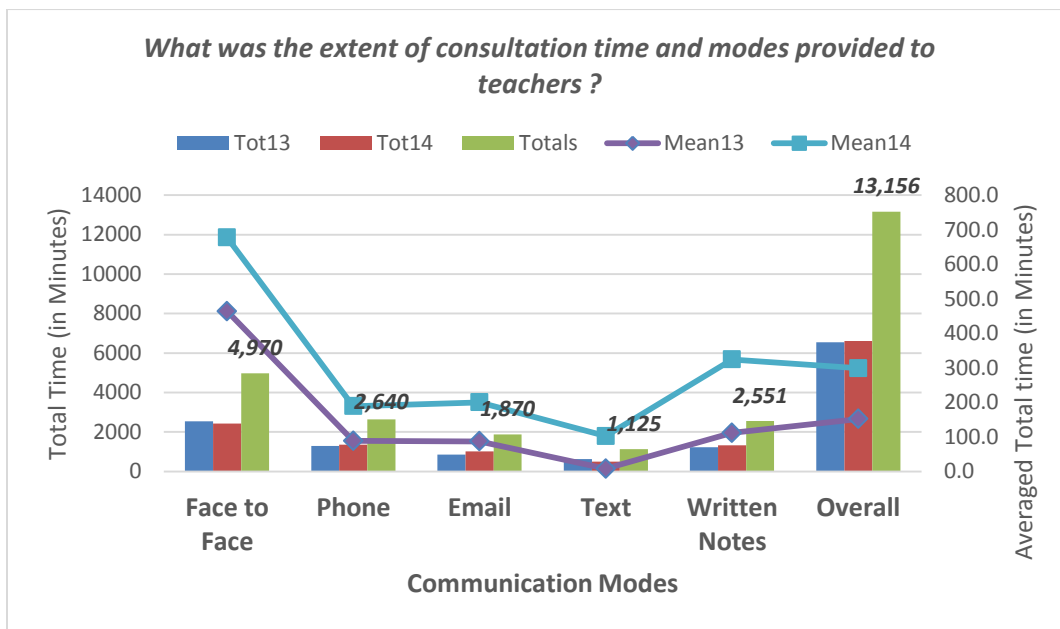
Exhibits 12 and 13 provide the combined overall average totals and percentages of the frequencies for each of the 5 types of consultations categories during the 2013 and 2014 school year. As indicated, a total of 16 consultants were engaged in providing various types of consultation supports during the 2013-14 school year. The specific categories of consultation support included:

1. **Applied strategies**: i.e., days spent observing; providing workshops/trainings; inclusion goal planning consultations; demonstrations/modeling; collecting/sharing resources; and/or providing verbal and written feedback.
2. **Behavioral and social supports**: i.e., days spent providing consultations or instructions on social skills, behavioral plans and expectations, peer supports or co-op learning strategies and medical consultations.
3. **Collaborative supports**: i.e., days spent on meetings with parents, professional development and/or team meetings.
4. **Instructional supports**: i.e., days involved in providing consultations regarding modifying curriculum/tests etc., functional routines, instructional adaptations and presentation methods.
5. **Environmental/physical adaptations**: i.e., time providing consultations regarding sensory modification, furniture seating arrangements, and about adaptive equipment and structural aids.

The consultants completed on an average about 165 observations across the 5 reporting domains, the averaged totals, ranges and standard deviation overall and for each of the domain are profiled in the exhibits.

Exhibit 12: Overall averages count of the observations completed by domain categories (2013-14 Data)
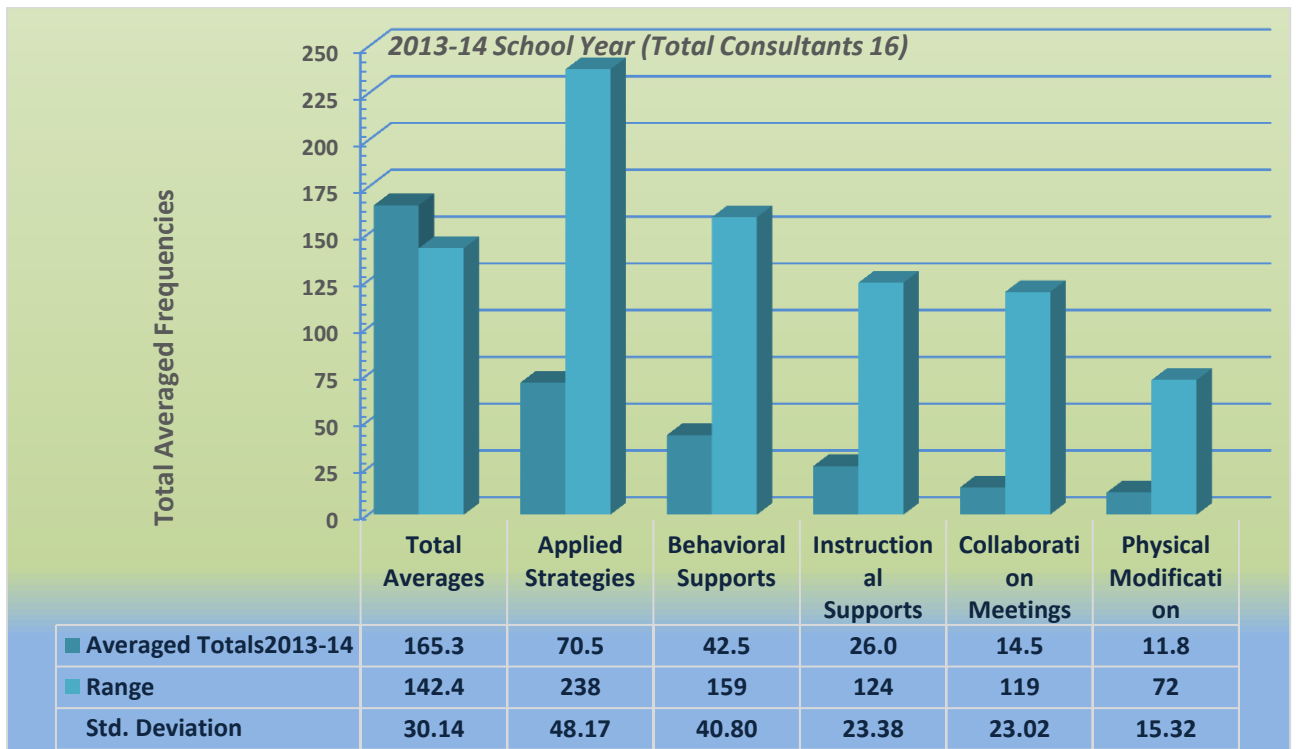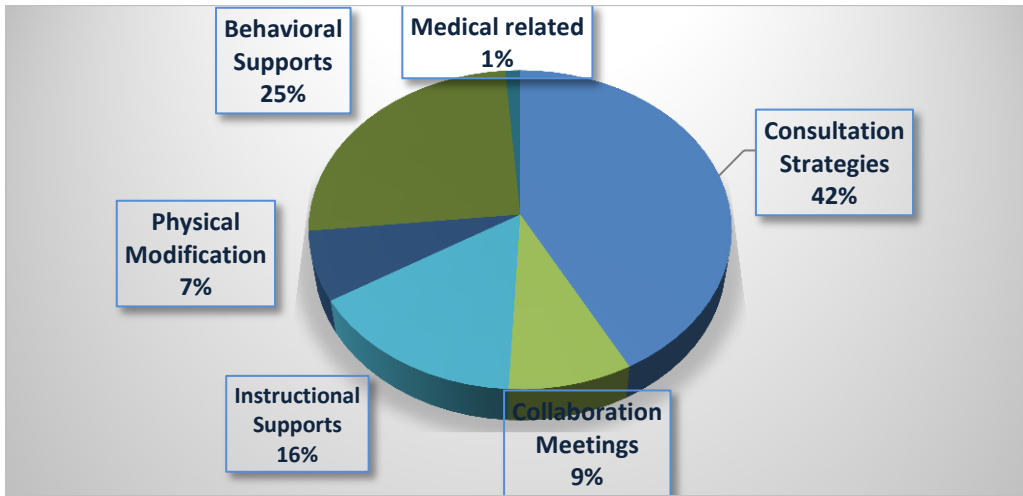

	Total Averages	Applied Strategies	Behavioral Supports	Instructional Supports	Collaboration Meetings	Physical Modification
■ Averaged Totals 2013-14	165.3	70.5	42.5	26.0	14.5	11.8
■ Range	142.4	238	159	124	119	72
Std. Deviation	30.14	48.17	40.80	23.38	23.02	15.32

Exhibit 13: Overall frequency percentages of observations by domain categories (2013-14 Data)

Behavioral Supports 25%
Medical related 1%
Consultation Strategies 42%
Physical Modification 7%
Instructional Supports 16%
Collaboration Meetings 9%

