Evaluation of the Florida Master Teacher Initiative

Final Evaluation Findings

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Executive Summary

The Florida Master Teacher Initiative (FMTI) is a collaborative professional development effort of Miami-Dade County Public Schools, the University of Florida (UF), and the W.K. Kellogg Foundation aimed at improving early learning instruction for high-need preschool through grade 3 students in Miami-Dade County Public Schools. Funding from the U.S. Department of Education's Investing in Innovation (i3) program supported the development, implementation, and evaluation of FMTI. SRI International (SRI) conducted the independent evaluation of FMTI.

Program Overview of the Florida Master Teacher Initiative

FMTI aims to enhance early learning instruction for high-need students through four program components:

- A job-embedded graduate degree program with an early childhood specialization—the Early Childhood Teacher Leadership for School Improvement (ECTLSI) Program—offered through UF.
- A Teacher Fellows program, through which a subset of teachers throughout the school engage in yearlong inquiry projects to examine new instructional approaches together with peers and present their projects at an annual districtwide Learning Showcase.
- A Principal Fellows program, which provides opportunities for principals to interact with other principals in discussions and activities that help build their shared leadership skills and enhance their ability to effect change within their schools.
- Summer leadership institutes, which support shared school leadership through facilitation of joint analysis of school surveys and student assessment data to support data-driven decision making and development of school action plans.

The FMTI team also introduced three program enhancements in its second and third years of implementation, including: (1) an Assistant Principal Professional Learning Community (APPLC), a program similar to the Principal Fellows program but for assistant principals: (2) a post-baccalaureate program, a non-degree-bearing, four-course version of the ECTLSI program available to a wider range of teachers than those who qualify for the ECTLSI graduate program, and (3) a Transition to Kindergarten Professional Learning Communities to support inquiries about aligning standards, social-emotional development, and barriers to smooth transitions between preschool and kindergarten.

SRI International conducted an independent evaluation of the impact of FMTI on school culture and teacher practices as measured by teacher surveys and teacher observations, and on student reading and math achievement as measured by standardized tests. The evaluation used both a cluster assignment random control trial (RCT) design, in which 40 Miami-Dade County public elementary schools were randomly assigned to the FMTI program or a status-quo control condition to assess schoolwide impacts, and an embedded quasi-experimental design (QED) using propensity score matching and difference-in-differences approaches to examine impacts on teachers who participated in the ECTLSI graduate program. The evaluation also included a formative evaluation to learn about the program's implementation, accomplishments, challenges, and strengths to support program refinement, replication, and the sharing of lessons learned with the education field. The evaluation also included a fidelity implementation study that examined

whether FMTI was implemented as intended to provide formative feedback and help with the interpretation of the impact study results. Below is a summary of the key evaluation findings.

Key Findings

Implementation Outcomes

- FMTI partners were successful with offering the planned programs for principals and teachers. All of the courses for the ECTLSI graduate degree program were developed, implemented, and well received. The Teacher Fellows program was successfully implemented in all the treatment schools. The UF team held statewide institutes and local meetings for principals to learn about and observe new leadership practices and develop a professional network and learning community with other principals of FMTI schools.
- Recruitment and participation levels in the ECTLSI graduate degree program and Principal Fellows program were a challenge and resulted in the program not achieving the level of implementation fidelity needed to accurately assess the model's impact. Further, requirements related to schools being designated high priority schools by the Educational Transformation Office made implementing some of the instructional practices learned through the graduate program a challenge.
- FMTI partners responded to these challenges by incorporating new program enhancements and working on the scheduling of program activities to avoid conflicts with other district activities.

Confirmatory Findings on Schoolwide Outcomes

- **Teacher outcomes:** There were no statistically significant differences between teachers in treatment schools and teachers in comparison schools on the majority of outcomes measured through the teacher survey. However we did find two significant results:
    - Teachers in treatment schools were more likely to engage in governance activities than their counterparts in control schools (82% vs.76%)
    - Teachers in treatment schools performed slightly worse than their counterparts in control schools on reported use of differentiated instruction (-.08 points on a 1-5 scale)
- **Student achievement:** There were no significant differences between students in treatment and control schools on math or reading achievement.

Exploratory Findings on Schoolwide Outcomes

- **Teacher outcomes in medium or high fidelity treatment schools:** There were no statistically significant differences between teachers in medium/high fidelity treatment compared to teachers in comparison schools in the same regions and voting districts on the majority of survey outcomes. However, there were four positive and statistically significant results:
    - Teachers in medium or high fidelity treatment schools reported slightly higher perceptions of trusting relationships between teachers within their schools than teachers in control schools (.22 points on a 1-4 scale)

- Teachers in medium or high fidelity treatment schools reported slightly higher levels of involvement in leadership roles than teachers in control schools (.36 points on a 1-5 scale).
- Teachers in medium or high fidelity treatment schools reported reaching out to a slightly higher proportion of families than teachers in control schools (.34 points on a 1-6 scale)
- Teachers in medium or high fidelity treatment schools reported using a greater variety of assessments than teachers in control schools (.23 points on a 1-4 scale)

- **Student achievement for those who remained in the same school for the full intervention period:** There were no statistically significant differences for reading and math achievement for Pre-K-2nd grade students who were still enrolled in the same school in 2013-14 compared to similar students at control schools.
- **Student achievement in medium or high fidelity treatment schools:** There were no statistically significant differences for reading and math achievement for Pre-K-2nd grade students who were in medium or high fidelity treatment schools compared to similar students at control schools who were still enrolled in the same school in 2013-14.

Confirmatory Findings on Graduate Degree Teacher Outcomes

- **ECTLSI instructional practices:** The evaluation found one positive difference in teacher quality for ECTLSI teachers compared to matched teachers based on the Classroom Assessment Scoring System (CLASS):
  - On average, observed ECTLSI teachers outperformed their matched comparison teachers by 1.7 points on the instructional support domain of the CLASS.
  - The evaluation found no statistically significant differences between observed ECTLSI teachers and their matched comparison teachers on the emotional support or the classroom organization domains of the CLASS.
- **ECTLSI teacher outcomes:** The evaluation found five positive and significant results for ECTLSI teachers compared to teachers in comparison schools on the teacher survey:
  - On average, ECTLSI teachers had slightly higher levels of involvement in leadership roles than similar teachers in control schools (.44 on a 1-5 scale).
  - On average, ECTLSI teachers performed slightly better than teachers in control schools on self-reported early childhood knowledge (.38 points on 1-4 scale)
  - On average, ECTLSI teachers performed slightly better than teachers in control schools on self-reported general instructional knowledge (.27 points on 1-4 scale)
  - On average ECTLSI teachers are more likely to engage in governance activities than teachers in control schools (94% vs. 76%)
  - On average ECTLSI teachers are more likely to engage in outreach activities than teachers in control schools (44% vs. 22%)
- **ECTLSI teacher student achievement:** The evaluation compared differences in student reading and math achievement between ECTLSI and other teachers in treatment schools with the difference between control school teachers matched to ECTLSI teachers and nonmatched control school teachers. The difference-in-differences estimate did not find a statistically significant difference between them on student math or reading achievement.

While the FMTI evaluation was not sufficiently robust to definitively determine the effectiveness of the program, small pockets of positive, significant findings suggest that FMTI may have potential to change instructional practices, if not yet student achievement.

1. Introduction

The Florida Master Teacher Initiative (FMTI) is a collaborative professional development effort of Miami-Dade County Public Schools, the University of Florida (UF), and the W.K. Kellogg Foundation aimed at improving early learning instruction for high-need preschool through grade 3 students in Miami. Funding from the U.S. Department of Education's Investing in Innovation (i3) program supported the development, implementation, and evaluation of FMTI. SRI International (SRI) conducted the independent evaluation of FMTI.

The evaluation had three primary goals: (1) to provide formative feedback to support program refinement and replication; (2) to assess program implementation; and (3) to measure the impact of the program on teachers and students. This final evaluation report summarizes the formative findings, describes the extent to which FMTI was implemented with fidelity, and presents findings on the impact FMTI on teachers and students. Previous reports described the formative findings and implementation of the program in more depth.[1]

In the remainder of this chapter, we provide an overview of FMTI and describe the evaluation design and questions.

Program Overview of the Florida Master Teacher Initiative

FMTI aims to enhance early learning instruction for high-need students through four main components:

- A job-embedded graduate degree program with an early childhood specialization—the Early Childhood Teacher Leadership for School Improvement (ECTLSI) Program—offered through UF. The graduate program combines online instruction, face-to-face pedagogy, and a professor-in-residence who works in schools with teachers and principals. The program also provides the graduate students with training on facilitating professional learning communities, guiding teacher inquiry, and using formal protocols to guide meetings to enable the graduate program teachers to take on school-based leadership opportunities and share program content and practices with colleagues.
- A Teacher Fellows program, through which a subset of teachers throughout the school engage in yearlong inquiry projects to examine new instructional approaches together with peers. This program culminates in a districtwide Learning Showcase in which teachers—as well as principals, assistant principals, and other school staff who also engaged in inquiry—present their projects.
- A Principal Fellows program, which builds leadership skills and provides an opportunity to interact with principals from other Florida school districts to support teacher leadership and instructional improvements. The Principal Fellows program supports principals' efforts to adopt a facilitative leadership approach and enhance their ability to effect change within their schools.

[1] Golan, S., Wechsler, M., Park, C., and Chen, W. (2012). Evaluation of the Florida Master Teacher Initiative: Formative Report. Menlo Park, CA: SRI International.

Golan, S., Warner, M. Wechsler, M., Park, C., and Campbell, A. (2013). Evaluation of the Florida Master Teacher Initiative: Second Formative Report. Menlo Park, CA: SRI International.

- Summer leadership institutes that develop shared leadership at schools through facilitation of joint analysis of school surveys and student assessment data to support data-driven decision making and development of school action plans at summer institutes.

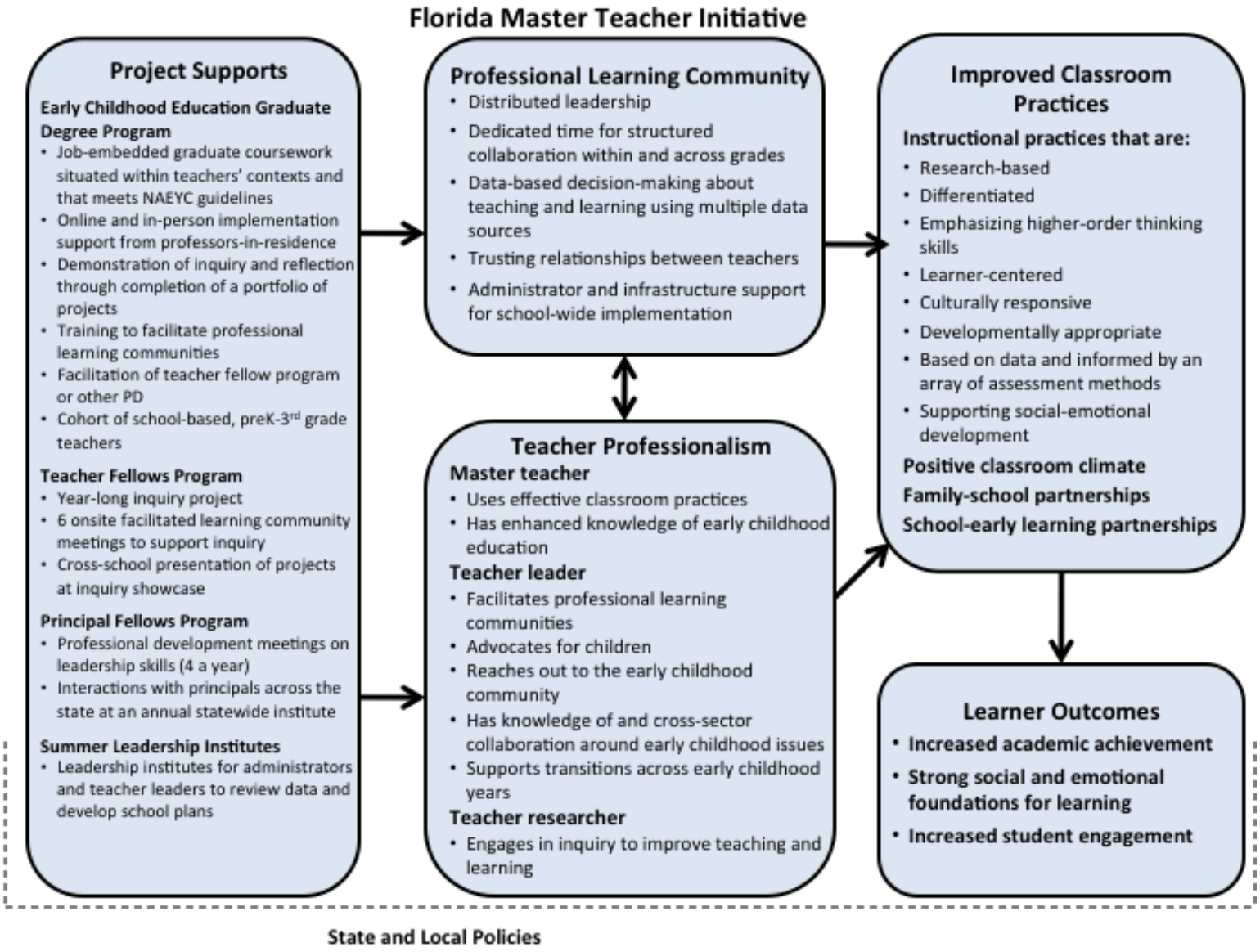
The FMTI team also introduced program enhancements following Year 1. In the 2012-13 school year, the FMTI team introduced an Assistant Principal Professional Learning Community, a program similar to the Principal Fellows program but for assistant principals. In the 2013-14 school year, UF faculty launched a new post-baccalaureate program, a non-degree-bearing, four-course version of the ECTLSI program available to a wider range of teachers than those who qualify for the ECTLSI graduate program. Finally, the FMTI team launched the Transition to Kindergarten Professional Learning Communities to support inquiries about aligning standards, social-emotional development, and barriers to smooth transitions between preschool and kindergarten.

Logic Model

The logic model below presents how FMTI program components are expected to lead to increased student achievement, stronger emotional and social foundations for student learning, and greater student engagement. SRI developed the logic model in collaboration with the FTMI development and implementation team at UF. According to the logic model, FMTI activities are hypothesized to support the development of a professional learning community among school staff and the professionalism and effectiveness of teachers. The job-embedded graduate program aims to develop a cadre of teachers with deeper knowledge of the early learning foundations promoted by FMTI, as well as strong research and leadership skills at each school. This cadre of job-embedded graduate program teachers is then able to facilitate a Teacher Fellows program that supports involvement of all teachers at a school in inquiry research projects to improve their practice and share in learning about their early learning knowledge. By running the Teacher Fellows program and other professional development efforts at their schools, the job-embedded graduate program teachers build their facilitation and leadership skills. Principals also learn how to support the emerging teacher leaders and researchers through their own professional learning community, the Principal Fellows program. Finally, teachers and administrators come together in teams as Summer Leadership institutes to develop school plans before each school year begins to improve school climate, instruction, and student achievement.

The main program components, together with additional program activities, are meant to produce teachers who excel as (1) master teachers who use effective teaching practices, including those focused on early childhood, (2) teacher leaders in their schools and communities who promote instructional improvement and high quality education from prekindergarten through third grade, and (3) teacher researchers who, through participation in a guided inquiry, research instructional topics that are relevant and important to improving their practice.

Exhibit 1-1. Logic Model



With improved skills in teaching, research, and leadership, it is hypothesized that teachers will be able to establish classrooms in which instruction is more research-based, differentiated, focused on higher-order thinking skills, learner-centered, culturally responsive, developmentally appropriate, guided by data from meaningful assessments, and supportive of social-emotional development. Further, teachers in these schools should be more able to establish classrooms with positive classroom climates, establish stronger partnerships with parents and the community, and more effectively engage with the early education community. It is hypothesized that these improvements in classroom instruction will contribute to improvements in student achievement, children's emotional and social development, and student engagement.

Evaluation Design

A goal of the i3 program is to provide rigorous research on the effectiveness of educational programs. SRI International conducted an independent evaluation of the impact of FMTI on school culture and teacher practices, measured by teacher surveys and teacher observations, and on student reading and math achievement as measured by standardized tests. The evaluation used both a cluster random assignment design, in which 40 Miami-Dade County public elementary schools were randomly assigned to the FMTI program or a status-quo control condition to assess schoolwide impacts, and an embedded quasi-experimental design using propensity score matching and difference-in-differences approaches to examine impacts on teachers who participated in the ECTLSI graduate program. Thus, the evaluation includes both a schoolwide random control trial design and a quasi-experimental design with a matched comparison group.

The evaluation also included a formative evaluation that provided data on implementation challenges to support midcourse corrections, assess progress, document program functioning, and support replication. Finally, the evaluation also included a fidelity implementation study that examined the extent to which the program was implemented as intended.

This section provides a brief description of the evaluation questions and methods used as part of the formative, implementation fidelity, and impact components of the evaluation. Appendix A contains a more detailed description of the methods used for sample selection, data collection methods and measures, and analysis.

Formative Evaluation

In Years 1 and 2 of FMTI's implementation, SRI conducted a formative evaluation to learn about the program's implementation, accomplishments, challenges, and strengths to support program refinement, replication, and the sharing of lessons learned with the field of education. The formative evaluation examined all four FMTI program components.

For the formative evaluation, researchers collected data through interviews with district and school level staff and document reviews. In the spring of 2012 and again in the spring of 2013, SRI visited six schools and interviewed principals and a sample of teachers participating in the ECTLSI graduate program and Teacher Fellows programs. SRI also reviewed documents such as curricula, program newsletters, and Learning Showcase program booklets to gather information about program activities. Additional information about the methods used is described in Appendix A.

Implementation Fidelity

Understanding the extent to which a program is implemented as intended is key to supporting program replication and interpreting the results of an impact study. To measure implementation fidelity, SRI worked with UF, the program developer, to identify the types and intensity of activities in each of the four program components believed necessary to bring about the desired changes and outcomes specified in the program logic model. These assumptions were used to develop fidelity measures detailed in Appendix B. SRI collected participation data for the Teacher Fellows program, Principal Fellows program, and Summer Leadership Institutes from the district, and participation data for the ECTLSI graduate program (including course completion, grades, participation in coaching training, enrollment status) from the University of Florida. In addition, SRI collected supplemental data from ECTLSI teachers through program surveys that asked about their involvement in leadership of professional development sessions within their schools and their engagement in inquiry projects. A summary of the fidelity model and the fidelity results are presented n Appendix B.

Impact Evaluation

The impact evaluation had two primary goals: (1) to assess the school-level impact of FMTI on teachers and students; and (2) to assess the impact of FMTI on teachers enrolled in the job-embedded early childhood graduate degree program and those teachers' students. These goals generated the following confirmatory research questions:

1. What is the school-level impact of the Florida Master Teacher Initiative on pre-kindergarten to 5th grade teachers' reports about school culture (i.e., collaboration within the school; reflection on instruction with other teachers; promotion of active learning) and their instructional practices (i.e., use if inquiry in instruction, use of collaboration in instruction, differentiated instruction, higher-order thinking skills, learner-centered instruction, culturally-responsive instruction, developmentally-appropriate instruction, and assessment-informed instruction) three years after the program has been in place compared to teachers in control schools?
2. What is the impact of the Florida Master Teacher Initiative on reading and math achievement after three years of program implementation, for all students who were in grades Pre-K through 2 in the treatment schools at the time of random assignment of schools to treatment conditions, compared to students who were in grades Pre-K through 2 in a control school at the time of random assignment?
3. After the program has been in place for three years, what is the added impact on reading and math achievement for students in grades 1 through 3 with one year of exposure to teachers who participate in the job-embedded graduate program?
4. What is the impact of the Florida Master Teacher Initiative on classroom instruction for teachers who have completed or nearly completed the job-embedded graduate program compared to matched comparison teachers, adjusting for their baseline classroom instructions?

To assess the school-level impact of FMTI on teachers and students, SRI used a cluster random assignment control (RCT) design. In spring of 2011, SRI randomly assigned 40 schools in Miami-Dade County Public Schools to participate in FMTI for three years or to the status-quo condition. To be eligible for FMTI, schools had to be Title I schools, have a pre-kindergarten

program, have at least four teachers interested in the graduate program, and have no previous FMTI programs or other key teacher development programs. The 20 schools assigned to the FMTI condition began participating in FMTI in summer of 2011, and continued working with FMTI through the 2013-2014 school year.

We evaluated the effects of teacher participation in the ECTLSI graduate program through an embedded quasi-experimental design using propensity score matching and difference-in-differences approaches. Researchers identified a matched comparison sample of teachers in control schools who were similar in teaching background, instructional practices, and interest in the ECTLSI graduate program prior to random assignment. We applied propensity score matching to identify comparison teachers (see Appendix A for a detailed description of the comparison teachers). UF recruited two cohorts of teachers for the embedded graduate degree program; Cohort 1 began the program in fall 2011 and Cohort 2 began the program in fall 2012. SRI pooled the two cohorts of ECTLSI teachers for analysis.

In addition to confirmatory research questions, we generated exploratory research questions aimed at understanding the impact of FMTI under more ideal conditions. Specifically, we examined the impact of FMTI among schools with medium or high level of program implementation and on students who remained in schools for all three program years. Our exploratory questions were:

1. What is the school-level impact of FMTI on pre-kindergarten to 5th grade teachers' reports about school culture and their instructional practices three years after the program has been in place for teachers in schools that meet the implementation threshold compared to teachers in control schools?
2. What is the impact of FMTI on reading and math achievement after three years of program implementation, for all students who were in grades Pre-K through 2 in treatment schools at the time of random assignment of schools and remained in the same schools all three years of the program, compared to students who were in grades Pre-K through 2 in a control school at the time of random assignment and remained in the same schools in the third year of the program?
3. What is the impact of FMTI on reading and math achievement after three years of program implementation, for all students who were in grades Pre-K through 2 at the time of random assignment of schools in treatment schools that meet implementation threshold and remained in the same schools all three years of the program, compared to students who were in grades Pre-K through 2 at the time of random assignment in control schools that are comparable to treatment schools that meet the implementation threshold and remained in the same schools in the third year of the program?

Measuring Teacher and Student Outcomes

SRI administered schoolwide surveys, conducted classroom observations of ECTLSI graduate program teachers and a matched comparison group, and gathered student achievement data for analysis at multiple levels. Appendix A contains a more detailed description of the methods used to collect and analyze teacher and student outcomes.

Teacher survey. SRI collected survey data from instructional staff both at baseline and following the three-year implementation FMTI. Researchers administered surveys in all 20 schools participating in the program and 20 control schools. The survey captured teachers' self-reports of instructional practices and school culture from the prior school year (the 2010-11 school year at baseline and 2013-14 school year at follow-up).

Exhibit 1-2 presents the response rate for 2011 and 2013. SRI surveyed a total of 1,397 teachers of prekindergarten through 5th grade students in 2011 and 1,335 teachers in 2014. Non-classroom teachers (e.g. media specialists, instructional coaches, special area teachers) and administrators are excluded from the survey sample. All 40 schools responded to the survey.

Exhibit 1-2. Teacher Survey Sample

	2011 Treatment	2011 Control	2014 Treatment	2014 Control
Total survey eligible respondents	685	712	643	692
Total number of respondents	596	631	565	634
Responses rate	87.0%	88.2%	87.9%	91.6%

Teacher survey data provided information on teachers' professional background, the professional learning culture of schools, teachers' involvement in school leadership, teacher engagement in trying and evaluating new instructional practices, and the use of various classroom practices. Sixteen outcome measures were constructed from the teacher survey. We used factor and reliability analyses to determine the item consistency and reliability of the survey items that measure the same underlying construct to create the 13 teacher outcome scales. The reliability coefficients of all the scales are larger than .70. We also created three other simple count measures that counted the frequency teachers engaged in outreach, governance, and a variety of assessment activities. The 16 teacher outcome measures are listed in Exhibit 1-3.

Exhibit 1-3. Teacher Survey Outcome Factors

School Culture and Professional Learning Community

- Collaboration around instruction
- Trusting relationships between teachers
- Effective principal PreK-3 leadership

Teacher Leadership

- Teacher leadership*
- Governance activities*
- Early learning outreach activities

Classroom Practices

- Learner-centered instruction
- Assessment-informed practice
- Regular use of a variety of assessments*
- Developmentally appropriate practices
- Emphasis on higher-order thinking skills
- Differentiated instruction
- Culturally responsive instruction
- Family partnerships
- Early childhood instructional knowledge
- General instructional knowledge

*Indicates a simple count measure

No asterisk indicates the measure is a mean of responses to the multiple items in the subscale.

Teacher Observations. Researchers conducted classroom observations of ECTLSI teachers and a group of matched comparison teachers located within control schools at two points in time using the Classroom Assessment Scoring System (CLASS). A baseline observation occurred early in the teachers first year of the program and a follow-up observation occurred after or near the end of the program. For the first cohort of ECTLSI students and their matched comparison teachers, baseline classroom observations were conducted in fall of 2011. For the second cohort of ECTLSI teachers and their matched comparison teachers, observations were conducted in fall of 2012. All follow-up observations were conducted in fall 2014.

Exhibit 1-4 shows the total number of teachers observed at baseline and at follow-up. A total of 49 treatment and 48 matched comparison teachers participated in observations at baseline. At post-intervention, researchers attempted to observe all teachers again. However, researchers were only able to conduct observations with 37 treatment teachers that remained in the program and 25 comparison teachers. These teachers comprise our analytic sample. It is important to note that due to the differential attrition between treatment and control groups for the follow-up classroom observations, it is possible that the results from this analysis may be biased. For example, if those control teachers who did agree to be observed at follow-up are more motivated teachers than those missing their follow-up observation, our control group may appear artificially positive on classroom instruction practice as compared to the treatment group.

Exhibit 1-4. CLASS Observation Teacher Sample

	Treatment N	Control N
Observed at baseline	49	48
Observed at follow-up/Analytic sample	37	25

The CLASS has been extensively validated and can be used reliably in both research and evaluation studies, and as a tool for guiding professional development[2]. The measure gives scores on three domains of classroom quality that have been linked to student learning and achievement: emotional support, classroom organization, and instructional support. Each domain is composed of multiple dimensions, which are rated on a scale of 1 to 7, with a score of 1 to 2 considered as low, 3 to 5 as middle, and 6 to 7 as high.

Student Achievement Data. To examine the impact of FMTI on reading and math achievement for students in kindergarten to grade 5, we collected standardized test scores from the spring prior to the start of the program (spring 2011) and for each spring that the program was implemented (spring 2012, 2013, 2014). The school district administers the Stanford Achievement Test-Tenth Edition (SAT-10) to students in kindergarten through grade 2 and the Florida Comprehensive Achievement Test (FCAT) to students in grades 3 – 5. In the last year of the study, we obtained from the district data files containing the SAT-10 and FCAT scores for all students in grades K-5 ever enrolled in treatment and control study schools during the year prior to the start of the program and the three years of the study. For the schoolwide impact analysis, because both SAT-10 and FCAT has developmentally scaled scores that are comparable across grades, we standardized the 2013-14 outcome test scores by student baseline grade level in 2010-11; therefore, even if a student is retained in grade, he is still compared with his original cohort at baseline. For ECTLSI teacher impact analysis, since we only examined one-year progress of student achievement, we standardized the 2013-14 outcome test scores by student grade level in 2013-14. For reading and math separately, we calculated z-score by taking the difference between each student's original test score and the mean score for his cohort in the whole district, then dividing by the standard deviation of the score for his cohort. In addition to outcome scores, we also standardized pre-test scores using the same approach and included them as covariates in the impact analyses.

