



Global TIES for Children

Transforming Intervention Effectiveness and
Scale



Implementing Quality Early Childhood Education in the Context of the Post-2015 Sustainable Development Goals

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Overview

- **I. Early Childhood Development in the post-2015 Sustainable Development Goals: Process & Update**
- **II. From Goals and Targets to Implementation: How can we implement Early Childhood Education with quality at national scale?**
 - **A. From Small to Bigger: Example from Chile**
 - **B. From Big to Better: Example from Boston**
 - **C. An Observational Measure of Early Childhood Education Quality for Low- and Middle-Income Countries**

Including early childhood development (ECD) in the U.N. Sustainable Development Goals

- ECD not included in the 2000-2015 Millennium Development Goals, beyond infant and maternal mortality
- Beyond survival, children have a right to thrive
- Past 20 Yrs: Much stronger evidence base from psychology, neuroscience, economics, evaluation sciences in support of investing in early childhood
- 2013 – 2015: Efforts to include early childhood development in the SDG's

Making the Case



Young Children as a Basis for Sustainable Development

Issue Brief

Prepared by the Thematic Group on Early Childhood Development, Education, and Transition to Work

February 18, 2014

From the UN Sustainable Development Solutions Network Policy Report

- Children are a common basis for all dimensions of sustainable development. No advances in sustainable development will occur in coming decades without multiple generations contributing to societal improvement. Moreover, **beyond sheer survival, children have a right to thrive, develop to their full potential, and live in a sustainable world.**

From the UN Sustainable Development Solutions Network Policy Report

- **The foundations of brain architecture and functioning, and subsequent lifelong developmental potential, are laid down in the early years in a process that is exquisitely sensitive to external influence.** Early experiences in the home, in other care settings, and in communities interact with genes to shape the developing nature and quality of the brain's architecture.

Benefits of Investment in ECD

- Raising preschool enrollment to 50% in all countries: **value US\$33 billion with benefit / cost ratio 8 to 18**, depending on discount rate (Engle et al., 2011; Behrman & Urzua, 2012)
- US Council of Economic Advisors estimate for the United States (CEA, 2014): benefit-cost ratio of 8.60
- 0-2 parenting program with nutrition supplementation in Jamaica (Walker, Grantham-McGregor et al, 2013; Gertler, Heckman et al., 2013) — 20 years later participating children had:
 - **Higher IQ**
 - **Reduced anxiety, depression and crime**
 - **50% higher earnings**

Final ratified Goal 4 and Target 4.2

- **Goal 4: “Ensure Inclusive and Equitable Quality Education and Promote Life-long Learning Opportunities for All”**
- **4.2: “By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education”**

**LOOKING AHEAD TO POST-2015:
HOW TO IMPROVE QUALITY AT
SCALE IN ECE TO ENSURE
DEVELOPMENTAL POTENTIAL?**

**II. FROM SMALL TO BIGGER
EXAMPLE FROM CHILE**

Dimensions of Quality That Matter in Early Education Programs

- **Structural:** Small group sizes and high adult-child ratios; safe physical setting; qualified and well-compensated personnel
- **Process:** Developmentally focused curriculum; warmth and responsiveness; language-rich environment; teacher skills that promote specific domains of development in children

Investing in Our Future: The Evidence Base on Preschool Education

Hirokazu Yoshikawa, Christina Weiland, Jeanne Brooks-Gunn, Margaret R. Burchinal, Linda M. Espinosa, William T. Gormley, Jens Ludwig, Katherine A. Magnuson, Deborah Phillips, Martha J. Zaslow



New Wave of Evidence on How to Achieve Increases in Process Quality

- Most promising recent evidence: Combination of
 - 1) **Developmentally focused instruction / curricula (focused on particular sets of skills incorporating engaging, play-based activities** – for language / literacy; math; socio-emotional; nature / environment; arts-based skills)
 - 2) **On-site professional development (mentoring / coaching);**
 - 3) **Regular monitoring of child progress that is not high stakes, but to inform teachers' practice** – adjust content and approach based on how individual children are doing
- Strong set of recent examples, including some at scale, for language / literacy; math; socio-emotional; some combinations (Yoshikawa et al., 2013)

Low levels of quality in ECE: Chile

(Strasser & Lisi, 2009)

- Low levels of stimulating activities; low levels of learning materials available in classrooms.
- Non-instructional activities: more than half of classroom time.
- (Children eating snacks, teachers managing the children's behavior, and recess time)
- Instructional activities typically focused on unstructured conversations or syllabic repetition.
- On average, five minutes per day reading books with children; one minute teaching the names and/or sounds of letters.

Investing in Preschool Quality in Chile: Un Buen Comienzo

- Teacher professional development through **in-classroom observation and coaching** to improve children's language, health and socio-emotional development
- From randomized evaluation to scaling up with Continuous Quality Improvement / networked learning communities



Cycle of coaching each month

12 cycles in 2 years of program



ACOMPANIAMIENTO

PRE

ACOMPANIAMIENTO

POST

Group
Reflection Mtg
(Every 2 months)

Didactic Workshop

Acompañamiento
2:
Implementing

Acompañamiento
1:
Modeling



Language and socio-emotional foci of 12 modules [but no prescribed dosage]

Lenguaje: “Conocer más a nuestros niños y niñas - Evaluación Formativa”.