Collaborative Interactions

As the bar-chart below indicates, between 2013-14 school year, the consultants engaged on an average in a total of about 22 collaborative interactions (Std. Dev.=6.03 collaborations; Range=1 to 67). Figure 5 shows the frequency counts for each of the collaboration types and overall.
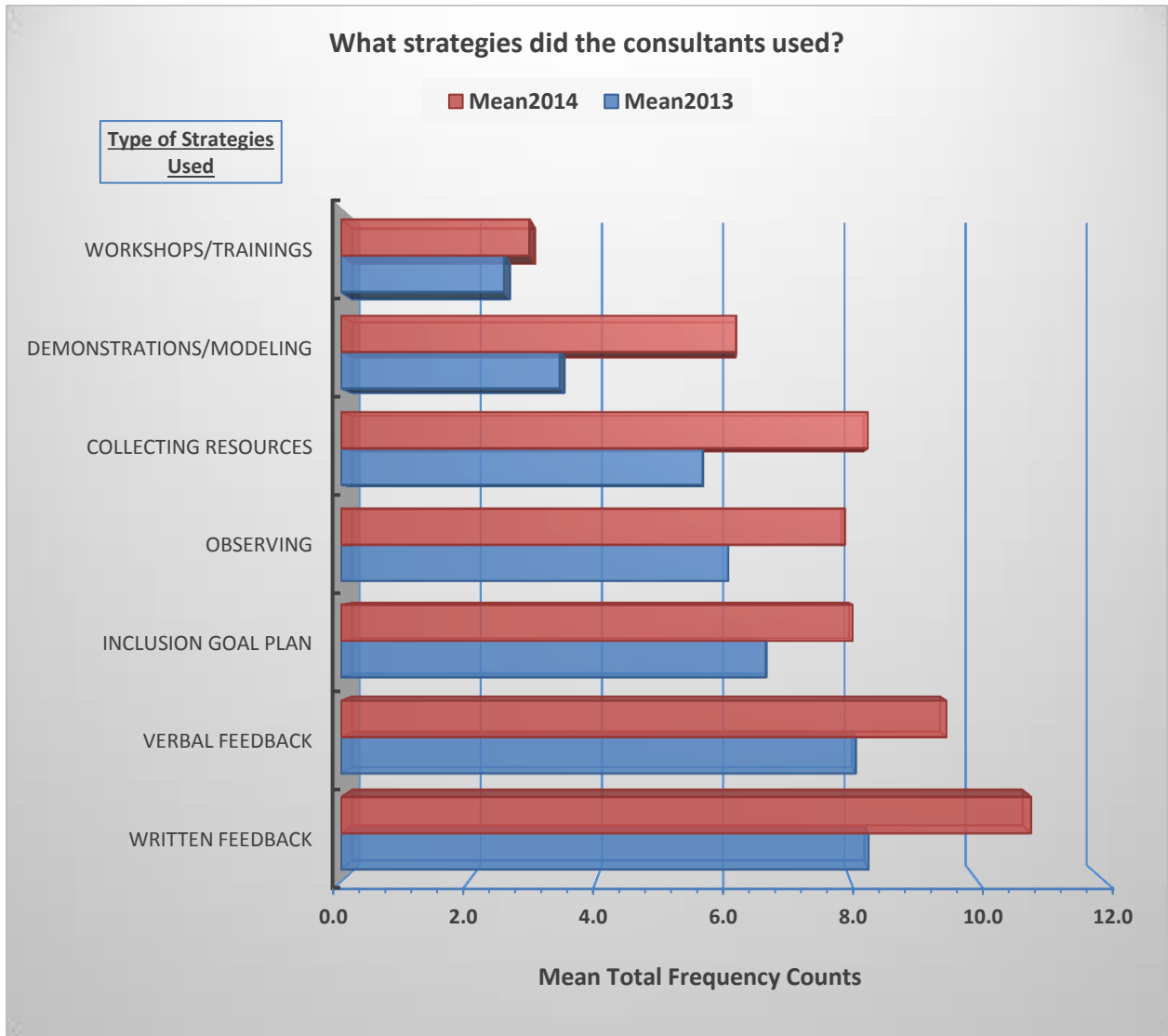
Exhibit 14: Average frequency counts by types of collaborations and overall (2013-14)
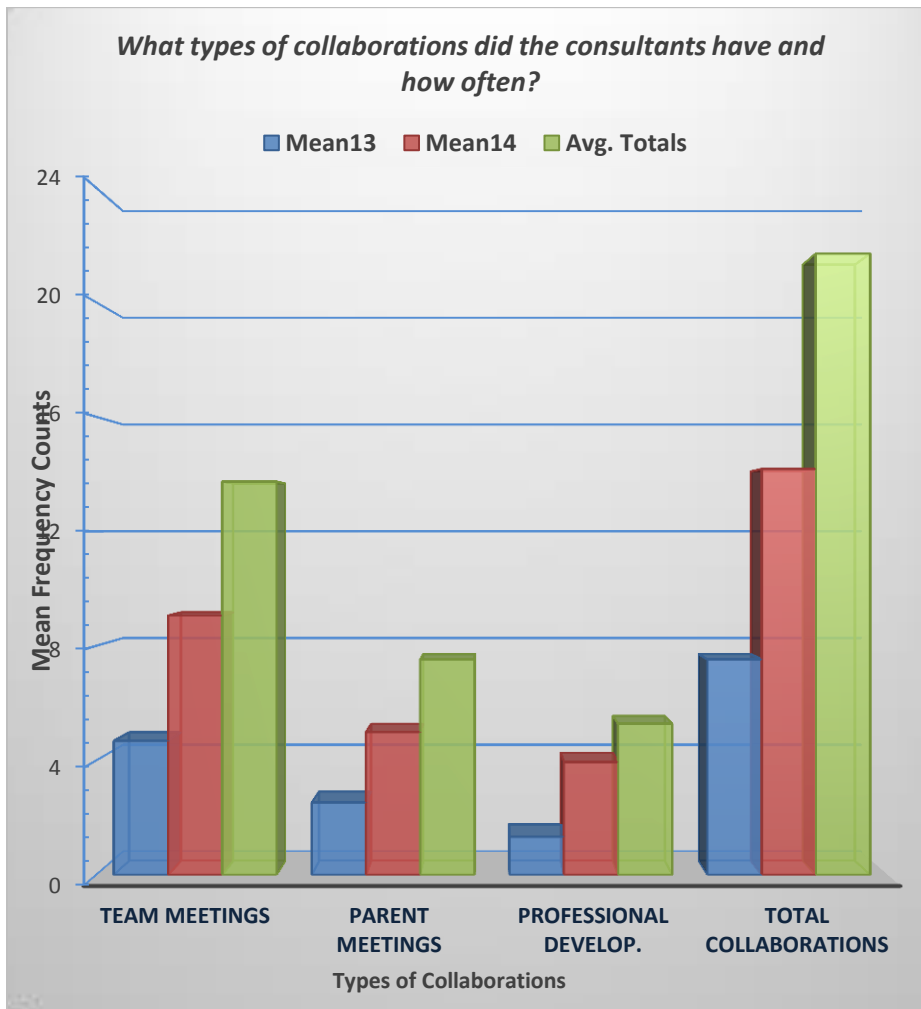
Consultation Strategies

The 16 consultants applied adopted various supportive strategies during their contacts with the teachers, parents and related services (e.g., observing; providing workshops/trainings; inclusion goal planning consultations; demonstrations/modeling; collecting/sharing resources; and/or providing verbal and written feedback). Over the 2013-14 school year, the consultants tapped in various strategies on average in about 94 occasions (Std. Dev. =5.2 strategies; Range= 5 to 44). The frequency count for each of the strategies used is provided in Figure 6 below.

*Exhibit 15: Average frequency counts across the consultation's strategies (2013-14)*

What strategies did the consultants used?

■ Mean2014   ■ Mean2013

Type of Strategies Used

Categories (top to bottom): WORKSHOPS/TRAININGS, DEMONSTRATIONS/MODELING, COLLECTING RESOURCES, OBSERVING, INCLUSION GOAL PLAN, VERBAL FEEDBACK, WRITTEN FEEDBACK

X-axis: Mean Total Frequency Counts (0.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0)

In general as the above graph suggests, the consultants spent about 15% of the time observing; using verbal and written feed-back strategies 39% of the times; demonstration, modeling strategies and workshops training strategies about 16% of the time; collecting and sharing resources 15% of the time and providing inclusion goal planning 16% of the time.

Instructional Supports
Instructional activities conducted by the consultants included: modifying curriculum, goals, and tests; instruction on functional routines; and presentation methods including instructional adaptations consultations. On an average and over the course of 2013-14 school year, each consultant engaged in instructional support and consultation on average on 11.4 occasions (Std. Dev. = 10.3; Range= 1 to 32).
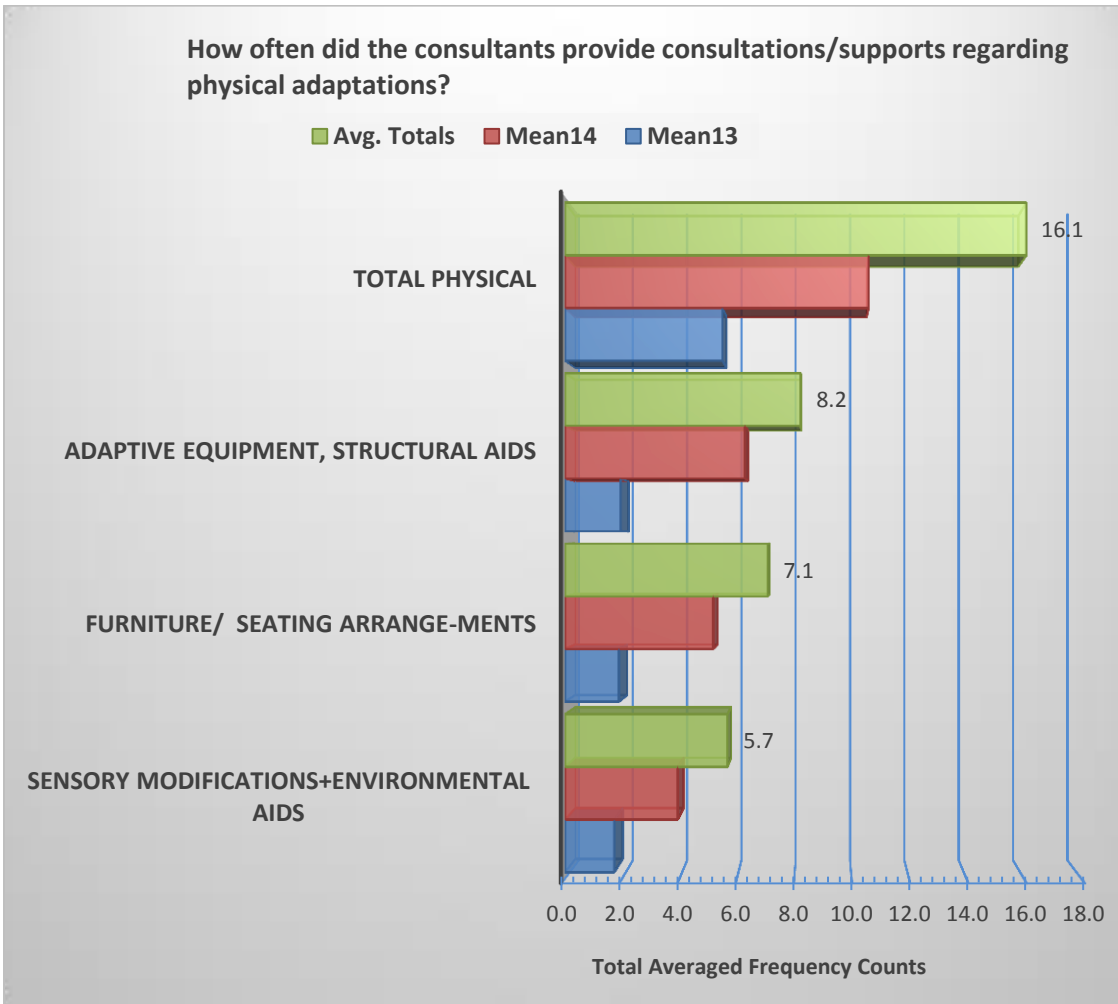
Exhibit 16: Averaged frequency counts across instructional categories and overall (2013-14 Data)