Covariate student and school data. We collected data on student and school characteristics to use as covariates in analytic models to improve the precision of impact estimates.

Report Overview

Chapter 2 presents key findings from the formative evaluation, including information on the fidelity of program implementation. Chapter 3 presents findings about the impacts of FTMI on school culture and teacher practices, both schoolwide and for those teachers who participated in the ECTLSI graduate program. Chapter 4 describes the findings about the impact of FTMI on student achievement for students schoolwide and for those who had an ECTLSI teacher. A brief conclusion presents the key lessons learned from this study. Finally, the report includes technical appendices that provide more details about the study methods, the fidelity implementation, and the analytic models used to determine impact.

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[2] Pianta, R. C., La Paro, K., & Hamre, B. K. (2008). *Classroom Assessment Scoring System (CLASS)*. Baltimore: Paul H. Brookes.

Cash, A. H., Hamre, B.K., Pianta, R.C., & Myers, S.S. (2012). Large-scale rater calibration for an observational instrument. Retrieved from: http://curry.virginia.edu/uploads/resourceLibrary/Research_Brief_-_Rater_calibration.pdf.

2. Formative and Fidelity Evaluation Findings

In Years 1 and 2 of FMTI's implementation, SRI conducted a formative evaluation to learn about the program's implementation, accomplishments, challenges, and strengths to support program refinement, replication, and the sharing of lessons learned with the field of education. The formative evaluation collected data through interviews with district and school level staff, administrative data on program participation, and review of program documents.

This chapter provides information on the implementation of the key program components—the job-embedded graduate degree program, the Teacher Fellows program, the Principal Fellows program, the Summer Leadership Institute, and program enhancements.

Job-Embedded Graduate Degree Program

At the heart of the Florida Master Teacher Initiative (FMTI) is the graduate program. Developed and administered by the UF College of Education, the graduate program has an early childhood specialization and specifically meets the needs of early childhood educators (grades pre-K–3) working in high-need communities. The FMTI graduate program is an enhancement of UF's Teacher Leadership in School Improvement (TLSI) graduate program with an emphasis on early childhood (EC), so it is called the ECTLSI program. The ECTLSI graduate program blends online instruction with face-to-face pedagogy by a professor-in-residence who works alongside the teachers and administrators in the participating schools. The program is job embedded and designed to help teachers immediately put to use their theories, objectives, and learning to solve the challenges they face in their classrooms.

The graduate degree program is a 2.5-year, 39-credit-hour program. It is divided into four terms a year (fall, spring 1, spring 2, and summer), and participants take one course each term except for summer, when they take two courses. In addition, each summer includes a three-day institute focused on developing participants' facilitation and leadership skills. The ECTLSI program is serving two cohorts of teachers: Cohort 1 began the program in the summer of 2011 and Cohort 2 began the program in the summer of 2012. Both cohorts followed the same sequence of courses and engaged in similar leadership and research opportunities.

The goal of the ECTLSI graduate program is to improve teacher professionalism along three dimensions: instructional practice, leadership, and the ability to engage in inquiry to improve teaching and learning. By facilitating improvement in these three domains, the program aims to help their participants achieve the three pillars of "master teacher," "teacher leader," and "teacher researcher." In the final semester of the program, teachers are expected to document their progress towards these goals by assembling a portfolio of their work including artifacts for each of the three pillars.

Course Development and Adaptation

The graduate degree program is a joint venture of two schools within UF: the School of Special Education, School Psychology & Early Childhood Studies and the School of Teaching & Learning. The program was adapted from an existing graduate program to include an early childhood focus. This adaptation involved the design of four new early childhood courses: Developmentally Appropriate Practice in Early Childhood Education, Assessment and Evaluation in Early Childhood Education, Family Involvement in Early Childhood Classrooms, and Policy and Transitions in Early Childhood. In addition, UF faculty redesigned existing

courses, such as Differentiated Instruction and Transforming the Curriculum, to create a stronger focus on early education by including more examples and texts relevant to the experiences of preschool through grade 3 classroom teachers.

The course designers also built in mechanisms for improvement. After each course, students are asked to provide feedback that is analyzed by the teaching professor and the course designer. Moreover, UF faculty hired graduate students to interview graduate degree teachers from Cohort 1 to learn about their perspectives on which features of the program had the largest impact on their practice and which features of the program could be improved. Where relevant, changes were made to courses before they were offered to Cohort 2.

For the most part, both the professors and designers of the ECTLSI courses believe that they went well the first time around. In particular, the original courses required few adjustments after their initial adaptation to emphasize early learning content. UF faculty explained that these courses had already gone through several cycles of formative feedback and revision and were consequently already functioning smoothly. The newly developed early learning courses also were largely successful, although they required some more substantial revisions than the original course sequence. For example, in their feedback for the Developmentally Appropriate Practice course students expressed concern that the course was overly focused on very early childhood (birth through preK) whereas many of them teach kindergarten through 3rd grades. In response, the course designers reduced some of the early childhood readings and introduced additional videos of primary grade children. Of all of the courses, Assessment and Evaluation in Early Childhood Education was the least well received by Cohort 1 students. For Cohort 2, UF staff heavily re-organized the assessment course and used a different professor, who was more experienced with the ECTLSI students, to teach it. By all accounts, the course went more smoothly for Cohort 2.

Through experimentation while teaching Cohort 1, UF faculty also refined the blended model for delivering instruction. An unsuccessful experiment with online-only delivery for one course confirmed the need for all professors to include at least some face-to-face instruction. UF staff also learned the necessity of allowing adequate time for students to become familiar with new online technologies before requiring their use in class. For example, program staff added "voice thread" to the online platform mid-way through the program, which allows a discussion thread using recorded video messages and presentations. This addition was meant to enable more compelling conversations and sharing than a purely written dialogue; however, teachers struggled with learning the new technology while learning new content at the same time. Once teachers became comfortable with the voice thread feature it ceased to become a barrier. For UF staff, this experience highlighted the importance of respecting the learning curve associated with introducing new technology for teachers who already have a lot on their plates.

The final category of revisions UF staff applied to the ECTLSI courses grew out of an increased understanding of participants' roles as full-time teachers and graduate students working under the constraints of the public school calendar. As one faculty member explained,

> *As we see how students respond to coursework, and when they really start to grow with coursework and assignments, things that feel too theoretical have been pared down, I've watched that happen. So I've seen things like the amount of scholarly reading has been reduced, and the amount of conversation and connection to practice has increased.*

Likewise, other professors described an increased awareness among UF faculty that ECTLSI participants could not be considered "traditional" students in a lot of ways and that the goals of the program "are to strengthen teachers' knowledge and practice, we aren't preparing them to be researchers at an R-1 university." After teaching Cohort 1, professors also realized that some of the due dates for their assignments coincided with particularly stressful times during the public school calendar such as during the high-stakes state testing period. In response, UF professors shifted due dates for Cohort 2 to be more accommodating of their responsibilities as teachers.

Recruitment of Graduate Students

In contrast to the successful process for course development and adaptation, the recruitment of graduate students was a challenge throughout the life of FMTI. UF professors-in-residence spent considerable time and effort recruiting teachers for the graduate's degree program but were unable to meet recruitment goals for either Cohort 1 or Cohort 2. In addition to preparing materials describing the program, recruitment strategies included visiting each school to discuss program structure and benefits with the principal and other staff, having current or past UF job-embedded graduate degree students present information about their experiences in the program, producing a video that promoted the ECTLSI program through student testimonials, and holding informal information sessions in local restaurants where prospective candidates could learn more about the program.

Understanding why teachers do and do not apply could help contextualize the disappointing participation statistics and inform future recruitment efforts for FMTI or for similar initiatives. As discussed in detail in the 2012 FMTI formative report, the most frequently cited reasons that Cohort 1 teachers applied for the grant include the fact that the program would be free to participants, the good reputation of UF, the ease of completing the program online, its immediate applicability to their instructional practice, and a personal drive to become a better teacher. Cohort 2 teachers cited many of these same factors when explaining their decisions to apply. For example, as one Cohort 2 teacher explained,

> *I wanted to enhance my practice... I wanted to be a better teacher... not just a better educator. I wanted to be a better leader. I knew this program—researcher, leader, and master teacher. I just wanted to improve on my craft. I've been teaching 16 years. I don't want to say I was in a rut, but I wanted to take it to a different level.*

Cohort 2 teachers, while echoing many of the same reasons for applying to the ECTLSI program, were additionally able to shed some light onto why they applied the second year the grant was offered, but not the first. For example, one teacher explained that the program was not advertised as much for Cohort 1 as it was the year she joined. When recruitment was underway for Cohort 1, she was teaching 4th grade, making her ineligible for the program; however due to the more intensive advertising the following year she asked her school administration if they would move her to 3rd grade if she applied for the program, which they did. This example both underlines the importance of aggressive advertising as well as providing some validation for UF staff's concern that their recruitment strategies did not effectively target early childhood teachers.

Several other Cohort 2 teachers cited their exposure to the program during its first year of implementation—either through participation in the Teacher Fellows program or simply through

hearing about the positive experiences of Cohort 1 teachers—as a motivator for applying for the second round. For example, one teacher said,

> *At first I wasn't sure, I was getting married and I was on the fence, you know it's a lot to take in. But [the first cohort] had so many positive things to say about it, they were so energetic and motivated that I was like "I want to be that, I want to extend my thinking in terms of education"…They were honestly the ones that were like "do it, because it changes your life."*

Similarly, a principal from one of the participating schools described the process as:

> *An evolution, those high-flyers that we have took to it really well and [the other teachers] see the things they've brought to our school and the empowerment and camaraderie they've had, and they see how wonderful the UF people have been, and then people gravitate towards that that want to be a part of something like that.*

Understanding why teachers apply to the program can inform future recruitment, but it is equally informative to understand the barriers that keep them from applying. For both cohorts, the GRE was one of the most difficult dilemmas for program developers at UF. Another challenge is the university's expectation for applying graduate students to have earned a 3.0 grade point average (GPA) in their undergraduate studies. As a land grant institution, part of the UF mission is to work with elementary schools. On the other hand, as a competitively ranked public research institution, UF needs to maintain strong GRE and GPA scores to maintain its standing. Although FMTI cannot waive the GRE or GPA requirements altogether, it does assist candidates in overcoming these barriers. For example, FMTI provides materials and test preparation courses to help candidates pass the exam. It also devised multiple admission plans to facilitate admissions for candidates with weak GRE scores. Plan B is a conditional admittance for those candidates with borderline scores but who had a sufficient undergraduate GPA. They are accepted to the program with certain conditions, one being that they must maintain a B average for their first courses. Plan C is for candidates who need higher GRE scores before they can be admitted. Plan C candidates are allowed to take the first course as non-degree-seeking students while they simultaneously take a rigorous GRE preparation course. Then they have to retake the GRE. Even if their scores remain borderline, it is easier to argue that these candidates will be successful in the program after they demonstrate success in the first courses. Ten teachers took advantage of the Plan C opportunity (two in cohort 1 and eight in cohort 2); which yielded six teachers fully accepted into the ECTLSI program.

Aside from the GRE requirement, some teachers did not apply because they already had a master's degree. Although FMTI does offer a "specialist" degree for participants who already have a master's degree, many teachers cited the combination of already having a master's degree along with having a lot on their plate due to work and personal obligations as their explanation for not applying. A principal at one of the schools with no ECTLSI graduate students explained that her "biggest challenges were that 50% already have a master's degree, and the other 50% did not want to take the GRE. They were afraid or discouraged through the process."

UF faculty were especially disappointed that they were not able to meet their recruitment goal for Cohort 2, given that they had both more time and more experience to improve upon their efforts from the first round. Several UF staff members speculated that they may simply have overestimated the demand for their program from any given school, saying that they had "gone

back to the well too many times." By contrast, one principal believed that if the program continued, his school would continue to field new applicants for the program as his older staff turned over and new teachers joined. From this perspective, the graduate degree model might not have overestimated demand all together, but rather overestimated the size of cohort that could be recruited in any given year.

Another issue with recruitment UF faculty identified was the inability to establish a foothold in some schools. Although the schools applied to be part of FMTI, seven schools ended up with no ECTLSI graduate students. Several UF faculty surmised that these schools, which included transformation schools, may have been pressured to apply by their regional superintendents. Also, they recognized that these schools are already involved in many other school improvement initiatives, which makes it a challenge for them to engage in FMTI programs as well. Program staff speculated that recruitment may have been less challenging if they had made administrative commitment to the program the central criteria for selecting schools. One UF faculty member reflected:

> *I think it's really important that you select schools that truly want to do what you want to do. I'm not sure if we did that right from the beginning, I think there was a lot of care about selecting schools from each region, and for political reasons, each school board member had a certain number of participating schools. It was very careful, but for me the more important thing is—do you [the principal] agree with the model conceptually and are you really going to push it and make it work?*

Similarly, a principal of one of the participating schools argued that the program might have gained better traction in schools if they had more effectively enlisted principals in their efforts.

> *Principals need to be more involved in understanding what this really means so they can be your best ambassadors and your best support system.*

Retention of Graduate Students

A total of 61 teachers (37 in Cohort 1 and 24 in Cohort 2) representing 13 of the 20 treatment schools were admitted into the ECTLSI program. By the end of Year 4, 30 Cohort 1 and 18 Cohort 2 teachers had graduated the ECTLSI program. Thus, 48 of the original 61 teachers (79%) had graduated and were retained until the end of the program.

Fidelity for the ECTLSI Program

By the end of their program, ECTLSI graduate teachers are expected to maintain a 3.0 GPA, complete scheduled classes, attend a facilitator training, engage in formal inquiry projects, and facilitate a Teacher Fellow group, other inquiry group, professional learning community (PLC), or other professional development activity. Data collected show that most teachers who remained in the ECTLSI program did meet the program expectations (Exhibit 2-1). However in Years 2 and 3, only 10 schools had at least two teachers in the program who could work together on coursework and school leadership and research efforts, an important school-level fidelity criterion. Because only 10 of 20 schools had at least two teachers enrolled in the ECTLSI program by Year 2, there was low fidelity for the ECTLSI program overall.

Exhibit 2-1. Teacher Progress in ECTLSI Graduate Program

Elements	Percent of ECTLSI Graduate Teachers Year 1	Percent of ECTLSI Graduate Teachers Year 2	Percent of ECTLSI Graduate Teachers Year 3
	n = 37	*n* = 47	*n* = 48
Maintained a 3.0 GPA	100	100	98
Completed scheduled classes	100	100	98
Completed an inquiry (ever)	93	100	100
Participated in facilitator training (ever)	83	83	100
Facilitated a Teacher Fellow or other professional development group in their school (ever)	77	55	91

Program Strengths

ECTLSI graduate students across both cohorts were overwhelmingly positive about the program. The three most widely cited program strengths were (1) the applicability of the course content to the participants' instructional practices, (2) the collaboration it engendered both within and across schools, and (3) the support the students received from UF faculty, both the professors-in-residence and Gainesville-based faculty.

Applicability. The ECTLSI program was explicitly designed to be job-embedded and to encourage teachers to immediately apply what they learned through their coursework to their own classrooms. As one professors-in-residence explained, "If you are not seeing the value this course has to your practice and it's not immediately impacting your practice, then I'm not doing a good job making that connection for you." This strong emphasis on applicability was extremely well received by teachers across both cohorts. For example, one teacher praised the way the professors facilitated discussions of the course readings, focusing on helping teachers adapt what they learned to their own situations.

Several teachers pointed out how the applicability of the coursework was different from their original education training or other master's degree programs. One teacher explained,

> *When I did my [first] master's, I did so many things and none of them really applied to what I was doing. It gets annoying. The advantage of this program is getting to do things in class that I can implement in my own classroom, it makes it fun and easier to do work and do my assignments.*

Similarly, a teacher from a different school said,

> *When you go to school to learn to be a teacher, you're learning all of these things but you don't put it into practice until you become a teacher. So this is amazing, you just put it in, OK it doesn't work for me, alright let's try something different, and it's all within the class and you're also getting feedback from your classmates.*

Indeed, several teachers referenced the combined benefit of the ECTLSI program's applicability and the collaboration it engenders. These two program features mutually reinforce one another

because teachers are not only able to immediately apply their learnings to their own classroom, but they also are able to get immediate feedback by comparing their strategies with similar or different approaches employed by other colleagues in the program.

Collaboration. The collaborative nature of the ECTLSI program both encourages teachers to learn from one another and helps them to feel less isolated. In schools with more than one participant, many teachers reported working closely together in conducting their inquiries, completing projects and other assignments for their classes, and collaborating on their instructional plans and strategies. For example, one teacher explained:

> *It's really rewarding, it's motivating, you're not just by yourself in the world. With this program you're not alone, everybody is together and we're all having the same issues. "This is how I dealt with it, how did you deal with it? Maybe I should try that. Maybe you should try what I did." And I love that, definitely being part of a team, and that is what education is, we are all a team trying to help our students.*

In one school with a high level of participation in the ECTLSI program (two teachers in Cohort 1 and six teachers in Cohort 2), the participants took the initiative to start their own professional learning community dedicated to offering each other support in their graduate work and strategizing how to translate what they learned in the program to improvements in schoolwide teacher morale. One of the teachers from this school emphasized the importance of the cohort aspect to her overall experience:

> *You could just take the online course and do the work, but it's not the same as doing it with a cohort. Fortunately we have a large cohort of participants in the master's program in this school, we're constantly collaborating about things we need to do for class or reflecting on things we've done in class. And it's easy to do because we're all here together.*

In addition to the benefits of interacting with ECTLSI colleagues within their own schools, several teachers also reported their appreciation of the opportunities the program provides for connecting with colleagues across school boundaries. One teacher explained how the online forum allowed the teachers in her school to "communicate with other professionals, to give our opinion, and get their opinion." Another teacher explained that even though they are often only required to respond to two teachers' posts online, "you want to go back and see what all of them have to say, and sometimes you want to respond to more than two. I love reading what they respond back to me."

Support from UF faculty. The third strength of the program is the support ECTLSI graduate students receive from the professors-in-residence and other UF faculty. They reported that the professors are available and accessible and that they provide meaningful feedback and support for meeting program expectations and requirements. Teachers described the professors as "friendly and easy to contact," "understanding," and "empathetic." One teacher favorably contrasted her experience with the professors-in-residence to her undergraduate experience: "It's not just like you're just another face, you're just another number in passing…sometimes in college that is what I felt…. No, they meet you, they get to know you, they embrace you, they nurture you."

When asked what characteristics allowed them to do their jobs so effectively, both professors-in-residence cited their experience teaching in the Miami public schools as critical to their ability to translate course content to the context in which the ECTLSI teachers are operating. ECTLSI graduate teachers echoed the importance of their professor's prior teaching experience when discussing the strengths of the program. One teacher explained, "they are coming from a situation that is similar so they are relatable." Another teacher emphasized:

> *They were there, so they understand what it is to be working as well as doing your master's. When implementing, sometimes you might not have the environment to do that and they will say, "You know what, let's adapt it for you, let's make it so it works for you in your environment." They're not just like "deal with it." They say, "Let's change it up so you're kind of doing the same assignment but within what you have, what can you do with the group that you have." They are just amazing.*

Program participants also were clear that the professors-in-residence were available to help with any issue, whether it was directly related to the coursework or a more personal issue that was interfering with their coursework. A few teachers had major life events or family emergencies take place while they were in the program. They explained that the flexibility and supportiveness of their professors helped them get through those periods successfully.

Program Challenges

All teachers in the ECTLSI graduate degree program spoke highly of the program and its strengths. A few, however, did bring up challenges. A common challenge was finding time to complete assignments, especially with other school and family obligations. But despite this frequent complaint, teachers largely described the program as "doable," despite how much they had on their plate.

Being designated a school targeted for improvement. As part of its improvement strategy under No Child Left Behind, the Miami-Dade County School District established the Education Transformation Office (ETO) to improve test scores in its lowest performing schools. Teachers working in schools operating under the oversight of the Education Transformation Office (ETO) reported more serious challenges to implementing the new instructional practices learned in their courses. As of the 2013-14 school year, 10 of the 20 FMTI schools were identified as ETO schools because of their persistently low achievement on state standardized tests. One of the professors-in-residence explained that the teachers in these schools are under such pressure, that she cannot push them to the same extent as other teachers:

> *But then you have the ETO students that you have to be very careful with…those you try to support more on the level of inquiry. For example, "well if you are going to have to do that anyway, why don't you do an inquiry on it?" You don't push them as a teacher leader because they are ready to burst. You try to push them as master teachers and teacher researchers.*

Although ETO oversight comes with extra supports for schools such as additional coaches, some teachers reported that the school climate under ETO was not conducive to the type of experimentation advocated by the ECTLSI program. "Everyone is walking on eggshells," one teacher explained. As a teacher from a different school described "coaches [are] all over the

place. And you're being told today is A, and tomorrow is B, and then the next day is C— it's a lot." A third teacher from yet a different ETO school concluded,

> *The biggest barrier in this school is that we're ETO. Since our grade was low performing, we have a lot of restrictions. We're very much scripted to what we need to do, at what time, and how. It's hard to follow those rules and still incorporate the building classroom communities and the feeling of a family when you have 10 minutes for this, 15 minutes for that, and let's move. We're under a lot of scrutiny.*

When the challenges with ETO schools began to surface, UF faculty worked with one of their doctoral students, who runs the elementary division of ETO, to help teachers understand that the ECTLSI program and the goals of ETO can be mutually reinforcing. One Cohort 2 teacher specifically mentioned that this effort helped assuage some of her concerns:

> *Initially it was [challenging], because we didn't know how to channel what we learn into what ETO is expecting of us, but after talking to other teachers in ETO schools and even after the talking to the ETO supervisor, who came out to one of our classes and spoke to us and told us it wasn't something separate and apart. She's in the UF program too. She was saying how everything can be incorporated, it's not one thing versus something else… I don't think it's challenging anymore. I did feel it before, but now I don't.*

A Cohort 1 teacher from the same school discussed how one of the recent ECTLSI courses she took helped her implement the practices required by ETO:

> *Now that we are under ETO they are requesting differentiated instruction, so everything has fallen into place. I just took that course last semester, so I am able to implement that and, because of the course, we were able to put the planning… I know the reason WHY it works, and now I am able to put it in practice because I have the tools.*

Conflicts with principal policies and goals. Another challenge mentioned by some teachers was the conflict between school policies set by a principal and the some of the practices promoted by the ECTLSI program. For example, the practices encouraged around family engagement sometime conflicted with school policies. One teacher described,

> *What I want for this year is to have my parents impact the classroom more, use their funds of knowledge, and having them be part of their children's education. But we sort of have a closed campus, which doesn't really invite parents unless we do a big activity, but we have to jump through hoops to get those things done.*

Similarly, some teachers and program staff mentioned lack of principal buy-in or full understanding of the purpose of FMTI in certain schools being a challenge. For example, one teacher explained,

> *I would say that there is a lack of knowledge about the true purpose of the program…because at times we've been directed with our professional learning communities topics that we should discuss but this is not what we*

are doing, the purpose of the PLC is not to support the administrator's agenda.

Teacher Fellows Program

FMTI seeks to improve the practice of all teachers in its program schools, not just participants in the embedded ECTLSI graduate degree program. The Teacher Fellows program provides a means to reach a broader range of teachers at a less intense and more accessible level than the graduate degree program. Over the course of a year, a Teacher Fellow facilitator, often a teacher in the ECTLSI graduate program, leads a group of teachers at a school through a guided inquiry into their teaching practice. Supported by the facilitator and their peers, participating teachers pose questions or "wonderings" about various areas of student learning that they feel could be improved, select a specific student learning area to improve, research potential strategies for doing so, implement a strategy with their students, assess the impact by collecting and analyzing data, and share the results of this inquiry with their peers. The program culminates in a presentation of the inquiries at the end of the school year at the district-wide Learning Showcase. Teacher Fellows earn a $400 stipend and professional development credit hours for participation. The Teacher Fellows facilitators receive training in facilitation, support, and materials from UF staff, and a $500 stipend.

The Teacher Fellows program has two main components:

- Teacher Fellows professional learning community (PLC) meetings to support teachers in developing, implementing, and reflecting on their inquiries
- The Learning Showcase, which both acknowledges the importance of teachers' inquiries and enables them to share their learning and promising practices with teachers and administrators from other FMTI and Miami Counts schools.

Teacher Fellows PLC Meetings

Most schools ran Teacher Fellows programs and held the required six program sessions, with groups meeting formally about once a month every year. Only one school of the 20 treatment schools did not participate in 2011-12 and two treatment schools did not participate in 2012-13. All the treatment schools participated in 2013-14. A total of 235 teachers participated in the Teacher Fellows program in Year 1, 242 teachers in Year 2, and 320 teachers in Year 3 (this was an average of 30-45% of faculty at these schools).

Most ECTLSI teachers participated in the Teacher Fellows program and often served to lead the groups, serving as Teacher Fellows facilitators. Non-ECTLSI teachers provided a variety of reasons for participating. The most common reasons for participating were prior positive experiences with action research and inquiry, the opportunity for collaboration with other teachers, and the opportunity to examine their own practices. A teacher fellow explained why the Teacher Fellows program was of interest to her:

> *I find the PLCs more helpful than traditional professional development because we [teachers] all have a lot of expertise, we've been teaching for a long time. It's the ability to share our expertise, and knowledge, and best practices that work that we can take or reject. With a professional development you are supposed to be just a recipient of these ideas and implement them and it doesn't work traditionally.*

Learning Showcase

The Learning Showcase is a one-day districtwide conference held in May that provides an opportunity for K-8 teachers, early education teachers, principals, assistant principals, and community involvement specialists to present their inquiry projects to the wider district community. The event acknowledges the efforts of educators to improve their practices and provides an opportunity for educators to share best practices and new innovations in education.

In May 2014, UF and the district hosted the sixth Learning Showcase in Miami, and the third Learning Showcase to involve FMTI schools. The showcase also featured the inquiry projects of educators in from other schools, including schools participating in a related initiative, Miami Counts. In addition, district administrators, including the superintendent, attended the showcase and many of the presentation sessions.

Of the almost 450 attendees at the 2014 Learning Showcase, 294 of them were teacher fellows from FMTI schools. While teachers made up the largest percentage of participants, other staff such as paraprofessionals, community involvement specialists, and administrators from FMTI schools presented as well.

The showcase presentations focused on a broad spectrum of topics, including language arts, math, science, art and technology, early childhood education, student engagement, school culture, special education, and leadership.

The majority of teacher fellows interviewed reported the Learning Showcase to be a positive experience. Teachers spoke positively about the opportunity that the Learning Showcase provided to learn from and share with their peers. Teachers below described their experience at the Learning Showcase:

> *I got to see that something works. You go to workshops and you're always given information… [and] everything looks great… but [you think,] "Yeah, but not with my kids." But it actually works with all levels… of kids… I like having the sessions because you get so much from different teachers. You hear so many different perspectives on things and then you can take that back and say, "I'm going to try this, I'm going to try that, or I'm going to do that differently. Maybe it's not working because of this."*

> *I love going to the showcase and learning about what everyone else is doing. I always walk away with a whole bag of goodies.*

However, some teacher fellows provided mixed or negative feedback on the showcase. Negative feedback included reports that several of the presentations or inquiries were of low quality or were not useful to inform their own practices. As one teacher said, "The other presentations I went to were really disappointing…. The quality of the research and the inquiry itself was not good."

Fidelity of the Teacher Fellows Program

The Teacher Fellows program was conducted with medium or high fidelity all three years in the vast majority of treatment schools, with a growing number of teachers participating each year (235 in Year 1, 242 in Year 2, and 320 in Year 3). This was an average of 30-45% of faculty at each of the schools. The vast majority of teachers who participated in the Teacher Fellows program showed active and consistent engagement. For example, in Year 3, 86% of Teacher

Fellows attended all six sessions, 92% presented at the Learning Showcase, and 90% wrote and submitted a summary of their inquiry (Exhibit 2-2). Of the teachers interviewed, only two mentioned challenges related to completing their inquiry project and both of them said their challenge was related to finding the time needed to complete the project.