Lenguaje: “Lectura de Cuentos 1: ¿Cómo Desarrollar Vocabulario en Nuestros Niños”.

Socioemocional: “Clima positivo de aula & Manejo de grupo.”.

Lenguaje: “Lectura de cuentos II: Estrategias para Desarrollar la Comprensión Oral”.

Trabajo con Familia: “Encuentros con Familias UBC: La importancia de acercar la familia a la escuela”.

Lenguaje: “El Desarrollo de la Escritura”. “Cierre UBC”.

Socioemocional: “Estrategias para trabajar con niños y niñas que requieren atención especial en el aula”.

Socioemocional: “Sensibilización de los derechos del niño”.

Lenguaje: “Lectura de cuentos III. Conociendo dos nuevas estrategias de comprensión”.

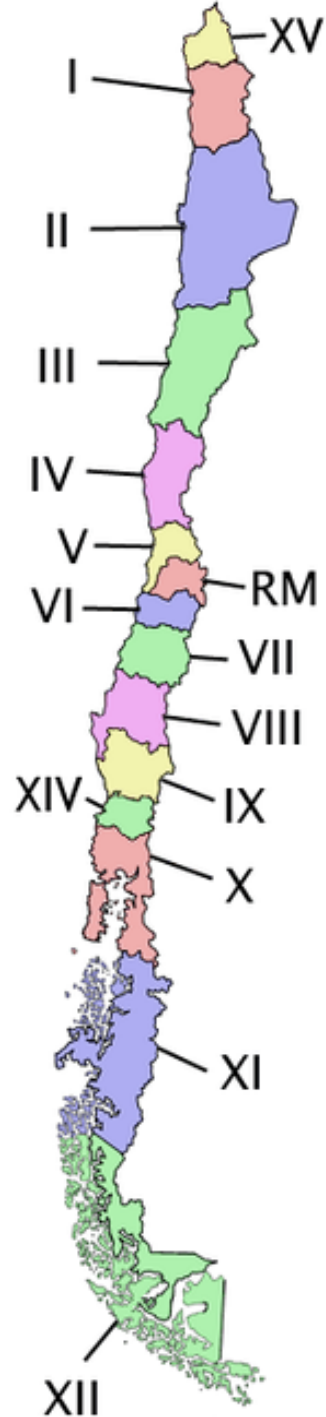
Lenguaje: “Lectura de cuentos IV. Integración de estrategias y trabajo de lenguaje en la jornada diaria”

Lenguaje: “Unidades Temáticas: ¿Cómo aprovechar un cuento trabajando de manera integrada diferentes contenidos?”.

Lenguaje: “Escritura II: Enseñando la Escritura como un Proceso”.

UBC Version 1: Impact Evaluation, Santiago (Region Metropolitana)

- Low-income municipalities of **Santiago, Chile**
- Cluster-randomized experiment with 64 preschools (Moreno & Lugo-Gil, 2008), 91 classrooms, 1,868 children randomly assigned to:
- Condition 1) Full UBC condition
- Condition 2) Comparison condition (minimal program: stress reduction class; books provided to classrooms)
- **Did Un Buen Comienzo improve educational process quality?**