What types of instructional support did the consultants provide?

■ Mean13   ■ Mean14   ■ Avg. Totals

Averaged Number of Occurrences

Instructional Supports Categories

Categories (x-axis): Modifying Curriculum, Goals, Tests; Instruction on Functional Routines; Presentation Methods + Instructional Adaptations; Overall Instructions Supports
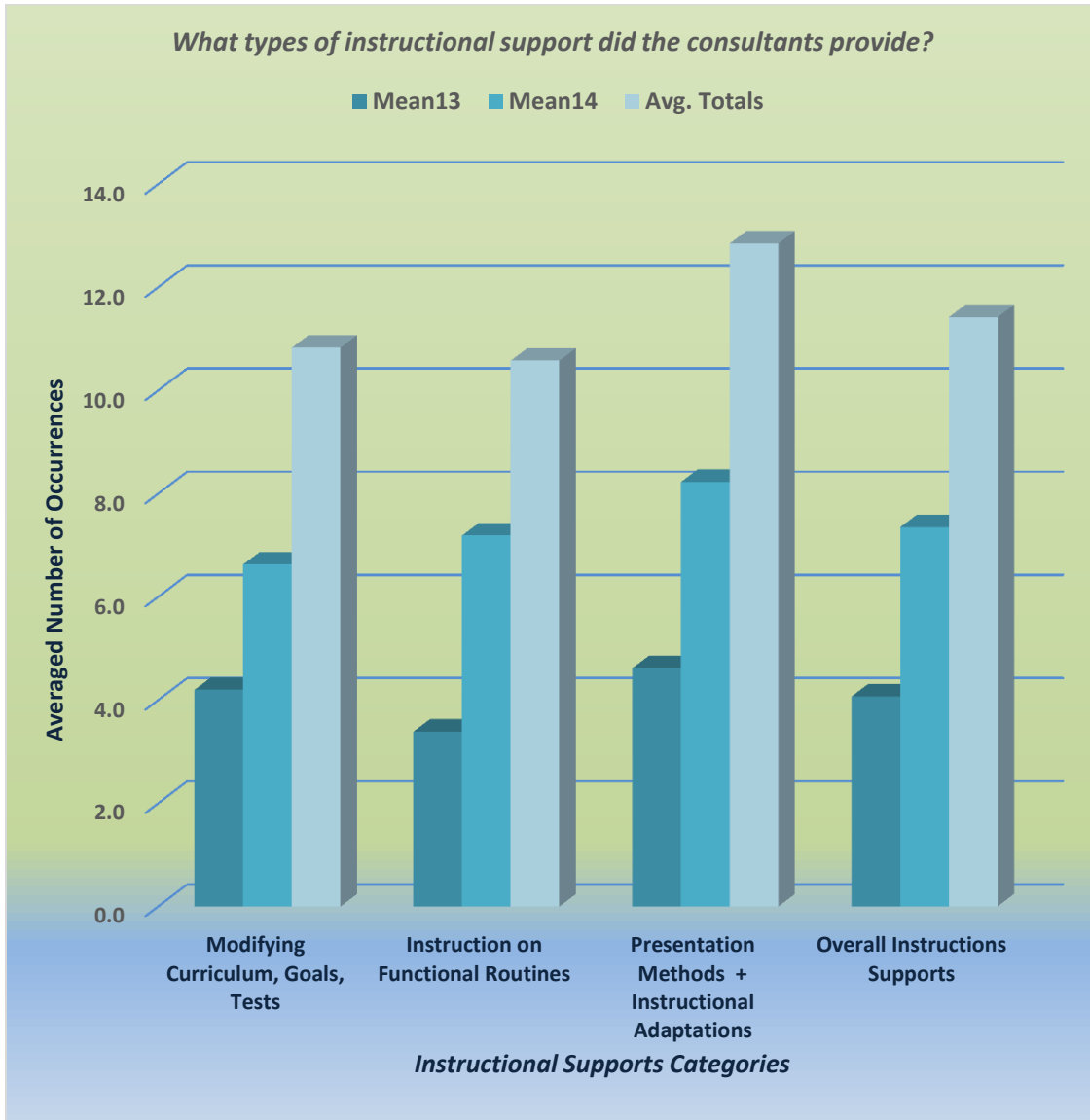
Physical Adaptation Supports

Physical adaptations reflects the frequency of occurrences when consultants engaged in providing consultations/supports regarding sensory modification and environmental aids, furniture seating arrangements, and about adaptive equipment and structural aids. These types of consultation supports was provided on an average 16 times (Std. Dev. =9.5) and their occurrences ranged from a minimum of 1 to a max of 44 occurrences. The averaged frequency count of these occurrences is provided in Figure 8.

Exhibit 17: Average frequency count of physical environment related consultations across domains and overall (2013-14 Data)

How often did the consultants provide consultations/supports regarding physical adaptations?

■ Avg. Totals ■ Mean14 ■ Mean13

- TOTAL PHYSICAL — 16.1
- ADAPTIVE EQUIPMENT, STRUCTURAL AIDS — 8.2
- FURNITURE/ SEATING ARRANGE-MENTS — 7.1
- SENSORY MODIFICATIONS+ENVIRONMENTAL AIDS — 5.7

0.0 2.0 4.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0

Total Averaged Frequency Counts

Health, Social and Behavioral Skills Supports

Behavioral and social skills supports describe activities such as instructions on social skills, behavioral plans and expectations, peer supports and/or co-op learning strategies as well as health/medical related consultations. The health/medical consultation supports was provided between 1 and 20 times over the course of the school year (Mean= 4.7; Std. Dev. =7.2). This would seem to indicate that there were very few children in the sample that presented health or medical related conditions. On the other hand, the consultants engaged in social and behavioral skills supports in at least 89% of the cases. The average frequency counts across the behavioral support categories is provided in Exhibit 17.

Exhibit 18: Average total frequency counts by social and behavioral categories (2013-14 Data)

With what frequencies did the consultants engage in social and behavioral skills supports?
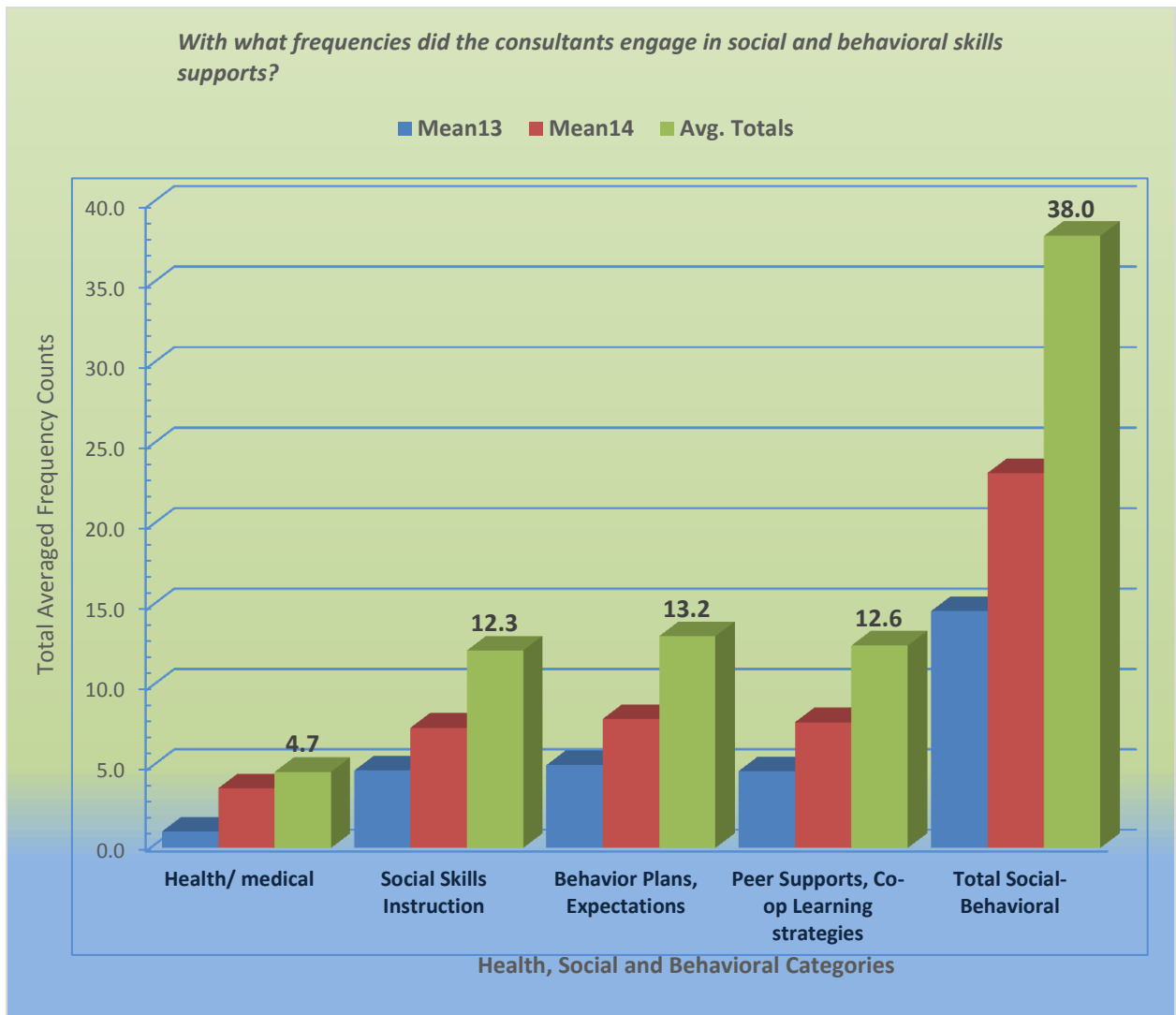
Student: Learning Status & Progress

