



**LUME Institute**  
**Discovery Initiative Impact Study**  
**Executive Summary**

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Statistical analysis by the  
Division of Biostatistics at  
Washington University School of Medicine in St. Louis  
**2017**

Initial study conducted by the  
Public Policy Research Center at the  
University of Missouri-St. Louis  
**2016**

At LUME Institute (LUME), we believe the power to change society lies in the way young children are taught. We also believe that our children need and deserve programs that are proven to make a positive impact on their social, emotional, and cognitive development.

LUME's commitment to impactful programming also means that we are committed to collecting and analyzing our data. This executive summary focuses on results from an independent analysis conducted by the Public Policy Research Center at the University of Missouri-St. Louis and from an additional statistical analysis conducted by the Division of Biostatistics at Washington University School of Medicine in St. Louis.

### **The study helped us better understand:**

- the effect of LUME's professional development on participating early childhood educators' knowledge and behavior
- participants' implementation of emotionally reflective teaching and development of attachment with their students
- the resulting decrease in behavioral problems and increase in positive interactions in the classroom

### **Key findings:**

The **LUME Approach was proven effective in making statistically significant improvement for teachers and students** through:

- strengthened student and teacher relationships
- improved attitudes, knowledge, and behavior in teachers and students
- improved emotional development in students

In addition, LUME-supported teachers reported:

- **74% reduced power struggles with children**
- **84% reduced isolation and expulsion of children**
- **100% have found ways to foster the emotional development of children**

### **Background Information: LUME Institute and the LUME Approach**

LUME Institute (LUME) and the LUME Approach, wholly owned by its lab school University City Children's Center (UCCC), were founded in 2008 and evolved from the values, philosophy, methodologies, and innovation embodied at UCCC. Through its programs, LUME Institute offers systemic and comprehensive approaches to early childhood education by:

- providing family education workshops to parents/caregivers,
- designing and implementing professional and workforce development curricula and trainings for teachers, and
- establishing strategic partnerships within the community that prepare all children for life

The LUME Approach is researched-informed and based on years of experience and observation that children will take greater academic risks and learn more when they feel emotionally supported in the classroom.

### **The LUME Approach Foundations Course**

The LUME Approach professional development for early childhood educators addresses crucial outcomes in mental health for children. The program aims to improve emotional responsiveness of early childhood educators and thereby **support children's mental health** from birth to five in early childhood settings. Over the years, LUME Institute developed the LUME Approach Foundations Course based on professional development provided to teachers at University City Children's Center as an element of the school's early childhood mental health consultation model. This course is now being offered as professional development to early childhood educators across the St. Louis region and beyond.

### **Overview of the Project and Study**

In 2014, LUME Institute partnered with YWCA Metro St. Louis to provide the LUME Approach Foundations Course professional development to Head Start and Early Head Start teachers in St. Louis County. LUME Institute received a grant from the St. Louis County Children's Service Fund to conduct professional development with a minimum of 40 teachers and gather data on up to 400 children in order to evaluate the impact of the proprietary professional development model.

YWCA submitted two administrations of standard assessments on all children for analysis: from late fall 2014 and from spring 2015. LUME conducted professional development for about half of the YWCA teachers from January 2015 through May 2015 with ongoing connection with and surveys of teacher participants in fall 2015 and beyond.

The Public Policy Research Center at the University of Missouri – St. Louis (UMSL) conducted a mixed-methods quasi-experimental evaluation of the LUME Approach professional development delivered to YMCA St. Louis Head Start/Early Head Start early childhood educators. UMSL conducted descriptive and inferential statistics to measure the effectiveness of the LUME professional development program. The evaluation measured the effect of the professional development on the early childhood educators' knowledge and behavior, their implementation of child-driven teaching and development of attachment with their students, and the resulting decrease in behavioral problems in the classroom. The evaluation used an interrupted time series (ITS) design. UMSL prepared an initial report in late 2015 and early 2016. Additional statistical analysis of child-level assessment data was conducted in 2017 by a contracted statistician at Washington University's Division of Biostatistics at Washington University St. Louis to look further into the program's impact on children.

## Executive Summary

**The LUME Approach proved effective in producing measurable improvement for children and teachers.** Analysis found change in all types of outcomes identified in LUME’s logic model – including improved emotional development for the Head Start and Early Head Start students, and improved teachers’ attitude, knowledge and behavior.

