



LAUP began the Teacher Institute during the 2009-2010 program year, as part of its commitment to developing professional growth and ensuring LAUP children receive a high-quality preschool experience. The Teacher Institute provides preschool teachers with hands-on activities, lectures from respected members of their field, and opportunities for questions, comments, and feedback. Engaging teachers in professional development allows teachers to expand their knowledge of teaching strategies, improve their skills, and reflect on their own teaching. In general, the following findings emerged from the evaluation of the 2013-2014 Teacher Institute (TI):

- Teachers completed all 3 days of the TI in record numbers.
- Overall, participants of the TI reported high satisfaction; however, it was suggested that more hands-on opportunities be provided.
- Coaches were generally effective in helping to implement practices learned in the TI.
- Participants reported feeling confident in teaching mathematics following the TI.
- Teachers increased their use of instructional practices they learned in the TI.
- Limited time to plan and prepare for activities was the primary challenge teachers reported facing when trying to implement instructional practices or techniques learned in the TI.

## Overview

Preschool quality centers on the competency of preschool educators and their understanding of effective teaching methods (Ciyer, Nagasawa, Swadener, & Patet, 2010). Professional development and coaching strategies in math and science have been shown to increase the quality of instruction in preschool classrooms (Rudd, Lambert, Satterwhite & Smith, 2009). Professional development is the purposeful acquisition of skills and knowledge that pertains directly to increased efficacy in one's chosen field. The 2013-14 TI's goals were to enhance lead teachers' strengths in relation to the Instructional Support dimension of the CLASS (Classroom Assessment Scoring System; Pianta, La Paro, & Hamre, 2008) assessment tool. The TI provided hands-on activities, lectures from respected members of the Early Childhood Education field, and opportunities for questions, comments, and feedback. This three-day series of professional development workshops allowed teachers to enhance their knowledge of teaching strategies, improve their skills, and reflect on their own teaching.

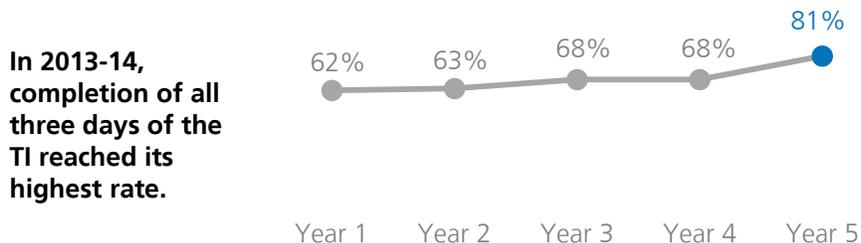
The 2013-2014 TI focused on teaching mathematics in Early Childhood Education classrooms; speakers were Dr. Isabelle Alessandra (Innovative Early Childhood Education Systems, LLC) and Dr. Sharon Shaffer (Early Learning in Museums, Inc.). Key components covered at the LAUP Teacher Institute Year 5 were as follows:

- **Mathematical concepts** (number sense, algebra and functioning, measurement and comparing, geometry, mathematical reasoning)
- **Research-based characteristics of effective math** (using problems that have meaning for children; expecting that children will invent, explain, and offer critiques of their own solutions and strategies; providing opportunities for both creative invention and practice; encouraging children by providing carefully supported opportunities which allow them to deepen their understanding; helping children see connections)
- **Alignment** (California Preschool Learning Foundations—CPLF, CLASS—Instructional Support, ECERS. Provided pedagogical teaching strategies that are in conjunction with assessments of quality)

## Teachers completed all 3 days of TI in record numbers.

Participation for the 2013-2014 TI included 266 pre-registration participants from across the LAUP network, with 215 completers (defined as those who attended all three days of the institute). This led to a completion

rate of 81%, the highest completion rate in all 5 years that the TI has been offered (see Appendix for detailed table).



### A great majority of teachers were satisfied with the TI.

At the end of the TI, participants were asked to rate their level of satisfaction on a 5-point scale ranging from “Very dissatisfied” to “Very satisfied”. Through the TI’s history, satisfaction levels have remained above 96%; however, the 2013-2014 TI reported the highest percentage of satisfaction coming in at 99.6%. In a consistent effort to improve the quality of the TI, participants were asked an open-ended question “What changes to the TI would you suggest for the future?” An analysis of the responses prompted two main changes that could potentially improve the TI for future participants. The responses with the highest frequency were “more hands-on activities” and “teach more science-based lessons.”