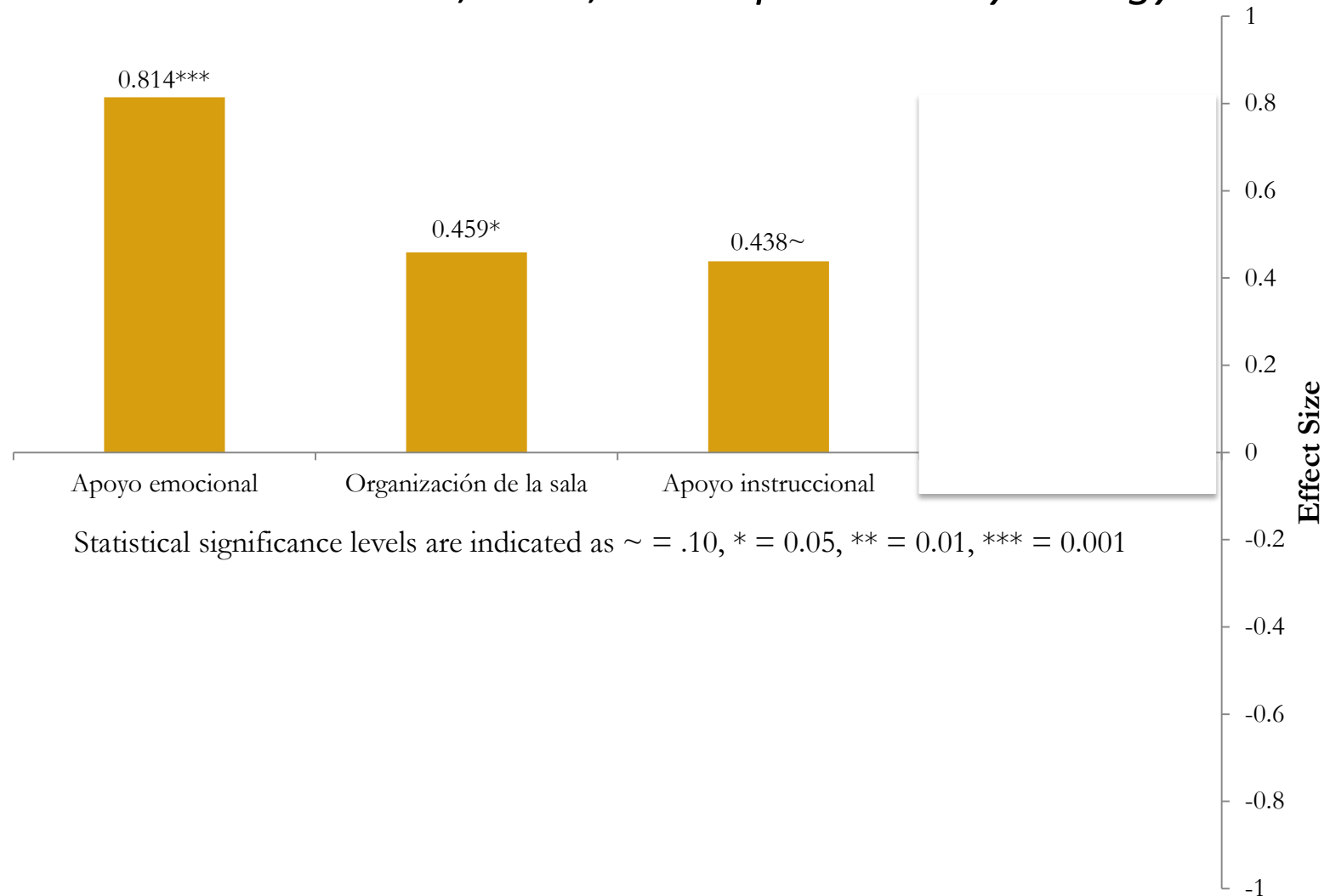
First Study in Latin America to validate CLASS measure of observational quality in ECE

(Hamre & Pianta, 2009)

- CLASS subscales confirmed and validated in Chile (Leyva, Weiland, Yoshikawa, et al., 2015, *Child Development*)
 - **Emotional support:**
 - Shared activities, positive emotion and expectations, warm, respectful interactions