The partners selected the mental health indicators of the Teaching Strategies GOLD<sup>®</sup>, a standard child outcomes assessment tool, that best reflected the mental health objectives of the LUME Approach. **Children who were taught by educators using the LUME Approach showed a statistically significant improvement (p<.05) in a composite measure of these mental health indicators over a 5-month time period when compared to children who were not taught by educators using the LUME Approach.**

UMSL researchers found there was improvement in child-level outcomes as measured by GOLD<sup>®</sup>. An additional statistical analysis of a mental health composite measure of the GOLD<sup>®</sup> was performed by a Washington University statistician. Analyses showed statistically significant improvement for the 439 children whose teachers received LUME Approach professional development compared to the 378 children whose teachers did not.

As indicated in the Discovery Initiative Impact Study logic model, LUME’s goal was to test a curriculum’s effectiveness in helping teachers practice self-reflection, and in understanding and supporting young children’s mental health and healthy emotional development. The LUME curriculum is designed for teachers to gain knowledge of their own emotional development as well as of early childhood emotional development, resulting in changed teacher behavior in the classroom and the impact of that changed teacher behavior measured by improved outcomes for the Head Start and Early Head Start students.

The LUME Approach Foundations Course professional development consisted of four areas of emphasis:

1. Emotional Milestones
2. Mirroring
3. Discipline
4. Early Literacy

### Evaluation Methods, Process, Analysis

One instrument was administered to measure outcomes for the Head Start and Early Head Start students: Teaching Strategies GOLD<sup>®</sup> observation systems. Teaching Strategies GOLD<sup>®</sup> is an ongoing observational system for assessing children from birth through kindergarten. It is based on 38 objectives for development and learning that include predictors of school success and are based on school readiness standards. The objectives are aligned with the *Common Core State Standards*, Missouri early learning guidelines, and the *Head Start Child Development and Early Learning Framework*. The objectives cover 10 areas of development and learning, including broad developmental areas, content areas, and English language acquisition.

Ten assessment instruments were administered to measure teacher outcomes: a knowledge test for each of the four topic areas of the course, a reflections workbook that included separate sections on all four topic areas, an online survey, and the Mayer-Salovey-Caruso Emotional Intelligence Test

(*MSCEIT*). In designing its professional development programming for early childhood educators, LUME provided for data collection efforts that would allow it to assess its performance on a variety of fronts. One approach that LUME used was an online survey of course participants designed and administered by UMSL researchers. This survey was designed to obtain participant reactions to the professional development; to assess attitude change; and to determine to what extent information presented during the professional development was applied in participant classrooms.

### **Educator Results**

Participants reported a variety of beneficial effects in their classroom interactions with the children. The comments to the open-ended questions indicate that respondents see these effects as arising from a deeper understanding of emotions that a child might exhibit through difficult behavior. Based on the results of the survey, LUME was successful in communicating the message regarding children's mental health and the profound influence that early childhood teachers have on the children in their classrooms through a focus on emotional development. Particularly encouraging are the statistics on the application of the concepts covered in the professional development, most notably nearly 100 percent of educators who reported that they are frequently finding opportunities to be an emotional partner with a child.

**Behavior:** participants responded positively to implementing what they learned in their interaction with young learners in the YWCA Head Start and Early Head Start classrooms. For example, in the survey, **84 percent of responding participants reported reduced reliance on time-out and 74 percent reported a decline in the frequency with which they found themselves in a power struggle with a child.** A high percentage of teachers reported they were changing practice on a daily basis, were promoting self-regulation, being an emotional partner to a child, using self-reflection to improve teaching practices, recognizing patterns of attachment, and relating to a child through genuine encounters.

**Attitude:** LUME Approach professional development participants experienced changed attitudes toward the young learners in their classroom and they reported a positive experience in the process of the program.

**Knowledge:** the participants demonstrated statistically significant knowledge gains in the four key areas of emphasis the LUME Approach Course.

### **Forward Movement**

As LUME Institute continues to make promising gains in the field of early childhood education, we will continue to engage independent researchers in assessing the impact of our model and our work. The publication of the statistical analysis and additional ongoing program evaluation and research will provide further insight into the LUME Approach and the results will be used to further improve the LUME model.