UF UNIVERSITY of FLORIDA
College of Education
Lastinger Center for Learning

CLASS Early Implementer Study

FINAL REPORT

Contract Number: AWI SR 952

EXECUTIVE SUMMARY

The powerful impact that positive teacher-child interactions have on young children's early literacy skills, cognitive and social development, and general behavior is widely recognized. Consequently, promoting positive teacher-child interactions to improve the quality of early learning programs is at the core of many continuous improvement, professional development, and training efforts at both state and national levels. This increased focus on teacher-child interactions requires that these relationships are measured and that professional development is accompanied by tools to enhance teachers' interactions with young children.

The Classroom Assessment Scoring System (CLASS)[1] is a widely used measure of teacher-child interactions and focuses on three main components of classroom practice–Emotional Support, Classroom Organization, and Instructional Support. Research demonstrates that improved scores on the CLASS are related to improved academic, social, and behavioral outcomes among young children.[2]

Florida's Office of Early Learning (FOEL) is building significant CLASS capacity throughout the state in 2012-2013. To determine how best to inform implementation and build capacity for using the CLASS as a voluntary tool for continuous improvement, FOEL contracted with the University of Florida's Lastinger Center for Learning to conduct a study with the goal of determining what types of supports are most useful and effective for using the CLASS. This Early Implementation Study was designed to test different supports for building CLASS capacity. The study included a baseline assessment, a short professional development intervention, and a post-assessment administered four months following the intervention. A total of 182 teachers from 11 programs in of Florida's 31 early learning coalitions participated.

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[1] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD.

[2] See for example:

Burchinal, M., Howes, C., Pinata, R., Bryant, D., Early, D., Clifford, R., et al. (2008). Predicting child outcomes at the end of kindergarten from the quality of pre-kindergarten teacher-child interactions and instruction. *Applied Developmental Science, 12*, 140-153.

Downer, J., Lopez, M., Grimm, K., Hamagami, A., & Pianta, R. (2012). Observations of teacher-child interactions in classrooms serving Latinos and dual language learners: Applicability of the Classroom Assessment Scoring System in diverse settings. *Early Childhood Research Quarterly, 27*, 21-32.

Howes, C., Burchinal, M., Pinata, R., Bryant, D., Early, D., Clifford, R., et al. (2008). Reading to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly, 23*, 27-50.

Mashburn, A., Pianta, R., Hamre, B., Downer, J., Barbarin, O., Bryant, D., et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*, 732-749.

The professional development intervention included a structured, 20-hour training called *Making the Most of Classroom Interactions*, which was developed by Teachstone. This training was supplemented by providing participating teachers with access to the Teachstone Pre-K CLASS video library and individualized technical assistance. Interviews with directors and teachers were also conducted as part of the study.

The study findings indicate that *a short-term investment in professional development for early childhood educators can produce significant improvements on the CLASS*. The specific findings include:

- There were significant gains on the CLASS post-assessment in all three areas of classroom practice following the professional development intervention. The results suggest that these teachers engaged in higher quality interactions with students, were more effective in responding to children's needs, provided a more effectively run classroom designed to maximize developmentally appropriate instruction, and gave students more useful feedback designed to support and extend their learning.
- Providing teachers with a combination of integrated supports was an effective professional development model. Teachers who received structured training supplemented by either technical assistance or access to video supports or both made significant improvement in all three areas measured by the CLASS. The approach used in the Early Implementation Model study is widely applicable to different types of early childhood programs. There were no differences in the magnitude of post-assessment CLASS score gains by class size, directors' years of experience, or teachers' years of experience.
- Teachers with a high school or equivalent diploma and those with higher levels of education experienced significant gains on the post-assessment CLASS scores. However, teachers with an associate's or bachelor's degree demonstrated greater improvements on the CLASS during the short period of this intervention.

Based on these findings and the collaboration with the early learning coalitions, program directors, and teachers to conduct the Early Implementation Study, the following recommendations are offered to improve implementation of the CLASS state-wide:

1. Ensure MMCI, technical assistance and other professional development supports are designed to meet the needs of all early learning professionals, regardless of education level.
2. Increase incentives for teacher participation in professional development in addition to continuing credit hours
3. Improve communication from top down and bottom up
4. Encourage Teachstone to improve their technological infrastructure
5. Establish guidelines and protocols for the sharing of scores with teachers and ensure these are followed

6. Provide time and training to create uniform and meaningful technical assistance to teachers
7. Modify the Teachstone training schedule to better accommodate teachers' schedules and learning styles.

These study results clearly indicate that quality investments in early learning programs by supporting the use of the CLASS as a tool to focus professional development and support teachers' application of the CLASS strategies in their own classrooms will improve teacher-child interactions and may in turn lead to improved outcomes for young children.

PRE-K EARLY IMPLEMENTATION STUDY:

IDENTIFYING EFFECTIVE STRATEGIES FOR CLASS IMPLEMENTATION AND IMPROVING ADULT-CHILD INTERACTIONS IN FLORIDA

Final Report

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INTRODUCTION

Young children's readiness for success when they arrive at school is central to the success of Florida's education system and long team future. A careful analysis of the available tools to support the continuous improvement of early learning programs clearly indicated that the Classroom Assessment Scoring System (CLASS) tools great promise for supporting early learning programs. The CLASS tools focus on adult-child interactions, based on an extensive research base showing positive teacher-child interactions lead to improved academic, social, and behavioral outcomes for young children.[1] There is a strong body of research that shows the link between improved CLASS scores and improved child social, behavioral and academic outcomes.[2] Studies have found that Instructional Supports (e.g., concept development, quality feedback, language modeling) were linked with improvements in children's understanding of pre-reading concepts and applied mathematics skills as well as language skills. Higher levels of emotional supports were associated to positive changes in children's social skills and decreased teacher reports of problem behaviors.[3] The academic gains associated with quality teacher-child interactions can have a positive and lasting effect on young children's educational and social trajectories. [4]

In 2012-2013 Florida's Office of Early Learning (FOEL) is investing in significant capacity building on the Toddler and Pre-K CLASS tools through early learning coalitions and Head Start grantees throughout the state. This study was undertaken in the third and fourth quarter of 2012 to 1) determine baseline Pre-K CLASS scores in a sample of school readiness programs in Florida, 2) examine how best to support voluntary use of the CLASS tools in school readiness programs

[1] Mashburn, A., Pianta, R., Hamre, B., Downer, J., Barbarin, O., Bryant, D. et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*, 732-749.

[2] Burchinal, M., Howes, C., Pinata, R., Bryant, D., Early, D. Clifford, R. et al. (2008). Predicting child outcomes at the end of kindergarten from the quality of pre-kindergarten teacher-child interactions and instruction. *Applied Developmental Science, 12*, 140-153.

Howes, C. Burchinal, M., Pinata, R., Bryant, D., Early, D., Clifford, R. et al. (2008). Reading to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly, 23*, 27-50.

[3] Mashburn, A., Pianta, R., Hamre, B., Downer, J., Barbarin, O., Bryant, D. et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*, 732-749.

[4] Burchinal, M., Howes, C., Pinata, R., Bryant, D., Early, D. Clifford, R. et al. (2008). Predicting child outcomes at the end of kindergarten from the quality of pre-kindergarten teacher-child interactions and instruction. *Applied Developmental Science, 12*, 140-153.

and 3) identify what types of professional development and other supports produce a positive impact on teacher-child interactions and early learning programs.

STUDY OVERVIEW

The Early Implementation Study was designed to identify baseline Pre-K CLASS scores and evaluate the impact of support models to inform statewide implementation of professional development and other CLASS supports. The study included a baseline assessment of programs that volunteered to participate, a short professional development intervention, and a post assessment on a sample of participating programs four months following the intervention. Ten of Florida's 31 early learning coalitions participated; these collations represented the full diversity of the state. This report presents the results of the Early Implementation Study and describes ways to best support CLASS tool implementation statewide and the use of CLASS to strengthen early learning programs.

STUDY OBJECTIVES

The primary objective of the study was to examine the impact of training and additional supports on the capacity of participating early childhood programs to improve adult-child interactions as measured by the Pre-K CLASS tools over a four-month period. The following questions guided the study design and its implementation:

1. What are the baseline scores on Pre-CLASS assessments among voluntarily participating centers?
2. With training and other supports, what improvements are evident four months after the initial pre-assessments?
3. Are there any supports that appear to make more of an impact than others on CLASS scores?
4. Are there any program characteristics that appear to be associated with either higher initial CLASS scores or larger score gains after four months of support?