 - **Classroom Organization:**
 - Learning activities with few disruptions, clear instructions, brief transitions, lesson and material preparation
 - **Instructional support:**
 - Open-ended questions and prompts, responsiveness, problem solving, elaboration, planning, back-and-forth exchanges

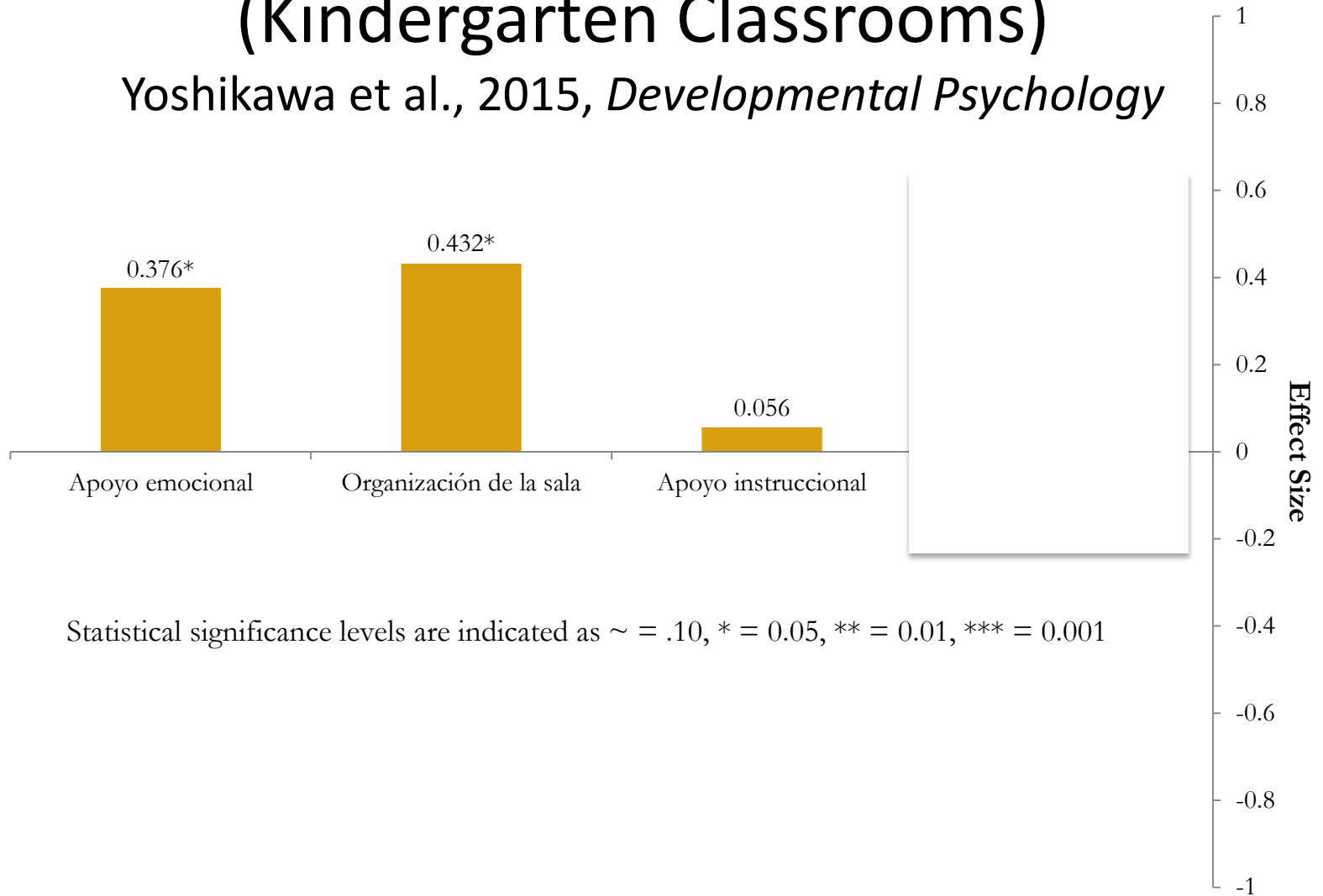
Effects on the CLASS, After Year 1 of Intervention (PreK Classrooms)