Exhibit 2-2. Participation in Teacher Fellows' Activities

Activity	2011-12 Number (*n* = 235)	2011-12 Percentage	2012-13 Number (*n* = 242)	2012-13 Percentage	2013-14 Number (*n* = 320)	2013-14 Percentage
Attended all six sessions	219	93%	228	94%	275	86%
Presented at Learning Showcase	217	92%	238	98%	294	92%
Submitted written summary of inquiry	220	94%	240	99%	288	90%

Data sources: Teacher Fellows sign-in sheet for 2011-12, 2012-13, and 2013-14; administrative data of Teacher Fellows receiving credit and receiving a stipend for participating.

Program Strengths

The majority of teachers spoke positively of their experience in the Teacher Fellows program. Nearly all interviewed teachers had participated in the program for two years and planned to participate again. The aspects of the program that contributed to teachers' positive experience included the layers of support embedded in the program, the clearly structured process and materials available for leading teachers through the inquiry process, and the protocols and time for collaboration.

High-quality training and facilitation. High-quality training and facilitation was important for supporting successful Teacher Fellows programs. The Teacher Fellows program is structured so that Teacher Fellow facilitators receive training in facilitation and support from UF staff, and the teacher fellows receive support from the facilitators and their peers. A Teacher Fellow facilitator said, "I'm the one that is going to support everyone…and say 'You can do it. If you have any problems, I'll try to help you.' Just to be that supportive person."

This tiered structure creates an environment where all participants have resources to draw on as they work together on their inquiry. Reflecting on their past two years as a Teacher Fellow facilitator, a few teachers recalled initially feeling "intimidated" or "nervous" in the role. However, the training and support from the professors-in-residence supported the Teacher Fellow facilitators throughout the process. Furthermore, a few teachers mentioned the importance of trainings in developing their skills to use meeting protocols and effectively run the Teacher Fellow facilitator meetings. One Teacher Fellow facilitator described the importance of the coaches' training played for her:

> *The coaches' training was a huge thing. I didn't know what the protocols were before that and with that we learned community agreements, how to build the relationships with the teachers.*

UF bolstered the support this year by increasing the length of the training and planning session for Teacher Fellow facilitators from two afterschool sessions to two half-day sessions. Teacher

Fellow facilitators also valued having a co-facilitator at their school to engage in the work together.

Clearly structured process and materials. The Teacher Fellows program provides a clear structure for leading teachers through an inquiry project over the course of six sessions. Each session has a clear focus, and Teacher Fellow facilitators are provided materials to support them in leading these sessions. The Teacher Fellow facilitators receive sample agendas, protocols, suggested activities, and readings for each of the meetings. UF strengthened the materials for Year 2 by tailoring them to the local context and providing examples specifically from Miami. Teacher Fellow facilitators reported that having all of these materials helped them feel prepared to lead the Teacher Fellows program. One Teacher Fellow facilitator also noted having all the Teacher Fellows materials available electronically in Year 2 made it much easier for them to find and adapt forms, protocols, and other materials for their Teacher Fellow meetings.

Protocols and time for collaboration. A key aspect of the Teacher Fellows program is the opportunity for teachers to share their instructional practice and learn from each other in a supportive environment. The structure of the program, including the collective establishment of group norms and use of protocols to guide conversations explicitly tries to develop this environment. One initiative leader summarized the benefit of providing time and structure to support deep professional conversation among teachers:

> *Providing teachers with a formal opportunity for meeting, talking and learning from one another is very powerful. As teachers we often walk into the building, nose to the grind and that's it before we come up for air. Because of demands, some of the conversations aren't deep enough and become venting session… [G]iving them tools to have a conversation that it doesn't become a venting session, and giving them a frame to think about their craft and improve whatever they decide, that mechanism is very powerful. I think that's why it's so successful.*

One teacher articulated how the Teacher Fellows program created a space in which teachers' felt safe to share and engaged with their peers:

> *Teacher Fellows brings the school together. You can speak and don't need to worry it will leave the room, and everyone is actively listening. Teachers don't like to share, but UF promotes norms that it's okay to share.*

Teachers also appreciated having specific time set aside to meet as professionals, given the challenges of finding time within the school day to talk with peers. One teacher described this challenge:

> *There is a designated time for collaboration because you know as a teacher it's almost impossible to do that. You're in your classroom with kids and this notion that we are all going to get together and collaborate, well fine, just pay me an extra day and I'll collaborate with the teachers. Our job is to spend time with our students. So having a designated time to collaborate is definitely a plus.*

Program Challenges

While comments about the Teacher Fellows program were generally positive, teachers and FMTI staff noted several challenges.

Some inquiries were of mixed quality. In year 2 of the program, some teachers noted that not all inquiry projects were of high quality. This emerging theme may reflect higher expectations or a deeper understanding of inquiry as the program matured. One teacher believed that some teachers did not present true inquiries into their practice:

> *I would say that the only thing that I was a little on the fence about was that some [presentations] were not inquiry based, it was more like a presentation. They just showed us what they were doing in their classroom but there was no, "This was my question, this is what I implemented, this was my result." It was more like, "This is what we do in our school."*

A few initiative leaders echoed the observation that some of the inquiry projects were weaker than others. Several hypothesized that the stipend attracted some teachers more interested in the money than engaging in a deep inquiry; however, they believe teachers still benefit:

> *The quality of some of the inquiries…is really great, and sometimes not so great…. The majority is good, [but] for people who want $400, it might not be of good quality. At the end of the day I want more quality, but the fact that you sit in six meetings talking about your practice, at the very least…if we increased… discussion that's great. I feel it is giving teachers the idea that research is not scary…and you have power in your classroom.*

> *Like everything you have your bell curve. There are some teachers who are doing their action research and they're trying to find something that will help them, and there are some that are a little more superficial. Perhaps they don't get it or something else. In all, the process and the platform does help everyone, the fact that they get to turnaround and share with colleagues, they find that voice.*

Impacts were limited to participating teachers. Another challenge for the Teacher Fellows program is the difficulty in affecting teachers not participating in the program. The impacts of the Teacher Fellow program remained primarily within the program participants. Spillover effects were restricted due to a lack of opportunities for teacher fellows to share their inquiries with other staff and a school culture of isolation. Two participants talked about these limits:

> *The ones that participate, [Teacher Fellows] has gotten us a little closer… It gives us a bond, just by meeting during fellows meeting. That's why I requested that we try to get whole staff involved.*

> *The teachers more involved in the activities have more of a family feel, more comfy going to each other for advice, but more than half aren't involved.*

When talking about the differential impact on collaboration across grade spans, one teacher implied that pre-existing norms around collaboration partially explained the differences in participation and impacts:

Collaboration is a really positive change because of the Teacher Fellows program. Kindergarten and 1st grade teachers are all involved.... Those two grade levels work really well together as a team. They have good communication. They have less fighting. [I] can't say the same things for upper grades that are less involved. Their collaboration not as strong.

In addition, opportunities to share inquiries with peers within schools were limited. At the end of Year 1, some teachers mentioned plans to share inquiries the following year; however, most of these plans fell through. One school provided time for teachers to present their inquiries to their peers by recreating a mini-showcase within the school. In most schools, however, teacher fellows did not have a venue to share their work with teachers who did not participate in the program.

The time commitment was sometimes a hardship. A few teachers mentioned the time commitment associated with participating in the program as a challenge for completing the inquiry and recruiting teachers to the program. Finding alternative afterschool childcare and needing additional time beyond the Teacher Fellow facilitator meetings to work on their inquiries with their group were the specific reasons mentioned.

Principal Fellows Program

The Principal Fellows program was designed to support principals in adopting a facilitative leadership approach and to enhance their ability to effect change within their schools. The Principal Fellows program has included several components.

- The Principal Professional Learning Community (PPLC), which holds meetings of the principals across the 20 treatment schools facilitated by UF faculty
- The statewide Principal Leadership Institutes, which afford the opportunity for principals to collaborate and share leadership practices with principals from UF's network of partner schools across Florida
- Inquiry projects in which principals can work with each other, with teachers, or on their own to study the effectiveness of new leadership and instructional practices, and opportunities for principals to present their what they have learned at the Learning Showcase.

The ways in which the three components were implemented changed each year based on feedback from participating principals and the district's calendar.

Principal Professional Learning Community Meetings

The frequency, focus, and membership of the Principal Professional Learning Community (PPLC) meetings have changed over the past 3 years. In 2011-12, the PPLC met locally five times during the school year. At the end of Year 1, principals provided feedback to UF faculty that there were too many meetings. Also, it was difficult to attend meetings after school when principals often had to address pressing issues that had arisen during the day. In response, the UF team reduced the number of meetings for 2012-13 from five to four, increased their length from 2 to 4 hours each to allow deeper conversation, and held them in the morning rather than after school to avoid unexpected conflicts. For 2013-14, UF held three PPLC meetings rather than four because the district professional development calendar could not accommodate more.

The focus of the PPLC meetings also changed between Year 1 and 2. The first year of the PPLC focused primarily on having principals learn about and personally experience the inquiry process. All principals were required to conduct an inquiry project and many principals shared their inquiry work at the Learning Showcase. Even though principals reported that the inquiry projects had been valuable, they let UF faculty know that these projects were too much work on top of their heavy workloads. The principals also requested that Year 2 PPLC meetings include more content and resources, such as a book study on appreciative leadership. In response, the UF team decided to make inquiry projects optional and to make the PPLC into more of a learning community that uses the UF protocols to share dilemmas and ideas for how to solve them. In particular, the UF team introduced the protocol of "principal talk." This protocol involves having different principals host each PPLC meeting. The host principal brings in data or a dilemma and shares it with the other principal fellows. The protocol guides the group through an analysis of the issues and possible solutions in a safe and supportive environment.

Finally, the regional or districtwide composition of the PPLC meetings changed from year to year. In Year 1, three PPLC meetings were held by region and two brought all of the principals together as a single group. In Year 2, the UF team held only regional PPLC meetings and combined FMTI principals with principals from the districts' 26 Miami Counts partner school sites in their regions, who were also receiving professional development from the same UF team. For the 2013-14 school year, the UF team has moved away from regional meetings to holding only centrally located meetings with all principals from the 20 FMTI schools.

Statewide Principal Leadership Institutes

Statewide Principal Leadership Institutes are an opportunity for principals to get away from their daily work to focus on learning and sharing practices with principals from other schools and districts. There were two statewide institutes in 2011-12, but only one in 2012-13 and 2013-14 because of conflicts with the district professional development calendar. The institutes in 2011-12 were held in two different Florida locations: Naples and Jacksonville. The focus of the first institute was on inquiry and appreciative leadership and the second statewide institute focused on cognitive strategies to promote student learning and engagement.

In 2012-13, one statewide institute was held in May in Tampa, and included school administrators and district personnel from Hillsborough County Public Schools. The focus was on effective leadership and teacher evaluation. Participants learned about Hillsborough's peer-supported teacher evaluation model through a panel discussion and school site visits. The group also learned about best practices in teacher evaluation from national expert, Dr. Robert Pianta, Dean of the Curry School of Education at the University of Virginia. Dr. Pianta spoke about the importance of using clear concise language and exemplars to facilitate the dialogue between principals and teachers. He also addressed the use of teacher evaluation as a catalyst for professional development.

In 2014 the Principal Fellows attended a leadership institute hosted by Jefferson County Public Schools in Louisville, Kentucky. Jefferson County Public Schools was chosen because of the district being one of the first large districts to adopt and implement the Common Core State Standards. Through interaction and dialogue with key district and school leaders of Jefferson County, the Principal Fellows gained knowledge of implementation successes and challenges, assessment data, and valuable resources to support implementation efforts in Miami- Dade schools.

In 2015, Principal Fellows attended a leadership institute in New York City that also focused on the implementation of Common Core Standards. As a part of the institute, principals and other district administrators visited NYC schools located in Brooklyn, East Harlem, and Queens to observe and discuss strategies being implemented by teachers and administrators around implementation of the standards.

Other Principal Supports

The FMTI team provided other school supports that help principals share leadership and engage in data-driven decision making. One such support has been the administration and analysis of two schoolwide surveys—the School Culture Survey and the Instructional Practice Inventory—that enable data-driven decision making about instruction and schoolwide practices. The IPI is an observational assessment of instructional practices that measures the level of student engagement in learning. The School Culture Survey measures six factors of school culture—collaborative leadership, teacher collaboration, professional development, unity of purpose, trusting relationships between teachers, and learning partnership—and an efficacy factor.

In 2011-2012, most schools participated in the surveys, but fewer did so in 2012-13 (Exhibit 2-3). In particular, many fewer schools implemented the IPI survey.

Exhibit 2-3. Participation in Surveys
(*n* = 20)

	Percentage of schools 2011-12	Percentage of schools 2012-13
Instructional Practices Survey	85%	50%
School Culture Survey	90%	80%

The UF team decided to discontinue doing the two surveys for the 2013-14 year because of the relatively low level of interest from and use of data by principals given the high level of effort and resources required to conduct the surveys. However, the UF team planned to support the few schools that did want to continue to use the IPI survey to track efforts to improve student engagement.

Fidelity of Principal Fellows Program

Participation in the PPLC decreased each year even though there were fewer meetings. In Year 1, almost two-thirds of the principals attended all the PPLC meetings (Exhibit 2-4). In Year 2, none of the principals attended all the meetings and most attended two or fewer of the four meetings. In Year 3, a growing number of principals attended only one meeting.

Exhibit 2-4. Attendance at Principal Fellows Meetings
(*n* = 20)

Number of Principal PLCs Attended	Percentage of Principals 2011-12	Percentage of Principals 2012-13	Percentage of Principals 2013-14
0	15%	20%	20%
1	10%	5%	35%
2	0%	55%	30%
3	0%	20%	15%
4	10%	0%	NA
5	65%	NA	NA

In 2011-12, most of the principals attended both statewide Principal Leadership Institutes, and only 10% missed both institutes (Exhibit 2-5). In 2012-13, a quarter of the principals were not able to attend the one institute held, but the majority (75%) of principals were in attendance. In 2013-14, only half the principals were able to attend the Principal Leadership Institute.

Exhibit 2-5. Attendance at Principal Institutes
(*n* = 20)

Number of Principal Institutes Attended	Percentage of Principals 2011-12	Percentage of Principals 2012-13	Percentage of Principals 2013-14
0	10%	25%	50%
1	20%	75%	50%
2	70%	NA	NA

In summary, implementation of the Principal Fellows program achieved medium or high fidelity in 80% of the intervention schools in Year 1 but was unable to reach a sufficient level of fidelity in enough schools in Years 2 and 3. In Year 3, only 40% of schools met medium or high fidelity on the Principal Fellows Program fidelity measure.

Program Strengths

Almost all principals who attended the PPLC meetings reported enjoying the new format of "principal talk" and felt it helped them develop a trusted professional network of principals who support each other, provide ideas for how to address issues, and share resources. For example, two principals shared the following:

> *One of the things I did like about the format from last year was they were based in a school and the person that was hosting talked about a problem they were having at their school or something that we could all help with, bringing theory to practice, and worked on strategies that could assist that school. They shared good and bad, also what we could learn from them.*

> *I developed more collegial friendships, which is nice because we are a lot of principals in the district, and we have something in common.... It's kind*

of nice because it's a little group that takes care of each other. We have that affinity, that friendship. So you feel safe.

Your day can be full of negativity [as a principal]. You go to a PLC and you have all these things swirling around in your brain, you can vent and get advice, get solutions from other principals…. Everyone pipes in and you hear lots of voices, and it's like you did a month's worth of research and now you're ready to write your paper. I always say, a lot of the time you may be frustrated that you have to come to this morning meeting, but I've never seen it take place with the principals that attend that they don't always leave smiling or saying that it was well worth their time.

Principals mentioned they also enjoyed networking with principals from other regions and that they do not normally get that chance to talk with colleagues outside of their regions. In particular, principals reported that getting outside the Miami-Dade County Public School district and their buildings helped them develop a deeper sense of camaraderie with each other and made them more open to thinking about new strategies.

Program Challenges

The biggest challenge for the Principal Fellows program was a lack of consistent participation by principals. Some of the reasons for decreased participation mentioned by the UF team and principals included the initial negative reaction to inquiry projects required in Year 1, the designation of several schools as ETO schools, which required them to attend to other pressing tasks and meetings, and the lack of a second statewide principal institute, which may have lowered the sense of community among the 20 FMTI school principals.

One principal mentioned conflicts with district requirements leading to his low participation:

The time and timelines [of the PPLC] overlap with other requirements that sometimes interfere with what any person can get to humanly. But I think the portions of the program that I have been involved in have been good.

The FMTI implementation team decreased the number of PPLC meetings to try and make it easier for principals to attend, but that change did not increase participation levels and may have resulted in other unintended effects. For example, one principal reflected on how the change to fewer meetings may have reduced her ability to participate and get the full benefit of the program.

I enjoyed those meetings but I remember I couldn't get to one, and then I felt like I only had two chances to see everyone…. I was probably one of the ones complaining about how it was a lot. But it almost forced you to do something, which was better than having the opportunity not to do something. So for me, in hindsight I would probably prefer to go back to meeting more.

Finally, one principal who was interviewed did not feel that some of the PPLC meetings were relevant for improving practices at his school. He would have preferred a greater focus on analysis of school data and strategies to improve instruction.

Summer Leadership Institutes

Another way FMTI supports more effective school leadership is through an annual multiday Summer Leadership Institute that generates school-specific action plans for the upcoming school year. Each school sent a leadership team, typically composed of the principal, assistant principal, teacher leader (who may be a teacher in the ECTLSI graduate degree program), and school-community liaison (in schools where such a position exists). These teams examined a variety of data on school culture, instructional practices, and student achievement to develop school improvement plans that they take back to their full faculties. Participants also used the summer institutes as a forum to learn about the practices and experiences of other schools in addressing such topics as using student data, protocols for PLC meetings, discipline, and improving school culture.

The 2013 Summer Institute was held in late July. It focused on Appreciative Leadership, a method that identifies the key strengths of an organization and uses them as levers for change. Each school team was asked to define "a big audacious statement" about what they want their school to be, identify their strengths that could be used as levers for change, and narrow their list down to 3 specific strategies. Teams built structures that represented their dreams and visions that labeled all the parts clearly so others could easily understand them. They then used big boards to lay out structured plans for how they will get to their dreams and visions. Teams took both of these items back to their schools to share with the rest of their faculty.

Fidelity of the Summer Leadership Institute

The intent is to have each school team include the principal, assistant principal, and teacher leaders. Schools differ on their team composition in large part because there is never a perfect time during the summer when everyone can attend. The UF team held its first and second Summer Leadership Institutes in June, but changes in principal assignments were made in July after the institutes. As a result, new principals did not have an opportunity to be part of the institute. In response, in 2013-14 school year, the team held the Summer Leadership Institute in late July, but several principals were on vacation at that time.

Although most schools sent representatives to the Summer Leadership Institute (95% of schools in 2013, 85% of schools in 2012, and 95% of schools in 2011), most principals and more than half of the assistant principals did not attend in any given year and participation of school administrators dropped in Year 3 (Exhibit 2-6). However, almost all the schools had teacher leaders present, and more than half included a teacher in the FMTI ECTLSI graduate degree program in July 2013. Also, all the schools present at the institute submitted a school action plan.

Exhibit 2-6. Participation at Summer Leadership Institute
(*n* = 20 schools)

Type of Attendee	2011-12 *N*	2011-12 %	2012-13 *N*	2012-13 %	2013-14 *N*	2013-14 %
Principal	8	40%	8	40%	5	25%
Assistant principal	6	30%	9	45%	7	35%
Teacher leader or community involvement specialist	18	90%	17	85%	19	95%
FMTI ECTLSI graduate program student	7	35%	7	35%	11	55%
No representatives	1	5%	3	15%	1	5%
Submitted school action plan	19	95%	17	85%	19	95%

Program Strengths

Principals and teachers reported being excited about the plans developed during Summer Leadership Institutes. Principals reported the positive hopes they had for these plans and the progress being made on them.

> *Teachers came up with an amazing plan, and they are doing it. It's around building a positive school culture. There was a lot of negative sentiment about becoming an ETO school. Over the course of 3 days they dipped into that and unpacked it. They said let's take the temperature and do a survey at the beginning of the year and come up with different committees to address aspects of school culture. The principal let them do it. I saw her last month and she is very excited about how the plan is going.*

> *At the Summer Institute we developed our focus on unity, and we felt good about our best practices. They gave us a big area to do protocols to build team and unity. We did a few of them at faculty meetings. Then class size hit and it all went down the tubes. The TLSI students are helping me get that moving again.*

> *Our motto is "building a stairway to success" [shows a faculty meeting agenda that has five I's: inspiration, illumination, inclusion, integrity, inquiry]. My leadership team came up with that. It's important enough to me that I want to remind people every time we step into a meeting that I want this to be our driving force. We did a protocol for the five I's, what do they each mean, as part of our opening school debrief with whole faculty.*

> *It was useful work because we geared it towards what we wanted to do in school, 16 habits of mind, and how that tied into our ESAC, our PTA, and getting everyone involved, so it was something that we were able to work on and use as opposed to just doing it for the sake of doing it.*

Some teachers who attended the Summer Leadership Institute reported the meeting was an opportunity to talk about challenges with their school's administration and across schools.

It was wonderful. I loved everything about it. You're with people who are passionate about the same things that you are concerned about…and you are sitting in a room with them and you are hearing powerful stuff, and they are having the same issues that you are having, the same concerns, maybe the same strengths, and you are there to share everything.

Collaboration was the most useful, the ability to collaborate and listen to how other schools are doing things. We don't get a chance to do that.

It was nice to see and hear the different points of view from the different levels. Sometimes they were the same as ours and sometimes they weren't. Opening up lines of communication breaks down the walls.

Program Challenges

Despite high hopes, there were mixed reports from teachers about whether the school action plans developed at the summer institute were actually implemented. Teachers at a few schools reported the plan being successfully implemented. However, most of the teachers interviewed who attended the summer institute reported that it was hard to implement their plans back in their schools because the plans were not fully developed. For example, as shared by two teachers:

I think we wanted more time to think about what they were going to do with our mission. And that is what made it slow to implement when you got back. Your opening school and thinking about another project is impossible unless you have a mind like Einstein's.

Having to implement something you haven't fully fleshed out and opening school, no one is going to do that.

Participation of principals was also a challenge. Many of the principals interviewed did not participate in the 2013-14 Summer Leadership Institute or only attended one day because of conflicts with vacations or other commitments or because they felt it was an opportunity to delegate leadership to their assistant principals or teacher leaders. District leaders, the UF team, and teachers agreed that the Summer Leadership Institute worked best when the principal attended and was invested. They also noted it was a good way for new principals to begin work with their staff. When principals did not attend, teachers developed a school improvement plan that the principal may not buy into. To ameliorate this situation, when a principal did not attend the Summer Leadership Institute, the UF team met with him or her at the beginning of the school year to review with them the school plan that was developed and provided dates and other information about upcoming FMTI activities for the year.

A few teachers reported that without representation from the school administration or broad representation from teachers across grades, it was difficult to develop meaningful school plans and the institute was much less valuable.

Unfortunately, for many reasons, I only had another teacher with me. So really, that whole plan that we did was not effective because the staff who we needed there wasn't. At least one administrator should have been there and at least one person from each grade level.

Summer Institutes could be valuable if you go with principals and the leadership team. The year I went it was with the reading coach… We

wrote a plan during the training, but I just don't remember it being applied.

Program Enhancements

Because of some cost savings due to low enrollment in the ECTLSI graduate degree program, FMTI had surplus resources for the initiative. Based on input from teachers, principals, and the district, the FTMI program staff decided to apply these extra funds to three program enhancements that further promote the goals of the initiative:

- The Assistant Principal Fellows program, which builds the leadership skills and professional support network of assistant principals across the 20 FMTI schools through Assistant Principal Professional Learning Community (APPLC) meetings and an Assistant Principal Institute.
- The Transition to Kindergarten Professional Learning Community, which supports pre-kindergarten and kindergarten teachers in aligning curriculum between the two grades and smoothing the transition for children between preschool and kindergarten.
- The post-baccalaureate (post-bac) program, which offers a non-degree bearing, four-course version of the ECTLSI program designed to help teachers who have participated in the Teacher Fellows program further improve their instructional practice.

Assistant Principal Fellows

The Assistant Principal Fellows program was introduced during the 2012-13 school year to address the needs of administrators holding this unique position in schools. APs' roles and responsibilities are wide ranging – covering everything from curriculum to discipline to day-to-day management. Despite the importance of APs in the successful functioning of schools, district staff explained that APs are often overlooked because most professional development programs target either principals or teachers. As one district official described,

> *Assistant principals at the elementary level are often forgotten in terms of everything. Communications, workshops, trainings, information sessions are all [targeted to] principals. The assistant principal and the principal really need to work as a unit in schools because a lot of times the principal isn't going to be the executive director. The day-to-day operations of schools often fall to assistant principals, who are at times disconnected from the information and the why.*

The idea for creating a fellows program to provide APs with the space and support to develop their leadership skills reportedly evolved organically through feedback program staff received from both principals and APs. The overall input was that APs would benefit from a similar program to the Principal Fellows program that supports networking and skills development. The AP fellows program has two components: APPLC meetings and an AP Institute.

Assistant Principal Fellows meetings. In 2012-13, the APPLC met four times. The all-day meetings were held at varying locations throughout the district. Topics included appreciative leadership, reflective discourse, understanding the significance of learning communities, and identifying strategies for eliminating barriers in their work, among others. Participants also were encouraged to network and to build collaboration among assistant principals within and across

regions. Both district staff and UF faculty were extremely enthusiastic about the addition of the APPLCs. For example, one of the professors-in-residence explained,

> *They are the best group we've worked with. They are so excited. If you know anything about school administrators, the AP is usually the gofer, they fill in the gaps. At the elementary level they do everything from curriculum to discipline. Unlike in high schools, they are usually the only AP in the building. In most cases principals don't treat APs very respectfully and teachers blame them for everything…, They are very isolated. Having a chance to come together with other APs, not in a district meeting where they are just sitting and listening, but in a meeting where they actually get to speak and talk about challenges and support each other—it becomes a support group for these people… They are so hungry for the support of each other.*

In 2012-13, the APPLCs were open to APs from FMTI schools as well as from schools participating in a related initiative, Miami Counts. Among the 25 APs from FMTI schools (several schools employ more than one AP), eight or nine reportedly attended the APPLCs regularly. Low participation rates from FMTI schools may have been due to the nature of the APs' job. One of the professors-in-residence explained that when APs did not attend it was usually because their principal said "no you can't attend because I need you in the building and you can't leave, or because they don't know anyone in that group who gives them a push saying, 'hey come join us, it's really great.'"

Assistant Principal Institute. The first Assistant Principal Institute was held in October 2013 in Gainesville, Florida. The two-day AP institute provided an opportunity for APs to get away from their daily work to focus on learning and sharing practices with APs from other schools. The institute was open to all APs from the FMTI treatment schools but only seven attended. The institute focused on responsive leadership, utilizing the 5 Dimensions of Teaching and Learning Framework developed by the Center for Education Leadership at the University of Washington. The group also learned about the importance of early childhood as a foundation for later school success from UF faculty member and early childhood expert, Dr. Patricia Snyder. Finally, the APs had the opportunity to visit a local elementary school with a well-developed early childhood program, positive school culture, and a strong leadership team. In 2014, the APs traveled to Louisville, Kentucky for the second annual AP i3 Residential Institute, focused on the implementation of Common Core standards.