### Coaches were generally effective in helping to implement practices learned in the TI.

In total, 87% of participants reported coaches were “moderate/very effective” in helping to implement practices learned at the 2013-2014 TI. Participants were asked to rate the effectiveness of their coaches in helping to implement the practices learned at the 2013-2014 TI. Overall, participants rated their coach’s effectiveness as moderately to very effective. Successful coaches significantly improve teachers’ teaching effectiveness, conceptual knowledge, domain knowledge, and efficacy (Sailors & Shanklin, 2010). The figure below, which compares all past TIs, shows the percentage of participants for each year who felt they received moderate to very effective help from coaches in implementing the lessons of the 2013-2014 TI.



### Participants reported feeling confident in teaching mathematics.

A total of 97% of participants reported feeling confident in teaching mathematics following the 2013-2014 TI. Confidence is a significant factor in providing high-quality classroom instruction (Holzberger, Phillip, & Kunter, 2013). In a pre- to post-TI analysis, participants were asked to rate their level of confidence in teaching mathematics from 1 to 5 where 1 was “Not confident” and 5 was “Very confident”. Prior to completing the 2013-2014 TI, only 72.4% of participants reported confidence in teaching mathematics. Following their completion of the TI, 97% of the participants reported feeling confident in teaching mathematics.



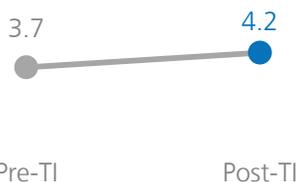
## Teachers increased their use of instructional practices they learned in the TI.

The frequencies of several instructional techniques and practices were assessed using a pre- to post-TI self-report survey. Participants were asked to rate their frequency of practice from 1-5, with 1 being "Rarely/never" and 5 being "In each activity/multiple times a day". The average use of each of the instructional practices identified increased statistically significantly immediately following the TI ( $p < 0.001$ ).

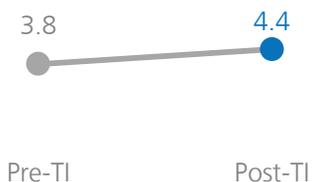
### Teachers reported an increase in their use of these instructional practices following their attendance of the TI.

Asking questions...

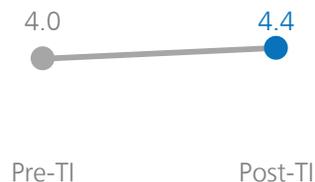
that are follow-ups to deepen children's understanding of an early math concept



that prompt children to explain their thinking during mathematical explorations



that are open-ended to encourage children to analyze and reason to expand mathematical understanding



Selecting...

math words ahead of time to tie into a larger concept

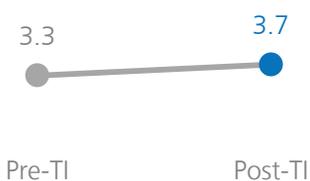


books ahead of time to tie into a larger math concept

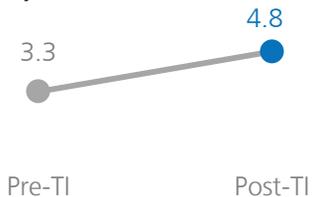


Planning...

math activities/experiences throughout the classroom



lessons and activities with a specific mathematical learning objective in mind

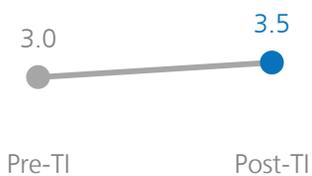


Conducting assessments...

that are informal with the intent to identify and address children's individual math related needs



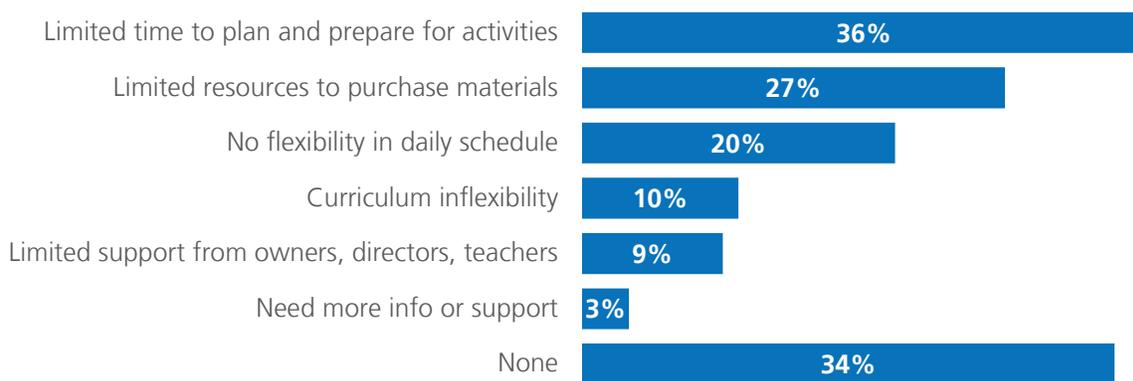
that are informal to shape lesson planning in mathematics



Math skills have been shown by some recent research to be the strongest predictor of future success, potentially more so than reading and attention skills (Manfra, Dinehart, & Sembianti, 2014). Most children enter preschool with an understanding of mathematical reasoning and the capacity to demonstrate computational awareness. For example, children will often assert their age to the teacher by counting on their fingers; they may count how many steps it takes to get to the rug, or say they are taller than a classmate. The fact that teachers increased their use of instructional practices means that they can develop conversations by asking follow-up questions and comparison questions that encourage scientific reasoning (Rudd, Satterwhite, & Lambert, 2010).