Yoshikawa et al., 2015, *Developmental Psychology*



Effects on the CLASS, After Year 2 of Intervention (Kindergarten Classrooms)

Yoshikawa et al., 2015, *Developmental Psychology*



Statistical significance levels are indicated as $\sim = .10$, $* = 0.05$, $** = 0.01$, $*** = 0.001$

Measuring effects on children – need to take into account absenteeism

- Measured preprimary and kindergarten attendance rigorously – 10 times a year, randomly selected days, through direct observation.
 - On average every day **23 percent of children** are absent from classrooms.
 - Across the year, the average child misses **one-quarter** of preschool and kindergarten days.
- Did absenteeism reduce UBC impacts on children?

Positive effects on child pre-literacy when taking into account basic dosage (Arbour, Yoshikawa, Murnane, Snow et al., in press, *Journal of Research on Educational Effectiveness*)

Figure 2. Effect sizes for UBC impacts on language outcomes **among all children**

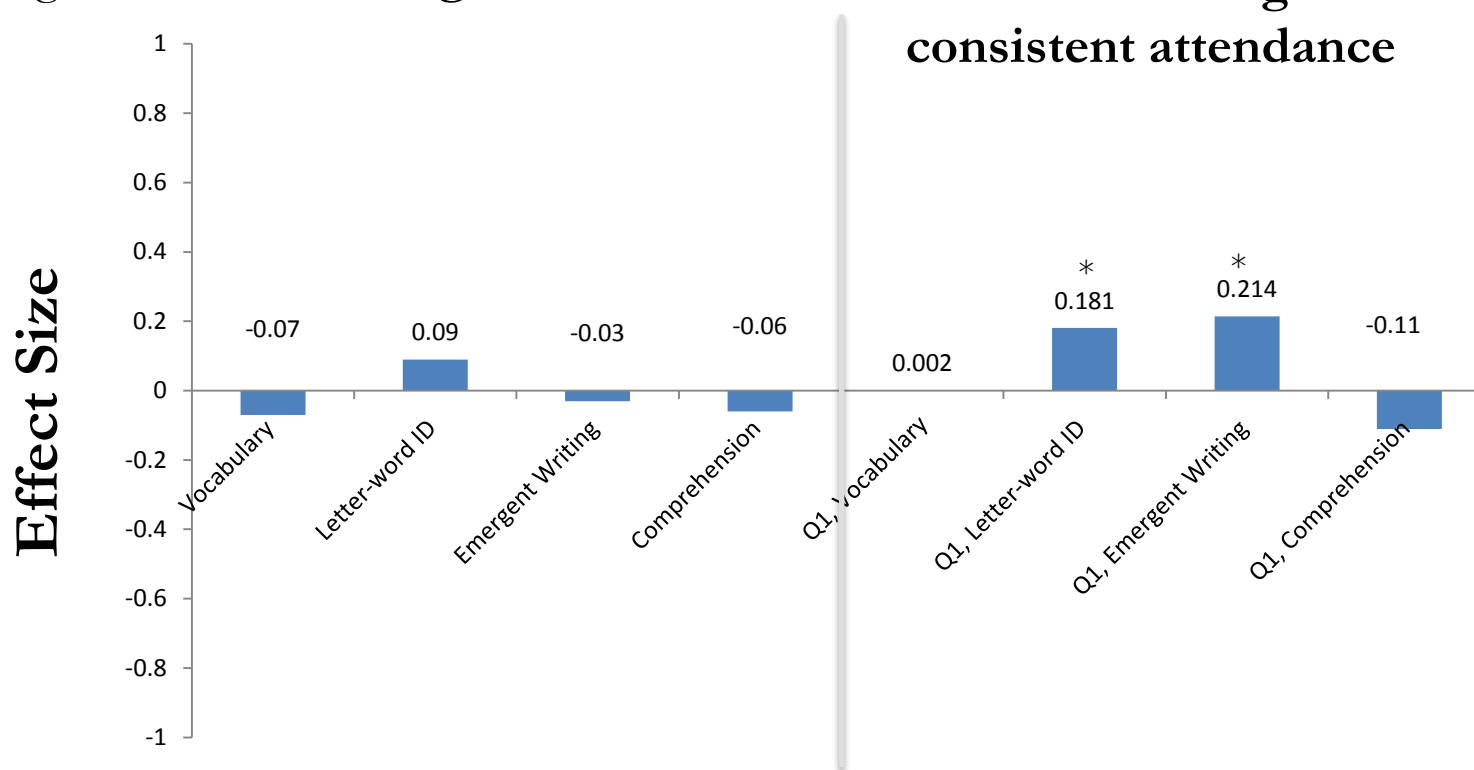
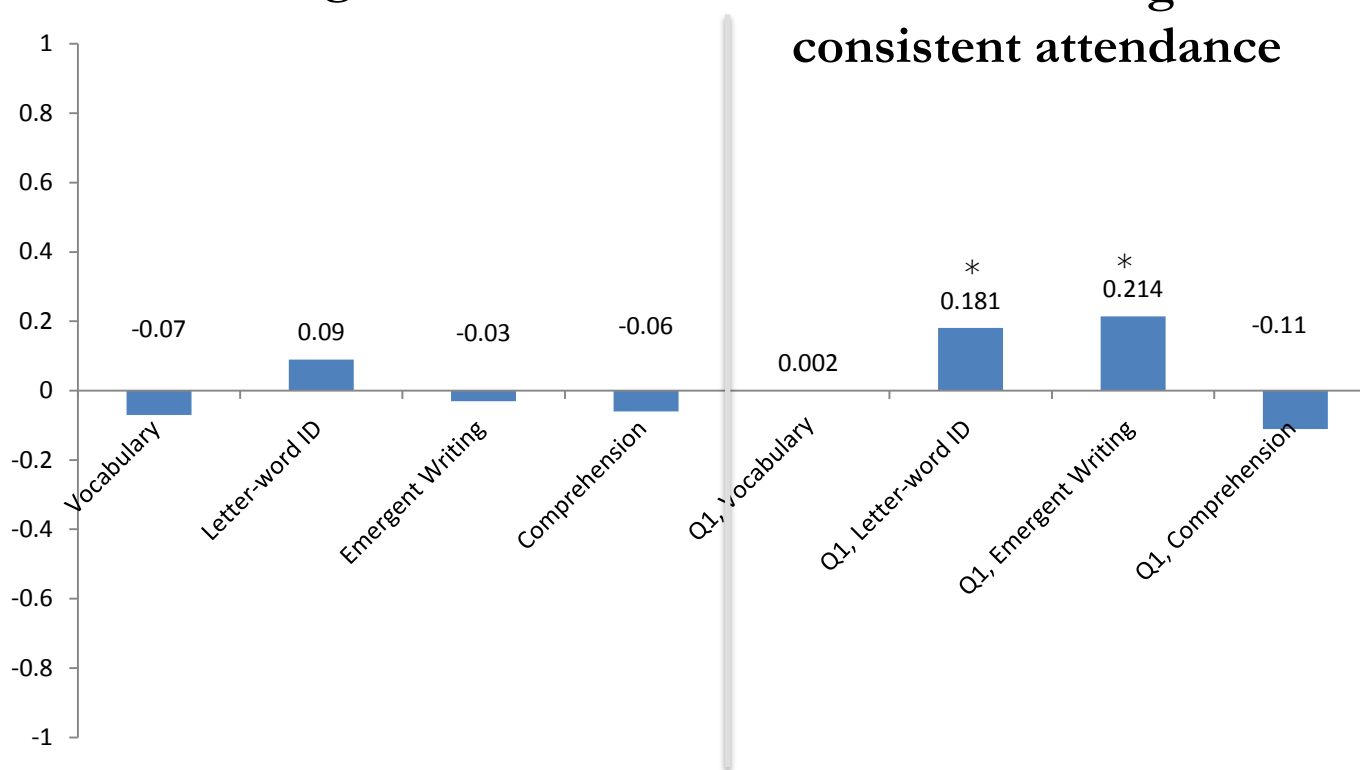


Figure 3. Effect sizes for UBC Impacts on language outcomes **among children with highest likelihood of consistent attendance**



Statistical significance levels are indicated as ~ = .10, * = 0.05, ** = 0.01, *** = 0.001