STUDY BACKGROUND

Indicators of Classroom Quality in Early Childhood Settings

Classroom practices are generally described according to three main areas: (1) time spent on academics and engaged in learning situations, (2) teacher-child interactions, and (3) the

classroom environment. [5] To make determinations about classroom quality, these main areas of classroom practice are often viewed relative to the nature of the relationship teachers have with children in their program (Note: the CLASS can also be used in family child care homes to measure adult-child interactions; the use of the word "classroom" is not meant to imply that the tool is limited to center or school-based early childhood programs). There is compelling evidence to suggest that the relationships teachers have with the children in their early learning program are essential to academic progress and social and behavioral development in early childhood. Teachers can influence young children's development by how they relate, interact, support, encourage, and engage them in their own learning and the quality of these interactions can have a lasting impact on children's academic trajectories. These types of teacher-child interactions are the primary mechanism and means through which much of the early learning processes and learning experiences transpire. The types of learning opportunities teachers provide and how effectively instructional time is managed is clearly related to how children experience and engage in their learning.[6] The ways in which teachers respond to individual children's learning progressions, gaps in knowledge, and skill deficits can have a significant impact on children's long-term academic progress. There are a number of studies of state-funded preschool programs providing evidence that the quality of teacher-child interactions are directly related to young children's learning.[7]

Teacher-child relationships are typically characterized by "closeness", and children and teachers who trust and like each other may be more likely to put forth more effort in classroom situations.[8] Studies show that teachers' warmth, caring, responsiveness, and sensitivity to children's needs are positively associated with early reading skill development and student engagement.[9] Well-run early childhood classrooms with established routines, rules, and procedures are associated with improved social skills and decreased problem behaviors. In

[5] Connor, C., Son, S., Hindman, A. & Morrison, F. (2005). Teacher qualifications, classroom practices, family characteristics, and preschool experience: Complex effects on first graders' vocabulary and early reading outcomes. *Journal of School Psychology, 43*, 343-375.

[6] Brophy, J. (1986). Teacher influences on student achievement. *American Psychologist*, 41, 1069-1077.

[7] See for example:
Howes, C. Burchinal, M., Pinata, R., Bryant, D., Early, D., Clifford, R. et al. (2008). Reading to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly, 23*, 27-50.
Mashburn, A., Pianta, R., Barbarin, O. Bryant, D., Hamre, B., Downer, J. et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, *79*, 732-749.
Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early D., et al. (2005). Features of pre-kindergarten programs, classrooms, and teachers: Do they predict observed classroom quality and child-teacher interactions? *Applied Developmental Science, 9*(3), 144-159>

[8] Driscoll, K., & Pianta, R. (2010). Banking time in Head Start: Early efficacy of an intervention designed to promote supportive teacher-child relationships. *Early Education and Development*, 21(1), 38-64.

[9] Pianta, R., LaParo, K., Payne, C., Cox, M., & Bradley, R. (2002). The relationship of kindergarten classroom environment to teacher, family, and school characteristics and child outcomes. *Elementary School Journal, 102*, 225-238.

addition, positive teacher-child interactions such as providing engaging opportunities to learn coupled with informative feedback, have been shown to predict early literacy and language development as well as mathematics skills among young children.[10] There is ample evidence to suggest that focusing attention and targeting professional development toward promoting positive teacher-child interactions can provide young children with improved developmental learning experiences that can have lasting positive effects[11] as well as make great strides to enhance the quality of the care and early education of young children.

Enhancing Classroom Quality: Using the CLASS as a Tool for Improvement

The Classroom Assessment Scoring System (CLASS) is a widely used measure to assess classroom quality with a specific focus on the quality of teacher-child interactions.[12] The CLASS is an evidenced-based observational measure informed by the research on children's development and learning and founded on extensive evidence that teacher-child relationships and interactions are the primary pathways for child developmental growth and learning. The CLASS measures interactions between teachers and children in their early learning program and does not measure instructional materials, curriculum or the physical environment. As noted in the manual, "The CLASS focuses on interactions between teachers and students and what teachers do with the materials they have" (p. 1) and serves as a tool to assess "interactional processes." The nature of interactions and the related constructs have been broadly described as classroom quality.[13] By this definition, classroom quality is multi-dimensional and incorporates emotional, instructional and managerial elements. The CLASS has three domains: Emotional Support, Classroom Organization and Instructional Support. Each of these domains measures specific dimensions; Figure 1 illustrates the three domains and the ten dimensions of the CLASS measure.

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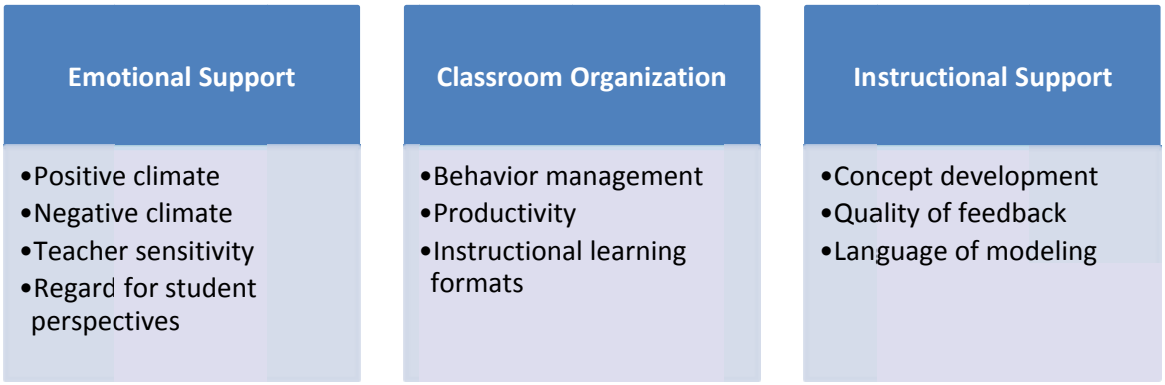
[10] See for example:
Howes, C., Burchinal, M., Pianta, R. Bryant, D., Early, D., Clifford, R., et al. (2008). Ready to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly, 23*, 27-50.
Mashburn, A., Pianta, R., Barbarin, O. Bryant, D., Hamre, B., Downer, J., et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, *79*, 732-749
NICHD Early Child Care Research Network (2002). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal, 39*, 133-164.

[11] Peisner-Feinberg, S. Curchinal, M. Clifford, R., Culkin, M., Howes, C., Kaga, S., et al. (2001). The relation of preschool child care quality to children's cognitive and social developmental trajectories through second grade. *Child Development, 72*, 1534-1553.

[12] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD.

[13] Mashburn, A., Pianta, R., Barbarin, O. Bryant, D., Hamre, B., Downer, J. et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, *79*, 732-749.

Figure 1. CLASS Domains and Dimensions



- The **Emotional Support** domain includes the specific dimensions of Positive and Negative Climate, Teacher Sensitivity, and Regard for Student Perspectives, and focuses on children's social and emotional functioning and the teacher-student relationship.
- The **Classroom Organization** domain consists of the Behavior Management, Productivity, and Instructional Learning Formats dimensions, concentrates on classroom procedures "related to the organization and management of student's behavior, time, and attention" (manual, p.3). This domain is focused on the belief that children function best when they are on task, busy, and engaged, and measures the teacher's ability to sustain student engagement.
- The **Instructional Support** domain, is comprised of dimensions associated with Concept Development, Quality of Feedback, and Language Modeling, and highlights the "instructional value" (manual, p. 5) of the classroom environment and the teacher's use of instructional methods that promote higher order thinking skills, support children's persistence in learning, and encourage language development.

The CLASS was developed from extensive research on the specific teacher behaviors that positively impact young children's social, academic and related skills.[14] With regard to the Emotional Support domain, there is a strong body of evidence that demonstrates children who are engaged and feel connected to others during their early years are more likely to persist and develop positive social and academic trajectories.[15] Teachers' skills and capacity to support the positive social and emotional function of children in their early learning program is central to developing positive relationships with others. The Classroom Organization domain measures teacher-child interactions related to the classroom processes and procedures related to managing children behavior and the general regulation of the early learning program

[14] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD.

[15] Hamre, B. & Pianta, R. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*(2), 625-638.

environment. Marzano, Marzano, and Pickering (2003) found that supportive teacher-child relationships were the foundation for effective classroom management.[16] Each dimension of the Classroom Organization domain measures aspects of the classroom environment associated with children's learning. For example, effective management and redirection of behavior can contribute to increased time on-task and focus on learning activities. Similarly, clear routines and well-articulated classroom procedures can contribute to effective time-management and use of instructional time. Teachers' abilities to facilitate the use of engaging materials and present inviting learning opportunities can enhance children's motivation and interest in the learning task. The Instructional Support domain is focused on how teachers deliver the curriculum or instruction to support cognitive development and language skill acquisition. The three dimensions comprising the Instructional Support domain target how teachers' interactions promote, facilitate, extend, and encourage the development of children's cognitive skills.