Three measures enable the SPECS team to document student status and progress**: The FOCAL and the FOCAL progress scales; and the Academic Competence Scale (ACS).** The FOCAL documents specific observational evidence of students' academic, learning, behavioral, and functional competencies. The FOCAL progress is an overarching classification framework which enables the teachers, parents, and consultants in team collaboration to classify the extent to which they judge that the student displayed socially noticeable progress ("just noticeable differences-JND") in daily learning and social-behavioral activities in various areas. The final measure is the Academic Competence Scale (ACS) which is a norm-referenced classification for use by teachers to rank order the membership of each student into one of four quartiles representing academic skill level compared to children in the classroom.

The Functional Outcomes Classification of Assets for Learner (FOCAL) is an instrument designed and based on the US Department of Education, Office of Special Education (OSEP)

framework for mandated documentation and reporting of status and progress data of children in October and April of each academic year. The **FOCAL Progress** assessment is completed collaboratively by parents, teachers, and mentors in natural classroom settings, at the end of the year; The FOCAL instrument focuses on and measures expected functional competencies for children/students as a result of improved teaching practices from Pre-K to High School due to individualized mentoring provided as part of Include Me from the Start (IMFS) SPECS program evaluation research. The instrument assesses and profiles 6 functional assets of the students including:

1. *Social-Emotional:* i.e., the degree to which students shows functional progress in acquiring positive social-emotional and engagement skills;
2. *Knowledge:* i.e., extent to which students show functional progress relating to using knowledge and skills;
3. *Effective Actions:* i.e., the functional progress in taking appropriate action to meet own needs;
4. Self-Regulation: i.e., demonstrating skills in self-regulatory behaviors as relating to classroom learning;
5. *Academics:* i.e., the extent to which students demonstrate functional capacity in acquiring and using academic skills;
6. *Technology:* i.e., demonstrating skills in acquiring and applying computer-assisted technology for classroom learning.

The FOCAL instruments (e.g., the FOCAL Scale and the FOCAL Progress) are both based on a 7-point Likert-type scale. However, the two scales do differ in the interpretation of the scoring. That is, while the FOCAL Progress asks about whether the child has or has not made observable progress (according the qualitative observations and judgments of the team), the FOCAL scale assesses the student's display of specific skills and behaviors over the year.   The 7-point Likert-type scale gradients and values for both scales are provided in Exhibit 19 below.

Exhibit 19: FOCAL Scale and FOCAL Progress scoring and interpretation

| Numeric Value	FOCAL Scale (Age-appropriate skills + functioning)	FOCAL Progress (Acquiring skills and showing improved performance)	
1	Not Yet	No Observable Progress	1
2	*(sometimes but not consistent)*	*(very little progress)*	2
3	Emerging	Made Observable Progress	3
4	*(between 3 and 5)*	*(closer to same-age peers)*	4
5	Somewhat	Reached Levels of Same-Age Peers	5
6	*(generally age-appropriate)*	*(mostly at or slightly above same-age peers)*	6
7	Completely	Maintained Level of Same-Age Peers	7

As the above table shows, the higher the score, the more the evidence that the student's skills and functioning are at age-appropriate levels and/or he/she is observed to be acquiring and reaching same-age peers levels in the selected FOCAL's domains/assets. In total there are 21

items that are rated on the FOCAL. The highest score obtainable on the FOCAL is 147 points. On an average, a total FOCAL score ranging from 90 to 105 would suggests that the student is attaining or reaching same age-level peers and thereby evidencing good level skills and near optimal functional performance. A sum score of 106 to 118 would suggest that the student has reached the level expected of same-age peers; and a score of 119 or higher would suggest that the student attained and maintained the expected level for same-age peers. A total FOCAL sum score that is 52 or lower reflects that the student does not yet show the skills and/or is not making much if any progress at all; and score that is between 52 and 62 reflects that judgment that the there is some or little evidence of age-appropriate skills and functioning and that both progress and performance remains below same-age peer levels. In this report we use the 90 (lowest range) and 105 (high average range) as the benchmarks to assess progress and gains and against which to compare the pre-post and progress FOCAL scores.

In addition to the FOCAL, another measure used to assess children's normative standing in classroom academic performance and progress is the ***Academic Competence Scale (ACS)***. The adapted ACS Scale includes 7 selected items and assesse the level of academic competence for students from Kindergarten through 12 Grade and profiles the students' performance in terms of their percentile rank in academic performance as compared to his/her peers in the same classroom (Frank M Gresham, Stephen N. Elliott, 2008). This scale is rated from a score of 1 = lowest 10% performance; 2 = next lowest 20%; 3= middle or 40% rank; 4= next highest 20%; and 5 = highest 10%. The highest score attainable on the adapted ACS scale is 35 points.

On average, about 131 days (range=74 to 168 days) elapsed between entry and exit observations time-points (i.e., about 6 months). Overall, 129 FOCAL and the ACS scales were completed between October of 2013 and May of 2014. About 32% (N=41 children) had one FOCAL at entry and the remaining 68% (N=90) had at least two time points, and 67% (N=86) had completed both the FOCAL Scale and the FOCAL Progress.   The group of children who have only entry level data were not found to be statistically different on the measures from the children who had both entry and exit data points; although, this group of children did have a higher mean FOCAL score than the children with both time points. The comparisons between these two groups of children (with or without two time-points) is shown in Exhibit 20.

Exhibit 20: FOCAL entry level mean sum scores comparisons of children with only one-time point to children with two-time points (2013 entry level data only).
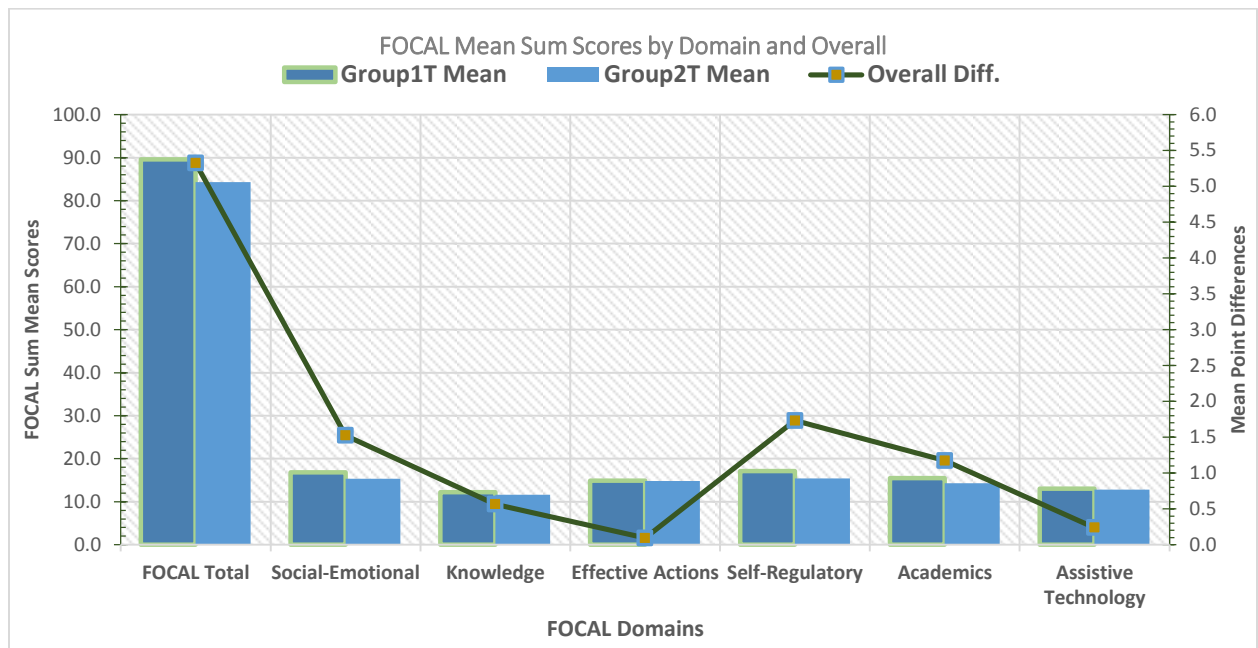
FOCAL and FOCAL Progress Outcomes Summary

 The analysis below focuses on the sample of children that have two-time points based on both the FOCAL Scale and the FOCAL Progress together (N=86).   The FOCAL outcomes analysis provides comparative statistics for the overall entry (T1, pre) and exit (T2, post) FOCAL Scales. Also, the subsequent analysis analyzes and explores the data from the FOCAL and ACS. The two FOCAL scales will be referred to as the FOCAL and the FOCAL Progress.