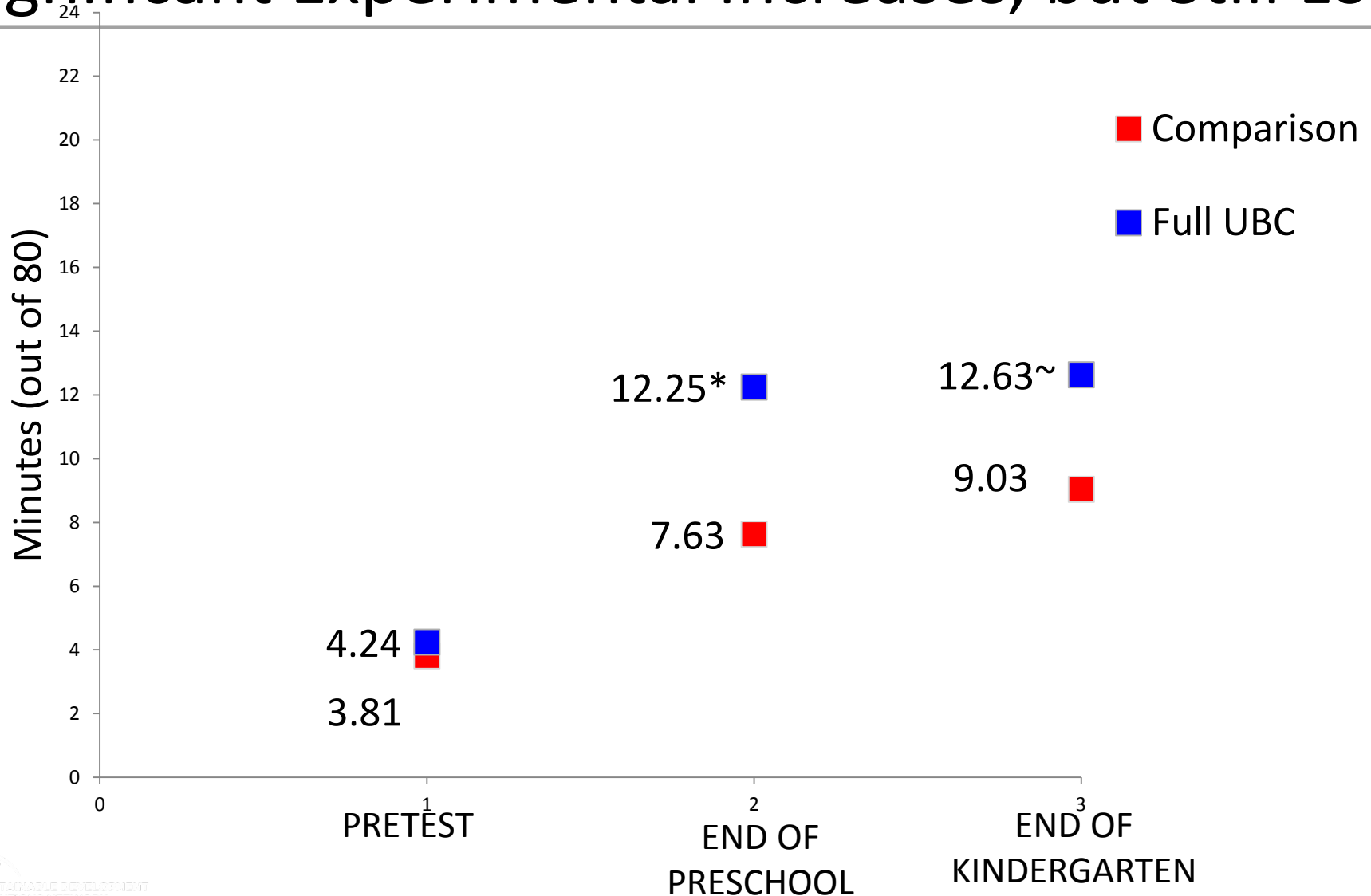
What did children actually experience?