Transition to Kindergarten PLC

The second FMTI program enhancement is the Transition to Kindergarten PLCs, being implemented at all 20 FMTI schools. Introduced in the 2013-14 school year, the structure of the Transition PLCs replicates that of the traditional Teacher Fellows PLCs—they are inquiry based and operate at the school level. Unlike the Teacher Fellows however, Transition PLCs are only open to prekindergarten and kindergarten teachers (including paraprofessionals) and they are co-facilitated by one kindergarten and one prekindergarten teacher.

Because of their specific emphasis on improving children's transition between pre-school and kindergarten, FMTI district and program staff decided to give the Transition PLC facilitators more structure than Teacher Fellows facilitators by guiding their focus and giving them a list of

three inquiry topics to choose from: social emotional development, aligning standards, or barriers to transition. These topics were chosen because they are grounded in the early childhood literature. As the UF faculty member in charge of content for the Transitions PLCs explained,

> *When we did the facilitator training we did some foundational reading on why this is important and why we are concerned, and then we have ready-to-go, stockpiled readings for whichever topic they pick to support them.*

In general, UF faculty members view the Transition PLCs as an opportunity to place added focus on the early childhood core of the FMTI:

> *It's something we've really wanted to address to a greater extent in the graduate program, but it's been difficult because we don't have that many Pre-K or kindergarten teachers. We do talk about it in the Policy and Transitions course, but it's pitched more as transition between grade levels is always a big change for a child and is always something we should be aware of. But the kind of transition to school work that the district really wanted, we haven't been able to do because we just haven't had Pre-K and kindergarten teachers in large enough numbers. So I think this allows us to address what has very much been a district concern but has been difficult for us to hit in other places.*

At the time we interviewed school staff, the teacher facilitators for the Transition PLCs had attended training sessions but the PLCs had not yet commenced meeting. Although the implementation of the Transition PLCs was only beginning to unfold, there were positive expectations for the program from both district staff and teachers.

Post-Baccalaureate Professional Development

The third FMTI program enhancement is a non-degree bearing, post-baccalaureate (post-bac) program, consisting of four of the core ECTLSI courses. The courses included in the post-bac program are Guided Teacher Inquiry, Culturally Responsive Classroom Management, Differentiated Instruction, and Families. These four courses were selected because of their emphasis on improving teachers' instructional practice. As one UF faculty member explained,

> *We picked courses that were targeted towards improving instruction. They were not supposed to be theoretical courses, they were supposed to be practical, applied courses that will help them improve practice. I think the one exception to that is the inquiry course, because that is really an approach, or a stance towards studying your own practice. We felt that one was critical, because it helps them develop the idea of focusing on their own practice, to help them improve it... So the purpose of the post-bac was really to only focus on the master teacher piece of our three goals.*

The logic behind the creation of the post-bac program was to provide an additional avenue of professional development for teachers that required less of a commitment than the full ECTLSI graduate program, did not require taking the GRE, and was not restricted to teachers in early grades (preschool through third grade). Like the ECTLSI graduate program, the post-bac graduate courses were free to participating teachers.

Because the post-bac course sequence does not lead to a degree, however, participation does not result in salary increases. The incentives to teachers are receiving four graduate courses for free (which is one third of a degree program), trying out a graduate program to see if it's plausible for them, and completing coursework toward recertification (although it is more than is needed).

Despite these benefits, both recruitment and retention were disappointing. Although FMTI had sufficient funding for 40 post-bac teachers, only 17 teachers enrolled. Of those initial 17, five teachers dropped before courses began and one more dropped after the first couple of classes. Consequently, at the time of our data collection, only eleven teachers remained in the post-bac program. When teachers who were not in the post-bac program were asked why they did not apply to the program, most teachers cited their busy schedules or conflicts with their families or personal lives. It is possible that, given how busy teachers are already, an incentive greater than free graduate coursework is necessary to motivate them to add to their already taxing schedules.

Regarding retention, several program staff speculated that in their efforts to reduce the barriers to recruitment, they may have unwittingly created a situation where enrolling was so easy that teachers did not form any attachment to the post-bac program.

> *Our speculation is that people don't feel they have skin in the game if they are not paying for coursework. The entry bar was set so low, they didn't have to take the GRE, no application fee. They are essentially in without any attachment that keeps them there or anything on their part.*

> *The whole program is a freebie to teachers, but if they have to take the GRE and they know if they hang in there they'll have a graduate degree then perhaps there will be a greater degree of commitment of those teachers. If you're handed it and didn't have to do anything, then for some teachers it may not be the same degree of commitment and they don't see a product.*

Chapter Summary

FMTI is a complex and multifaceted initiative. It is comprised of multiple programmatic components, each targeted at different audiences; it is operating in 20 different schools of varying size, demographics, resources, and needs. Still, FMTI partners were successful with offering high quality programs for principals and teachers. All of the courses for the ECTLSI graduate degree program were developed, implemented, and well received. The Teacher Fellows program was successfully implemented in all the treatment schools. The UF team held statewide institutes and local meetings for principals to learn about and observe new leadership practices and develop a professional network and learning community with other principals of FMTI schools. However, recruitment and participation levels in the ECTLSI graduate degree program and Principal Fellows program was a challenge and resulted in the program not achieving the level of implementation fidelity needed to accurately assess the model's impact. Further, requirements related to schools being designated high priority schools by the Educational Transformation Office made implementing some of the instructional practices learned through the graduate program a challenge. FMTI partners responded to these challenges by incorporating new program enhancements and working on the scheduling of program activities to avoid conflicts with other district activities.

3. Impact Analysis: Teachers

FMTI is designed to support the development of a professional learning community among school staff and improve teachers' skills in instruction, research, and leadership. Ultimately these improvements to school culture, teacher leadership, and classroom practice are hypothesized to lead to increased student achievement, stronger emotional and social foundations for student learning, and greater student engagement. This chapter focuses on the short-term teacher and school outcomes. We present the results from two major data collection efforts: (1) pre- and post-treatment surveys of all teachers in treatment and control schools, and (2) observations of classroom instruction for teachers in the job-embedded graduate program and matched comparison teachers in control schools.

Teacher Survey

As described in Chapter 1, the teacher survey was designed to capture teachers' reports on measures related to school culture (i.e., collaboration within the school, trusting relationships between teachers, principal leadership), teacher leadership (i.e., involvement in leadership roles, governance activities, and outreach activities) and teacher instructional practices (i.e., learner-centered instruction, assessment-informed practice, regular use of a variety of assessments, developmentally-appropriate instruction, higher-order thinking skills, differentiated instruction, culturally-responsive instruction, family partnerships, early childhood knowledge, and general teaching knowledge).

We begin by presenting the confirmatory teacher survey results for both the RCT schoolwide analysis (all teachers in treatment schools compared with all teachers in control schools) as well as for the embedded QED that focuses only on treatment teachers who participated in the ECTLSI graduate program (compared with all Pre-K-3 teachers in control schools). For ease of comparison, we present the schoolwide and ECTLSI teacher results side by side for each outcome measure. Next, we present results from an exploratory analysis that restricts the treatment group sample to only teachers in schools that attained medium to high fidelity to the FMTI model. Appendix A provides more detail on the data, sample, baseline equivalence, and analytic approach for each analysis.

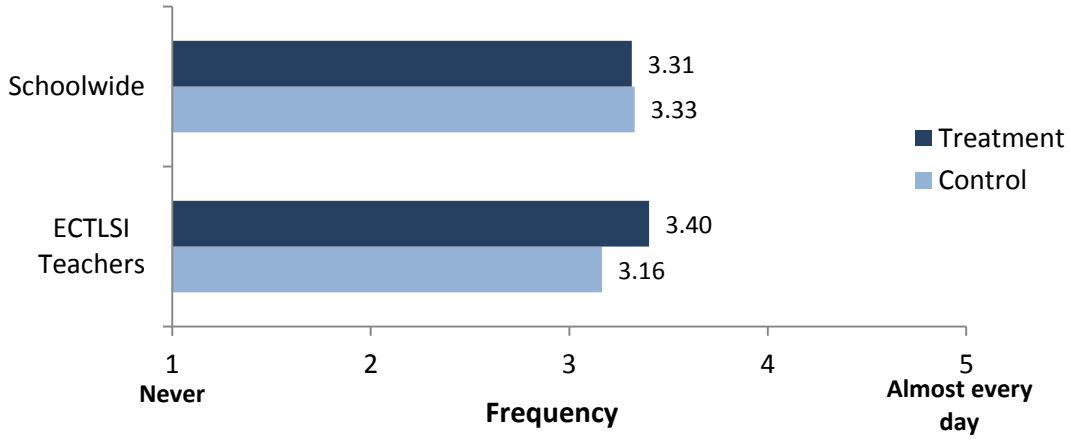
Confirmatory Results

For each outcome, we present the model-adjusted means for treatment (FMTI participants) and control groups. Means presented are adjusted to account for differences in baseline means and teacher demographics that may have existed between treatment and control schools. We found no statistically significant differences between teacher reports on school culture and professional learning community for either the schoolwide or ECTLSI teacher analyses. For self-reported involvement in teacher leadership activities, we found a consistent, positive impact of the FMTI program on ECTLSI teachers, but not on the school as a whole. With regards to classroom practices, we found no significant differences for the majority of outcomes, however we did find that the FMTI program had a small negative impact on schoolwide teacher reports of differentiating instruction and a positive impact on both the early childhood knowledge and general teaching knowledge of ECTLSI teachers.

Collaboration around instruction. Teachers, on average, reported collaborating with colleagues around instruction between once or twice a month and once or twice a week

(Exhibit 3-1). There was no statistically significant difference between teachers in the treatment and control schools in their report of collaboration during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-1. Frequency of Collaboration around Instruction, 2013-14 School Year



Survey Items:

Last year, with other teachers I…

- Discussed what I/they learned at a workshop or conference.
- Shared, discussed, and analyzed student work.
- Discussed and analyzed instructional issues and problems.
- Shared and discussed research on effective teaching methods.
- Developed teaching materials or activities for particular classes.
- Discussed student assessment data to make decisions about instruction.

Scale Points:

1 = Never

2 = A few times a year

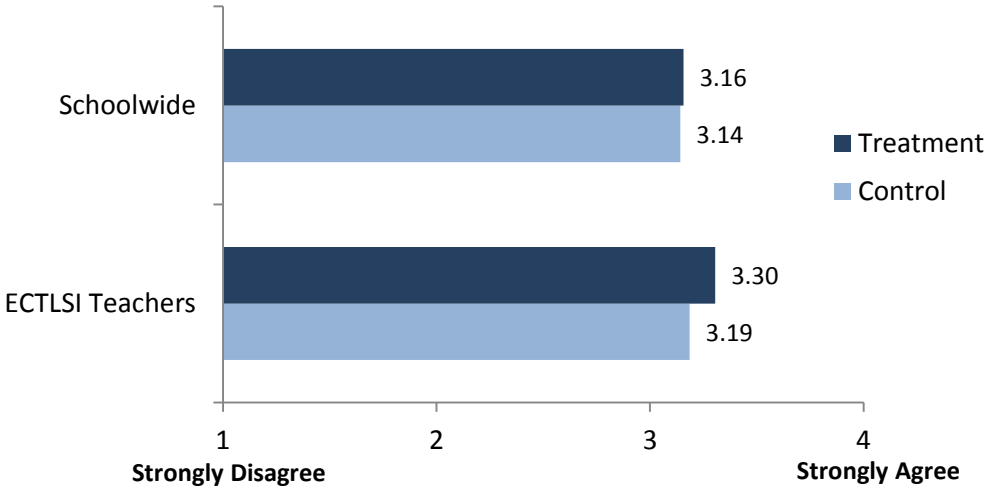
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Trusting relationships between teachers. Teachers, on average, agreed to strongly agreed with positive statements about trusting relationships between teachers (Exhibit 3-2). There was no statistically significant difference between teachers in the treatment and control schools on their perceptions of teacher collegiality during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-2. Trusting Relationships between Teachers, 2013-14 School Year



Survey Items:

Last year, teachers in this school generally…

- Felt supported by colleagues to try out new ideas.
- Trusted each other.
- Felt responsible to help each other do their best.
- Felt comfortable sharing their challenges with each other.
- Were open to advice and feedback from their peers.

Scale Points:

1 = Strongly disagree

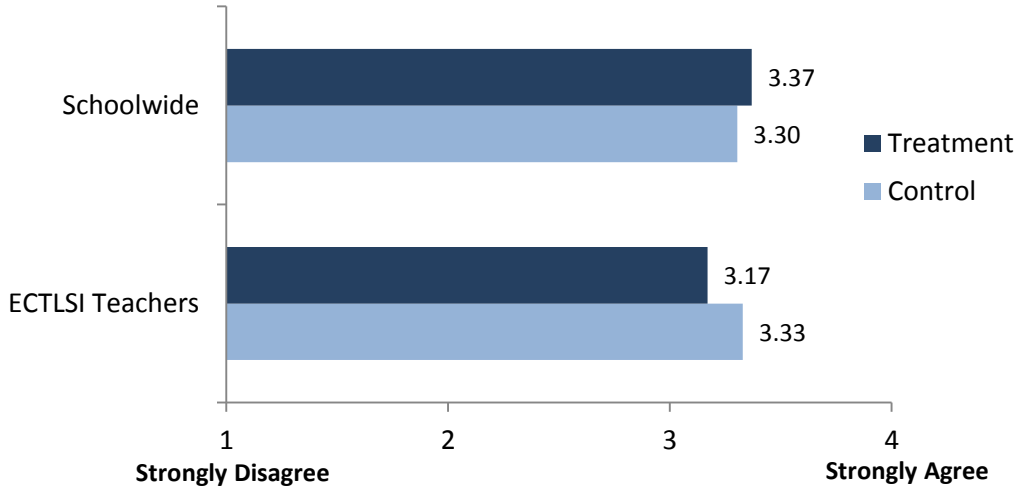
2 = Disagree

3 = Agree

4 = Strongly agree

Effective PreK-3 principal leadership. Teachers, on average, agreed to strongly agreed with positive statements describing their principal's quality of leadership (Exhibit 3-3). There was no statistically significant difference between teachers in the treatment and control schools on their evaluation of principal leadership during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-3. Principal Leadership, 2013-14 School Year



Survey Items:

Last year, the principal at this school…

- Set high standards for teaching.
- Communicated a commitment to high-quality PreK-3 learning.
- Actively monitored the quality of teaching in this school.
- Ensured that teachers had dedicated time for collaboration.
- Encouraged school staff to take on leadership roles.
- Supported successful transitions of students from one grade to the next.

Scale Points:

1 = Strongly disagree

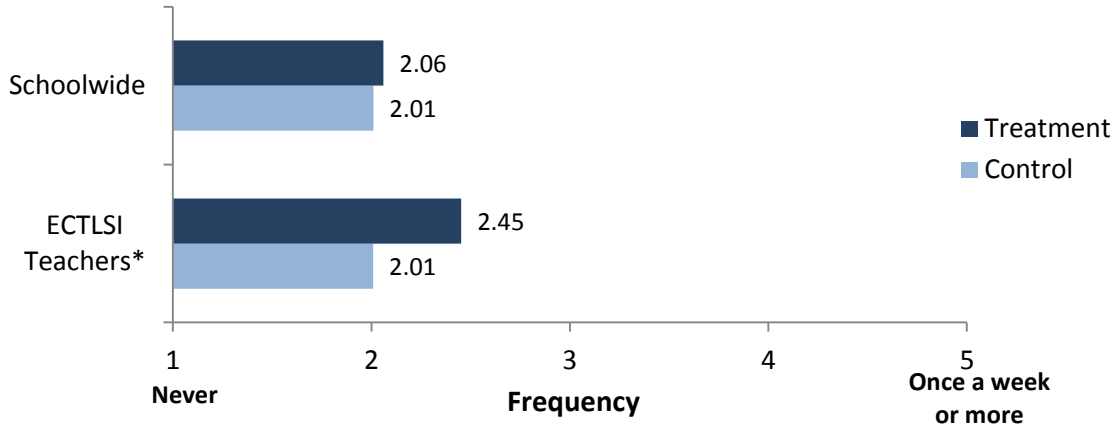
2 = Disagree

3 = Agree

4 = Strongly agree

Teacher leadership. The level of involvement of teachers in teacher leadership averaged around a few times a year (Exhibit 3-4). On average, ECTLSI teachers reported slightly higher levels of involvement in leadership roles than similar teachers in control schools during the 2013-14 school year. However, there was no statistically significant schoolwide difference in involvement in teacher leadership between teachers in treatment and control schools.

Exhibit 3-4. Teacher Leadership, 2013-14 School Year



*$p < .05$

Survey Items:

Last year, I…

- Developed curriculum to be used by a team of teachers.
- Assisted in the design or planning of staff development activities.
- Led staff development activities.
- Facilitated text-based study groups.
- Participated in peer observation, coaching, or modeling activities.
- Facilitated teacher meetings (e.g., grade level, faculty meetings, professional learning communities).

Scale Points:

1 = Never

2 = A few times a year

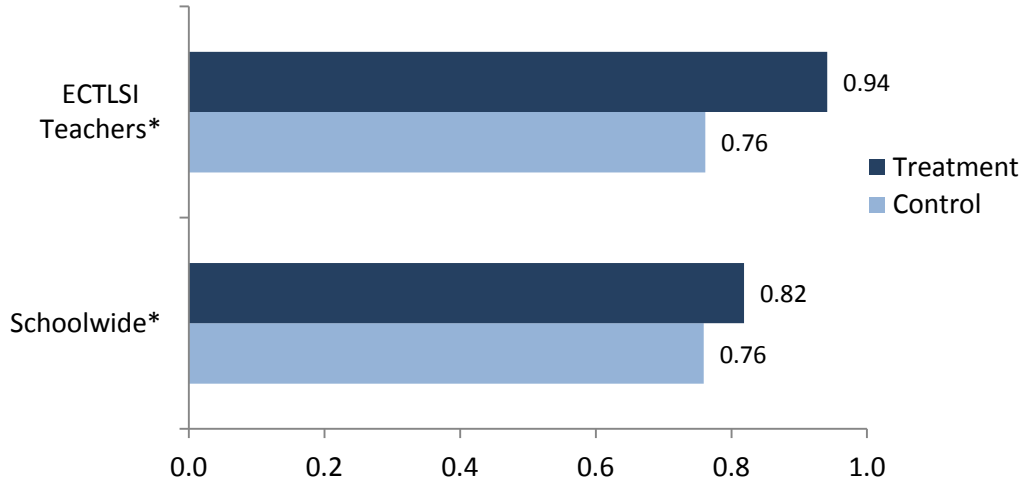
3 = Once a month

4 = 2 or 3 times a month

5 = Once a week or more

Governance activities. On average, ECTLSI teachers were more likely to engage in a governance activity during the 2013-14 school year than similar teachers in control schools (Exhibit 3-5). Schoolwide, teachers in treatment schools were also more likely to report engaging in a governance activity than teachers in control schools.

Exhibit 3-5. Governance Activities, 2013-14 School Year



*$p < .05$

Survey Items:

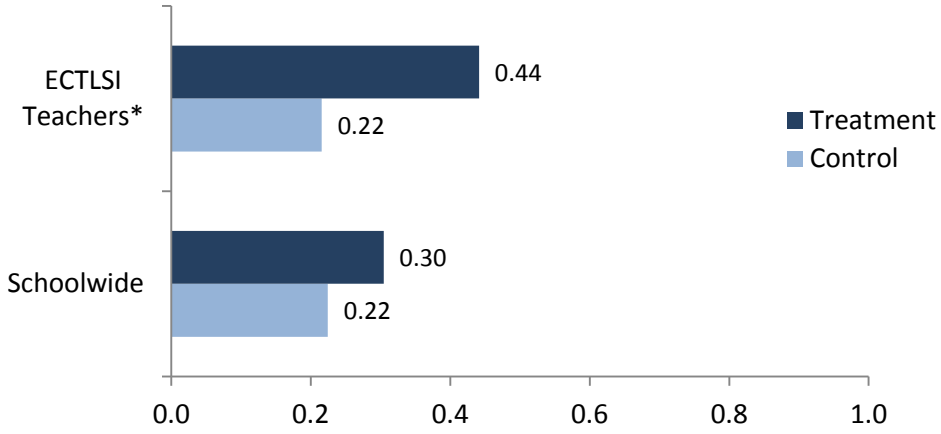
Last year, I…

- Held a designated leadership role in the school.
- Helped decide how discretionary school funds should be used.
- Helped develop the school improvement plan.

This measure is an indicator where Outreach = 1 if a teacher indicated they participated in any of the three activities listed, and otherwise Outreach = 0.

Early learning outreach activities. On average, ECTLSI teachers were more likely to participate in an early learning outreach activity during the 2013-14 school year than similar teachers in control schools (Exhibit 3-6). By contrast, there was no statistically significant schoolwide difference in involvement in governance activities between teachers in treatment and control schools.

Exhibit 3-6. Outreach Activities, 2013-14 School Year



*$p < .05$

Survey Items:

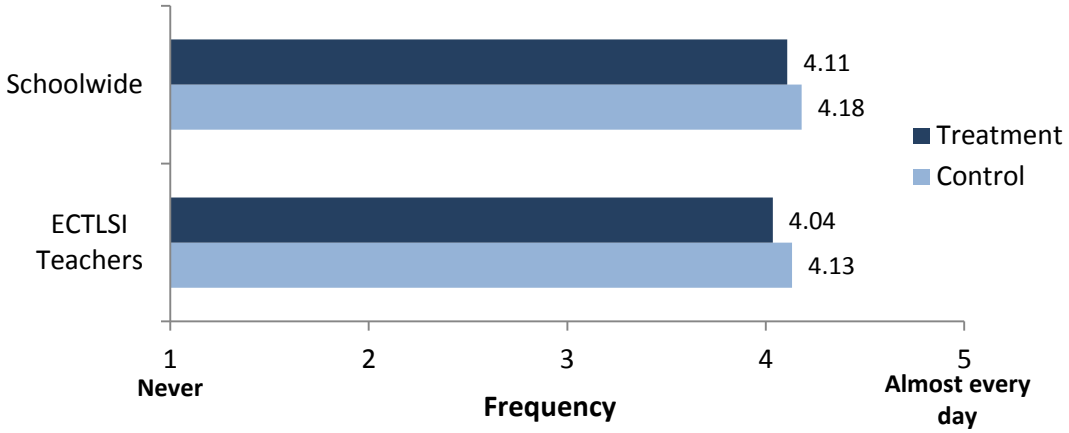
Last year, I…

- Worked with preschool programs or family care centers in my community to promote school readiness activities.
- Promoted linkages between feeder early learning programs and my elementary school.
- Advocated for early learning programs and my elementary school.
- Spoke at school board meetings to advocate for policies, programs, or funding that promote child well-being.

This measure is an indicator where Outreach = 1 if a teacher indicated they participated in any of the activities listed.

Learner-centered instruction. Teachers, on average, reported using learner-centered instructional strategies with students about once or twice a week (Exhibit 3-7). There was no statistically significant difference between teachers in the treatment and control schools in their frequency of engaging in learner-centered instruction during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-7. Learner-Centered Instruction, 2013-14 School Year



Survey Items:

Last year, I asked my students to…

- Make choices about their own activities (what they did and/or how they did it).
- Discuss their ideas and learning with other students in formal groupings.
- Participate in class meetings or discussions to share feelings, solve problems together, or talk about personal interests.

Scale Points:

1 = Never

2 = A few times a year

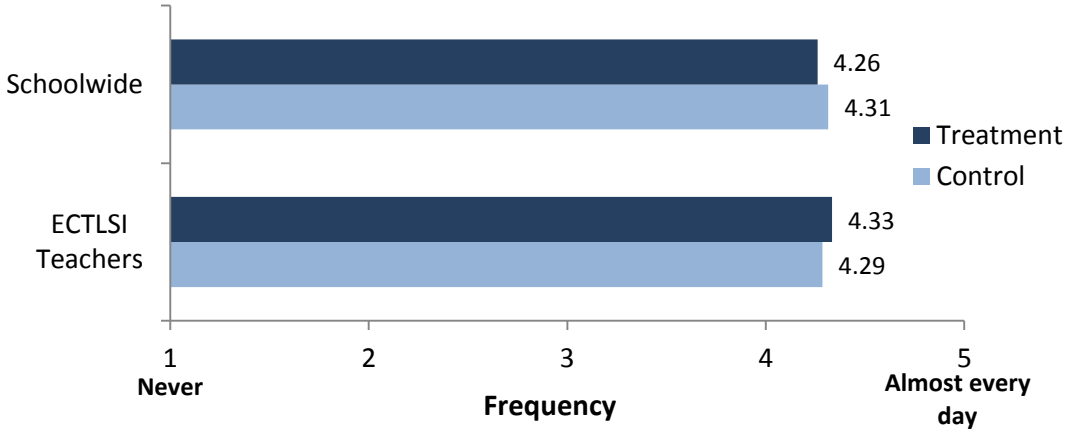
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Assessment-informed practice. Teachers, on average, reported using data to inform practice between once or twice a week and almost every day (Exhibit 3-8). There was no statistically significant difference between teachers in the treatment and control schools in their frequency of engaging in learner-centered instruction during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-8. Assessment-Informed Practice, 2013-14 School Year



Survey Items:

Last year, I used assessment data to…

- Individualize instruction for each student.
- Inform curricular and lesson planning.
- Evaluate the overall effectiveness of my instructional practice.

Scale Points:

1 = Never

2 = A few times a year

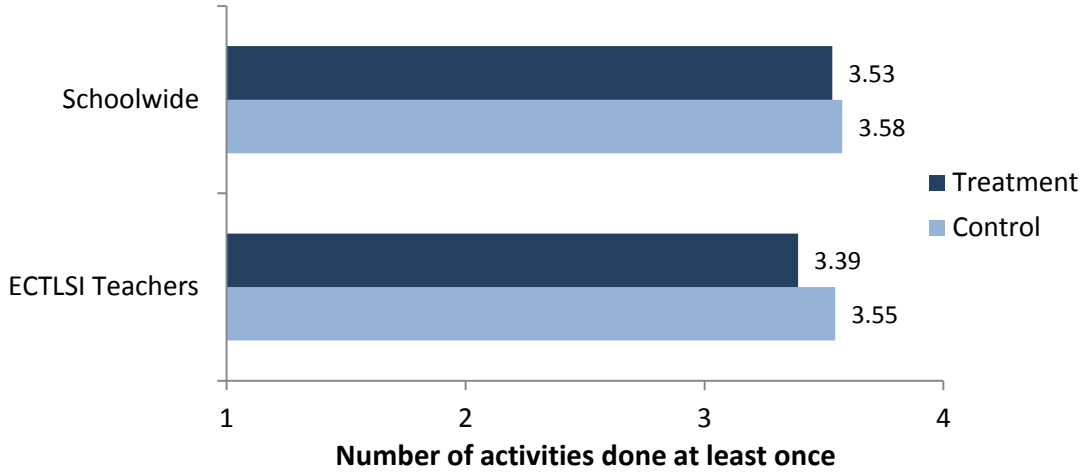
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Regular use of a variety of assessments. Teachers, on average, reported using between three or four (of a total of four) different types of assessment at least once during the 2013-14 school year (Exhibit 3-9). There was no statistically significant difference between teachers in the treatment and control schools on the number of assessment activities used for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-9. Regular Use of a Variety of Assessments, 2013-14 School Year



Survey Items:

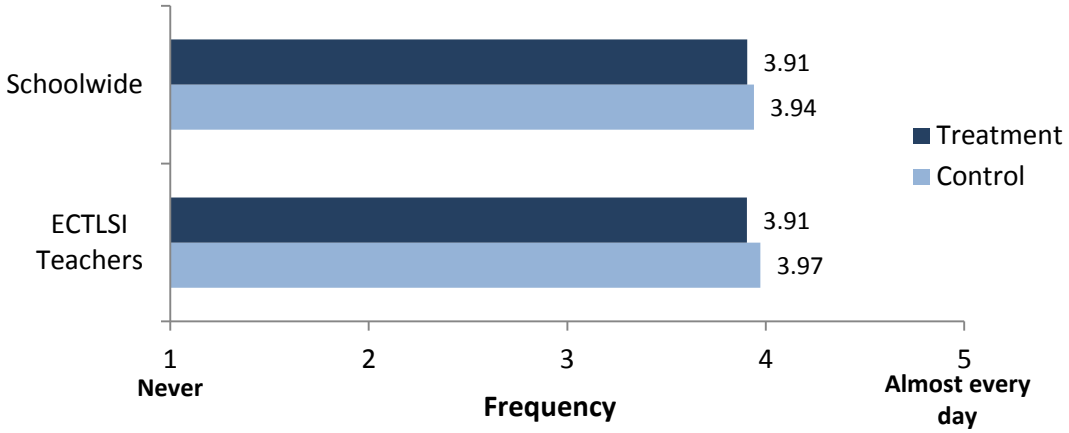
Last year, I used student assessment results to…

- Direct observation looking for specific skills
- Direct assessment or testing (e.g., district tests or chapter tests)
- Ongoing formative assessment (progress monitoring)
- Portfolios of students' work samples

This measure is constructed by counting the number of different activities a teacher did at least a few times a year.