In this section the analysis focuses on answering the following questions:

   a.   Did the childrens' overall performance as measured on the FOCAL show improvement?
   b.   When compared to entry level FOCAL data, to what extent did the childrens' skills and functional outcomes at exit change or improve?
   c.   Are there differences between the specific and global progress observations and judgments reported, respectively, on the FOCAL (specific skills) and the FOCAL Progress (global)?

   • ***Did the childrens' overall performance on the FOCAL show improvement?***

At entry the mean FOCAL sum score was 84.3 (Standard Dev. = 23.41; range= 84.3 to 128; mode=78), compared to the FOCAL mean sum score at exit (or post-test) of 97.2 (standard Dev. = 23.7; range=97 to 137). This translates into an **overall increase of 15% points** (or about 7.2 score points; statistical significance or ***p value= <0.01***). Exhibit 21 shows the FOCAL mean sum scores for exit and entry level data.

Exhibit 21: Children's FOCAL sum score comparisons for entry and exit time-points (N=86)
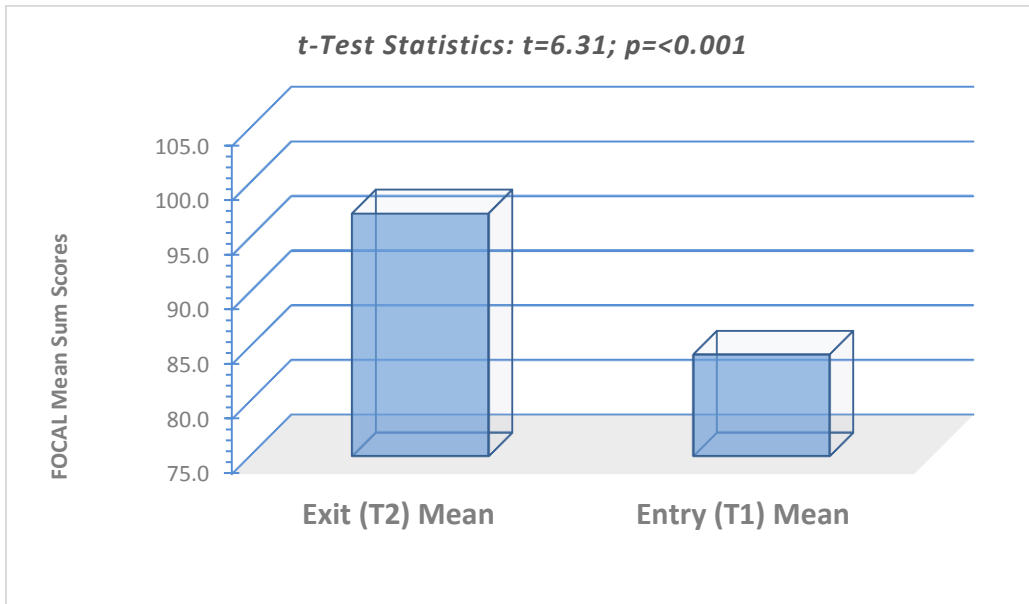
t-Test Statistics: t=6.31; p=<0.001

FOCAL Mean Sum Scores (y-axis): 75.0, 80.0, 85.0, 90.0, 95.0, 100.0, 105.0

Exit (T2) Mean   Entry (T1) Mean

- ***When compared to entry level FOCAL data, to what extent did the childrens' skills and functional outcomes at exit change or improve?***

Exhibit 22 provides further insights about the magnitude between entry and exit time-points by comparing the mean points' differences at exit (post) and entry (pre) against the Low and Highest averages FOCAL sum score. That is, the distance of the actual FOCAL sum score from a score of 90 (low average) and a score of 105 (highest average). As indicated above, a total FOCAL score ranging from 90 (low average) to 105 (highest average) were set as a benchmark to indicate that the children are attaining or reaching same age-level peers and evidencing good level skills and near optimal functional performance.

Exhibit 22: Comparisons of FOCAL point changes at entry and exit data points against the lowest and highest average benchmark performances.

Comparisons of FOCAL Points Changes Against Average and Hieghest FOCAL Sum Scores
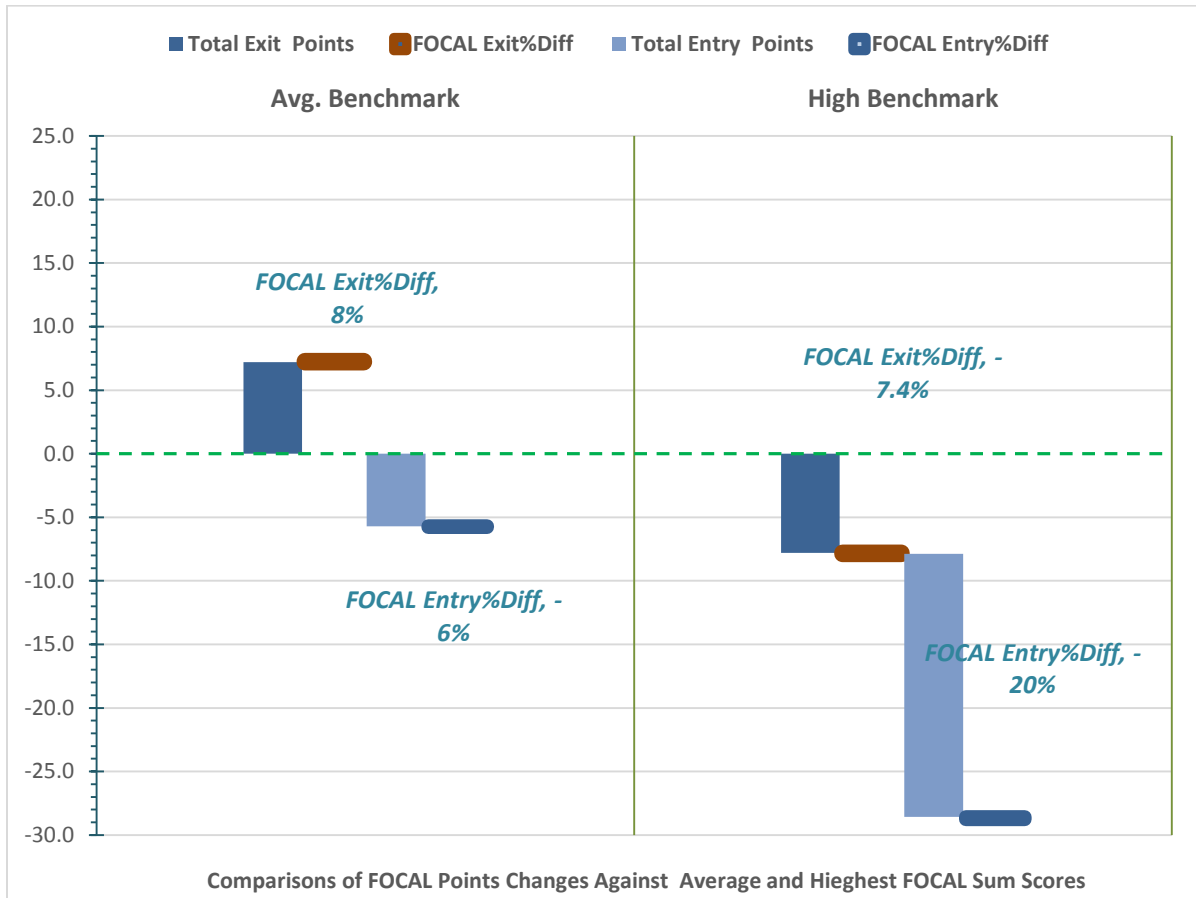
At entry, the children had a -6% points' difference from the average low performance range (i.e., score=90), and about a -20% points' difference from the average high performance (i.e., score =105) range. By the second or exit time period, the children gained 8% points over the low performance and reduced the gap or difference from the higher average score range by nearly 12% points. **What this change indicates is that by the exit time period the children did make significant and positive gains in their skills and functioning as measured by the FOCAL scale.**

> • *Are there differences between the specific and global progress observations and judgments reported, respectively, on the FOCAL (specific skills) and the FOCAL Progress (global)?*

The next analysis compares the childrens' exit outcomes based on the FOCAL Progress (i.e., the qualitative and global judgments of the progress based upon behaviors that are socially noticeable in daily school and home activities and routines) with the FOCAL (i.e., the assessed skills and functional performance overtime in the classroom). The first analysis and graph shows the mean total scores of the three FOCAL observation time points (i.e., entry, post-test and progress). As indicated the highest attainable item's score is 7 (or that the child "completely" demonstrate or shows age-appropriate functioning and skills). A score of 5 means that the child

somewhat shows age-appropriate functioning and skills. A score of 3 means that the expected age-appropriate functioning and skills are "emerging". A score of 2 means that the child very rarely shows the age-appropriate functioning and skills; and a score of 1 means that the child does not yet show or demonstrates age-appropriate functioning or skills.