Fidelity of Implementation Study

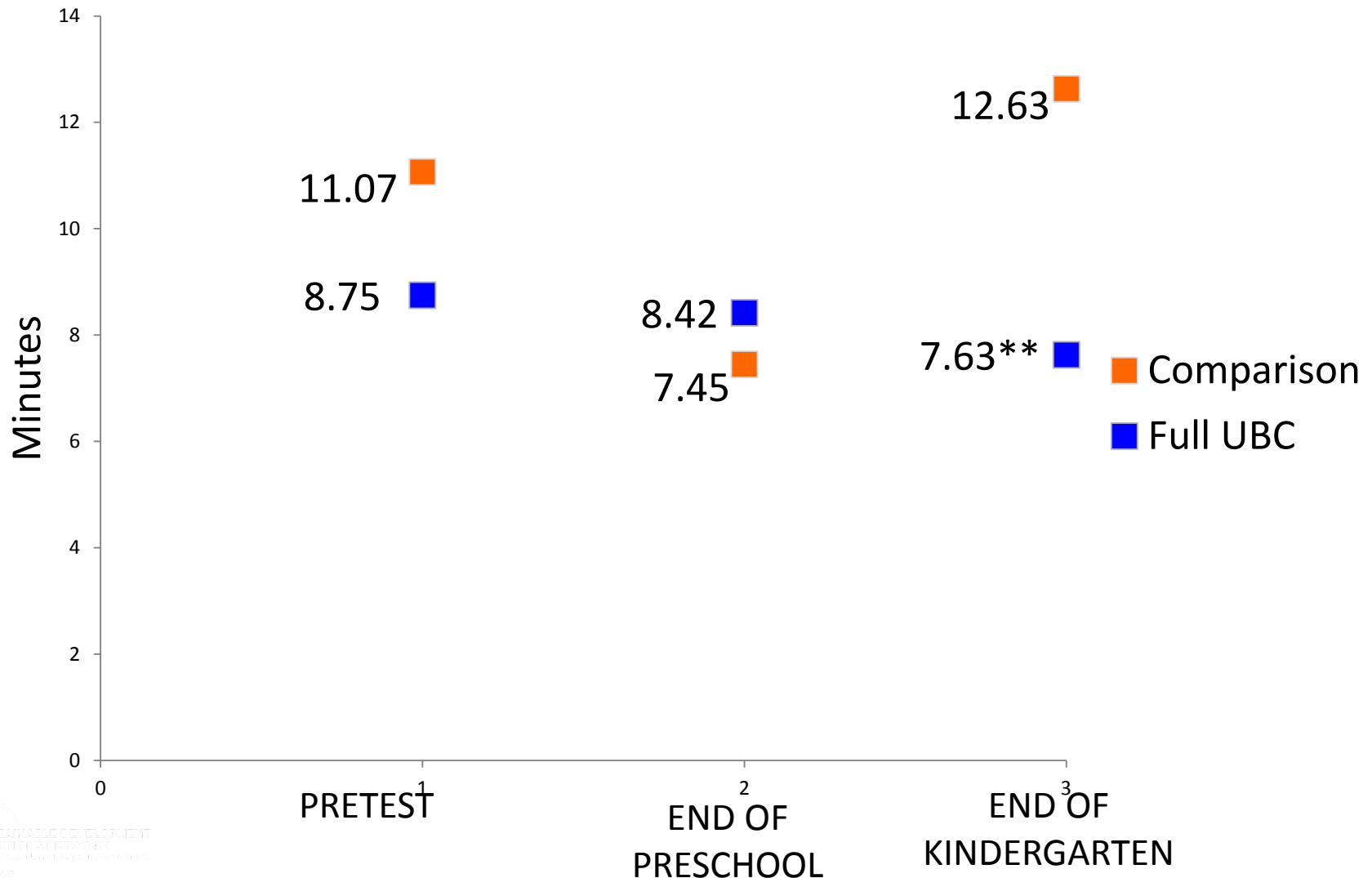
(Mendive, Weiland, Yoshikawa, & Snow, 2015, *Jl of Educational Psychology*)

- **Minute-by-minute video coding of targeted and non-targeted teaching strategies in both experimental and treatment group**
- **Same video segments (80 minutes per day) used to code the CLASS measure of classroom quality**
- Codes:
- UBC targeted literacy strategies (e.g. print knowledge, vocabulary, emergent writing, oral comprehension, adult reading to children)
- Non-targeted literacy strategies (e.g. oral routines, conversation about a theme, isolated phonemic awareness, drawing after listening to a story)

UBC Targeted-Strategy Dosage in Minutes: Significant Experimental Increases, but Still Low

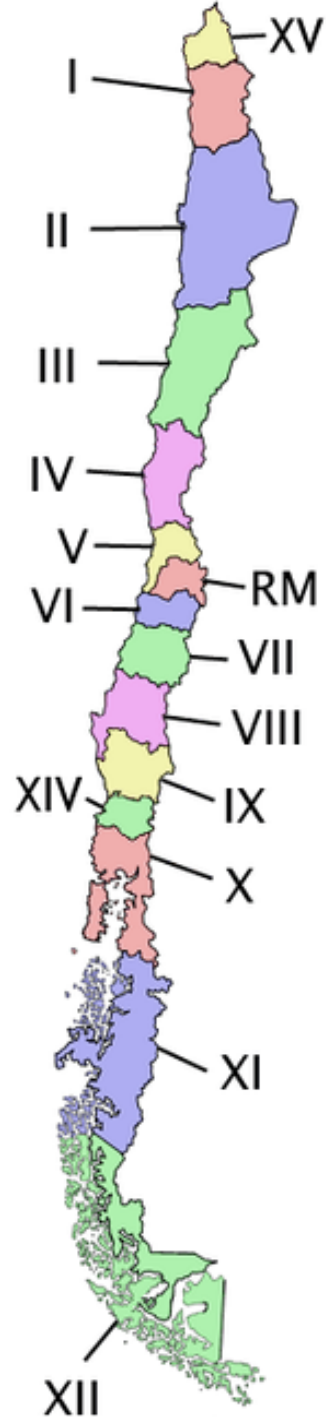


Non-targeted “Oral Routines:” Experimental Reductions



UBC Version 2: Scaling / Expanding to Region VI and rest of Santiago *with Continuous Quality Improvement*

- Goals in expansion of program:
 - Retain its core approaches
 - Workforce: shift from original (implementing NGO) to Min of Education
 - Motivate and involve all stakeholder groups not in recreating a program, but improving it
 - Improve attendance; intensify language, socio-emotional, family engagement, health components
- How?
 - Continuous Quality Improvement model from the Institute on Healthcare Improvement
 - First implementation of this model in ECD services in Chile
 - **Little extra cost relative to existing training**



Continuous Quality Improvement with Learning Networks

(Berwick, 2003; Bryk, Gomez, & Grunow, 2010)

A method of improvement for health care systems (based on system improvement approaches in corporate sector) that involves all stakeholders in the conceptualization, measurement and implementation of quality improvement strategies.