Developmentally appropriate practices. Teachers, on average, reported using developmentally appropriate practices about once or twice a week (Exhibit 3-10). There was no statistically significant difference between teachers in the treatment and control schools in their frequency of engaging in developmentally appropriate practices during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-10. Developmentally Appropriate Practices, 2013-14 School Year



Survey Items:

Last year, I asked my students to…

- Use manipulatives, real objects (e.g., plants, animals), and concrete materials as part of their learning experiences.
- Engage in inquiry through experiments or projects.
- Engage in open exploration or play.
- Listen, sing, and/or move to music as part of my lessons.
- Represent what they learn in ways other than writing (art, constructions, dramatizations).

Scale Points:

1 = Never

2 = A few times a year

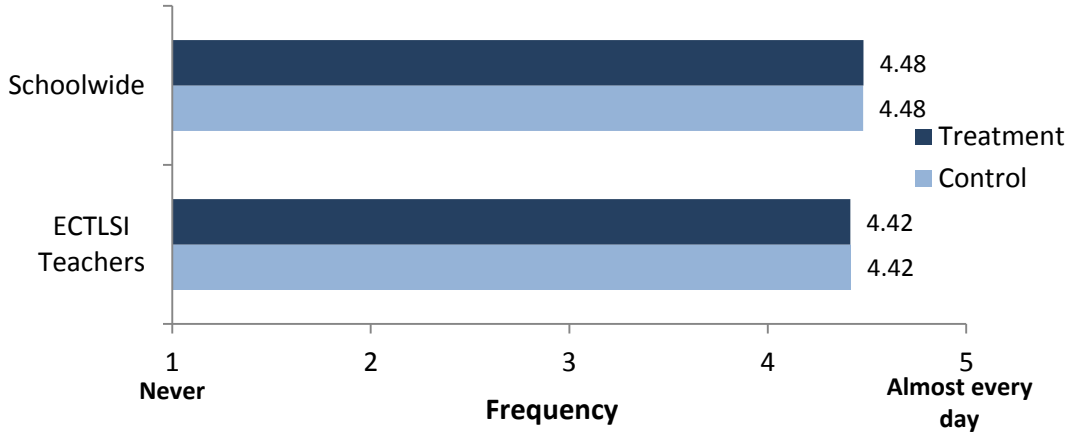
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Emphasis on higher-order thinking skills. Teachers, on average, asked students to engage in higher-order thinking skills between once or twice a week and almost every day (Exhibit 3-11). There was no statistically significant difference between teachers in the treatment and control schools in their frequency of engaging students in higher order thinking skills during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-11. Emphasis on Higher-Order Thinking Skills, 2013-14 School Year



Survey Items:

Last year, asked my students to…

- Discuss possible solutions to problems with other students.
- Think aloud as they tried to solve a problem.
- Apply content knowledge to real-world scenarios.
- Discuss their point of view about something they read or I read to them.
- Discuss connections between a reading and real-life people or situations.
- Generate a prediction or hypothesis.
- Think about the factors that influenced an idea or caused an event to happen.

Scale Points:

1 = Never

2 = A few times a year

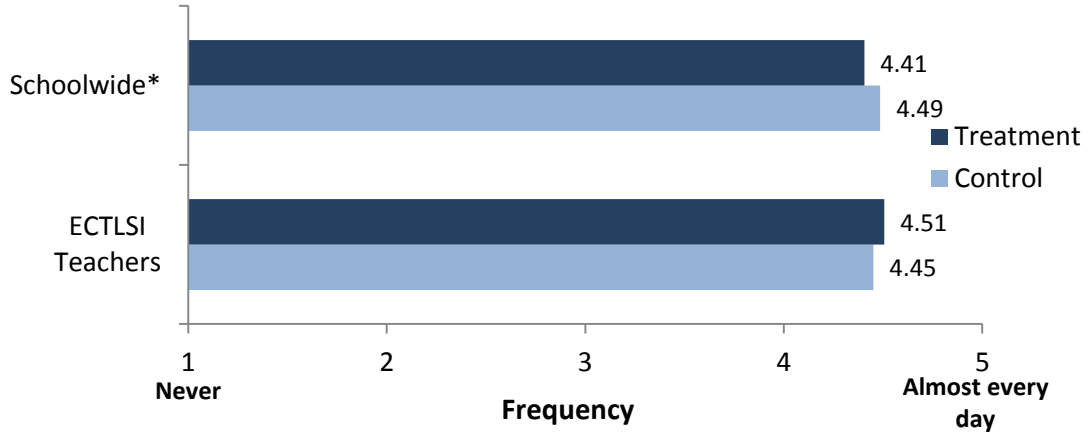
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Differentiated instruction. Teachers, on average, reported differentiating instruction between once or twice a week to almost every day (Exhibit 3-12). Schoolwide, teachers in treatment schools reported differentiating instruction slightly less than teachers in control schools during the 2013-14 school year. There was no statistically significant schoolwide difference in differentiating instruction between ECTLSI teachers and similar teachers in control schools.

Exhibit 3-12. Differentiated Instruction, 2013-14 School Year



*$p < .05$

Survey Items:

Last year, I…

- Used a wide variety of instructional strategies that are related to different learning styles.
- Provided multiple ways for students to demonstrate knowledge and skills.
- Used pre-assessments of students' skills to plan instruction.
- Determined students' interests to help connect learning to their specific interests.

Scale Points:

1 = Never

2 = A few times a year

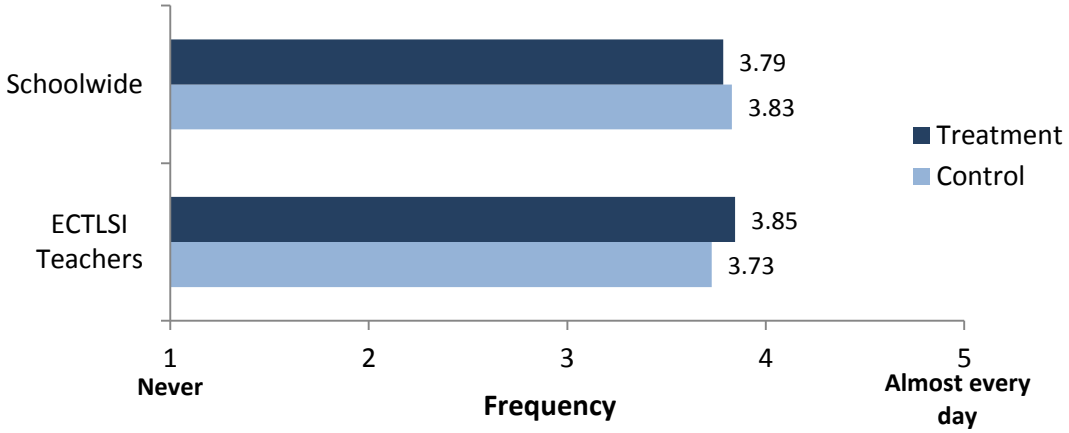
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Culturally responsive instruction. Teachers, on average, reported using culturally responsive instruction between once or twice a month and once or twice a week (Exhibit 3-13). There was no statistically significant difference between teachers in the treatment and control schools in their frequency of using culturally responsive instruction during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-13. Culturally Responsive Instruction, 2013-14 School Year



Survey Items:

In my class last year, I…

- Adapted lessons from texts or curriculum guides to the cultural background of my students.
- Provided opportunities for students to value and explore diversity (such as cultural heritage) in themselves and others.
- Used instructional activities that build on home and family experiences.
- Used classroom materials that reflect the backgrounds and experiences of my students (e.g., pictures of familiar places).

Scale Points:

1 = Never

2 = A few times a year

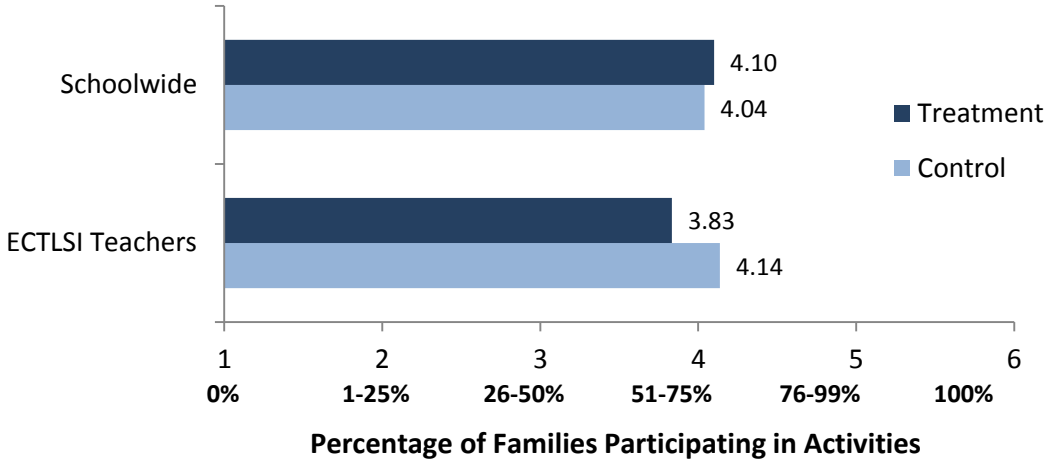
3 = Once or twice a month

4 = Once or twice a week

5 = Almost every day

Family partnerships. On average, teachers reached out to roughly 51-75% of families through multiple methods (Exhibit 3-14). There was no statistically significant difference between teachers in the treatment and control schools on the proportion of families to whom they reached out during the 2013-14 school year for either the schoolwide or ECTLSI teacher analyses.

Exhibit 3-14. Family Partnerships, 2013-14 School Year



Survey Items:

Last year, to reach out to parents, I…

- Called or sent a personal note/email to discuss a concern.
- Called or sent a personal note/email to share positive news.
- Talked with them informally before or after class.
- Sent home activities for them to do with their children to support student learning.
- Used school-based resources such as a Community Involvement Specialist to reach out to families.

Scale Points:

1 = 0% of families

2 = 1-25% of families

3 = 26-50% of families

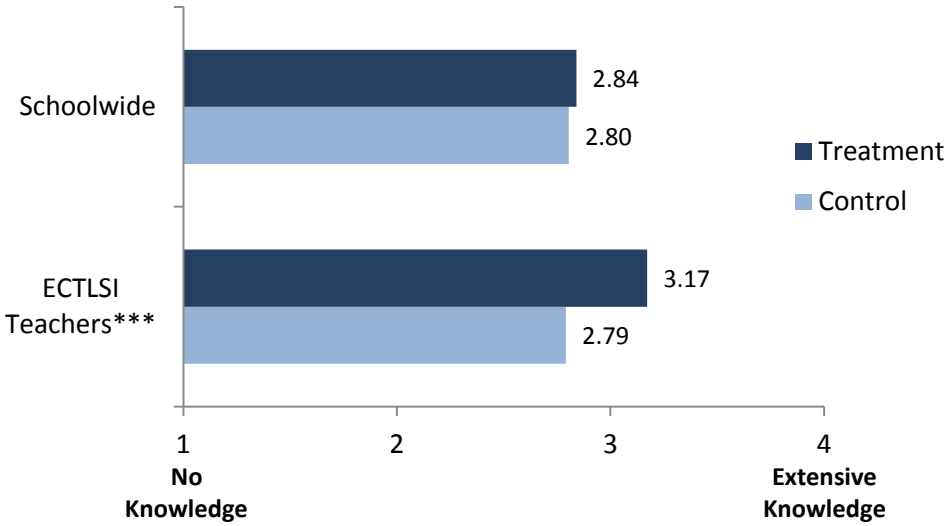
4 = 51-75% of families

5 = 76-99% of families

6 = 100% of families

Early childhood instructional knowledge. Teachers, on average, reported close to moderate early childhood content knowledge (Exhibit 3-15). On average, ECTLSI teachers reported slightly higher levels of early childhood knowledge than similar teachers in control schools during the 2013-14 school year. There was no statistically significant schoolwide difference in self-reported early childhood knowledge between teachers in treatment and control schools.

Exhibit 3-15. Early Childhood Knowledge, 2013-14 School Year



***$p < .001$

Survey Items:

My current level of knowledge of…

- Early child development from birth to age 5.
- Child assessment.
- Strategies for promoting family engagement.
- Florida Early Learning and Developmental Standards for 4-year-olds.

Scale Points:

1 = No knowledge

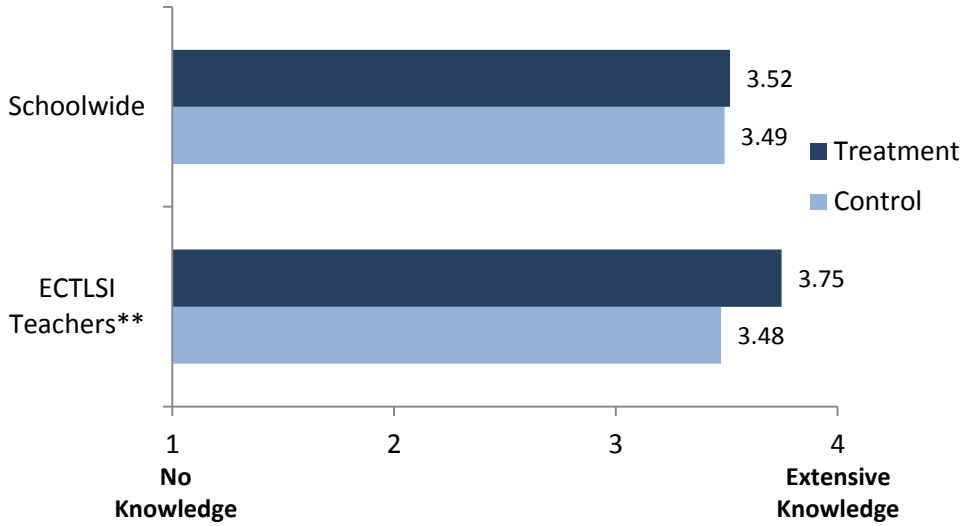
2 = Minimal knowledge

3 = Moderate knowledge

4 = Extensive knowledge

General instructional knowledge. Teachers, on average, reported moderate to extensive general instructional knowledge (Exhibit 3-16). ECTLSI teachers reported slightly higher levels of general instructional knowledge, on average, than similar teachers in control schools during the 2013-14 school year. There was no statistically significant schoolwide difference in self-reported general instructional knowledge between teachers in treatment and control schools.

Exhibit 3-16. General Instructional Knowledge, 2013-14 School Year



**$p < .01$

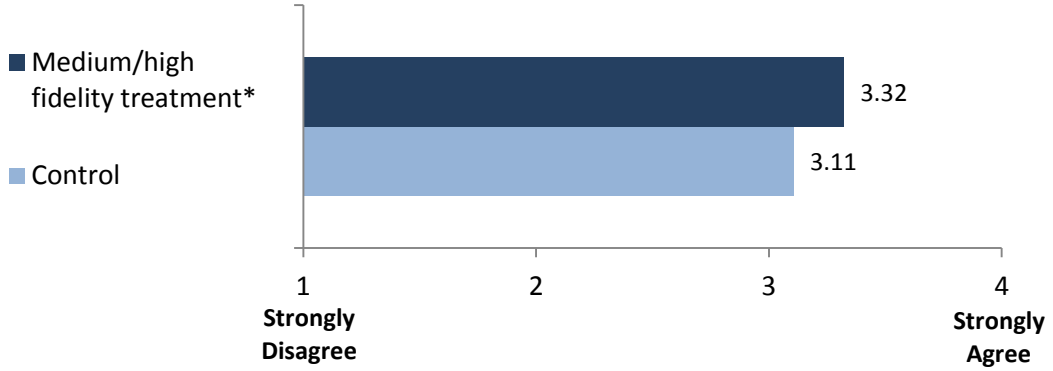
Survey Items:	Scale Points:
My current level of knowledge of… • Strategies for using ongoing student assessment to plan instruction. • Strategies to create a positive learning environment. • Strategies for integrating curriculum. • Florida Early Learning and Developmental Standards for 4-year-olds	1 = No knowledge 2 = Minimal knowledge 3 = Moderate knowledge 4 = Extensive knowledge

Exploratory Results

In the section below, we present data from the exploratory analysis of the impact of FMTI on the subset of FMTI schools with a medium to high implementation fidelity rating. Here we present only the schoolwide analysis. We found no statistically significant differences between teachers in FMTI schools and those in control schools on the majority of outcomes, but found statistically significant positive findings for teachers in the medium and high fidelity FMTI schools on trusting relationships between teachers, teacher leadership, regular use of a variety of assessments, and family partnerships. In the interest of parsimony, we present results for significant findings only. Appendix C presents model estimates from all exploratory analyses.

Trusting relationships between teachers. Teachers, on average, agreed to strongly agreed with positive statements about trusting relationships between teachers (Exhibit 3-17). Teachers in the medium/high fidelity treatment schools reported somewhat stronger teacher collegiality during the 2013-14 school year than teachers in the control schools.

Exhibit 3-17. Trusting Relationships between Teachers, 2013-14 School Year, Medium/High Fidelity Schools



*$p < .05$

Survey Items:

Last year, teachers in this school generally…

- Felt supported by colleagues to try out new ideas.
- Trusted each other.
- Felt responsible to help each other do their best.
- Felt comfortable sharing their challenges with each other.
- Were open to advice and feedback from their peers.

Scale Points:

1 = Strongly disagree

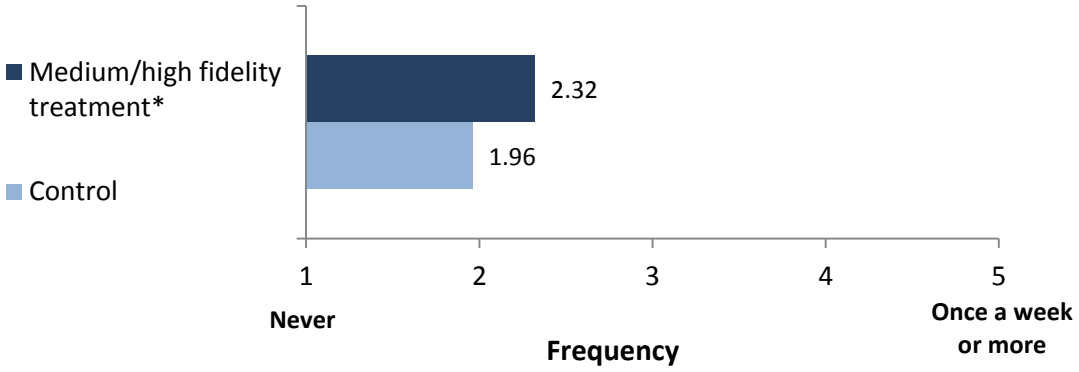
2 = Disagree

3 = Agree

4 = Strongly agree

Teacher leadership. The level of involvement of teachers in teacher leadership averaged around a few times a year (Exhibit 3-18). Teachers in the medium/high fidelity treatment schools reported slightly more involvement in teachers' leadership activities during the 2013-14 school year than teachers in the control schools.

Exhibit 3-18. Teacher Leadership, 2013-14 School Year, Medium/High Fidelity Schools



*$p < .05$

Survey Items:

Last year, I…

- Developed curriculum to be used by a team of teachers.
- Assisted in the design or planning of staff development activities.
- Led staff development activities.
- Facilitated text-based study groups.
- Participated in peer observation, coaching, or modeling activities.
- Facilitated teacher meetings (e.g., grade level, faculty meetings, professional learning communities).

Scale Points:

1 = Never

2 = A few times a year

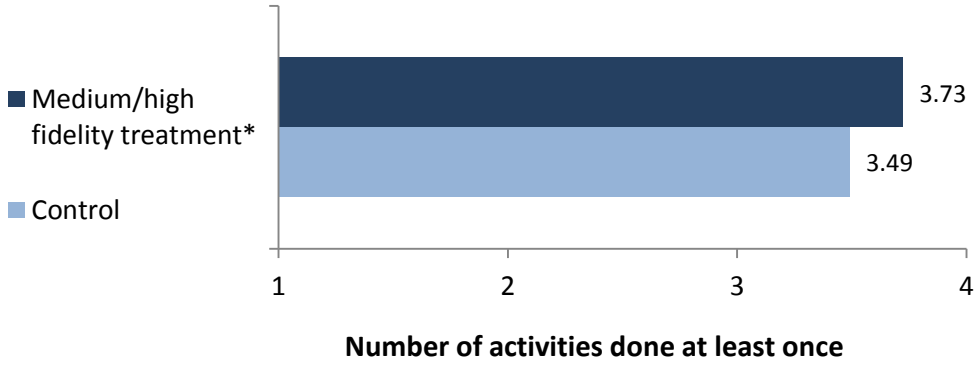
3 = Once a month

4 = 2 or 3 times a month

5 = Once a week or more

Regular use of a variety of assessments. Teachers, on average, reported using between three or four (of a total of four) different types of assessments at least once during the 2013-14 school year (Exhibit 3-19). Teachers in the medium/high fidelity treatment schools reported using slightly more types of assessment than teachers in the control schools.

Exhibit 3-19. Regular Use of a Variety of Assessments, 2013-14 School Year, Medium/High Fidelity Schools



*$p < .05$

Survey Items:

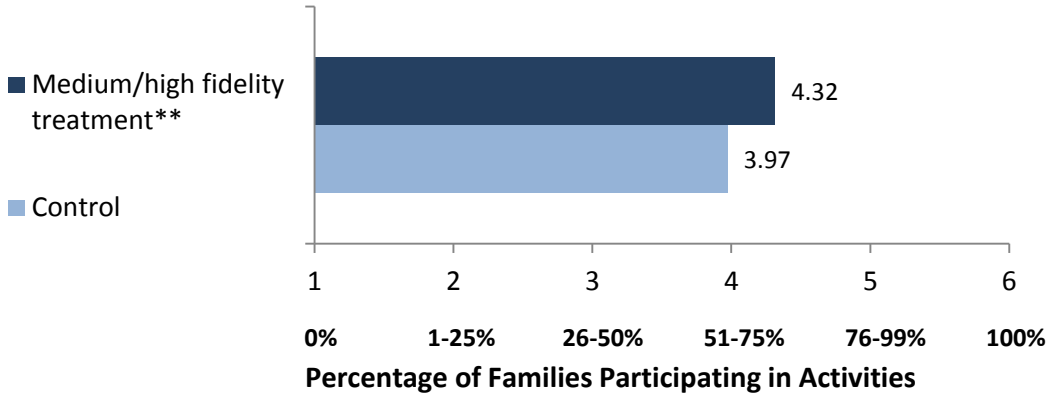
Last year, I used student assessment results to…

- Direct observation looking for specific skills
- Direct assessment or testing (e.g., district tests or chapter tests)
- Ongoing formative assessment (progress monitoring)
- Portfolios of students' work samples

This measure is constructed by counting the number of different activities a teacher did at least a few times a year.

Family partnerships. On average, teachers reached out to approximately 51-75% of families during the 2013-14 school year through multiple methods (Exhibit 3-20). The teachers in medium/high fidelity treatment schools reached out to a slightly higher percentage of families than teachers in the control schools.

Exhibit 3-20. Family Partnerships, 2013-14 School Year, Medium/High Fidelity Schools



**$p < .01$

Survey Items:

Last year, to reach out to parents, I…

- Called or sent a personal note/email to discuss a concern.
- Called or sent a personal note/email to share positive news.
- Talked with them informally before or after class.
- Sent home activities for them to do with their children to support student learning.
- Used school-based resources such as a Community Involvement Specialist to reach out to families.

Scale Points:

1 = 0% of families

2 = 1-25% of families

3 = 26-50% of families

4 = 51-75% of families

5 = 76-99% of families

6 = 100% of families

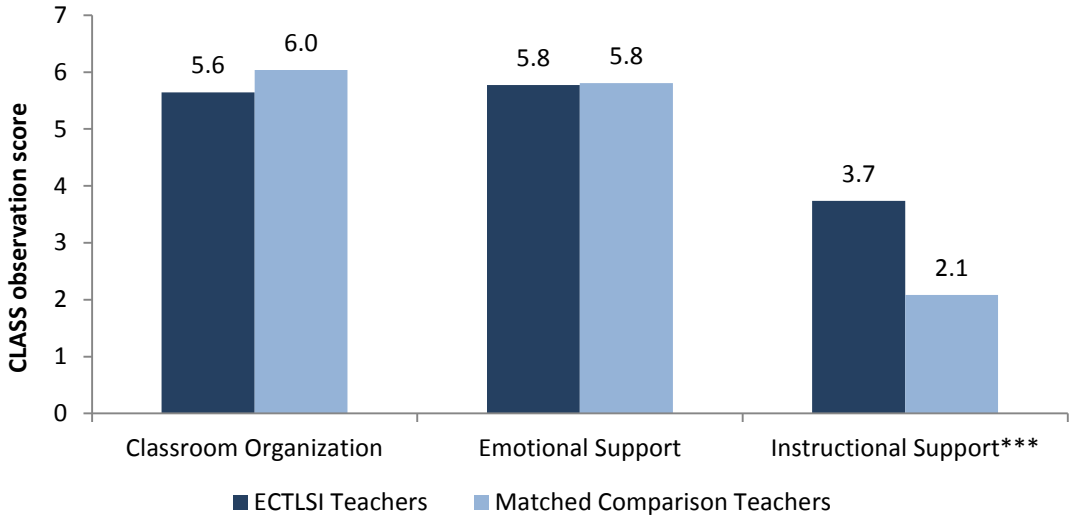
Classroom Observations of ECTLSI Teachers and Matched Comparison Teachers

The ECTLSI program aims to develop a cadre of teachers with deeper knowledge of the early learning foundations promoted by the FMTI, as well as strong research and leadership skills at each school. By design, these teachers received a much more intensive treatment than non-ECTLSI teachers in treatment schools and were consequently expected to make the strongest improvement to their instructional practice. To understand how the FMTI program impacted the classroom instruction of ECTLSI teachers, researchers conducted and scored classroom observations of ECTLSI teachers and a group of matched comparison teachers located within control schools at two points in time using the Classroom Assessment Scoring System (CLASS). A baseline observation occurred early in the teachers' first year of the program and a follow-up observation occurred toward the end of the program. For more detail on the data collection, scoring, sample attrition, baseline equivalence, and analytic approach, please see Chapter 1 and Appendix A.