The CLASS is a reliable and valid measure for use in early learning programs to measure teacher-child interactions. Each of the domains comprising the CLASS has been shown to have sufficiently high levels of internal consistency, meaning the structure or framework of the measure is consistent across settings, classrooms, and teachers.[17] Downer, Lopez, Grimm, Hamagami, and Pianta (2012) examined the applicability of the CLASS for Latino and dual language learner (DLL) children.[18] Their study of 2,938 children enrolled in 721 pre-k classrooms from 11 different states found that the three domain CLASS structure was the same for DLL and classrooms comprised largely of Latino children. In other words, this study validated the use of the CLASS for diverse early childhood student populations. In addition, they also found that scores of the three Pre-K CLASS domains were significant predictors of improved school readiness in pre-k classrooms regardless of Latino and DLL status. The study demonstrated the wide-ranging applicability of the CLASS to measure quality teacher-child interactions in diverse classroom settings. The findings of this study are especially relevant to Florida's implementation of the CLASS tools as a means to improve the quality of early childhood care and education.

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[16] Marzano, R., Marzano, J. & Pickering, D. (2003). *Classroom management that works*. Alexandria, VA: ASCD.

[17] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD. The technical appendix of the CLASS Pre-K manual describes the psychometric properties of the CLASS over multiple administrations and studies. The internal consistency values of the Emotional Support domain scale ranged from .85 to .94 across five studies. Similarly, the ranges for the Classroom Organization and Instructional Support domain scales were .76 to .89 and .79 to .90 respectively. The CLASS also has strong criterion-validity evidence where high scores on the CLASS were associated with related high scores on the Early Childhood Environment Rating Scale, Revised Edition (ECERS-R).

[18] Downer, J., Lopez, M., Grimm, K., Hamagami, A., & Pianta, R. (2012). Observations of teacher-child interactions in classrooms serving Latinos and dual language learners: Applicability of the Classroom Assessment Scoring System in diverse settings. *Early Childhood Research Quarterly, 27*, 21-32.

Given the link between improved CLASS scores and improved child outcomes, the CLASS is used in a variety of capacities. For example, Pianta, LaParo, and Hamre (2008) describe that the CLASS can be used for research as a tool to measure the quality of teacher-child interactions; to meet accountability requirements by using the CLASS as a way to report on direct assessments of the quality of classroom environments; and as a tool for program planning and evaluation to improve classroom quality by focusing improvement and professional development efforts.[19] Many states - such as Arizona, California, Georgia, Minnesota, Virginia, and Washington - use the CLASS to provide professional development and support continuous improvement in family child care and center-based programs. Nationally, the Office of Head Start has identified and recommends the CLASS as an instrument to measure teacher-child interactions.

STUDY METHODOLOGY

The purpose of the Early Implementation Study was to determine baseline CLASS scores and to determine what supports make the greatest impact on early learning programs to inform the provision of supports statewide for early learning programs. Since programs will voluntarily participate in the statewide implementation of the CLASS Because the use of the CLASS will be voluntary by programs when implemented statewide, all participants in this study voluntarily participated. The directors and teachers in the early childhood programs received professional development and access to technical assistance to support their continuous improvement; technical assistance providers also received professional development to build their knowledge of the CLASS tools.

Design and Professional Development Intervention

This study examined how different types of supports were associated with improved CLASS capacity. Figure 2 shows the basic design and general timeline of the study. The study design allowed UF to determine the impact of the intervention on CLASS scores and to isolate the impact of specific types of supports.

[19] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD.

Figure 2. Early Intervention Study Design and Timeline

The following timeline describes the activities that occurred for each month of the study.

May:

- Teacher recruitment

June:

- Baseline assessments using the CLASS conducted

July:

- Assessor training provided to coalition staff and partners to improve their knowledge of the CLASS

August:

- Selected trainers for each coalition attended a two-day MMCI training in Orlando
- Intervention begins

September – October:

- Intervention on-going: MMCI training, technical assistance, and use of the video library

November:

- Follow up CLASS assessments conducted in a sample of programs
- Interviews with teachers and directors conducted

Professional Development Intervention

The professional development intervention included three components:

1. **Making the Most of Classroom Interactions (MMCI) professional development training**: MMCI is comprised of 10 two-hour sessions designed to help teachers and

teaching assistants working with children 3-5 years of age improve their interactions with the children in their early learning program. MMCI uses the CLASS framework to identify factors such as positive climate, teacher sensitivity, behavior management and quality feedback, as well as identifies and helps to develop teacher behaviors that foster an improved classroom climate through more positive interactions with children. The MMCI training provides teachers with extensive opportunities to learn in-depth about the three domains and ten dimensions measured by the CLASS (see Figure 1 on page 4), engage in professional discussions, view and respond to observational videos in guided and independent formats, and experience opportunities for individualized practice in their own classrooms. The MMCI program also offers teachers a greater understanding of the classroom environment and supports teachers' development through a coaching model. MMCI uses a "train the trainer" model. This required that each participating coalition identify an individual that would receive the MCCI training and who would then provide the training program to teachers within their coalition.

2. **Access to the video library:** A one-year subscription to the CLASS Video Library was provided to all MMCI participants for further professional development and to support the coaching activities associated with the MMCI program.
3. **Technical assistance** was provided to participating teachers over the course of the study. Individualized technical assistance included classroom observations, targeting areas for improvement, modeling, and providing support to establish effective classroom procedures and routines.

Early Learning Sites and Teacher Participants

Ten early learning coalitions representing the diversity of Florida were asked to participate in the Early Implementation Model. These coalitions represented a range of coalitions from those that had already implemented the CLASS to those that had not yet done anything with the tool but had shown high levels of motivation to use the instrument. The ten participating coalitions included: Alachua, Duval, Flagler/Volusia, Gateway, Miami-Dade, Northwest, Orange, Osceola, Palm Beach, and Southwest. Originally, the Big Bend Coalition participated but could not continue due to budget cuts.

Baseline Pre-K CLASS assessments were conducted on 182 teachers. By design, a sample of these programs received a follow up assessment in November; follow up Pre-K CLASS assessments were completed on 63 teachers. Table 1 shows the coalitions and the number of participating early learning programs and participating teachers for each for the baseline assessments and the follow up assessments.

Table 1. Early Learning Coalitions and Number of Participating Programs and Teachers

Coalition	Programs (N)	Teachers (N)
Alachua	7	13
Duval	3	5
Flagler/Volusia	6	8
Gateway	2	3
Miami	35	54
Northwest	9	9
Orange	9	22
Osceola	4	5
Palm Beach	8	10
Southwest	50	50
***Big Bend (dropped out)**	3	3
Total	116	182

Interviews were conducted with a representative sample of 37 program site directors to gather background and descriptive information about the participating programs and teachers. The interviews included questions about the professional experience and background of the site director, descriptive questions about the teaching staff as well as the children enrolled in educational programs offered by the site.

As shown in Table 2, the directors had a variety of experience directing early learning programs ranging between 1 and 36 years. On average they had 11 years of director experience. There were greater differences among the directors when asked about how long they had served as the director of their present site. On average, directors had been at participating sites for 7 years, ranging from less than one to 26 years. The vast majority had at least some college experience, with 35% of those interviewed having earned a bachelors, masters, or doctoral degree. A similar percentage (35%) indicated they had specialized in an education-related field such as early childhood or elementary education. Directors also provided information about the teaching staff at their site, their responses indicate that teachers were ethnically diverse and their primary languages closely mirrored those of the children enrolled. With regard to programming, the vast majority of the directors indicated that they offered two (40.5%) to three (56.8%) age-level programs. Generally, the class size across the different 3, 4, and 5-year old classes were similar and ranged from a low of 2-8 to a high of 22-25 children enrolled. The average class size was 14-16 children and the median class size ranged from 15-18. Typically, the 5 year old classes tended to have lower numbers of children per class. Sites had a licensed capacity to serve an average of 132.5 children with a minimum of 20 and a maximum of 347. The average monthly enrolled for the participating sites was 102 children, with a minimum of 15 and a maximum of 264. The directors also reported that an average of 47% of their total enrollment is comprised of children receiving school readiness funding, this ranged from a

minimum of 0% to a maximum of 100% of enrollment.[20] These characteristics indicate the diversity in the types of children served by the participating sites. In addition, about half of the directors (51.4%) reported that their site participated in one of the local Quality Rating and Improvement System (QRIS) initiatives and had been participating for an average of 3.5 years. The remaining half (48.6%) indicated that their site was not currently participating in a QRIS.