Exhibit 23. Children's FOCAL mean scores by observation time points (entry, exit and progress)
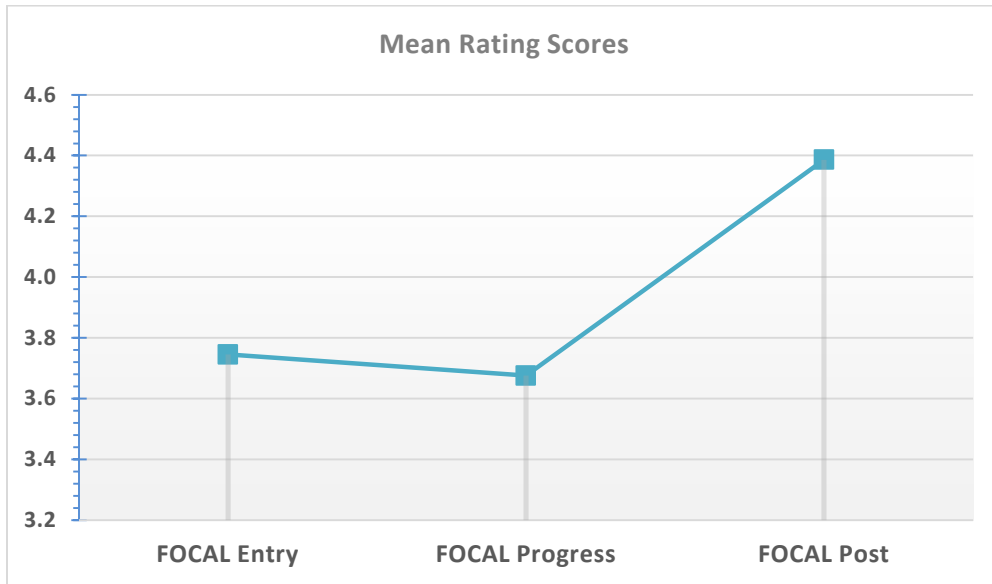
The mean scores graphed suggest that while there is a substantial and statistically significant difference between the FOCAL entry and post, the FOCAL Progress mean rating score is not different and actually slightly lower than the entry level FOCAL. In order to best capture the performance and progress made by the children is to look at the percent frequency of the occurrence of different FOCAL score ranges, which is what is graphed in Figure 5 below.

Exhibit 24: Frequency percent of children by FOCAL sum score ranges at entry, progress and exit time periods.
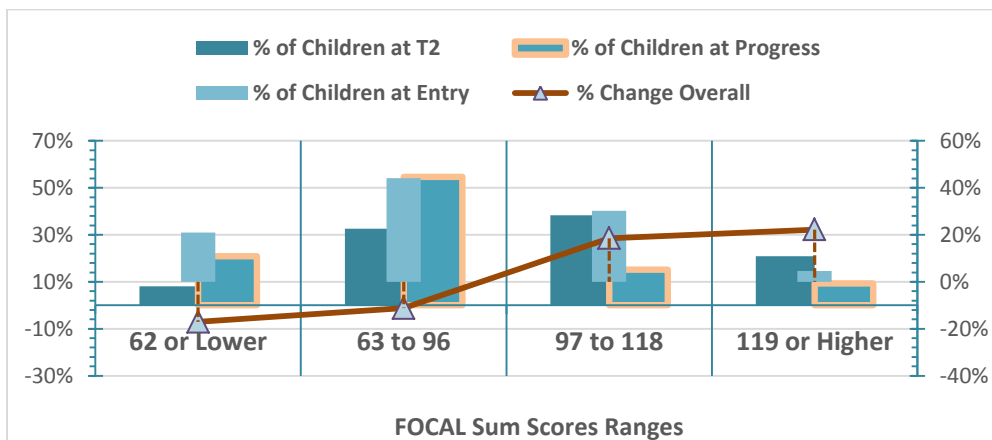
At times, what the measures of central tendency (e.g., mean scores) fail to capture are the subtle variations and changes that take place. Indeed, exhibit 24 evidences both the -17% drop in the percent of children whom at entry had FOCAL scores of 62 or lower and the

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corresponding increase in the percent of children that moved in the "made observable progress" and "reached or maintained same-age peer level" range's categories.

Also, it is interesting to note some differences in both the childrens' mean scores and percent frequencies distribution that are apparent between the exit (T2) FOCAL (this is the performance as assessed by the teachers) and the FOCAL Progress (this is the progress as assessed globally with the in-put of the parents).

Thus, in some aspects, childrens' progress is socially noticeable in everyday settings and activities but not in others; this suggests that while children evidenced progress in acquiring specific skills within the teaching routines of the classroom, for some children, those same skills are not consistently, independently, or noticeably exhibited in wider activities; is arguable that more time spent in intervention with IMFS mentoring could likely increase generalization of skills across settings and routines.

**Pre, Post and Progress Outcomes by FOCAL Domains**
This next section further explores and analyzes the children's pre-, post- and progress FOCAL outcomes across the six FOCAL domains/assets. These are some of the questions addressed in this section:

   a.   In which domains and by how much have childrens' performances changed?
   b.   What percentage of the IMFS students made or exceeded observable progress?
   c.   What does the domains' level data suggest about the relationship between classroom instructional supports, teachers' expectations and childrens' performances?

- ***In which domains and by how much have childrens' performances changed?***

Exhibit 25 compares the children's mean FOCAL scores on each of the FOCAL Domains at exit with those at entry and provides a line graph showing the average percent points change between the entry and exit time periods and for each FOCAL Domains.

Exhibit 25: Children's FOCAL mean scores distribution and percent point change by FOCAL Domains and time periods.
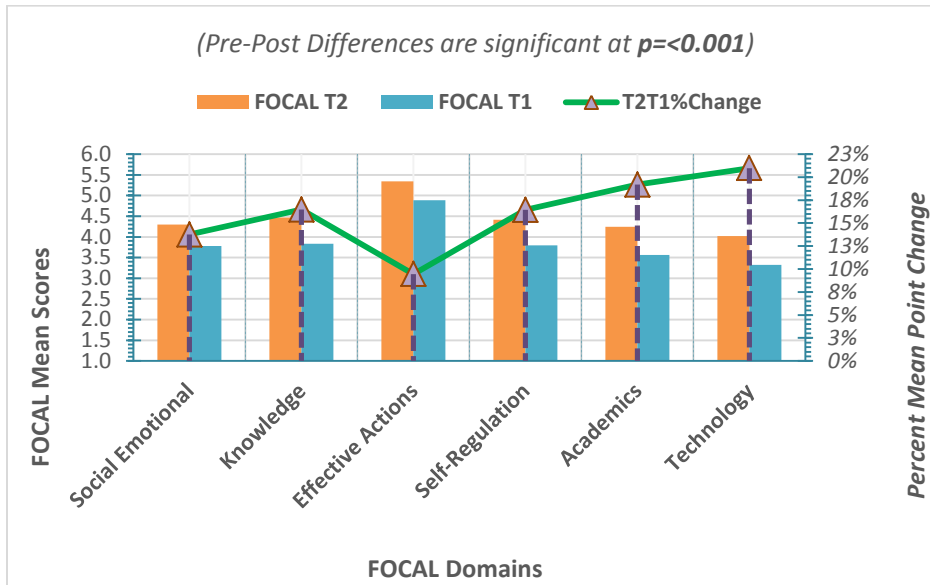

The mean FOCAL score at exit increased overall on average by 16% points. It is also possible to observe from the above graph that Knowledge, Self-Regulation and the Academic Focal Domains increase on average by 17% points compared to the other domains. It is also possible to observe that although there is a 9% increase in the children's effective action domain, the children's self-care skills (i.e., taking effective actions to care for their own needs) mean scores at entry was 4.9, which indicates already the presence of good or strong level skills and functioning in this domain.

- **What percentage of the IMFS students made or exceeded observable progress?**

Exhibit 26 presents the frequency percent of children across each of the FOCAL domains and compares the difference in the percent of children that at each time point (i.e., Exit, Progress, and Entry) were assessed with ratings lower than 3. The second graph presents the frequency percent of the children across each of the FOCAL domains and compares the differences in the percent of children that at each time points had scores of at least 3 or higher. These two comparisons provide a better analysis of what changes occurred and where and to what extent we can state that the children evidenced positive and observable progress by the exit time point.

As previously indicated using the frequency of occurrences of actual items ratings allows us to gain more insights in how each observers (e.g., teachers and parents) assesses the changes occurrences and to more correctly assess the actual progress made which is sometimes downplayed and not fully captured only by looking at or using measures of central tendency.