Due to the differential attrition between treatment and control groups for the follow-up classroom observations, described in Chapter 1, it is possible that the results from this analysis may be biased. For example, if control teachers who agreed to be observed at follow-up are those who made more recent progress than teachers missing their follow-up observation, the control group may appear artificially positive on classroom instruction practice as compared to the treatment group. Although we used propensity score weighting to balance baseline observation scores with a standardized mean difference of greater than .25, this kind of selection bias on the outcome may not be adjusted away.

Below we present a graph with the findings from the classroom observations (Exhibit 3-21). For each domain observed, we present the model-adjusted means for treatment (ECTLSI teachers) and control groups. The analysis did not find statistically significant differences between the ECTLSI teachers and their matched comparison teachers on emotional support or classroom organization domains. However, we did find a statistically significant positive impact of the FMTI program on the instructional support domain. The ECTLSI teachers were found to have performed 1.7 points better than the matched comparison teachers on the instructional support domain (Exhibit 3-21).

Exhibit 3-21. Mean CLASS Scores, for Master's Teachers and Matched Comparisons, 2013-14 School Year



***$p < .001$

Chapter Summary

The evaluation found that most schoolwide outcomes related to school culture and instructional practices did not differ between treatment schools and comparison schools as measured through a teacher survey, but there were a few positive and significant results for teachers in medium or high fidelity schools compared to teachers in comparison schools. Also, ECTLSI teachers—those receiving the most intensive professional development—outperformed their matched comparison teachers on the instructional support domain of the CLASS and more of the practices measured by the teacher survey. While not conclusive about the effectiveness of FMTI, these findings are promising.

4. Impact Analysis: Students

The ultimate goal of the FMTI program is to improve student outcomes. This chapter presents results from analyses examining the impact of FMTI on student reading and math test scores. We present the results of the schoolwide analyses of all students in treatment schools compared with all students in control schools for the RCT, as well as results from the embedded QED that focuses only on students who were taught by treatment teachers who participated in the ECTLSI program. Please see Appendix A for detailed descriptions of the analyses.

Schoolwide Impact on Student Achievement

This section presents analyses of reading and math test scores of students in schools randomly assigned to treatment and control conditions in order to estimate the schoolwide impact of FMTI on student achievement. For these analyses, we included students who were enrolled in treatment and control schools in grades Pre-K through 2 in the spring of the baseline year (2010-11), right before random assignment took place. We examined their achievement outcomes three years later in 2013-14, when they were mostly in grades 2-5[3].

Confirmatory Results

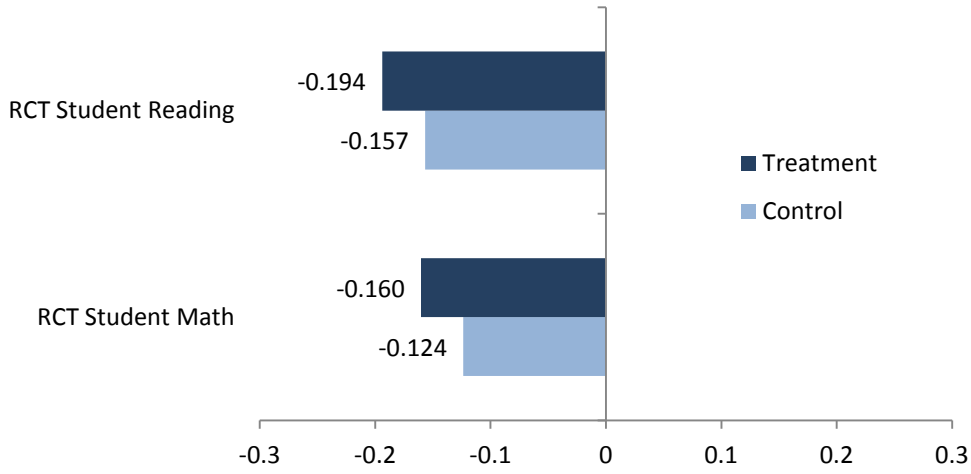
The confirmatory analysis estimates the impact of FMTI on all students in grade Pre-K to 2 at baseline. It is an intent-to-treat analysis that includes students who changed schools during the intervention period, which provides an unbiased estimate of the impact of schools being randomly assigned to the treatment versus control group on all students at baseline.

For reading and math separately, we present the model-adjusted means for treatment students in FMTI schools at baseline and control students in control schools at baseline. We did not find statistically significant differences in student reading and math achievement between those in FMTI and control schools. Appendix C presents model estimates for confirmatory analyses.

[3] We included baseline Pre-K students who were retained and were in first grade in 2013-14.

Exhibit 4-1. Model-adjusted Outcome Scores for Schoolwide Impact Analysis

Student Math and Reading, 2013-14 School Year



Exploratory Results

The exploratory analyses investigated the impact of FMTI on all students in grades Pre-K to 2 at baseline who stayed in the same schools over the three years of intervention, and on those who also stayed in the same schools with medium/high fidelity of program implementation. These exploratory analyses provide insights into FMTI's impact on students who received treatment for the maximum amount of time and on those who received prolonged treatment in schools that truly implemented the program. Neither analysis found statistically significant differences in student reading and math achievement between FMTI and comparison schools. Appendix C presents model estimates for all exploratory analyses.

ECTLSI Teacher Impact

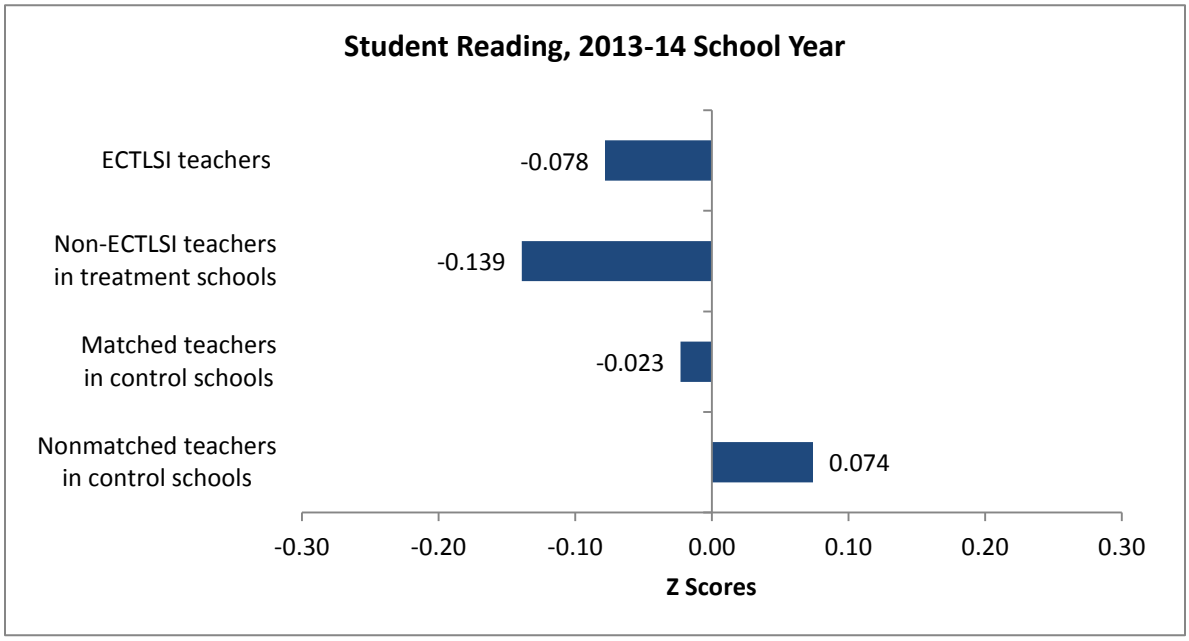
The confirmatory analysis of ECTLSI teacher impact compared the reading and math test scores of first- to third-grade students between ECTLSI teachers and matched comparable teachers in control schools, adjusting for differences between non-ECTLSI teachers in treatment schools and non-matched teachers in control schools (i.e., a difference-in-differences analysis). This analysis examined whether there was an ECTLSI teacher impact on student outcomes on top of the FMTI schoolwide impact. We included in the analysis teachers who were linked to students with reading and math test scores in 2013-14, and who also had baseline survey data so that we could match ECTLSI and control-school teachers. We examined student achievement outcomes in 2013-14, after students had received instruction from ECTLSI and comparison teachers for a year.

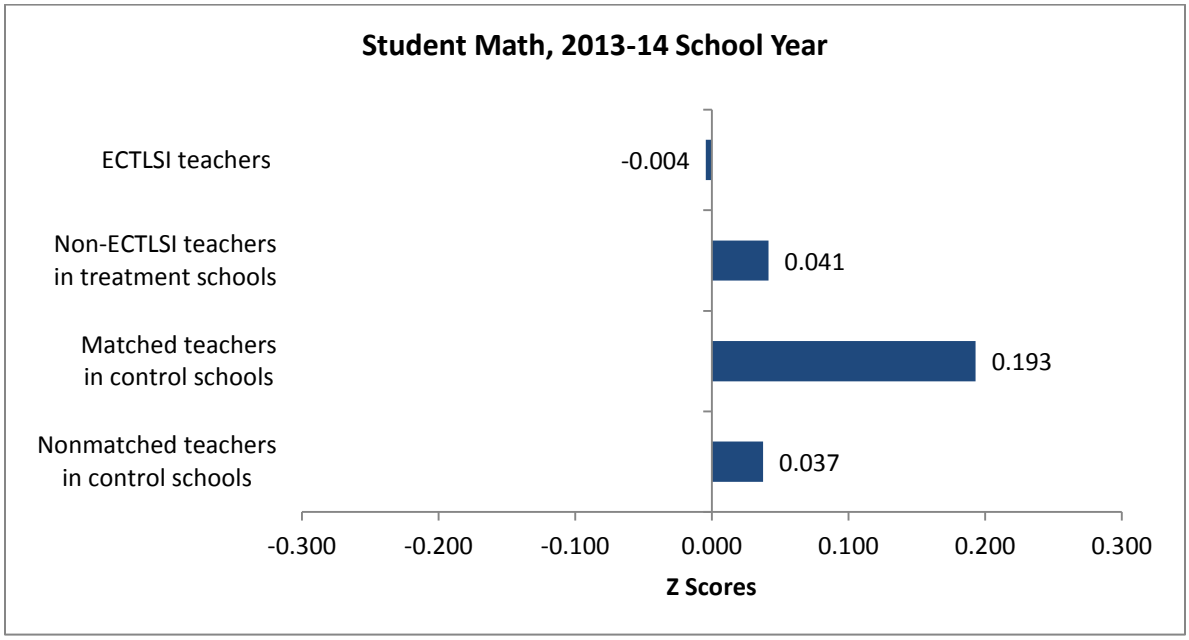
Confirmatory Results

We present the model-adjusted means for reading and math separately by the four groups of teachers in the difference-in-differences analysis: ECTLSI teachers, matched teachers in comparison schools, non-ECTLSI teachers in treatment schools, and nonmatched teachers in control schools. We did not find statistically significant differences between ECTLSI and matched teachers, adjusting for the differences between non-ECTLSI teachers in treatment

schools and non-matched teachers in control schools. Appendix C presents model estimates for from all confirmatory analyses.

Exhibit 4-2. Model-adjusted Outcome Scores for ECTLSI Teacher Impact Analysis





Chapter Summary

There were no significant differences between students in treatment and control schools on math or reading achievement. These findings were consistent for all analyses conducted.

5. Conclusion

Even though FMTI partners were successful at launching their four-pronged program, recruitment and participation levels in the ECTLSI graduate degree program and Principal Fellows program were a challenge and resulted in the program not achieving the level of implementation fidelity needed to accurately assess the model's impact. Further, requirements related to schools being designated high priority schools by the Educational Transformation Office made implementing some of the instructional practices learned through the graduate program a challenge.

With this less than optimal implementation of the program, most of the desired outcomes were not achieved. Most of the school culture, teaching quality, and instructional practices measured by the teacher survey did not change as a result of the program. There was growth in teacher participation in governance activities in FMTI treatment schools but a slight decline in their use of differentiated instruction.

A more positive story emerged for FMTI treatment schools that achieved medium or high fidelity of implementation across the three years. Exploratory analyses found positive changes in trusting relationships between teachers, participation in leadership roles, family partnerships, and use of a greater variety of assessments in schools with medium or high fidelity of FMTI implementation compared to control schools.

The evaluation also found some significant impacts on teachers who participated in the ECTLSI graduate program. Specifically, ECTLSI teachers had slightly higher levels of involvement in leadership roles, self-reported early childhood knowledge, self-reported general instructional knowledge, participation in governance activities, and engagement in outreach activities than similar teachers in control schools. The ECTLSI teachers also improved the quality of their instructional support compared to matched teachers based on the CLASS.

The evaluation found no significant differences in reading and math achievement between students in treatment and students in control schools, between students in treatment schools with medium or high fidelity and students in control schools, or between students who had an ECTLSI teacher and students who had a matched comparison teacher.

While the full implementation of the FMTI model could not be tested through this evaluation, there are many lessons it can provide for other teacher quality improvement efforts. For example, the evaluation elucidates the influence of district and state mandates for turning around low achieving schools and how these mandates can conflict with recommended schoolwide and classroom practices. It shows how difficult it is for principals to find time outside of their school duties to engage in professional learning, but the value they find in those learning opportunities when they are able to engage in it. It also shows the demand teachers have for professional learning that they find applicable to their instructional practices and that fosters collaboration. Finally, it shows how high-quality facilitation, materials, and processes enable productive teacher learning.

The FMTI evaluation was not sufficiently robust to definitively determine the effectiveness of the program. However, pockets of positive, significant findings suggest that the initiative may have potential to change instructional practices, although the changes in instructional practices may not be strong or relevant enough to change student achievement. Importantly, the evaluation has illuminated lessons gleaned from FMTI about how to effectively provide job-embedded

professional development—a model that still holds great promise—that can be used to support other teacher quality improvement efforts.

Appendix A. Methods

The methods used for the formative, implementation fidelity, schoolwide impact, and ECTLSI impact evaluations are described below and displayed in a timeline in Exhibit A-1.

Formative Evaluation

In Years 1 and 2 of FMTI's implementation, SRI conducted a formative evaluation to learn about the program's implementation, accomplishments, challenges, and strengths to support program refinement, replication, and the sharing of lessons learned with the field of education. The formative evaluation collected data through district and school staff interviews and a review of program documents.

SRI conducted semi-structured interviews in spring of 2012 and fall of 2013 with key informants, including principals, teachers participating in the Teacher Fellows and ECTLSI program, district staff managing the initiative, and UF faculty. At the school level, interview topics included professional background, participation in the various FMTI programs (e.g., Principal Fellows, summer Leadership Institute, and graduate degree program), challenges to participation, perceived impacts and benefits of the program on staff and students, teacher community and collaboration, and kindergarten transition and parent outreach. At the initiative level, interviews focused on supports and challenges for implementation, perceived impacts of the initiative on participating schools and the district as a whole, coordination and collaboration across initiative partners, as well as plans for sustainability.

SRI researchers conducted interviews in six of the 20 schools participating in FMTI. Sampled schools represented the four geographic regions of the M-DCPS district and varied in levels of participation in the FMTI (e.g., from schools that had several teachers in the ECTLSI graduate program to schools that had no teachers in it). In spring 2012, we interviewed 19 teachers, including eight teachers enrolled in the ECTLSI graduate degree program, and all the school principals. In fall 2013, we interviewed 23 teachers, including ten teachers enrolled in the ECTLSI graduate degree program, and all the school principals. The ECTLSI graduate degree program teachers were equally representative of teachers who started the program in 2011 (cohort 1) and those who started in 2012 (cohort 2). We also interviewed district staff managing the initiative and UF faculty, including professors-in-residence and developers of the ECTLSI graduate degree courses.

The formative evaluation also included a review of program documents, including "The Link," a periodic newsletter about FMTI published by UF, the Learning Showcase program, and ECTLSI course curricula.

Fidelity of Implementation

The implementation study examined the research question: What is the fidelity of implementation of the Florida Master Teacher Initiative for each key program component? To measure participation and fidelity, SRI worked with the program developer, the University of Florida, to identify types and intensity of activities in each of the program components believed necessary to bring about the desired changes and outcomes outlined in the program logic model. These assumptions were used to develop the fidelity measure included in Appendix B. SRI collected administrative data on participation in the various program components. The fidelity measure and findings are included in Appendix B.

Exhibit A-1. Data Collection Schedule for 5-year Project

	Year 1				Year 2				Year 3				Year 4				Year 5			
	2010	2011			2011	2012			2012	2013			2013	2014			2014	2015		
	F	W	Sp	S	F	W	Sp	S	F	W	Sp	S	F	W	Sp	S	F	W	Sp	S
					C1: Graduate Program Cohort 1 (Sept 2011 - May 2014)															
									C2: Graduate Program Cohort 2 (Sept 2012 - May 2015)											
Interviews							● Apr-May		● Oct											
Teacher surveys				● Aug													● Aug			
Teacher observations					● C1 Oct				● C2 Oct								● C1&2 Oct			
Participation data								●				●				●				
Student achievement analysis																	●			

*__F__ = October, November, December; __W__ = January, February, March; __Sp__ = April, May, June; __S__ = July, August, September

Fidelity was measured in all 20 schools implementing the intervention. To construct fidelity scores, data were collected on teachers' participation in the Teacher Fellows Program; teachers' participation and performance in the ECTLSI program; principals' participation in the Principal Fellows program; and administrators' and teachers' participation in Summer Leadership institutes. Fidelity scores were used to assess and report whether each key component of the Florida Master Teacher Initiative components were implemented with fidelity in at least 75% of the treatment schools.

Schoolwide Impact

The FMTI program was conceptualized as a full-school intervention. Thus, SRI researchers designed the schoolwide impact study to examine the effect of FMTI on all teachers and students in the target grade levels (pre-kindergarten through fifth grade) of treatment schools. The schoolwide impact study includes both confirmatory analyses that include all schools and students randomized to treatment and control conditions and exploratory analyses that focus on estimating the effect of the program under ideal conditions such as in medium- to high fidelity schools or for students who remained in the same school for the full, three-year intervention period. In this section, we describe the initial school sample selection, random assignment procedures, and data collection and measures for the schoolwide impact study. Then we describe the analytic approach for each set of analyses. For analyses with high attrition we also present measures of baseline equivalence.

Sample Selection

Miami-Dade County public elementary schools were eligible for the study if they were Title I schools with a pre-kindergarten program, had at least four teachers interested in the graduate program, and had no previous experience with FMTI professional development opportunities through a similar effort, Ready Schools Miami.

The district held a meeting with principals to explain the criteria for participation and sent letters to all the principals inviting them to participate with the goal of recruiting 50 schools. The total elementary schools and K-8 centers that were eligible to participate in FMTI was 133. A total of 40 elementary schools, 10 short of the initial goal, agreed to participate in the study and to participate even if they were assigned to the control rather than the treatment condition. The control schools received the status-quo professional development offered by the school district and received $1,500 for their participation in the evaluation.

Random Assignment of Schools

Prior to randomization, the 40 study schools were blocked by region and also by voting district within region if a region-voting district block had more than one school. There are five regions and nine voting districts in the Miami-Dade County school district, defined by location and feeder patterns. The racial/ethnic composition of the student populations varied across regions; however, study schools in all regions were Title I schools. Among the regions and voting districts covered by the 40 study schools, some region/voting district combinations only had one school each, in which case we ignored the voting district in blocking. Using this strategy we came up with 13 blocks. Schools within each block were randomly assigned to either the intervention or control condition, with 20 schools assigned to the intervention condition and 20 schools assigned to the control condition.

Because random assignment with only 40 schools cannot guarantee well-balanced treatment and comparison schools in all important school characteristics, we conducted the randomization of schools six times and selected the assignment that yielded the best balanced groups. For each of the six randomization outcomes, we compared school demographics in both conditions (e.g., 3rd grade reading and math achievement; ethnic composition; percent eligible for free and reduced price meals; percentage of dual language learners; school size). Test scores in third grade reading and math were given the most weight in determining group equivalence. The outcome that yielded the most equivalent intervention and control groups was selected for the study.

Measures and Data Collection for Schoolwide Impact Evaluation

To assess impacts on teachers and students, we collected teacher surveys and analyzed student standardized test performance data in both treatment and control schools.

Teacher surveys. SRI conducted a survey of all teachers in both intervention and control schools at baseline (late summer/early fall 2011) and at post-test (late summer/early fall 2014).

Target sample: SRI administered the teacher survey to all teachers at a school with instructional responsibilities who had taught at the same school the prior year. Following survey administration, we removed non-classroom teachers (e.g. media specialists, instructional coaches, special area teachers) and administrators from the survey sample and any teachers who had not taught at the school during the prior year. Only Pre-K through 5th grade classroom teachers were included in the final sample.

Administration procedures. Prior to administration, rosters for teaching staff were collected for all schools. For the baseline survey, SRI prepared a survey packet for each teacher listed on the school roster and provided extra surveys for new teachers. SRI worked with the principal at each school to identify a person who would serve as the survey administrator. This person received the survey materials, distributed the surveys to teachers, collected completed surveys in sealed envelopes, tracked which teachers returned surveys, entered the names of new teachers on a roster tracking sheet, and mailed all surveys (both completed and noncompleted surveys) back to SRI. SRI provided a $50 gift certificate in appreciation for the survey administrator's help. Most surveys were conducted during staff meetings that took place on the two teacher workdays prior to students beginning school. Some schools distributed the surveys at meetings early in the school year. All schools completed baseline surveys by late September 2011. The majority of schools returned follow-up surveys by early October 2014. One school did not complete the survey until early November 2014. The survey asked teachers about the prior school year; therefore, the later completion of the surveys should not have made a significant difference. Exhibit A-2 shows the response rate for 2011 and 2014 for the target teachers.

Exhibit A-2. Teacher Survey Response Rate

	2011 Treatment	2011 Control	2014 Treatment	2014 Control
Total survey eligible respondents	685	712	643	692
Total number of respondents	596	631	565	634
Responses rate	87.0%	88.2%	87.9%	91.6%

School culture and instructional practice measures. The survey asked teachers to rate statements about school culture and their instructional practices on 4- and 5-point Likert scales (e.g., the extent to which they agree/disagree with statements and the frequency of specific practices). From the post-test teacher survey, measures of school culture and instructional practice were constructed using the constructs named in the FMTI logic model as a guide. Construction of the final school culture and instructional practice measures were based on a statistical analysis of the pre-test teacher survey data. Those factors on the pretest survey with an internal consistency score (i.e., Cronbach Alpha) of greater than .7 were deemed reliable measures.

Exhibit A-3. Survey Teacher Outcome Measures

Construct	Cronbach's Alpha, std	Survey Items
Frequency of Collaboration around Instruction	0.90	Mean of the following: - Discussed what I/they learned at a workshop or conference. - Shared, discussed, and analyzed student work. - Discussed and analyzed instructional issues and problems. - Shared and discussed research on effective teaching methods. - Developed teaching materials or activities for particular classes. - Discussed student assessment data to make decisions about instruction.
Culturally Responsive Instruction	0.89	Mean of the following: - Adapted lessons from texts or curriculum guides to the cultural background of my students. - Provided opportunities for students to value and explore diversity (such as cultural heritage) in themselves and others. - Used instructional activities that build on home - Used Classroom materials that reflect the background and experiences of my students.
Differentiated Instruction	0.74	Mean of the following: - Used a wide variety of instructional strategies that are related to different learning styles. - Provided multiple ways for students to demonstrate knowledge and skills. - Used pre-assessments of students' skills to plan instruction. - Determine students' interests to help connect learning to their specific interests.
Assessment - informed practice	0.80	Mean of the following: - Individualize instruction for each student. - Inform curricular and lesson planning. - Evaluate the overall effectiveness of my instructional practice.

Construct	Cronbach's Alpha, std	Survey Items
Developmentally Appropriate Practice	0.89	Mean of the following: - Use manipulatives, real objects (e.g., plants, animals), and concrete materials as part of their learning experiences. - Engage in inquiry through experiments or projects engage in open exploration or play. - Listen, sing, and/or move to music as part of my lessons. - Represent what they learn in ways other than writing (art, constructions, dramatizations).
Family Partnerships	0.82	Mean of the following: - Called or sent a personal note/email to discuss a concern. - Called or sent a personal note/email to share positive news. - Talked with them informally before or after class. - Sent home activities for them to do with their children to support student learning. - Invited them to help out in my classroom. - Used school-based resources such as a Community - Involvement Specialist to reach out to families.
Emphasis on Higher-Order Thinking Skills	0.89	Mean of the following: - Discuss possible solutions to problems with other students. - Think aloud as they tried to solve a problem. - Apply content knowledge to real-world scenarios. - Discuss their point of view about something they read or I read to them. - Discuss connections between a reading and real-life people or situations. - Generate a prediction or hypothesis. - Think about the factors that influenced an idea or caused an event to happen.
Learner-Centered Instruction	0.77	Mean of the following: - Make choices about their own activities (what they did and/or how they did it). - Discuss their ideas and learning with other students in formal groupings. - Participate in class meetings or discussions to share feelings, solve problems together, or talk about personal interests.
Teacher Leadership	0.87	Mean of the following: - Developed curriculum to be used by a team of teachers. - Assisted in the design or planning of staff development activities. - Led staff development activities. - Facilitated text-based study groups. - Participated in peer observation, coaching, or modeling activities. - Facilitated teacher meetings (e.g., grade level, faculty meetings, professional learning communities).
Principal Leadership	0.92	Mean of the following: - Set high standards for teaching. - Communicated a commitment to high-quality Pre-K-3 learning. - Actively monitored the quality of teaching in this school. - Ensured that teachers had dedicated time for collaboration. - Encouraged school staff to take on leadership roles. - Supported successful transitions of students from one grade to the next (including from Pre–K to K).

Construct	Cronbach's Alpha, std	Survey Items
Trusting Relationships Between Teachers	0.93	Mean of the following: - Felt supported by colleagues to try out new ideas. - Trusted each other. - Felt responsible to help each other do their best. - Felt comfortable sharing their challenges with each other. - Were open to advice and feedback from their peers.
Early Childhood Teaching Knowledge	0.78	Mean of the following: - Early child development from birth to age 5 - Child assessment - Strategies for promoting family engagement - Florida Early Learning and Developmental Standards for 4-years olds.
General Instructional Knowledge	0.85	Mean of the following: - Strategies for using ongoing student assessment to plan instruction. - Strategies to create a positive learning environment. - Strategies for integrating curriculum.
Governance activities	N/A	If a teacher indicated the participated in one of the activities below, the value of this measure =1. Otherwise the value of this measure = 0. Mean of the following: - Worked with preschool programs or family care centers in my community to promote school readiness activities. - Promoted linkages between feeder early learning programs and my elementary school. - Advocated for early learning programs and my elementary school. - Spoke at school board meetings to advocate for policies, programs, or funding that promote child well-being.
Outreach activities	N/A	If a teacher indicated the participated in one of the activities below, the value of this measure =1. Otherwise the value of this measure = 0. Mean of the following: - Held a designated leadership role in the school. - Helped decide how discretionary school funds should be used. - Helped develop the school improvement plan.
Regular Use of Variety of Assessments	N/A	Count of the number of the following activities teacher did Once or twice a month or more Mean of the following: - Direct observation looking for specific skills - Direct assessment or testing (e.g., district tests or chapter tests). - Ongoing formative assessment (progress monitoring). - Portfolios of students' work samples.

Teacher characteristics data. From the surveys we collected teacher characteristic information such as gender, ethnicity, years of teaching experience, certification type, certification area, highest degrees earned, whether a teacher is a special education teacher, and grade level taught. The variables were used as covariates in the subsequent analysis.