Table 2. Participating Program/Site Characteristics

Characteristics		Director Responses (N=37)
Director Experience	Total number of years (average)	11.1
	Number of years at site (average)	7.1
Director Degree	GED/High School diploma	24.3%
	Associate's degree	27.0%
	Bachelor's degree	27.0%
	Master's degree	8.1%
	Doctorate	8.1%
	Advanced Director Credential	5.4%
Teacher Experience	Average number of years	8.9
Average Class Size	3 year olds	14.3
	4 year olds	15.9
	5 year olds	16.5
Average Weekly Full Rate	3 year olds	138.7
	4 year olds	131.7
	5 year olds	116.5
Child Primary Language	English	86.5%
	Spanish	8.1%
	English, Spanish, Creole	5.4%
Teacher Primary Language	English	83.8%
	Spanish	10.8%
	English, Spanish	2.7%
	English, Spanish, Creole	2.7%
School Readiness Fund	Average percent of enrollment	47.1%
QRIS Participation	Yes	45.9%
	No	51.4%

[20] As part of the director interview, they were asked to report on the percent of their total child enrollment that received school readiness funding. Of the 37 interviews, two directors reported that none (0%) of their total enrollment of children received this funding.

The selection of teachers was determined by site directors. Coalitions asked directors to invite teachers of 3, 4 and/or 5 year olds who were eager to learn and open to improving their practice to participate in the Early Implementation Model. A total of 182 teachers agreed to participate at the outset of the study; by design, a sample of 63 teachers was selected for the post-test data to measure the impact of the professional development and other supports. Table 3 shows the descriptive characteristics of the participating teachers that had both pre and post CLASS scores (N = 63).

The final study sample, those teachers with both pre and post assessments on the CLASS, included a diverse group of practitioners. A strong majority of participants were of Hispanic/Latino or White backgrounds. A smaller, but sizable percentage indicated they considered themselves African American (17.5%). A small number of teachers were Asian (1.6%). The number of years participants had in the classroom ranged from one to 35 years with an average of 14 years. Teachers reported working in their current program/site less than one year to over 21 years, with an average of approximately six years. Participating teachers represented a variety of education levels, with about half earning a high school diploma or an equivalent degree and the other half earning a 2-year associate's or bachelor's degree. Of those reporting earning an associate's or bachelor's degree, the majority specialized in child development or an early childhood related field. In addition, 48.2% reported having a CDA credential and almost 10% had a Director's Credential. Also, about one-fourth indicated that they were members of early childhood professional associations.

With regard to their specific classrooms, teachers reported having an average of 14 children in their rooms. This number ranged among participants from 5 to 22 children. The children also represented a diverse student population. A total of 27.6% of the children were African American, 21.9% were Hispanic/Latino, 41.3% were White, 6.6% were Other and 2.4% did not report ethnicity.

Table 3. Teacher Participant and Child Demographic Characteristics

Characteristics		Study Sample (N=63)
Gender	Male	1.6%
	Female	98.4%
Ethnicity	Asian	1.6%
	African American	17.5%
	Hispanic/Latino	41.3%
	White	39.7%
Teaching Experience	Total number of years (average)	14.3
	Number of years at site (average)	6.5
Degree	Pre-GED	2.1%
	GED	4.2%
	High School	45.8%
	Associate's degree	29.2%
	Bachelor's degree	18.8%
Major/Area of Specialization[1]	Child Development	18.8%
	Early Childhood	8.4%
	Elementary Education	8.4%
	Other	8.4%
Class Size	Average	13.9
Class Demographics		
Gender	Male	47.9%
	Female	52.1%
Ethnicity	African American	27.6%
	Hispanic/Latino	21.9%
	White	41.3%
	Other	6.7%
	Ethnicity Unreported	2.4%

1. Note: The percentages for major/area of specialization do not total 100. This question was asked of those who had received at least a 2-year associate's degree. The percentages represent the percentage out of the total teacher sample.

CLASS Administration

As noted earlier, the CLASS is an observational measure and requires that observers or assessors are trained and reliable to ensure that CLASS scores maintain their meaning when multiple observers implement the CLASS assessment tool. Trained observers scored each of the dimensions using a seven-point scale that includes three categories – low (1, 2), mid (3, 4, 5), and high (6, 7). Four observation cycles were completed for each participating teachers and dimension scores were averaged across the cycles to compute domain scores. Prior to

conducting CLASS observations, all assessors had to have documentation of Level II background check screening and current certification as a reliable Pre-K CLASS Assessor. The UF assessment team consisted of six assessors located in various geographic regions within the state. Assessors were selected based upon recommendation to the project manager by various organizations and possessing the proper documentation as required by OEL to conduct the assessments (Level II background screening and CLASS reliability certification). Assessors conducted four cycles of the CLASS; the majority of the cycles were the full 20 minutes, but some were shortened to accommodate teachers' schedules.

Prior to the baseline CLASS assessments, the participating coalitions provided UF with a list of teachers to be assessed using the CLASS. While most of the pre-assessments were completed during June, a week's extension was granted to the Big Bend and Gateway sites due to the inaccessibility of sites as a result of Tropical Storm Debbie. Pre-assessment scores on the CLASS were sent to coalition directors and/or support staff to share with the teachers prior to receiving the MMCI training. All post assessments were conducted in November 2012.

Limitations

It is important to recognize a few limitations of the Early Implementation Study. The primary limitations are associated with the professional development supports provided to the participating teachers. While anecdotal evidence of the impact of the video library was shared in the interviews, it was not possible to incorporate the frequency of teachers' use of the video library. Teachstone, the MMCI provider, does not have a mechanism in place to record when teachers logged on to the library and for how long. Consequently, it was only possible to determine if access to the video library had an impact on teachers' CLASS results, but the extent to which the video library was used could not be measured to determine if the amount of use impacted CLASS scores. Furthermore, several directors noted their teachers had difficulty logging onto the Teachstone site to view the video library, limiting their ability to build upon the MMCI training they received and/or hone in on a particular dimension on which they wanted further help. Similarly, *t*he technical assistance that was offered to the participating teachers ranged in length and intensity. Some teachers were provided minimal assistance while others received intensive technical support. When asked why teachers did not receive more technical assistance, the majority of coalitions responded that there was a lack of staff with which to do so. The majority of the coalitions were facing severe to moderate budget cuts during the time of the study, reducing the resources that could have been utilized to provide additional technical support. Other initiatives, to include accreditation reviews and other child or program assessments further reduced the resources to provide additional technical support.

Another limitation to this study was the timeline in which the project needed to be launched and completed. Due to the contract between OEL and UF having to be reconfigured, time was

lost in waiting for contract approvals. Participating sites and teachers reported communication challenges around which teachers should be selected to be included in the study, when the trainings needed to be completed, and the challenge of the MMCI training happening at the same time as the beginning of the school year. Seven of the ten coalitions began their trainings in August with the remaining three started in September; five coalitions completed their trainings in September, followed by three coalitions completing their training in October with the final two coalitions simultaneously completing their training while UF was post-assessing. Ideally, the study procedures would have allowed sites to begin at point that was conducive to their schedules and allowed adequate time for the various interventions to take effect.

An additional limitation is the training schedule established by Teachstone, which suggests 10 sessions at 2 hours in length each. Establishing training schedules was often difficult given the demands of individual sites on teachers and locations of the training sites. Three coalitions provided sessions in 4-hour blocks for 5 sessions to accommodate the schedules of the teachers. However, some coalitions expressed difficulty in keeping teachers enrolled in the suggested 20 hours and had several teachers drop from the training due to being unable to commit for this amount of time.

Finally, it is important to note that all of the participants in this study were asked to participate by their local coalitions and voluntarily participated. As such, these scores may be higher than if a statewide, randomly selected sample was conducted.