Exhibit 26: Frequency percent of children with rating scores of 2 or lower by time periods and FOCAL domains.
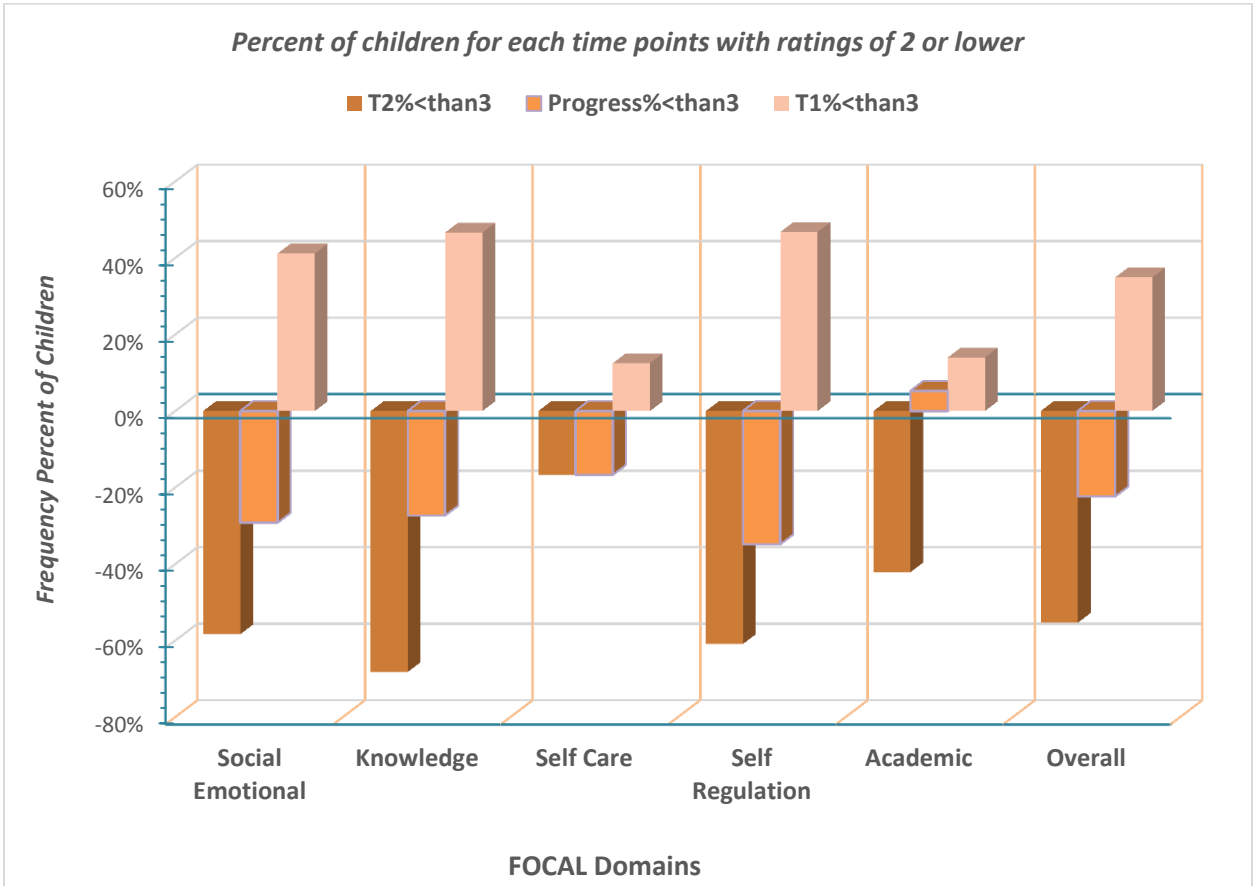
The above bar-graph shows that by the exit and progress time period the percent of children with FOCAL rating scores of 2 or lower experienced a sizable drop across all of the domains. **Overall, the number of children in the 2 or lower rating decreased by -55% at posttest, and by -22% as assessed on the FOCAL progress**. **This shows that there is a general agreement through both the FOCAL and FOCAL Progress that the children did make positive progress in acquiring academic and functional skills and that this skills acquisition is generally socially noticeable and generalized.**

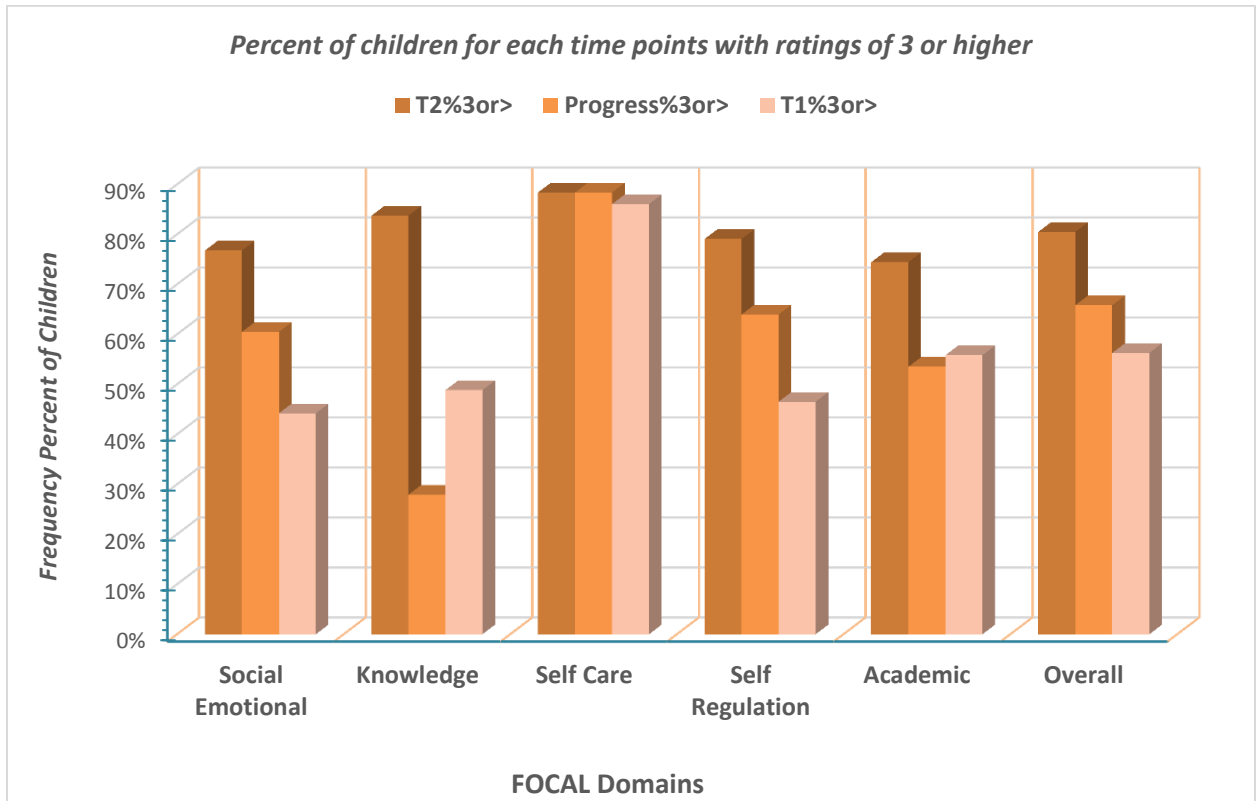*Exhibit 27: Percent of children with rating scores of 3 or higher across FOCAL domains.*

Exhibit 27 shows in which domains the gains occurred most across the FOCAL domains. The above bar-graph confirms that on the domain *"effective action to meet needs" (or self-care)* the children maintained and/or slightly exceeded the entry level performance. It is also possible to observe that there is agreement across specific skill assessments and global social validity judgments that children made observable progress in social emotional, self-regulation domains of the FOCAL.

Academic Competence Scale (ACS) Outcomes

Next, we report the performance of children as assessed and rated on the Academic Competence Scale (ACS) by teachers and others. The ACS scale includes a total of 7 items rated on a Likert-type scale with the following rating ranges:

- *Lowest 10%* or a rating of 1
- *Next Lowest 20%* or a rating of 2
- *Middle 40%* or a rating of 3
- *Next Highest 20%* or a rating of 4
- *Highest 10%* or a rating of 5

These 5-level ratings are used to assess the student' perceived "relative" academic or learning rank in the classroom (a local norm comparing the IMFS student to student peers in the same classroom). Specifically, the 7 ACS items reported on include:

1. Item 77: The overall academic performance (***Academic Overall***)
2. Item 78: In reading, how does this student compare with other students? (***In Reading***)
3. Item 79: In mathematics, how does this student compare with other students? (***In Math***)
4. Item 80: In terms of grade-level expectations, this student's skills in reading (***Reading Expectations***)
5. Item 81: In terms of grade-level expectations, this student's skills in mathematics (***Math Expectations***)
6. Item 82: This student's overall motivation to succeed academically (***Motivation***)
7. Item 83: Compared with other students in my classroom, this student's intellectual functioning (***Intellectual***)

Overall ACS Pre and Post Outcomes

This section compares and evaluates the teachers' reported performance of the children in their classrooms as measured on the ACS scale. The ACS mean rating score is used for this pre- and post-intervention/mentoring comparisons. Exhibit 28 shows the ACS mean score distributions across the 7 ACS skills and overall at exit and entry.

Exhibit 28: Children ACS mean rating scores across SSIS Skills at exit and entry time points.
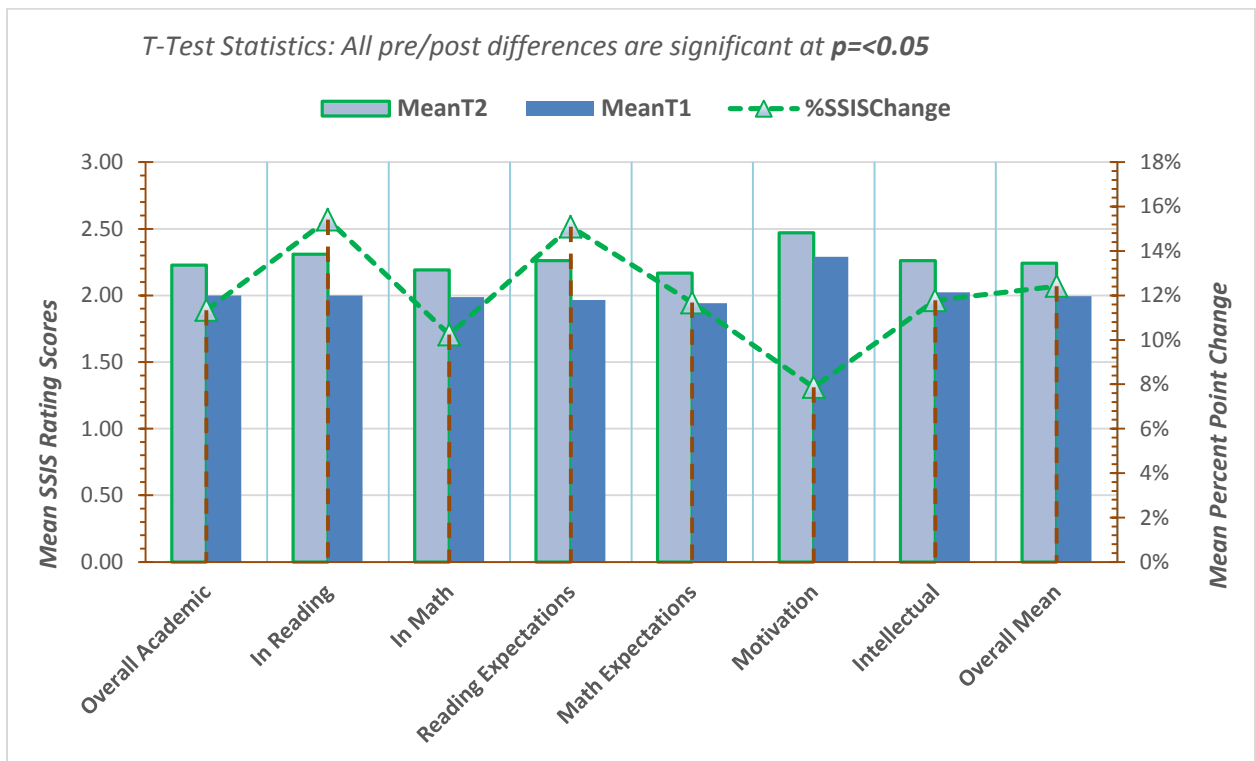
According to the ACS exit data, teachers rated the children as making statistically significant (*p=<0.05*) improvements overall and across all of the ACS learning skill areas during the academic year. The highest gains are reported in reading, reading expectations and intellectual functioning. Overall the ACS mean rating score increase by 12% points (exit mean= 2.21; t=3.55; *p=<0.001*). Another way to look at the magnitude of the progress that children