### “Limited time to plan and prepare” is the primary challenge teachers face when trying to implement instructional practices or techniques addressed at the Teacher Institute.

Participants were asked, “Which of the following challenges have you encountered while trying to implement instructional practices covered in the Teacher Institute?” Participants were asked to check all that applied from a list of potential challenges; for the fifth straight year, “limited time to plan and prepare for activities” remained the highest reported challenge to teachers trying to implement techniques and practices learned at the 2013-2014 TI. A total of 36% of participants reported limited time to plan and prepare as their main challenge. The figure below illustrates the distribution of challenges teachers faced while trying to implement the instructional practices learned at the 2013-2014 TI.



### Recommendations

Positive feedback from participants as well as statistically significant increases in self-reported frequency of instructional practices indicate a successful 2013-2014 TI overall. Research strongly supports the benefits of teachers’ professional development to student outcomes, classroom quality, and overall educational improvements (Ozdemir, 2013; Corlu & Corlu, 2012). The opportunities presented to LAUP preschool teachers throughout LA County are indicative of LAUP’s commitment to connecting community and education. LAUP coaches and staff strongly encourage feedback from participants in order to address areas of possible improvement for future TIs. The following recommendations are based on the feedback from participants, taken from the last five years of survey findings:

- **Future Teacher Institutes should spend more time promoting hands-on activities to the attendees.** Hands-on instruction is a key aspect of memory retention, and increases the likelihood of implementation in the classroom. Furthermore, coaches should be cognizant of providing “too much” support to the participants; 23% of participants reported receiving more support than they would like. Coaches should make a conscious effort to gauge the participants’ level of need by asking open-ended questions, requesting clarification, and developing meaningful relationships.
- **Presenters and coaches should invest in developing time-efficient lessons and activities that participants can utilize in their classrooms.** Time to plan and prepare remains the primary challenge facing participants of the TI, so the development of time-saving techniques should be a priority.
- **Presenters at the Teacher Institute should incorporate science instruction.** In an open-ended question participants were asked to make suggestions for future Teacher Institutes; several participants indicated that

science should be focused on in the future. According to the U.S. Department of Education, the United States ranks 17th in Science and 25th in Mathematics among industrialized nations; moreover, the United States Government is implementing numerous S.T.E.M. (Science, Technology, Engineering, and Math) - related educational programs to increase S.T.E.M. occupations through 2020. Science and science-related experiments are gaining significant empirical support for their effectiveness and usefulness in preparing children for K-12 education in math, reading, and art domains. Since every technique and practice measured in LAUP's evaluation was shown to increase as a result of the TI, it is likely that science-based instruction would produce a similar increase in implementation. Emphasizing science-based curricula for participants to use in their classrooms would be a productive direction for future Teacher Institutes to take.

## References

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## Appendix

### Evaluation Approach

The following questions guided LAUP's evaluation of the TI: What did the teachers learn during their time at the Teacher Institute? Overall, how satisfied are the participants with the 2013-2014 TI? What is the likelihood that the participants will implement the strategies they learned at the TI? Finally, how effective was the coaches' support of the participants' learning while attending the TI?

The current evaluation utilized quantitative and qualitative methods (surveys including open-ended questions and interval rating scales) to assess quality and perceived effectiveness of the 2013-2014 TI. Surveys administered pre- and post-TI provided data for our analysis; paired sample t-tests were run to determine whether there was a statistically significant difference between participants' pre-TI and post-TI responses; then, descriptive statistics were calculated to gain a better understanding of participants' satisfaction with different elements of the TI. Open-ended questions informed our qualitative analysis. For example, participants were asked to describe how the TI might be improved for future planning purposes.

## Detailed Tables

### Teacher Institute Participation

	Year 1 09-10	Year 2 10-11	Year 3 11-12	Year 4 12-13	Year 5 13-14	5 Year TOTAL
# Registered	237	259	260	234	266	1256
# Attended 3 Days	146	163	177	158	215	859
% of Registered Who Completed 3 Days	62%	63%	68%	68%	81%	68%

For more information about this evaluation please contact [researchmail@laup.net](mailto:researchmail@laup.net).