RESULTS

Initial Measures of Classroom Environment

One of the study objectives was to assess where participating early learning programs were on the CLASS to identify a "starting point" or baseline to measure progress. As described previously the initial sample included 179 teachers. CLASS scores for the initial group were similar to those nationally, putting Florida (as represented by the study sample) on par with national trends. The pre-CLASS scores for the initial sample included the following domain scores:

Emotional Support = 5.86 (high mid/moderate range)

Classroom Organization = 5.26 (mid/moderate range)

Instructional Support = 2.33 (low range)

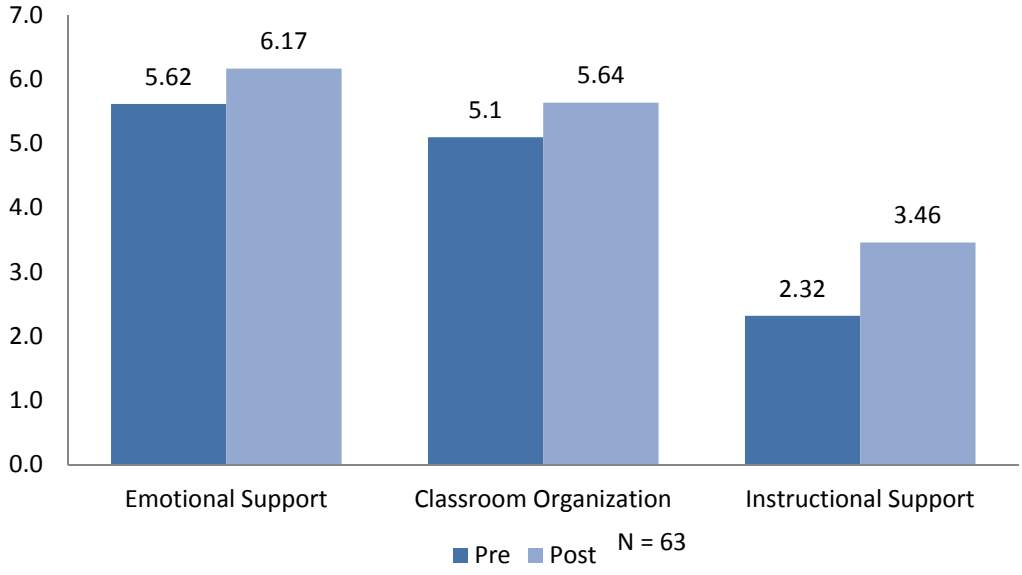
The results of the initial CLASS assessments are consistent with national data. According to Hamre, Goffin, and Kraft-Sayre (2009), "the domains of Emotional Support and Classroom Organization typically are at moderate to high levels of quality" in early childhood education

(ECE) classrooms. Instructional Support, however, is "typically at a low level of quality" (p. 16).[21] The national data for the CLASS is reported using a distribution of scores, as such it is not possible to make direct comparisons of the national average scores on the three CLASS domains and the baseline results of Early Implementation Study. It is important to note that the baseline means for this study indicate that the participating teachers' CLASS scores are similar to the national data.

Overall Impact of Training and Supports

The pre and post CLASS scores were compared and showed that there were statistically significant gains[22] in participating teachers' scores following the MMCI training and other supports. As shown in Figure 3, prior to the training teachers' scores on the Emotional Support and Classroom Organization domains were in the "mid/moderate" range and on the Instructional Support domain were in the "low" range. Following the training the domain scores significantly increased in all three domain areas and moved from the "mid" to "high" range for Emotional Support and from the "low" to "mid" range for Instructional Support. Even though the range category did not change from pre to post test for Classroom Organization, the score gain was still substantial and statistically significant, indicating that participation in the MMCI training and other supports had a positive, statistically significant impact on teacher-child interactions, the quality of the classroom atmosphere and context of the participating ECE teachers.

Figure 3. Pre and Post CLASS Domain Scores



[21] Hamre, B., Goffin, S., & Kraft-Sayre, M. (2009). Classroom Assessment Scoring System (CLASS) Implementation Guide: Measuring and Improving Classroom Interactions in Early Childhood Settings.

[22] The results of one-way Analyses of Variance (ANOVA) indicated that there were statistically significant gains at posttest on each of the three CLASS domains at $p < .001$.

Targeted Supports for Improving the Classroom Environment

As described, the intervention included three types of supports for developing capacity for implementing the CLASS. The primary support was the MMCI training. Participating teachers had the option to supplement this training by accessing the video library and taking advantage of individualized technical assistance. The structure or format of the MMCI training was different across the 10 participating coalitions. Some coalitions provided the training over 9 to 10 sessions for 2-3 hours per session, while others had fewer meeting times, but spent more time training per session. For example, one coalition held 4 MMCI training sessions on a series of Saturdays for a period of 5 hours each. While the structure of the training sessions varied, most were organized to provide the target 20 hours of training. Participating teachers spent an average of 13.8 hours in MMCI training and the number of hours varied by coalition. This number may be lower than the 20 required hours, because some teachers were not able to attend all of the training sessions. Since it was not possible to capture how much time teachers spent using the video library resource or the frequency with which they accessed the library, CLASS scores were examined according to teachers' reports of using the library or not. The majority of teachers (n=47) reported accessing and using the video library resources. By comparison, all teachers (n=63) reported receiving the technical assistance option. There is some overlap between these categories as teachers may have received multiple supports. On average, teachers received 3.3 hours of technical assistance. The number of technical assistance varied by coalition; in some cases teachers reported receiving about 12 hours of technical assistance compared to others who reported receiving 1-2 hours of assistance. To determine the impact of each type of support on changes in CLASS scores analyses were conducted to examine the score gains associated with MMCI, access to the video library, and the receipt of technical assistance. Figures 4-6 show these results and the different numbers of teachers who reported receiving each type.

Figure 4. Pre and Post *Emotional Support* CLASS Domain Scores by Type of Support

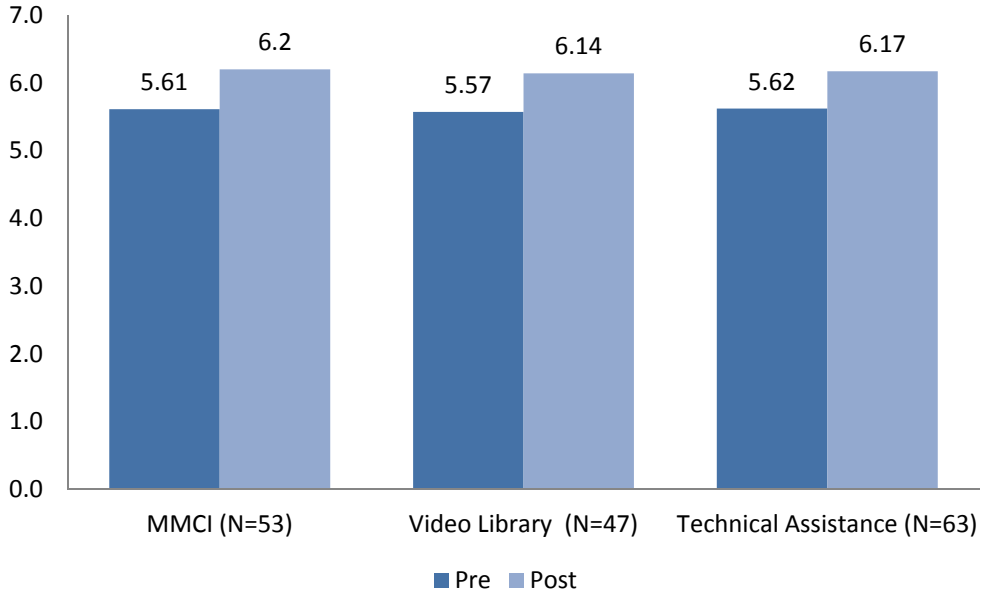


Figure 5. Pre and Post *Classroom Organization* CLASS Domain Scores by Type of Support