Student achievement data and student teacher link data. To examine the impact of the FMTI on reading and math achievement for students in kindergarten to grade 5, we collected student achievement on standardized tests from the spring prior to the start of the program (spring 2011) and for each spring that the program was implemented (spring 2012, 2013, 2014). The school district administers the Stanford Achievement Test-Tenth Edition (SAT-10) to students in kindergarten through grade 2[4] and administers the Florida Comprehensive Achievement Test (FCAT) to students in grades 3 – 5. In the final year of the study, we obtained data files containing the SAT-10 and FCAT scores for all students in grades K-5 ever enrolled in treatment and control study schools during the year prior to the start of the program and the three years of the study from the district.

To link students with specific teachers for reading and math achievement, we obtained course-taking data for treatment and control schools that connected students to individual teachers through courses the students took. From the course-taking data we were able to distinguish which teachers teach English or math for what students, so we were able to later attribute student achievement in reading or math to corresponding teachers.

Student and school covariate data. We collected data on student and school characteristics to use as covariates in the analytic models to improve the precision of impact estimates.

Student characteristics data. In the last year of the study, we obtained from the district student characteristics data on all students in grades K-5 ever enrolled in the study schools during the year prior to the start of the program and the three years of the study. Data on student demographics and other baseline student characteristics included gender, ethnicity, free lunch status, and English learner and special education statuses.

School characteristics data. We collected school characteristics data, including school size, accountability rating, and percentages of minority students, students receiving free or reduced price meals, and English learning students from the district.

Confirmatory Analysis of Schoolwide Impact on Teachers

This section describes the analysis of teacher survey outcomes from schools randomly assigned to treatment and control conditions to estimate the schoolwide impact of FMTI on school culture, teacher leadership, and classroom practice. We included all pre-kindergarten through 5th grade classroom teachers with completed post-treatment surveys in the analysis, regardless of whether they were present at baseline (i.e., we include "joiners"). We selected this approach for the schoolwide impact analyses because we were interested in the program impact on school culture and classroom practice for the school overall, regardless of normal teacher mobility.

Analytic approach. To assess the impact of FMTI on school culture and schoolwide teacher leadership and classroom practice, we analyzed teachers responses to the August 2014 survey,

[4] The school district did not administer SAT-10 to kindergarten students in Spring 2011.

controlling for teacher and school background variables as well as the corresponding school average baseline outcome from the August 2011 survey. We adjust for school-average baseline survey measures instead of individual teacher survey measures because the post-test teacher survey was completed by a somewhat different group of teachers from those who completed the baseline teacher survey due to teacher mobility and nonresponse to the survey.

To address the nested nature of the data, we applied a two-level hierarchical model with teacher and school levels. Because we randomized schools within blocks, we also include block indicators in the model to control for block effects. We used a dummy variable imputation approach[5] to handle missing covariate data, where we set missing values for covariates to 0 and created a dummy variable indicator for each covariate (with a value of 1 for cases with a missing value and a value of 0 for cases with a non-missing value). Both the recoded covariates and the dummy variable indicators are included in the impact model shown below.

Teacher-level model:

$$Y_{ij} = \beta_{0j} + \beta_{dj}\,(\text{d-th covariate at teacher level})_{ij} + e_{ij}$$

School-level model:

$$\beta_{0j} = \gamma_{00} + \gamma_{0l}\,(\text{Treatment})_j + \gamma_{02}\,(\text{School average baseline outcome})_j + \gamma_{0k}\,(\text{k-th covariate at school level})_j + \gamma_{0m}\,(\text{m-th block indicator})_j + u_j$$

Where

Y_{ij} is the value of the outcome variable for teacher *i* in school *j*.

γ_{0l} indicates the impact of school being assigned to the treatment on the teacher outcome controlling for teacher and school-level covariates.

[5] Puma et al (2009) have found that, in studies with a random assignment design, this approach to handling missing data does not bias the impact estimate or its standard error and enables cases with missing covariates to be retained in the analysis. Although the dummy variable adjustment method leads to biased estimates of the coefficient for the variable itself (Jones, 1996), the impact estimate will be unbiased if assignment to condition is uncorrelated with the covariate in question (Puma, Olsen, Bell, & Price, 2009).

Exhibit A-4 presents the full list of teacher and school covariates that were included in the analysis.

Exhibit A-4. Covariates for Schoolwide Teacher Survey Impact Analysis

Covariate
Teacher level
Black
Hispanic
Asian
Other ethnicity
Years of teaching experience
Florida Temporary Certification
National Board Certification
Certification area: Pre-kindergarten/primary education
Certification area: Elementary education (K-6)
Master's degree or higher
Grade level indicators
Special education teacher
School level
Percent students with limited English proficiency
Percent students with free or reduced price lunch status
Percent minority students (Black and Hispanic)
Average baseline survey measure
Average baseline third-grade reading score
Average baseline third grade math score
State accountability grade
Block indicators

Exploratory Analysis of Schoolwide Impact on Teachers in Medium- to High-fidelity Schools

This section describes the exploratory analysis on the impact of FMTI in treatment schools that attained medium to high fidelity to the FMTI model.

Analytic approach. To explore the possible impact of FMTI on teachers in treatment schools that met the implementation threshold, we replicated the schoolwide impact analysis described above on a sample that included only teachers in medium- or high-fidelity treatment schools (11 schools) and teachers in comparison schools within the same randomization blocks (18 schools). Randomization blocks that contained no medium- or high-fidelity schools were excluded from the analysis. The analytic model and set of covariates was the same as for the confirmatory schoolwide teacher survey analysis.

Confirmatory Analysis of Schoolwide Impact on Students

This section describes the analyses of the schoolwide impact of FMTI on students who were in treatment and control schools prior to randomization. This is an intent-to-treat analysis, which means that students are retained in the analytic sample as long as they have post-treatment test scores and that students are classified according to their initial treatment assignment, regardless of whether they change schools later during the implementation of the intervention. Because all treatment and control schools remained in their randomly assigned status during the intervention period, there was no school level attrition. Furthermore, as Exhibit A-5 shows, among students in these schools at baseline, only 20% in treatment and 20% in control schools did not have outcome scores for both reading and math analyses. By What Works Clearinghouse (WWC) standards, this analysis is considered to be an RCT with low attrition and does not require evidence of baseline equivalence to meet WWC evidence standards without reservations. This allowed researchers to pool students across grade levels that do and do not have baseline test score data to estimate an overall estimate of the impact of FMTI on student achievement.

Exhibit A-5 Sample Size and Attrition for School-wide Student Impact Analysis

	Baseline Student N	Reading Student N	Reading Attrition %	Math Student N	Math Attrition %
Treatment	6672	5320	20	5313	20
Control	6575	5290	20	5274	20

Analytic approach. To examine the three-year impact of FMTI on all students who were in Pre-K through grade 2 at baseline, we pooled students at all grade levels in the same analysis. The outcome measures for the student achievement analyses are test scores in math and reading in 2013-14, three years after the intervention started. Because both SAT-10 and FCAT have developmentally scaled scores that are comparable across grades, we standardized the 2013-14 outcome test scores by student baseline grade level in 2010-11. Therefore even if a student was retained in grade, he was still compared with his original cohort at baseline. For reading and math separately, we calculated a z-score by taking the difference between each student's original test score and the mean score for his cohort in the whole district, then dividing by the student-level standard deviation of the score for his cohort.

Baseline measures of the outcomes come from student reading and math test scores in the spring of 2010-11, when students in first grade took the SAT-10 and students in second grade took the FCAT. We calculated z-scores at these grade levels for reading and math separately, using the same approach as for the outcome scores. Students in grades Pre-K and K at baseline did not take any baseline assessment, therefore do not have baseline test scores.

We used a two-level HLM model with student and school levels for the analysis, adjusting for baseline student achievement, demographic characteristics, and school characteristics at their respective levels. Because we randomized schools within blocks, we also included block indicators in the model to control for block effects. We used the same dummy imputation approach to handling missing covariate data that is described in the schoolwide teacher impact analysis section. This includes imputation of baseline achievement data for all students who were in grades Pre-K and K at baseline.

Student-level model:

$$Y_{ij} = \beta_{0j} + \beta_{1j}(\text{Baseline test score})_{ij} + \beta_{dj}(\text{d-th covariate at student level})_{ij} + e_{ij}$$

School-level model:

$$\beta_{0j} = \gamma_{00} + \gamma_{0l}(\text{Treatment})_{j} + \gamma_{0k}(\text{k-th covariate at school level})_{j} + \gamma_{0m}(\text{m-th block indicator})_{j} + u_{j}$$

Where

Y_{ij} is the value of the 2013-14 reading/math test score for student *i* in school *j*.

γ_{0l} indicates the impact of schools being assigned to the treatment on the student outcome for students after three years, controlling for student and school-level baseline covariates.

Exhibit A-6 presents the full list of student and school covariates that were included in the analysis.

Exhibit A-6. Covariates for School-wide Impact Analysis

Covariate
Student level
Female
Black
Hispanic
Asian
Other
Free-reduced price lunch status
Limited English proficiency
Special education
Grade level indicators
Baseline test score
School level
Percent students with limited English proficiency
Percent students with free or reduced price lunch status
Percent minority students (Black and Hispanic)
Average baseline third grade reading score
Average baseline third grade math score
State accountability grade
Block indicators

Exploratory Analysis of Schoolwide Impact on Students who Remained in the Same School

This analysis examined the impact of FMTI on students who remained in the same school during the three years of intervention (impact of treatment on the treated). As displayed in Exhibit A-7, among students in grades Pre-K through 2 at baseline, 47% in treatment and 43% in control schools were not retained in the sample either due to missing data or because they did not remain in the same school for the full three-year intervention period. We conducted the analysis for students in grades Pre-K to K at baseline separately from those who were in grades 1 and 2. The analyses are conducted separately because of differences between the two samples in the availability of measures for establishing baseline equivalence. For the sample of students in grades Pre-K to K at baseline, there are not pretest measures for the same students as those in the analytic sample; therefore we use baseline scores for the earlier adjacent cohort of students (from spring 2011 and measured in the same grade levels as the posttest – grades 2 and 3) to establish baseline equivalence. For the sample of students who were in grades 1 and 2 at baseline, there are pretest measures for the same students as those in the analytic sample, which we use to establish baseline equivalence.

Exhibit A-7. Sample Size and Attrition for School-wide Impact Analysis of Students who Remained in the Same School

	Baseline Student N	Reading Student N	Reading Attrition %	Math Student N	Math Attrition %
Treatment	6672	3,567	47	3,564	47
Control	6575	3,750	43	3,739	43

Analytic Approach. We conducted two separate analyses, both of which included the same covariates and applied the same two-level HLM model as in the above confirmatory schoolwide analysis. However, for the analysis of students in grades PreK to K at baseline, instead of imputing baseline test scores, we used school-average baseline test scores for grades 2 and 3 in spring 2011 as the pre-test measure. For the analysis of students in grades 1 and 2 at baseline, individual student pretest scores from spring 2011 were included in the model for all students in the analytic sample. Moreover, we excluded students with missing values on any other covariates for both analyses.

Baseline equivalence. For the analysis of students who were in grades 1 and 2 at baseline (grades 4 and 5 at post-test), we checked baseline equivalence of reading and math scores respectively, using t-tests on individual student scores to assess whether there were any statistically significant differences between treatment and control students. For the analysis of students who were in Pre-K and K at baseline (grades 2 and 3 at post-test), we checked the equivalence of reading and math scores for the earlier, adjacent cohort of students in grades 2 and 3 at baseline (spring 2011) using t-tests on individual student scores.

Although the estimated treatment-control differences were statistically significant, none exceeded .25 standard deviations (Exhibit A-8). We therefore considered students in treatment and control groups to be not substantially different at baseline. In the impact model, we adjusted for the relevant baseline test score and other covariates as discussed above, but did not perform any additional weighting.

Exhibit A-8. Baseline Equivalence for Schoolwide Impact Analysis of Students who Remained in the Same School

Student outcome measure	Standardized Mean Difference	SE	P-value	Student N	School N
Math achievement, grades Pre-K & K	-0.086	0.031	0.005	3901	40
Reading achievement, grades Pre-K & K	-0.153	0.031	0.000	3903	40
Math achievement, grades 1-2	-0.124	0.027	0.000	4732	40
Reading achievement, grades 1-2	-0.118	0.028	0.000	4740	40

Exploratory Analysis of Schoolwide Impact on Students Who Remained in Medium- to High-fidelity FMTI Schools

Among the 20 schools randomly assigned to the treatment condition, 11 treatment schools are considered to have medium or high implementation fidelity. This exploratory analysis compared students who stayed for the full three-year intervention period in these 11 FMTI schools with students who stayed for the same time period in the18 control schools in the same randomization blocks. As displayed in Exhibit A-9, among students in grades Pre-K through 2 at baseline, 65% of students in treatment schools and 45% in control schools did not remain in the analytic sample. We adopted the same analytic approach as the exploratory schoolwide impact analysis of students who stayed at the same school (described above) and conducted analysis separately for students in grades Pre-K to K at baseline (using baseline measures for the prior adjacent cohort of students in study schools in 2011) and those who were in grades 1 and 2 (using pretest measures for the same students as those in the analytic sample).

Exhibit A-9. Sample Size and Attrition for School-wide Impact Analysis of Students Staying in Medium- to High-fidelity Treatment Schools and Comparison Schools

	Baseline Student N	Reading Student N	Reading Attrition %	Math Student N	Math Attrition %
Treatment	6672	2,309	65	2,307	65
Control	6575	3,625	45	3,614	45

Analytic approach. We used the same covariates and applied the same two-level HLM model as in the above exploratory analysis with students who stayed in the same school during the three years of intervention.

Baseline equivalence. For the analysis of students who were in grades 1 and 2 at baseline (grades 4 and 5 at post-test), we checked baseline equivalence of reading and math scores respectively, using t-tests on individual student scores to assess whether there were any statistically significant differences between treatment and control students. For the analysis of students who were in Pre-K and K at baseline (grades 2 and 3 at post-test), we checked the equivalence of reading and math scores for the earlier, adjacent cohort of students in grades 2 and 3 at baseline, in spring 2011, using t-tests on individual student scores (Exhibit A-10).

Although three out of four of the estimated treatment-control differences were statistically significant, none exceeded .25 standard deviations. We therefore considered students in

treatment and control groups to be not substantially different at baseline. In the impact analysis model, we adjusted for the relevant baseline test score and other covariates, but did not perform any additional weighting.

Exhibit A-10. Baseline Equivalence for Students in Medium- to High-Fidelity Treatment Schools and Comparison who Remained in the Same School

Student outcome measure	Standardized Mean Difference	SE	P-value	Student N	School N
Math achievement, grades PK-K	-0.001	0.036	0.988	3050	29
Reading achievement, grades PK-K	-0.100	0.036	0.005	3052	29
Math achievement, grades 1-2	-0.061	0.031	0.050	3859	29
Reading achievement, grades 1-2	-0.067	0.032	0.033	3867	29

ECTLSI Graduate Program Teacher Impact

Although the FMTI program was conceptualized as a schoolwide intervention, teachers who participated in the ECTLSI graduate program experienced a much more intensive treatment than those who did not. To reflect this, SRI researchers incorporated an embedded, quasi-experimental design (QED) into the overall evaluation to examine the impact of ECTLSI on the teachers who participated in it. We estimated the effect of the ECTLSI program on teachers directly through the teacher survey and classroom observations, and we also estimated the added benefit to students of being taught by an ECTLSI teacher on top of the schoolwide FMTI effect. In this section, we describe sample selection for ECTLSI teachers, their matched comparison groups, and the additional data collection and measures collected beyond those collected through the schoolwide impact study. Then we describe the analytic approaches used for each data source (i.e., teacher survey, CLASS observations, and student achievement data) and measures of baseline equivalence for each set of analyses.

Sample Selection

Once a school was assigned to the intervention condition, all teachers of grades Pre-K to 3 were allowed to apply to the ECTLSI program; however, they had to be admitted to the graduate program based on their undergraduate GPA, GRE scores, and their application narrative. Professors-in-residence made presentations at many of the treatment schools and held information sessions at restaurants to encourage teachers in the treatment schools to apply. Teachers interested in applying were offered, at no cost, GRE preparation materials and training.

A total of 50 teachers in the treatment schools submitted complete applications to Cohort 1 of the master's program and 37 of those teachers were admitted (74%), 2 were allowed to take a first course while they retook their GREs (4%), and 11 teachers were officially denied (22%). SRI only evaluated those teachers who were fully admitted to the program. After receiving notification of acceptance into the program but prior to the start of the program, two teachers decided not to participate. These two teachers are not considered ECTLSI students for purposes of the evaluation. The program further accepted 24 Cohort 2 teachers in the second year of the intervention. Because the QED was based on having 50 ECTLSI teachers and there were only 35 in Cohort 1 by the start of the second year of implementation, we randomly selected 15 additional teachers from Cohort 2 in 2012-13 for inclusion in the classroom observations. We

included all ECTLSI teachers with complete data in the survey and student achievement analyses. Because the analytic strategy for identifying a comparison group for ECTLSI teachers depended on the data source and its specific analytical approach, we discuss this aspect of the sample selection within the analytic approach section for each data source below.

Measures and Data Collection for Analysis of ECTLSI Impact

For the embedded QED, in addition to collecting the same data that were collected on teachers and students for the schoolwide RCT, the evaluation conducted classroom observations in the classrooms of teachers in the ECTLSI graduate program and of matched comparison teachers in controls schools. To identify a matched comparison group for observations, we used propensity score matching. We first included all Pre-K-3 teachers in treatment schools to posit a model predicting the probability of being in the master's program based on teachers' indication of interest to participate in the program in spring 2011, being a special education teacher, years of teaching experience, academic degrees earned, whether the teacher has national board certification, areas of certification, ethnicity, and scores on six classroom practice scales from the baseline teacher survey (learner-centered instruction, assessment-informed practice, developmentally-appropriate instruction, higher-order thinking skills, differentiated instruction, and culturally-responsive instruction). We then extrapolated the estimated propensity score model to teachers in comparison schools and calculated propensity scores for them as well.

We applied one-to-one nearest neighbor matching without replacement to select a comparison teacher in control schools for each of the 35 Cohort 1 ECTLSI teachers and a randomly selected pull of 15 Cohort 2 ECTLSI teachers. These matched comparison teachers were the highest priority matches. We then matched each of the 50 ECTLSI teachers with three additional comparison teachers (one-to-three nearest neighbor matching, with replacement) as backup matches in case the main comparison teachers refused to participate in the study. We subsequently produced prioritized lists of matches for each ECTLSI teacher and proceeded to contact comparison teachers in order of the quality of the match until we found one who was willing to participate.

Classroom observations. To assess changes in teaching skills, SRI conducted repeated 2-3 hour classroom observations (i.e., a minimum of four 20 minute cycles of observation as recommended by the assessment's developer) using the Classroom Assessment Scoring System (CLASS) observation tool with the Pre-K-3 teachers participating in the first and second cohort of the graduate program and matched teachers in the control schools. The CLASS was used to measure outcomes in each of the following domains: emotional support, classroom organization, and instructional support. Emotional support includes measures of positive climate, negative climate, teacher sensitivity, and regard for student perspectives. Classroom organization includes measures of behavior management, productivity, and instructional learning formats. Instructional support includes measures of concept development and quality feedback.

Observations were conducted in the fall of students' first year in the graduate program and two or three years later (depending on cohort) by trained observers who had received certification in the reliable use of the tool from the CLASS developer, Teachstone. Note that teachers in cohort 2 had a year of exposure to the other components of the intervention in the school prior to starting the graduate program, while teachers in cohort 1 began experiencing all components of the FMTI at the same time. In addition, cohort 1 teachers received their post observation approximately 6 months after completing their graduate program while cohort 2 teachers received their post

observation approximately 6 months before completing their graduate program. Comparison teachers received $100 for each observation as a token of appreciation for their participation. Exhibit A-12 provides the list of reasons for missing observations at follow-up.

Measures of classroom instruction were constructed from CLASS ratings completed during classroom observations in classrooms of teachers in the graduate program and matched comparison teachers. For the CLASS observation, dimensions of classroom organization, emotional support, and instructional support are each rated on a 7-point Likert scale for multiple 30-minute observation cycles. Scores for each dimension were averaged across all observation cycles in a classroom and then the average dimension scores were summed and averaged for each of the three instructional domains – classroom organization, emotional support, and instructional support. Exhibit A-13 provides psychometric properties for the CLASS observation. Impacts of FMTI on each of the three instructional outcome scores were examined for teachers in the graduate program and matched comparison teachers.

Exhibit A-11. CLASS Observation Teacher Sample

	Treatment N	Control N
Observed at baseline	49	48
Observed at follow-up/Analytic sample	37	25

Exhibit A-12. Reasons for Excluding from Follow-up Analysis

	Treatment N	Control N
On leave during observation period	5	5
No longer teaching in a Pre-K to 3rd grade position	2	6
No longer teaching within district	1	2
Declined to participate	1	4
Non-responsive to observation requests	1	5
Unable to locate	0	1
Did not remain enrolled in EC-TLSI program	2	0
Total	***12***	***23***

Exhibit A-13. Domains and Psychometric Properties for CLASS Observation

Domain	Instrument reference	Normed or State Test?	Test-Retest Reliability	Internal Consistency	Inter-rater Reliability	Score
Classroom instruction: emotional support	Pianta, LaParo, Hamre, 2008	No	.73-.85	.77-.89	.79-.97	1-7 Likert scale score
Classroom instruction: classroom organization	Pianta, LaParo, Hamre, 2008	No	.73-.85	.77-.89	.79-.97	1-7 Likert scale score
Classroom instruction: instructional support	Pianta, LaParo, Hamre, 2008	No	.73-.85	.77-.89	.79-.97	1-7 Likert scale score

Confirmatory Analysis of ECTLSI Impact on Teacher Survey Outcomes

This section describes the analysis of teacher survey outcomes to estimate the impact of the ECTLSI graduate program on school culture, teacher leadership, and classroom practice.

Analytic approach. To assess the impact of the ECTLSI graduate program on participants' reports of school culture, teacher leadership, and classroom practice, we compared ECTLSI teachers' survey responses to all Pre-K to 3 teachers in control schools who responded to both the baseline and post-treatment surveys. We explored the possibility of selecting a matched comparison group of teachers for this analysis, but found that it was not possible to select one sample that was balanced on all sixteen baseline survey measures.

We analyzed teacher responses to the August 2014 survey, controlling for teacher and school background variables, including teachers' individual baseline survey measures from the August 2011 survey. We excluded teachers with missing covariate data from these analyses. To address the nested nature of the data, we applied a two-level hierarchical model with teacher and school levels. Because not all of the 20 treatment schools had ECTLSI teachers, we combined geographically neighboring blocks as necessary to ensure that there was always at least one treatment and one control school in each block.

The analytical models used for survey outcomes were:

Teacher-level model:

$$Y_{ij} = \beta_{0j} + \beta_{dj}\,(\text{d-th covariate at teacher level})_{sij} + e_{ij}$$

School-level model:

$$\beta_{0j} = \gamma_{00} + \gamma_{0l}\,(\text{Treatment})_j + \gamma_{0k}\,(\text{k-th covariate at school level})_j + \gamma_{0m}\,(\text{m-th block indicator})_j + u_j$$

Where

Y_{ij} is the value of the teacher practice outcome variable for teacher *i* in school *j*.

γ_{0l} indicates the effect of school being assigned to the treatment on the teacher practice outcome.

Exhibit A-14 presents the full list of teacher and school covariates that were included in the analysis.

Exhibit A-14. Covariates for ECTLSI Teacher Impact Analysis

Covariate
Teacher level
Black
Hispanic
Asian
Other ethnicity
Years of teaching experience
Florida Temporary Certification
National Board Certification
Certification area: Pre-Kindergarten/primary education
Certification area: Elementary education (K-6)
Master's degree or higher
Grade band indicators
Baseline survey measure
School level
Percent students with limited English proficiency
Percent students with free-reduced price lunch status
Percent minority students (Black and Hispanic)
Average baseline third-grade reading score
Average baseline third grade math score
State accountability grade
Block indicators

Baseline equivalence. We checked baseline equivalence of all survey measures, using t-tests on individual teacher measures to assess whether there were any statistically significant differences between ECTLSI and control teachers. We found that the estimated treatment-control difference exceeded .25 standard deviations for six survey measures (Exhibit A-14). For these six measures, we calculated propensity score weights using the inverse propensity score calculated from a logistic regression that included the baseline survey measure as well as teacher demographic characteristics. We then utilized these weights in the analytic models along with the covariates discussed above. For survey measures where the estimated treatment-control difference did not

exceed .25 standard deviations, we considered treatment and control groups to be not substantially different at baseline. We adjusted for the relevant baseline test score and other covariates, but did not perform any additional weighting. Exhibit A-15 displays both unweighted and weighted standardized treatment-control differences at baseline.

Confirmatory Analysis of ECTLSI Impact on CLASS Outcomes

This section describes the analysis of CLASS observations to estimate the impact of the ECTLSI graduate program on classroom instruction. For more information on the identification of the matched comparison group, sample attrition, and data collection procedures, see the above section on Measures and Data Collection for Analysis of ECTLSI Teacher Impact.

Analytic approach. To assess the impact of the ECTLSI graduate program on classroom instruction we compared classroom instruction indicators obtained from CLASS observations between ECTLSI teachers and their matched comparison teachers. We use the same model and set of covariates as in the analysis of ECTLSI teacher survey outcomes described above except that we used teachers' baseline CLASS observation scores as the pre-treatment measure of classroom instruction. Also, because not all 40 study schools had ECTLSI or matched comparison teachers, we combined geographically neighboring blocks as necessary to ensure that there was always at least one treatment and one control school in each block.

Baseline equivalence. We checked baseline equivalence of each CLASS domain, using t-tests on individual teacher measures to assess whether there were any statistically significant differences between ECTLSI and matched control teachers. We found that the estimated treatment-control difference exceeded .25 standard deviations for the instructional support domain only (Exhibit A-16). For instructional support, we calculated a propensity score weight using the inverse propensity score calculated from a logistic regression that included the baseline instructional support measure as well as teacher demographic characteristics. We then utilized this weight in our analytic model along with the covariates discussed above. For the domains where the estimated treatment-control difference did not exceed .25 standard deviations, we considered treatment and control groups to be not substantially different at baseline. We adjusted for the relevant baseline test score and other covariates, but did not perform any additional weighting. Exhibit A-14 displays both unweighted and weighted standardized treatment-control differences at baseline.

Exhibit A-15. Baseline Test of Difference Between ECTLSI and Control Teachers on Teacher Survey

Survey outcome measure	Unweighted Standardized Mean Difference	Unweighted SE	Unweighted P-value	Weighted Standardized Mean Difference	Weighted SE	Weighted P-value	Teacher N	School N
Learner-centered instruction	-0.391	0.180	0.031	0.013	0.205	.949	439	33
Assessment-informed practice	0.048	0.126	0.704	—	—	—	440	33
Developmentally appropriate practices	0.192	0.182	0.290	—	—	—	440	33
Emphasis on higher order thinking skills	-0.292	0.186	0.118	0.018	0.230	0.938	445	33
Differentiated instruction	-0.244	0.182	0.181	—	—	—	444	33
Culturally responsive instruction	-0.274	0.182	0.134	-0.014	0.204	0.943	436	33
Collaboration around instruction	-0.266	0.185	0.151	-0.009	0.209	0.966	443	33
Trusting relationships between teachers	-0.171	0.174	0.324	—	—	—	441	33
Principal leadership	-0.667	0.182	0.000	-0.112	0.251	0.654	442	33
Teacher leadership	-0.219	0.169	0.198	—	—	—	445	33
Family partnerships	-0.268	0.186	0.150	-0.079	0.199	0.690	442	33
Regular use of variety of assessments	0.143	0.186	0.444	—	—	—	440	33
Early childhood instructional knowledge	-0.071	0.175	0.682	—	—	—	443	33
General instructional knowledge	-0.139	0.174	0.424	—	—	—	443	33
Governance activities*	-0.044	—	—	—	—	—	446	33
Early learning outreach activities*	-0.135	—	—	—	—	—	446	33

*For assessing baseline equivalence of binary outcomes, we follow a procedure adapted from the version 3.0 WWC Standards and Procedures manual, pp. F.5 – F.6.