made on the ACS skill sets is to note the percentage of children that moved from a lower rating category (i.e., ratings of 20% and Lowest; Middle 40%; and 20% and Highest) to a higher rating category at the exit time period. This is shown in Exhibit 29.

Exhibit 29: Frequency percent of children by rating categories at exit time period across ACS skill set.
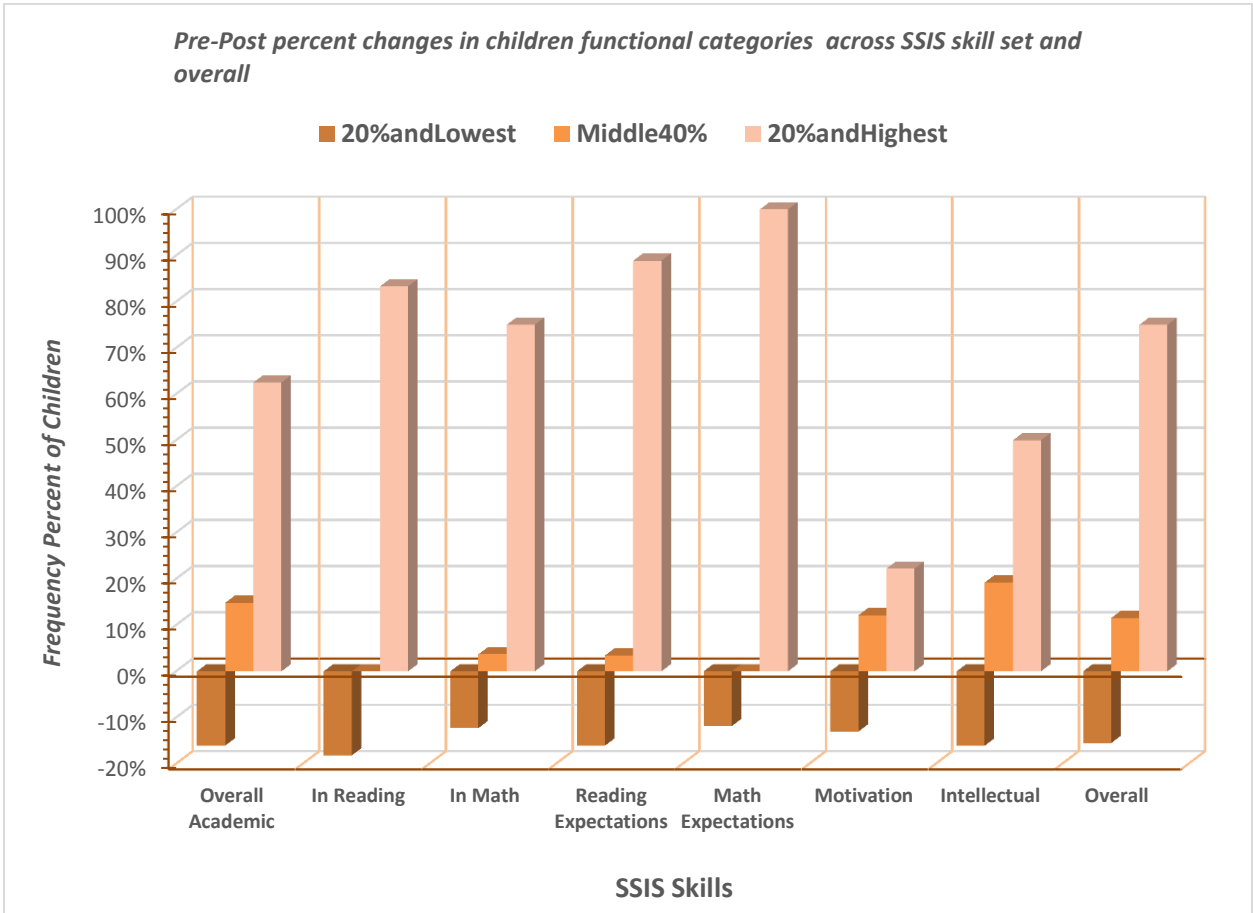
At the exit time point, there were on an average -16% fewer children that had ratings in the lowest 20% and 10% performance categories with a corresponding increase of 12% in the children in the Middle 40% performing category and a 75% increase in the children in the 20% and Highest performing categories. It is also possible to observe the increase in the percent of children whose expectations and performance in reading and mathematics, which is not fully captured by the mean rating scores. **That is more children had a score of 3 or higher at exit than they had at entry.**

Teacher Expectations and Level of Child Engagement

The last outcomes analysis explores the relationships between the level of teachers' expectations and the level of childrens' engagement in learning activities and tasks. The expectations were calculated by taking the mean average score and sum of the following two SSIS items:

1. Item 80: In terms of grade-level expectations, this student's skills in reading (***Reading Expectations***)
2. Item 81: In terms of grade-level expectations, this student's skills in mathematics (***Math Expectations***)
3.

The engagement score was obtained by taking the mean and sum scores from the following FOCAL items:

1. Engaging in group activities
2. Motivation to engage in social learning
3. Engagement with completion of learning tasks and,
4. Selective and sustained attention to learning

As it might have been expected (and the regression model confirmed), **there was a strong and positive association between increases in the level of teacher's positive expectations for children (as assessed on the ACS) and the overall engagement level of students in learning activities (as assessed on the FOCAL scale).** Exhibit 30 below shows the mean engagement scores at entry (T1) and at exit (T2) time-periods and the effect size or correlation of teachers' and parents' expectations on children engagement in classroom activities.

Exhibit 30: Teacher expectations and student engagement mean scores and coefficient of correlation (effect) by time points.

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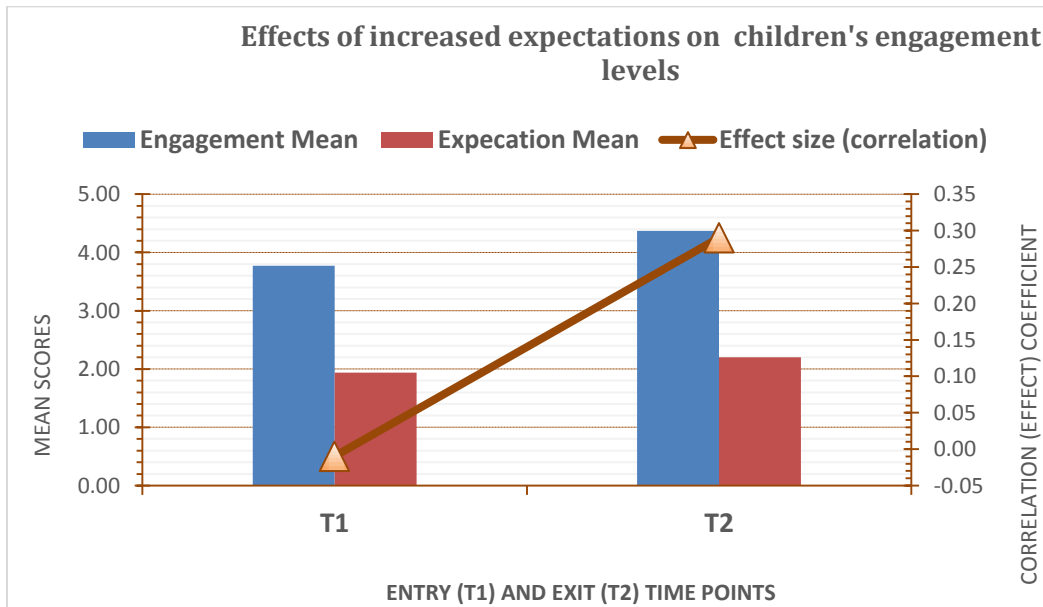
The mean expectation increased from a mean rating of 1.94 at entry to a mean rating of 2.20 at exit. This is about a 14% increase overall. The mean engagement score increased from a mean of 3.7 at entry to a mean rating of about 4.4 at exit, which is about a 16% mean point change overall. As the graph shows, this change translated in a correlation coefficient (effect) going from -0.10 (or negative relationship) to a positive correlation +0.29.

The positive message in this result is fundamental—increases in the level of teacher expectations for students in all learning areas, but particularly, in reading and mathematics were significant predictors or facilitators of higher levels of student engagement in classroom learning activities in reading and math.