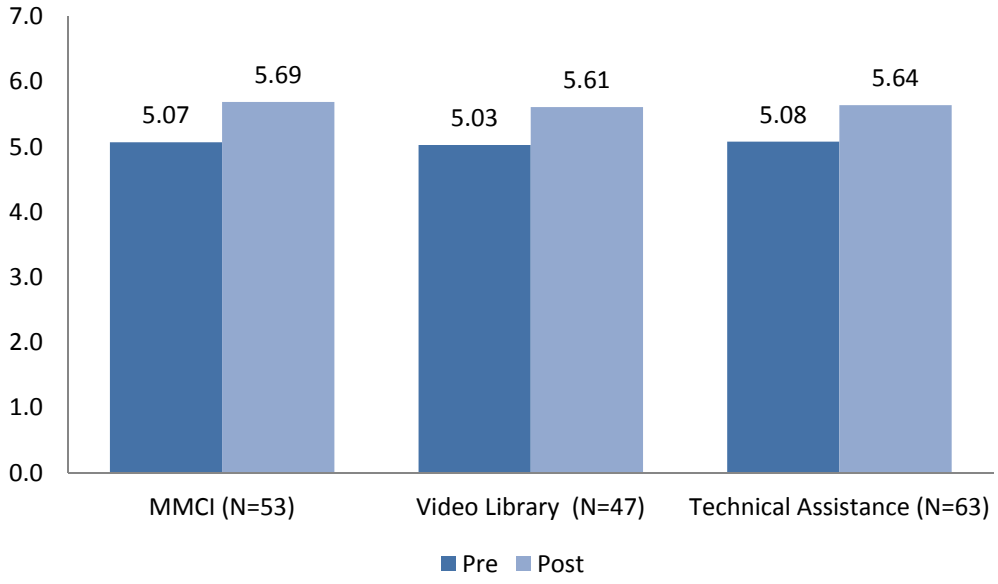
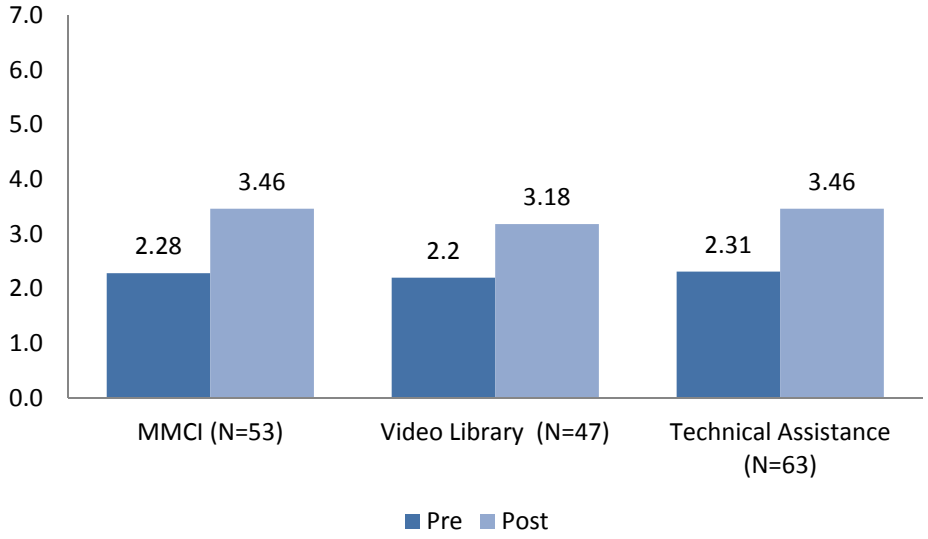


Figure 6. Pre and Post *Instructional Support* CLASS Domain Scores by Type of Support



Figures 4-6 show the improvement on the CLASS domain scores according to each type of support. The baseline and posttest CLASS scores were compared to determine if the type of support teachers reported receiving contributed to statistically significant improvements on the CLASS.[23] For each CLASS domain – Emotional Support, Classroom Organization, and Instructional Support the domain score at posttest was significantly larger than the baseline score measured prior to the intervention. This pattern is consistent for three types of supports for each domain area. For example, Figure 6 shows the increases on the Instructional Support domain by type of support. The posttest score for teachers who received MMCI was 3.46 compared to a baseline score of 2.28. Statistical analyses indicated that this increase in the Instructional Support domain score was statistically significant; in other words, the improvement was not a result of chance or an arbitrary increase. This is true for all of the gains shown in Figures 4 through 6, suggesting that the intervention had a meaningful impact on teachers' CLASS scores.

The specific gains made on each domain are presented in Table 4. The positive change in the scores after the implementation of the intervention was significant for all three types of support on each of the three domain areas.[24] Gain scores, around or approaching 1, indicate a possible shift or substantial movement towards a higher reporting category. As shown, the greatest improvement was evident in the Instructional Support area; suggesting that as a result of the intervention, the instructional value of participating teachers' classroom was enhanced

[23] Paired-samples one-way ANOVA was conducted to determine if posttest scores were significantly different from those at pretest by type of support and CLASS domain scores.

[24] Three one-sample ANOVAs were conducted for each type of support to determine if pre and post CLASS domain scores were significantly different. Results were statistically significant for all three statistical tests at $p < .01$.

and that they were more likely to interact with children in ways that supported their learning. These results indicate that even a short intervention with targeted supports for using the CLASS can result in improved levels of Emotional Support, Classroom Organization, and Instructional Support indicative of higher quality teacher-child interactions.

Table 4. Average Gain on CLASS Domain Scores by Type of Support

Type of Support	CLASS Domains		
	Emotional Support	Classroom Organization	Instructional Support
MMCI	.597	.617	1.18
Video Library	.566	.582	.979
Technical Assistance	.554	.555	1.14

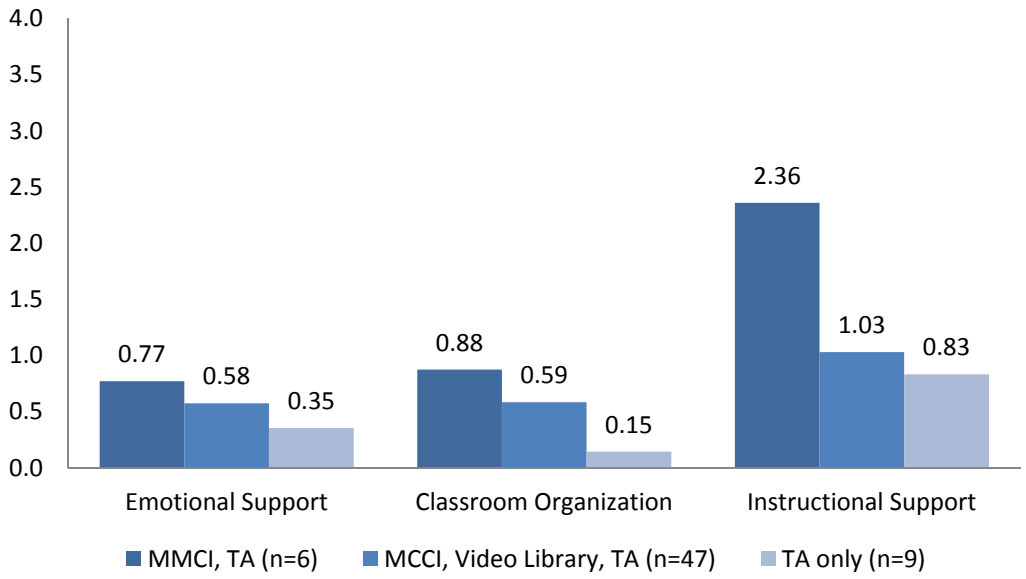
The CLASS results were also analyzed to determine if the number of MMCI training hours or the number of technical assistance hours were associated with greater improvements in CLASS scores. The results indicated that there were not any strong associations between the number of hours teachers reported receiving MMCI training and or the number of hours of technical assistance hours and CLASS score gains.[25] These results may suggest that the combination of supports may be more essential than the amount of time spent on MMCI or technical assistance. Given that this was a pilot study, further research is warranted to determine the impact of the amount of time spent on training and technical assistance and score gains. The present study demonstrates that targeted professional development can positively impact CLASS scores but does not allow for more nuanced analyses or conclusions.

One of the limitations of the preceding analysis is that is the isolated impact of the training components is somewhat artificial because teachers generally received the supports in combination, so it is not possible to detect a "true" impact of each type of support independent from the other. As such, it was important to determine if any combinations of support had more or less of an impact on CLASS post-intervention scores. This type of information could be used to inform decisions about how best to encourage teachers and ECE programs to invest time and resources for building CLASS capacity. As noted previously, all teachers reported taking advantage of the technical assistance (TA) resource. Consequently, four different combinations of the three available supports were used by participating teachers: (1) MMCI and TA; (2) MMCI, Video Library, TA; (3) Video Library and TA; (4) TA only. Only one teacher

[25]Bivariate correlations were computed to determine if there were significant correlations between the number of hours teachers received MMCI training or technical assistance and the pre-posttest difference scores on each of the three CLASS domains. The results indicated that there were not any statistically significant correlations at p = .05.

reported using only the video library and technical assistance resources, as such the results for this support combination are not included in the reporting of results or the analysis. Figure 7 shows the pre-post CLASS assessments difference scores on each of the three CLASS domains by the type of support combinations teachers received.