Exhibit A-16. Baseline Test of Difference Between ECTLSI and Control Teachers on CLASS Observations

CLASS domain	Unweighted Standardized Mean Difference	Unweighted SE	Unweighted P-value	Weighted Standardized Mean Difference	Weighted SE	Weighted P-value	Teacher N	School N
Instructional support	-0.398	0.256	0.125	-0.167	0.272	0.542	62	26
Emotional support	-0.036	0.261	0.891	—	—	—	62	26
Classroom organization	-0.104	0.261	0.69	—	—	—	62	26

Confirmatory Analysis of ECTLSI Impact on Student Outcomes

In this section we describe the confirmatory analysis of the added impact of participation in the ECTLSI program on top of the schoolwide FMTI effect for grade 1 to 3 students' reading and math achievement. This analysis used a difference-in-difference approach to estimate the impact of the FMTI program on students' reading and math achievement (measured by the SAT-10 and FCAT) for students of teachers in the master's program (compared to matched comparison teachers in the control schools) over and above the impact for students in intervention schools whose teachers did not participate in the master's program (compared to a comparison group of teachers in control schools).

Outcome student achievement measures are student achievement test scores in math and reading in 2013-14, after they received one year of instruction from the four groups of teachers. As described previously, students in grades 1 and 2 took the SAT-10 and students in grade 3 took FCAT. We calculated grade-specific z-scores for reading and math separately.

Baseline student achievement outcome measures are student achievement test scores in reading and math in the spring of 2012-13, when students in K - second grade took the SAT-10[6]. We calculated baseline grade-specific z-scores for reading and math respectively.

Analytic approach. Among 45 eligible ECTLSI teachers for whom we had baseline survey data (which were used to identify matched comparison teachers in control schools), 23 teachers from 10 schools taught English and had students with a reading test score in 2013-14, and 20 teachers from 8 schools taught math and had students with a math test score in 2013-14. There were 14 teachers who taught both reading and math.

For each ECTLSI teacher, we used 1-to-1 nearest neighbor propensity score matching to find a matched teacher from control schools. There were three types of teachers: those who taught both reading and math, those who only taught English, and those who only taught math. For the 14 teachers who taught both reading and math, we matched them with teachers in control schools who taught both subjects. We matched 9 ECTLSI teachers who taught only English with teachers in control schools who taught only English, and 6 ECTLSI teachers who taught only math to those in control schools who only taught math.

For each of the three kinds of teachers, we first included ECTLSI teachers and teachers in control schools to posit a model predicting the probability of being in the ECTLSI's program based on teachers' indication of interest to participate in the program in spring 2011, years of teaching experience, academic degrees earned, certification type and area, as well as six classroom practice scales from the baseline teacher survey (learner-centered instruction, assessment-informed practice, developmentally-appropriate instruction, higher-order thinking skills, differentiated instruction, and culturally-responsive instruction). We then estimated the propensity score of being an ECTLSI teacher for all teachers, and matched each of the ECTLSI teachers with a teacher in a control school who taught the same grade level and had the closest propensity score.

[6] Florida began administering the SAT10 to Kindergarten students in 2011-12—too late for our RCT design, but in time for the embedded QED.

A total of 29 ECTLSI teachers taught either reading or math in grades 1 to 3, and a total of 260 control teachers taught either reading or math at these grade levels. Table A-17 shows the variable balance for ECTLSI and control teachers before and after matching. Before matching, ECTLSI teachers were more likely than control teachers to express an interest to participate in the ECTLSI program at baseline (48% versus 15%). After matching, 41% of the matched control teachers expressed interest, reducing the gap from 33% to only 7%. Matching also reduced the gaps in classroom practice between the two groups of teachers, rendering all post-matching differences within .2 standard deviations on all variables. This ensures the comparison of similar teachers between treatment and control schools in terms of baseline teaching practices and motivation to participate in the program. On the other hand, matching did not close the gap in having a master's degree or higher degree or eliminate differences in racial composition between the two groups of teachers. We further adjusted all these variables in the subsequent analytic model.

Table A-17. Descriptive Information on ECTlSI and Comparison School Teachers, Before and After Matching

	ECTLSI teachers Original (n=29)	Comparison teachers Original (n=260)	Comparison teachers Matched (n=29)
Interest to participate in ECTLSI	0.48	0.15	0.41
Years of teaching in total	10.59	14.13	13.72
Florida temporary certification	0.00	0.01	0.07
Florida professional certification	1.00	0.96	0.90
National board certification	0.10	0.05	0.10
Elementary certification	0.76	0.79	0.83
Pre-K/ primary certification	0.21	0.13	0.14
Preschool certification	0.00	0.02	0.03
Black	0.07	0.24	0.34
White	0.38	0.15	0.14
Latino	0.48	0.53	0.41
Other Ethnicity	0.07	0.08	0.10
Having a master's degree or higher	0.31	0.48	0.55
Student Centered Instruction	3.80	3.96	3.84
Assessment-informed practice	4.07	4.25	4.05
Developmentally Appropriate Instruction	3.98	3.91	3.91
Higher Order Thinking Skills	4.34	4.49	4.40
Differentiated Instruction	4.27	4.46	4.34
Culturally Responsive Instruction	3.51	3.85	3.64

Exhibit A-18 compares non-ECTLSI teachers in treatment schools and nonmatched teachers in control schools, who are similar in teacher background and classroom practice measures.

Exhibit A-18. Descriptive Information on Non-ECTlSI and Nonmatched Teachers in Treatment and Control Schools

	Non-ECTISI Teachers in Treatment Schools (n=216)	Nonmatched Teachers in Control Schools (n=231)
Interest to participate in ECTLSI	0.17	0.12
Years of teaching in total	14.71	14.18
Florida temporary certification	0.01	0.00
Florida professional certification	0.97	0.97
National board certification	0.05	0.04
Elementary certification	0.84	0.79
Pre-K/ primary certification	0.09	0.13
Preschool certification	0.01	0.02
Black	0.29	0.23
White	0.15	0.15
Latino	0.44	0.54
Other Ethnicity	0.12	0.08
Having a master's degree or higher	0.51	0.47
Student Centered Instruction	4.03	3.97
Assessment-informed practice	4.38	4.28
Developmentally Appropriate Instruction	3.91	3.91
Higher Order Thinking Skills	4.51	4.50
Differentiated Instruction	4.49	4.48
Culturally Responsive Instruction	3.90	3.88

For the subsequent difference-in-differences analysis, we only included schools with either at least one ECTLSI teacher or at least one matched comparison teacher.

Because some teachers co-teach math or English, we generated “virtual” teachers (the combination of all teachers teaching a class) and nested students under those virtual teachers. For example, if a class was taught by two different English teachers, we averaged the characteristics of these two teachers to generate a virtual teacher for that class. If one of the two teachers was an ECTLSI teacher, the virtual teacher has a value of 0.5 for the ECTLSI teacher indicator. For example, among 23 ECTLSI English teachers, 18 each independently taught one class only, three each co-taught a class with a non-ECTLSI teacher only, and two each co-taught a class with a non-ECTLSI teacher in addition to a class they taught independently. Therefore there are 25 ECTLSI virtual teachers included in the analysis, 20 with a value of 1for the ECTLSI indicator and 5 with a value of 0.5 for the indicator. Exhibit A-19 shows the number of teachers and the corresponding number of virtual teachers in each group for the difference-in-differences analysis.

We hereafter refer to a teacher/teachers teaching a class as a virtual teacher, while the vast majority of virtual teachers were in fact only one teacher.

Exhibit A-19 Number of Teachers and Virtual Teachers in Different Comparison Groups

	Teachers N	Virtual Teachers N
Reading		
Nonmatched teachers in control schools	102	97
Matched teachers in control schools	23	27
Non-ECTLSI teachers in treatment schools	83	83
ECTLSI teachers	23	25
Math		
Nonmatched teachers in control schools	103	103
Matched teachers in control schools	20	20
Non-ECTLSI teachers in treatment schools	59	60
ECTLSI teachers	20	20

We used a three-level HLM model with student, virtual teacher, and school levels, adjusting for student prior test score and demographics, teacher characteristics, school characteristics and block indicators. We included in the analysis students who are linked to the four types of virtual teachers and have no missing values on the outcome score or any of the covariates.

In the model we included an ECTLSI/matched teacher indicator, a treatment school indicator, and the interaction term between the ECTLSI/matched teacher indicator and the treatment school indicator. The interaction term represents the difference-in-differences estimate, providing the impact of the specific ECTLSI program on teachers, net of the schoolwide program impact. The model is shown below.

Student-level model:

$$Y_{sij} = \pi_{0ij} + \pi_{pij}\,(\text{Previous year test score})_{sij} + \pi_{dij}\,(\text{d-th covariate at student level}))_{sij} + e_{sij}$$

Teacher level model:

$$\pi_{0ij} = \beta_{00j} + \beta_{01j}\,(\text{ECTLSI teacher or matched comparison}) + \beta_{0tj}\,(\text{t-th covariate at teacher level}) + r_{0ij}$$

School-level model:

$$\beta_{00j} = \gamma_{000} + \gamma_{00l}\,(\text{Treatment})_j + \gamma_{00k}\,(\text{k-th covariate at school level})_j + \gamma_{00m}\,(\text{m-th block indicator})_j + u_{0j}$$

$$\beta_{01j} = \gamma_{010} + \gamma_{011}\,(\text{Treatment})_j$$

Where

γ_{000} is the average student outcome with teachers in control schools who are not matched with ECTLSI teachers (with all covariates grand- mean centered)

γ_{00l} indicates the impact of school being assigned to the treatment on the student outcome for students with teachers not in the ECTLSI's program.

γ_{0l0} is the average difference in student outcomes among students with control teachers in the matched comparison for ECTLSI teachers and among students with control teachers in the comparison group for teachers *not* in the ECTLSI's program.

$\gamma_{001} + \gamma_{011}$ is the total impact of the program on students with ECTLSI teachers.

γ_{011} is the additional impact of the program on students with ECTLSI teachers, over and above the treatment impact on students with teachers not in the ECTLSI's program.

Exhibit A-20 presents the full list of student and school covariates that were included in the analysis.

Exhibit A-20. Covariates for ECTLSI Teacher Impact Analysis

Covariate
Student level
Female
Black
Hispanic
Asian
Other ethnicity
Free or reduced price lunch status
Limited English proficiency
Special education
Grade level indicators
Baseline score
Teacher level
Black
Hispanic
Other ethnicity
Years of teaching experience
Florida Temporary Certification
National Board Certification
Certification area: Pre-Kindergarten/primary education
Certification area: Preschool education
Master's degree or higher
School level
Percent students with limited English proficiency
Percent students with free or reduced price lunch status
Percent minority students (Black and Hispanic)
Average baseline third-grade reading score
Average baseline third grade math score
State accountability grade
Block indicators

Baseline equivalence. Exhibit A-21 presents the means and standard deviations for the baseline scores as well as numbers of students, virtual teachers, and schools for each of the four groups of teachers for math and reading analysis respectively. We further used ANOVA to test whether there were any statistically significant differences between any of the four groups of students. The p-value from the ANOVA test is shown in the last column for reading and math separately.

Although the ANOVA test shows a statistically significant difference in reading, the differences between any of the four groups are smaller than 0.25 standard deviations for reading and math alike. We therefore considered the four groups of students to not be substantially different at baseline in either reading or math, and proceeded with the analysis adjusting for the baseline outcome measure and covariates as described above.

Exhibit A-21 Distributions of Baseline Test Scores for Students in Different Comparison Groups

	Standardized Mean	Standard Deviation	Student Sample N	Virtual Teacher N	School N	P Value from ANOVA
Reading						**0.002**
Nonmatched teachers in control schools	0.058	1.040	1701	97	11	
Matched teachers in control schools	-0.014	0.990	371	27	11	
Non-ECTLSI teachers in treatment schools	-0.078	0.981	1378	83	10	
ECTLSI teachers	0.036	0.878	408	25	10	
Math						**0.959**
Nonmatched teachers in control schools	-0.001	1.024	1973	103	12	
Matched teachers in control schools	0.017	0.878	378	20	12	
Non-ECTLSI teachers in treatment schools	0.004	1.039	1116	60	8	
ECTLSI teachers	-0.021	0.868	392	20	8	

Appendix B. Implementation Fidelity

The implementation study examined the research question: What is the fidelity of implementation of the Florida Master Teacher Initiative for each key program component? To measure participation and fidelity, SRI worked with the program developer, the University of Florida, to identify types and intensity of activities in each of the program components believed necessary to bring about the desired changes and outcomes outlined in the program logic model. These assumptions were used to develop the fidelity measure (Exhibit B-1).

SRI collected administrative data each summer during the three years of the program. Fidelity was measured in all 20 schools implementing the intervention. To construct fidelity scores, data were collected on teachers' participation in the Teacher Fellows Program; teachers' participation and performance in the ECTLSI program; principals' participation in the Principal Fellows program; and administrators' and teachers' participation in Summer Leadership Institutes. We used fidelity scores to assess whether each key component of the FMTI was implemented with fidelity for the entire sample of schools. Exhibit B-2 presents the findings on fidelity for each key component of the FMTI. The results for fidelity varied by program component and by year.

The Teacher Fellow program was conducted with medium or high fidelity all three years in the vast majority of treatment schools. A total of 235 teachers participated in the Teacher Fellows program in Year 1, 242 teachers in Year 2, and 320 teachers in Year 3. This was an average of 30-45% of faculty at each of the schools. For teachers that chose to participate in the Teacher Fellows program, the majority showed active and consistent engagement. For example, in Year 3, 86% of Teacher Fellows attended all six sessions, 92% presented at the Learning Showcase, and 90% wrote and submitted a summary of their inquiry.

The ECTLSI graduate program was implemented with medium or high fidelity in only 10 of the 20 schools, resulting in an overall score of low fidelity for this component. Sixty-one teachers were enrolled in the ECTLSI program at some point. The goal had been to enroll 100 teachers. By the end of Year 3, 29 teachers had graduated and 20 teachers were still enrolled in the ECTLSI program (two Cohort 1 teachers were still completing the program with Cohort 2 teachers). The program fell short of the target of having 75% of schools meeting medium or high fidelity in Year 2. Since no new enrollment occurred in Year 3, the fidelity level did not increase. However, average fidelity scores for individual teachers in the ECTLSI program were high and completion rates were also good (79%).

The Principal Fellows program only met medium or high fidelity in the first year of implementation. The Principal Fellows program achieved medium or high fidelity in 80% of the intervention schools in Year 1 but was unable to reach a sufficient level of fidelity in enough schools in Years 2 and 3. In Year 3, principals from only 8 of the 20 treatment schools attended both the statewide institute and at least one Principal Fellow meeting. Thus, in Year 3, 40% of schools met medium or high fidelity on the Principal Fellows Program fidelity measure.

The Summer Leadership program achieved fidelity in only the third year of implementation. The fidelity of the Summer Leadership improved each year, going from insufficient fidelity in Years 1 and 2 to meeting fidelity benchmarks in Year 3.

Because of low levels of implementation fidelity, the full model, as intended, could not be tested across all 20 schools in the initiative. However, 11 of the 20 schools had medium or high fidelity across all four components each of the three years.

Exhibit B-1: Florida Master Teacher Initiative Fidelity Measure

Teacher Fellows Program

Individual teacher level

Fidelity Element	Data Source	Data Collection Frequency	Scoring of adequacy of fidelity
Attend Teacher Fellow meetings (up to 6).	TF attendance roster from each meeting	Annual, July	Get a point for each meeting attended 0-6
Present project at inquiry showcase.	Showcase presentation schedule	Annual, July	No = 0 Yes = 4
Write and submit an inquiry summary to be added to the inquiry database at UF.	Inquiry write-up summaries (get from UF)	Annual, July	No = 0 Yes = 5
Teacher Fellow Fidelity Score			**Range 0 – 15**

A. Individual teacher level fidelity score for teachers participating in the Teacher Fellow Program

0 points (Inadequate, if score is 0 – 7)
1 point (Low fidelity, if score is 8 - 9)
2 points (Medium fidelity, if score is 10 – 11)
3 points (High fidelity, if score is 12 and more)

B. School level:

B1a. Percent of teachers in a school who participate (enroll) in the Teacher Fellows program

0 points (Inadequate, if 0% - 5% participate)
1 point (Low fidelity, if 6%-10% participate)
2 points (Medium fidelity, if 11%-25% participate)
3 points (High fidelity, if 26% or more participate)

B1b. Number of Teacher Fellow meetings held

0 points (Inadequate, if 0-1 meetings)
1 point (Low fidelity, if 2-3 meetings)
2 points (Medium fidelity, if 4-5 meetings)
3 points (High fidelity, if 6 meetings)

B2. Average of individual teacher fidelity score for teachers participating in the Teacher Fellow program

Calculate average of individual teacher points for school level score (A).

Overall School Level = $\frac{(B1a + B1b)}{2}$ + B2 (range 0-6 points)

C. Overall Project Level: Adequate Fidelity = At least 75% of schools have a score of 4

Exhibit B-1 (continued): Florida Master Teacher Initiative Fidelity Measure

Teachers in Early Childhood Graduate Degree Program (ECTLSI)
ANNUAL SCORE

Fidelity Element	Data Source	Data Collection Frequency	Scoring of adequacy of fidelity
Maintains 3.0 GPA	UF administrative data	Annual, July	No = 0 Yes = 5
Completes scheduled classes for the year Year 1: 16 credits Year 2: 17 credits Year 3: 6 credits	UF administrative data	Annual, July	Completed all credits No = 0 Yes = 10
Attends facilitator training (ever)	Attendance forms	Annual, July	Gets a point for each facilitator training attended (up to 2) 0-2 (cumulative)
Facilitates Teacher Fellow or other inquiry group, leads professional development, or facilitates PLC (ever)	Teacher survey	Annual, July	Gets a point for each group led (up to 2) 0-2 (cumulative)
Completes an inquiry project during program (ever)	Teacher survey	Annual, July	Gets a point for each inquiry project completed (up to 2) 0-2 (cumulative)
ECTLSI Fidelity Score			**Range 0 - 21**

A. Individual teacher level
0 points (Inadequate, if score is 9 or lower)
1 point (Low fidelity, if score is 10-14)
2 points (Medium fidelity, if score is 15-16)
3 points (High fidelity, if score is 17 or higher)

B. School level:

B1. Number of teachers in a school who start a first class in the ECTLSI program (2011-2015)

0 points (Inadequate, if 0 participate)
1 point (Low fidelity, if 1 participates)
2 points (Medium fidelity, if 2-3 participate)
3 points (High fidelity, if 4 or more participate)

B2. Average of individual teacher fidelity scores of teachers in ECTLSI (2011-2015)

Calculate average of individual teacher points for school level score.

Overall School Level = B1 + B2 (range 0-6 points)

C. Overall project level: Adequate Fidelity = At least 75% of schools have a score of 5

Exhibit B-1 (continued): Florida Master Teacher Initiative Fidelity Measure

Principal Fellows

Fidelity Element	Data Source	Data Collection Frequency	Scoring of adequacy of fidelity
Attend Principal Fellow meetings. (up to 4 points)	Principal Fellow attendance roster, for each meeting	Annual, July	Get a point for each meeting attended 0 – 4 (no point for a fifth meeting in Year 1)
Attend principal institute(s) Year 1: 2 meetings Year 2: 1 meeting Year 3: 1 meeting	Principal Fellow attendance roster, for each meeting	Annual, July	Get 4 points attending a least one institute a year
Principal Fellow Fidelity Score			**Range 0 – 8**

B. School level

0 points (Inadequate, if score is 0-2)
1 point (Low fidelity, if score is 3-4)
2 points (Medium fidelity, if score is 5-6)
3 points (High fidelity, if score is 7 or more)

C. Overall project level: Adequate Fidelity = At least 75% of schools have a score of 2

Exhibit B-1 (continued): Florida Master Teacher Initiative Fidelity Measure

Summer Leadership Institutes

Fidelity Element	Data Source	Data Collection Frequency	Scoring of adequacy of fidelity
Principal attends	Sign-in/admin. data	Annual, July	No = 0 Yes = 3
Asst. principal attends	Sign-in/admin. data	Annual, July	No = 0 Yes = 1
Teacher leader(s) or community involvement specialist	Sign-in/admin. data	Annual, July	No = 0 Yes = 1 point/attendee 0 - 4
A teacher in TLSI graduate program	Sign-in/admin. data	Annual, July	No = 0 Yes = 1
Develop a school action plan	UF administrative data	Annual, July	No = 0 Yes = 3
Summer Leadership Institute Fidelity Score			**Range 0 – 12**

B. School level
0 points (Inadequate, if score is 0-3)
1 point (Low fidelity, if score is 4-6)
2 points (Medium fidelity, if score is 7-9)
3 points (High fidelity, if score is 10 or more)

C. Overall project level: Adequate Fidelity = At least 75% of schools have a score of 2

Exhibit B-2. Implementation with Fidelity for each Key Component of the Intervention, at the Sample Level

Key Components (from Logic Model)	Measurement (see Fidelity Measure attachment)	Definition of implementation "with fidelity" at sample level	Year 1 % of schools meeting fidelity threshold for component	Year 1 Was the component implemented with fidelity at the sample level? (Y/N)	Year 2 % of schools meeting fidelity threshold for component	Year 2 Was the component implemented with fidelity at the sample level? (Y/N)	Year 3 % of schools meeting fidelity threshold for component	Year 3 Was the component implemented with fidelity at the sample level? (Y/N)
Teacher Fellows Program	School-level score, 0 – 6 point scale	At least 75% of schools have a score of 4 or higher	95%	YES	90%	YES	100%	YES
Early Childhood Education Graduate Program	School-level score, 0 – 6 point scale	At least 75% of schools have a score of 5 or higher	25%	NO	50%	NO	50%	NO
Principal Fellows Program	School-level score, 0 – 3 point scale	At least 75% of schools have a score of 2 or higher	80%	YES	55%	NO	40%	NO
Summer Leadership Institutes	School-level score, 0 – 3 point scale	At least 75% of schools have a score of 2 or higher	55%	NO	70%	NO	90%	YES

Appendix C. Impact Estimates

Table C-1. Confirmatory Analysis of Schoolwide Impact on Teacher Survey

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Learner-centered instruction	-0.073	0.049	0.142	1190	40
Assessment-informed practice	-0.054	0.044	0.217	1184	40
Developmentally appropriate practices	-0.033	0.047	0.473	1188	40
Emphasis on higher order thinking skills	0.002	0.036	0.962	1194	40
Differentiated instruction	-0.080	0.035	0.024	1194	40
Culturally responsive instruction	-0.044	0.061	0.469	1184	40
Collaboration around instruction	-0.015	0.079	0.845	1189	40
Trusting relationships between teachers	0.015	0.056	0.790	1186	40
Principal leadership	0.065	0.080	0.411	1178	40
Teacher leadership	0.050	0.071	0.477	1188	40
Family partnerships	0.061	0.062	0.326	1189	40
Regular use of variety of assessments	-0.042	0.046	0.363	1186	40
Early childhood instructional knowledge	0.035	0.039	0.363	1180	40
General instructional knowledge	0.024	0.034	0.481	1180	40
Governance activities	0.380	0.189	0.044	1186	40
Early learning outreach activities	0.356	0.182	0.050	1186	40

Table C-2. Exploratory Analysis of Schoolwide Impact on Teacher Survey in Medium- to High-fidelity Schools

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Learner-centered instruction	0.048	0.110	0.664	968	29
Assessment-informed practice	0.042	0.094	0.654	964	29
Developmentally appropriate practices	0.087	0.103	0.397	966	29
Emphasis on higher order thinking skills	0.078	0.085	0.355	971	29
Differentiated instruction	-0.021	0.079	0.791	971	29
Culturally responsive instruction	0.126	0.141	0.373	964	29
Collaboration around instruction	0.219	0.159	0.167	968	29
Trusting relationships between teachers	0.216	0.107	0.043	965	29
Principal leadership	0.213	0.148	0.151	963	29
Teacher leadership	0.359	0.145	0.013	968	29
Family partnerships	0.342	0.124	0.006	968	29
Regular use of variety of assessments	0.233	0.100	0.020	966	29
Early childhood instructional knowledge	0.085	0.083	0.308	961	29
General instructional knowledge	0.094	0.080	0.237	961	29
Governance activities	-0.281	0.412	0.495	967	29
Early learning outreach activities	0.556	0.395	0.160	967	29

Table C-3. Confirmatory Analysis of Schoolwide Impact on Students

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Math achievement	-0.037	0.037	0.325	10587	40
Reading achievement	-0.037	0.020	0.068	10610	40

Table C-4. Exploratory Analysis of Schoolwide Impact on Students Who Remained in the Same School

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Math achievement, grades 1 & 2 at baseline	-0.023	0.058	0.687	4732	40
Reading achievement, grades 1 & 2 at baseline	-0.021	0.028	0.450	4740	40
Math achievement, grades PK & K at baseline	0.012	0.066	0.854	2571	40
Reading achievement, grades PK & K at baseline	-0.005	0.038	0.888	2577	40

Table C-5. Exploratory Analysis of Schoolwide Impact on Students Who Remained in Medium- to High-fidelity FMTI Schools

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Math achievement, grades 1 & 2 at baseline	-0.076	0.091	0.403	3859	29
Reading achievement, grades 1 & 2 at baseline	-0.075	0.054	0.166	3867	29
Math achievement, grades PK & K at baseline	0.020	0.121	0.870	2062	29
Reading achievement, grades PK & K at baseline	-0.106	0.092	0.248	2067	29

Table C-6. Confirmatory Analysis of ECTLSI Impact on Teacher Survey Outcomes

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
Learner-centered instruction	-0.098	0.084	0.246	439	33
Assessment-informed practice	0.048	0.126	0.704	440	33
Developmentally appropriate practices	-0.068	0.137	0.619	440	33
Emphasis on higher order thinking skills	-0.004	0.075	0.957	445	33
Differentiated instruction	0.054	0.110	0.622	444	33
Culturally responsive instruction	0.118	0.164	0.472	436	33
Collaboration around instruction	0.238	0.145	0.101	443	32
Trusting relationships between teachers	0.119	0.132	0.369	441	32
Principal leadership	-0.158	0.086	0.064	442	32
Teacher leadership	0.444	0.189	0.019	445	33
Family partnerships	-0.303	0.187	0.105	442	32
Regular use of variety of assessments	-0.155	0.159	0.330	440	33
Early childhood instructional knowledge	0.380	0.101	0.000	443	33
General instructional knowledge	0.273	0.100	0.006	443	33
Governance activities	2.713	1.198	0.023	446	33
Early learning outreach activities	1.234	0.535	0.021	446	33

Table C-7. Confirmatory Analysis of ECTLSI Impact on CLASS Outcomes

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Teacher N	School N
CLASS emotional support score	-0.035	0.306	0.910	62	26
CLASS classroom organization score	-0.391	0.366	0.285	62	26
CLASS instructional support score	1.657	0.434	0.000	62	26

Table C-8. Confirmatory Analysis of ECTLSI Impact on Student Outcomes

	Impact Estimate	Impact Estimate Standard Error	Impact Estimate p-Value	Student N	Teacher N	School N
Math achievement	-0.201	0.150	0.179	3859	203	20
Reading achievement	0.158	0.109	0.147	3858	232	21