Figure 7. Average Gain on CLASS Domain Scores by Combination of Support

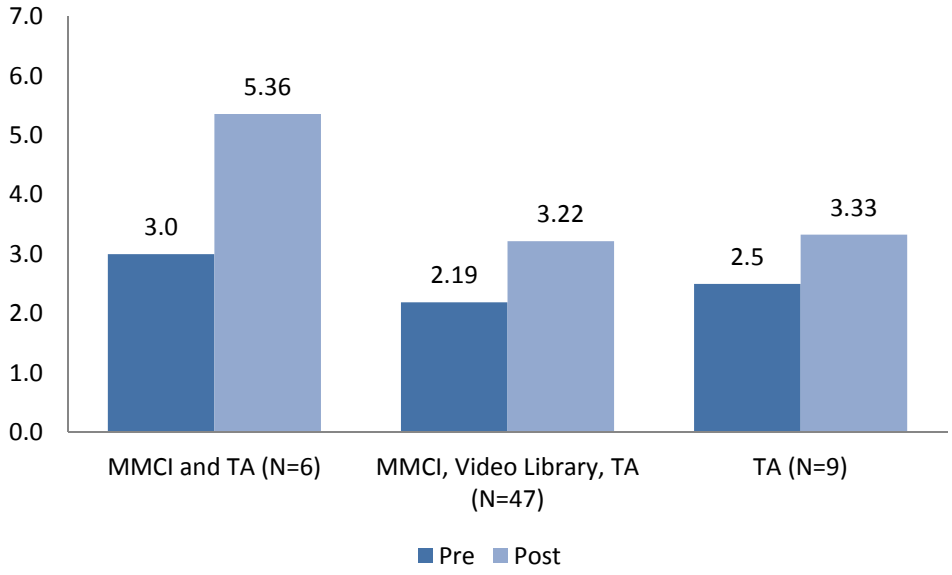


Teachers who received MMCI and technical assistance in addition to those who received MMCI training that was supplemented by accessing the video library and receiving technical assistance made significant improvement at post-test on the CLASS tool in all three areas: Emotional Support, Classroom Organization and Instructional Support.[26] Teachers who experienced technical assistance only did not show any significant improvement on the post-assessments; this result may be due in part to the small number of teachers in this group. Similar to previously reported results, the greatest improvements were made in the area of Instructional Support. The CLASS scores were also analyzed to determine if any of the different combinations of supports were more effective than the other. The analyses indicated that there were no differences in the degree of improvement teachers made in the area of Emotional Support and Classroom Organization; regardless of the support combination involving MMCI all teachers made significant gains at posttest in these areas. However, teachers who received MMCI and technical assistance had a greater degree of on the Instructional Support domain compared to those that received all three types of supports and

[26] Paired-dependent samples t-tests were conducted to determine if there were statistically significant differences at posttest for each of the three support combination groups. Results indicated that the posttest CLASS domains scores were significantly higher than pretest scores for the MMCI and TA as well as the MMCI, Video Library, TA groups at $p < .05$.

those that only received technical assistance.[27] To explore these results further, it was important to see if the greater gains evident for the MMCI and TA support group were due to teachers receiving more hours of technical assistance. The average number of technical assistance hours for the MMCI and TA; MMCI, Video Library, TA; and TA only groups were 3.0, 2.7, and 7.2 hours respectively. It follows, that those teachers who received only technical assistance would have spent more hours using this support. The number of technical assistance hours received by teachers in the MMCI and TA group and the MMCI, Video Library, TA group were similar. As such, this suggests that the different rates of improvement in the Instructional Support area are not associated with the number of technical assistance hours. Figure 8 illustrates the significant improvement for all three support combinations on Instructional Support scores and shows the greater rate of improvement for the teachers who received MMCI training supplemented by individualized technical assistance. These results should be interpreted with caution due to the differences in the number of teachers for each group. Smaller sample sizes may show more dramatic score changes than groups with larger numbers, because some of the individual pre and post differences within the larger group may effectively cancel each other out.

Figure 8. Pre and Post *Instructional Support* CLASS Domain Scores by Combination of Support



[27] An ANOVA was conducted to determine if there were differences on the pre and post difference scores on the three CLASS domains by the combination of support. The results were statistically significant for the Instructional Support domain at p = .023. These results indicated that there were statistically significant between-subjects effects by the combination of support. It is important to note that these results are limited by the difference in the cell sizes of the three support combinations.

Essential Program Characteristics for Enhanced Classroom Environments

The results of the pre and post CLASS assessment were analyzed to determine if there were any contextual characteristics of the different programs that were associated with larger improvements on the CLASS scores. The results are shown in Table 5. The demographic and program characteristics that were described earlier in the report (see Tables 2 and 3) were combined in several instances to create comparison groups of similar sizes to provide for more meaningful interpretations of the results. As shown, the results for Emotional Support, Classroom Organization, and Instructional Support were similar for class sizes less than 14 and those classrooms with 14 or more children enrolled. Similarly, there were no differences on the CLASS scores by the number of years of experience for program directors or teachers. Program participation in a QRIS also did not produce different rates of improvement on the CLASS domain scores. Across all of these areas, improvements in post-CLASS scores were evident following the intervention. The one area that did seem to influence the degree of improvement was teachers' education level. The teacher education categories (see Table 3) were combined to create two groups; one of High School education or less and the other group having a 2-year associate's degree or a bachelor's degree. As shown in Table 5, teachers with higher education levels made greater gains or improvement at posttest on the CLASS. Even though the CLASS scores for both groups of teachers improved, those with higher education levels made larger improvements than teachers with a high school or equivalent degree.[28] This finding from the brief intervention study suggests that teachers with stronger education backgrounds may be better positioned to apply the concepts of the CLASS framework and use pre-test scores to inform their instruction and shape interactions with children. Figure 9 shows the pre-post difference scores or gain scores that show the improvement teachers made on the CLASS assessment after the intervention. As shown in the figure, both groups improved but teachers who had earned either an associate's or bachelor's degree made greater gains.

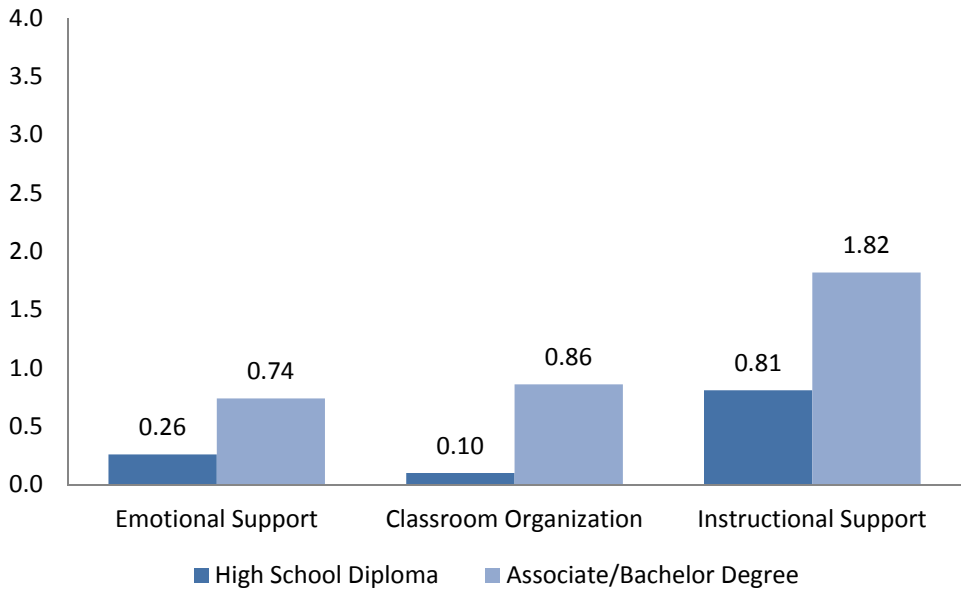
[28] A one-way ANOVA was conducted to determine if there were statistically significant differences on the three CLASS pre-post difference scores by teacher education level. Results indicated that there were statistically significant between group effects at $p < .05$ for Emotional Support and Classroom Organization and $p < .01$ for Instructional Support.

Table 5. Pre and Post CLASS Domain Scores by Program Characteristics

Program Characteristics		N	Emotional Support		Classroom Organization		Instructional Support	
			Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*
Class Size	< 14	22	5.63	6.31	5.15	5.82	2.49	3.87
	>= 14	28	5.57	5.93	5.09	5.42	2.20	3.42
QRIS Participation	No	23	5.06	6.25	4.29	5.37	2.46	4.63
	Yes	28	5.53	6.14	4.69	5.82	2.44	3.82
Director Years of Experience	< 10 years	28	5.47	6.10	4.75	5.62	2.44	3.54
	>= 10 years	25	5.70	6.12	5.38	5.64	2.22	3.53
Teacher Years of Experience	< 10 years	20	5.52	5.96	4.81	5.46	2.37	3.66
	>= 10 years	28	5.70	6.23	5.40	5.73	2.39	3.68
Teacher Education	High School/GED	25	5.69	5.95	5.25	5.35	2.21	3.02
	Associate's/BA	23	5.55	6.29*	5.05	5.91*	2.57	4.39*

*Statistically significant differences on pre-post difference score at p = .05.

Figure 9. Average Gain on CLASS Domain Scores by Teacher Education Level



Summary

The results of the Early Implementation Study clearly demonstrate the promise of providing early care and education teachers with targeted professional development and supports to improve teacher-child interactions. The results show impressive differences between pre and post-intervention CLASS scores. Teachers' scores on all three domains of the CLASS – Emotional

Support, Classroom Organization, and Instructional Support – significantly improved following the professional development. Further, the results suggest that structured training (i.e., MMCI) coupled with additional supports, particularly individualized technical assistance, promoted the largest improvement in CLASS scores. In addition, program characteristics and teacher characteristics, other than teacher educational level, were not strongly associated with increased CLASS post-assessment scores. Consequently, these results suggest that this targeted approach to professional development is broadly applicable to a variety of different early care and education programs and has the potential to produce widespread positive results. *The gains in CLASS scores that resulted from the short intervention are impressive and clearly show the promise of a long-term and sustained approach to professional development to positively impact teacher-child interactions and child outcomes.*

RECOMMENDATIONS

Based on the implementation and findings of the Early Implementation Study as well as our experiences working with the coalitions, program directors, and teachers on this project, UF offers the following recommendations to inform how the CLASS is used statewide:

1. **Ensure MMCI, technical assistance and other professional development supports are designed to meet the needs of all early learning professionals, regardless of education level**. The results of this short intervention show the greatest gains among teachers with more formal education. Careful planning and attention needs to be brought to how to best implement MMCI, technical assistance, and other supports to ensure all early childhood professionals, regardless of education level, have the knowledge and skills needed to improve their interactions with young children.

2. **Increase incentives for teacher participation in professional development in addition to continuing credit hours**. Although many of the teachers expressed appreciation for CEUs, many had already earned their required 10 clock hours, thus it was not viewed as an incentive. The majority of the teachers did not receive incentives for participating in the MMCI training, which was particularly challenging since the locations of the trainings were often far from work sites, requiring teachers to provide their own transportation and pay for their own fuel. Funding to provide incentives for teachers' time and to offset their transportation costs would help teachers tremendously.

3. **Improve communication from top down and bottom up.** It was evident as the UF assessment team called to arrange the pre-assessments of teachers that communication of the project wasn't as clear as it needed to be. Directors often were only told that "UF would be calling them" with minimal to little information about what UF's role was, what would be asked of their teacher, etc. Upon arriving to assess the teachers, teachers often were not even told they were going to be assessed, by whom or for what reason. For coalitions not utilizing the CLASS, many teachers had never heard of the instrument and assumed it was similar to the ECERS assessment tool. Communication seemed to have improved by the time of the post-assessment phase. However, it was discovered during interviews with the coalitions and directors that the communication surrounding the MMCI trainings wasn't clear. Teachers were selected to attend the training who might not otherwise have been chosen, had directors been given more clarification and direction on how to select participants for the pilot. In some cases, selected teachers were not told of the time commitment until the first MMCI training. This lack of information caused some of the teachers to drop out of the study due to personal commitments outside of work. To minimize the confusion and frustration felt by the teachers, directors, and coalitions, face-to-face meetings, conference calls and email exchanges need to occur on a regular basis to ensure all of the information is clearly understood and shared with all involved. FOEL is also encouraged to develop communication templates or related guidance for coalitions to adapt that address the common questions, issues that arise, and suggestions for implementation.

4. **Encourage Teachstone to improve its technological infrastructure.** One of the supports provided to teachers was the CLASS Video Library. At the launch of the study, Teachstone did not have the ability to track when viewers logged on and off, how long their viewing time was, which dimension/video was viewed the most, etc. At the time of this final report, Teachstone did not have the capability to provide this information, even though the technology to document usage is widely used by similar companies. Many of the teachers and directors expressed how helpful the library was in helping them to see how to score well on a particular dimension by viewing an actual classroom situation surrounding that dimension. It would have been extremely helpful to access information on how much the library was utilized for this report and, in cases where substantial growth was seen, whether viewing time was high for a particular dimension. Given wide use of CLASS, this data would also help inform the multitude of research projects using the CLASS. On a related note, some teachers expressed frustration with the slow response time of Teachstone when they had difficulties logging on to the site and called for technical assistance. Four teachers in the study were never able to access the library even after numerous attempts and calls for

assistance; several others voiced difficulty logging on to the site after being "kicked off" several times. Discussions are recommended with Teachstone to make them aware of how breakdowns occurred within their system and to emphasize the priority in integrating the technology needed to record and track viewers accessing the site.

5. **Establish guidelines and protocols for the sharing of scores with teachers and ensure they are followed.** Originally, this study did not include the sharing of scores with teachers as it was established as a research study. After much deliberation, it was decided that scores would be shared by the coalitions to the teachers so they would know what areas they needed to improve upon. Protocols and supporting documents were sent to each coalition to assist in the sharing of the teachers' scores. During interviews with teachers and directors, it was discovered that scores were not shared uniformly. In some instances, teachers were never provided their scores, some received them via email with no additional information or support and some teachers were only given a range of where their scores fell. Also, some teacher scores were shared <u>after</u> the teachers had gone through the MMCI training. Had they been shared at the beginning of the MMCI training, it would have helped teachers to concentrate on areas needing improvement. If scores are to be utilized as a teaching and guiding tool, mechanisms need to be in place in which to do so. It is understood that each coalition is unique, but some uniformity and continuity needs to be in place when sharing CLASS scores. It is suggested that guidelines and protocols be developed in partnership with the coalitions and then distributed for statewide use. Video clips showing scores being shared with teachers would also be of help in creating consistency as well as providing guidance in how to share scores in different scenarios.

6. **Provide time and training to create uniform and meaningful technical assistance to teachers.** Interviews with coalition training and support staff uncovered a wide range of technical support structures and hours. Some coalitions were limited in how much technical assistance they could provide teachers to help them better understand the CLASS or make improvements within certain domains. To support coalition implementation of technical assistance it is recommended that capacity building related to technical assistance be developed and mechanisms for sharing promising practices across coalitions be implemented. This would help coalitions implement more consistent technical assistance strategies, share and learn from successful models, and utilize approaches proven to be meaningful to programs and make a difference to children.

7. **Modify the Teachstone training schedule to better accommodate teachers' schedules and learning styles.** The recommended delivery of the MMCI training was 10 two-hour sessions. Coalitions had the flexibility to modify the sessions so as to accommodate

teachers' schedules as some conducted five 4-hour sessions and others did a combination of the two. Many of the teachers, directors, and coalition support staff expressed the intensity of the training and noted, "It was a lot to absorb in a short amount of time." We suggest that coalitions and sites collaboratively schedule trainings to better accommodate the schedules of the teachers while keeping in mind how to optimize their learning capabilities after putting in a full day's work. Although Teachstone suggests all of the sessions occur closely together, it might be wise to rethink how to deliver the trainings. One teacher suggested having 2-3 week breaks in between each domain session allowing teachers to not only better absorb what they learned, but to also enact what they learned. Another suggestion was to start with the domains that most teachers struggle with: Instructional Support and Classroom Organization and place the Emotional Support sessions at the end. It would be helpful for OEL to reassess how to best deliver the trainings so more teachers could fully participate and reap the benefits of the training provided.

CONCLUSIONS

The results of the Early Implementation Study provide evidence that a professional development intervention that includes structured training supported by individualized technical assistance and opportunities for practice can improve the quality of teacher-child interactions. Teacher who participated in the study made significant gains on their post-intervention CLASS scores in the areas of Emotional Support, Classroom Organization, and Instructional Support. Instructional Support has been shown in the research to be the most robust and significant predictor of improved academic outcomes for young children.[29] There is a compelling body of evidence that directly links quality teacher-child interactions with student achievement and improved social and behavioral outcomes. The results of the Early Implementation Model pilot study are promising, and demonstrate that greater quality investments in professional development and training for the early education workforce will likely produce positive results such as greater quality of early childhood programs, improved academic, social and other outcomes for young children, and reap the potential for lasting impacts as young children progress through the early elementary grades.

[29] Pianta, R., La Paro, K., & Hamre, B. (2008). *Classroom Assessment Scoring System, PRE-K, Manual*. Brookes Publishing Co., Baltimore, MD.

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