Successful in reducing infant mortality nationwide in Ghana; positive impacts in other LMIC and OECD health care systems

Applying Continuous Quality Improvement with Learning Networks for the First Time in Early Childhood Programs



Learning Networks

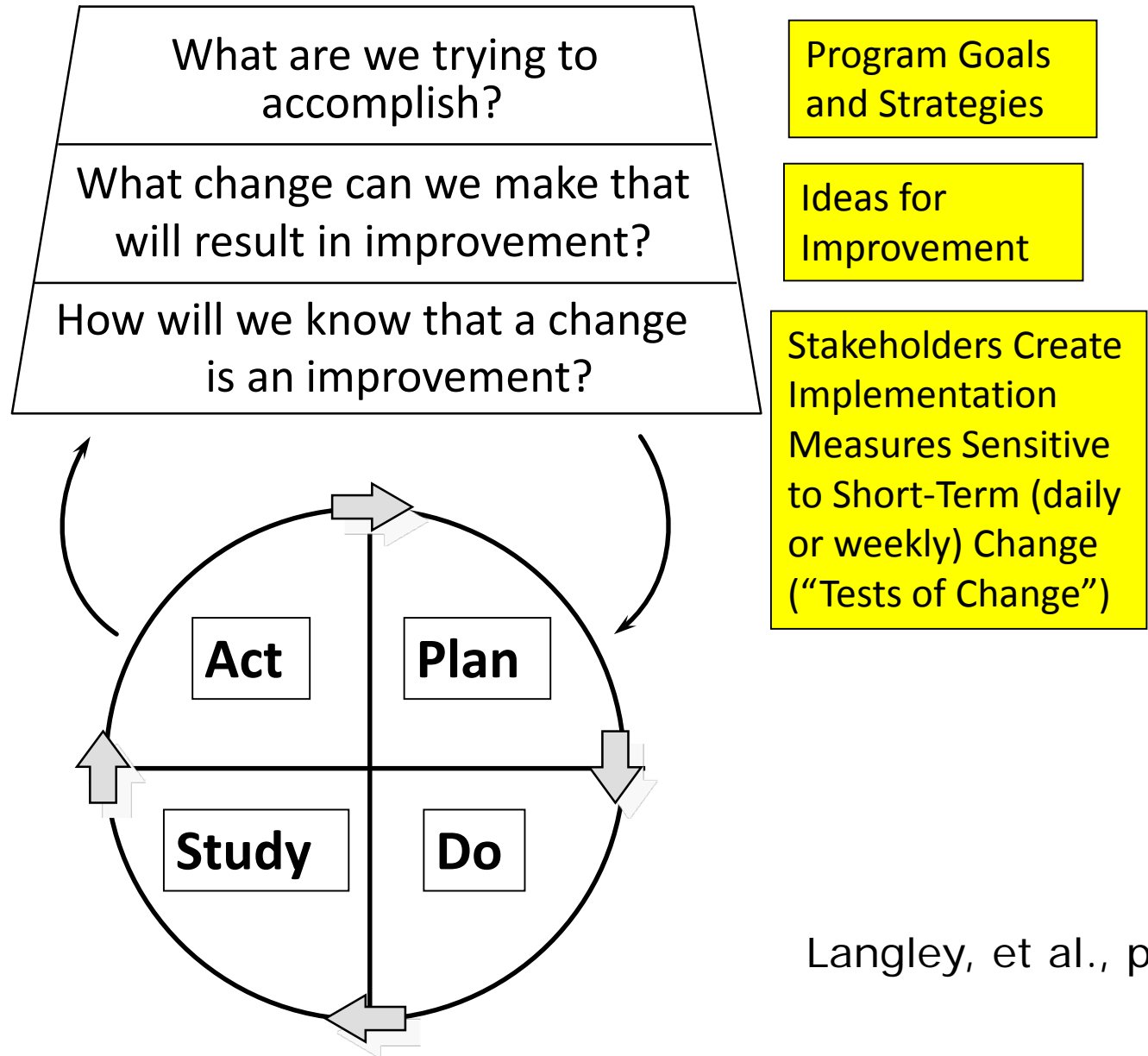
- **Networks of schools with municipality and regional members:**

- Principals, teachers, aides, UBC coaches, parents, municipality departments of education; health centers, Ministry of Education representatives.
- Work together for a defined period of time (9 to 24 months).

- **Learning Sessions every 3 Months for Stakeholder-Driven Innovation and Improvement at Scale**

- Learning Session I – meet to establish initial targets for change in each component of UBC and determine measures for “tests of change”
- Implement improvement strategy + tests of change over 3 months
- Learning Session II – Second Learning session to review improvements; troubleshoot; set new short-term improvement targets and tests of change
- Implement improvement strategy + tests of change over 3 months

Rapid Cycles – Plan-Do-Study-Act -- for Quality Improvement



Langley, et al., p. 96

PDSA Cycle to Build Vocabulary

Goal: to introduce 1 new vocabulary word per day with rotating strategies for incorporation of the new word



Outcome measure: end-of-year

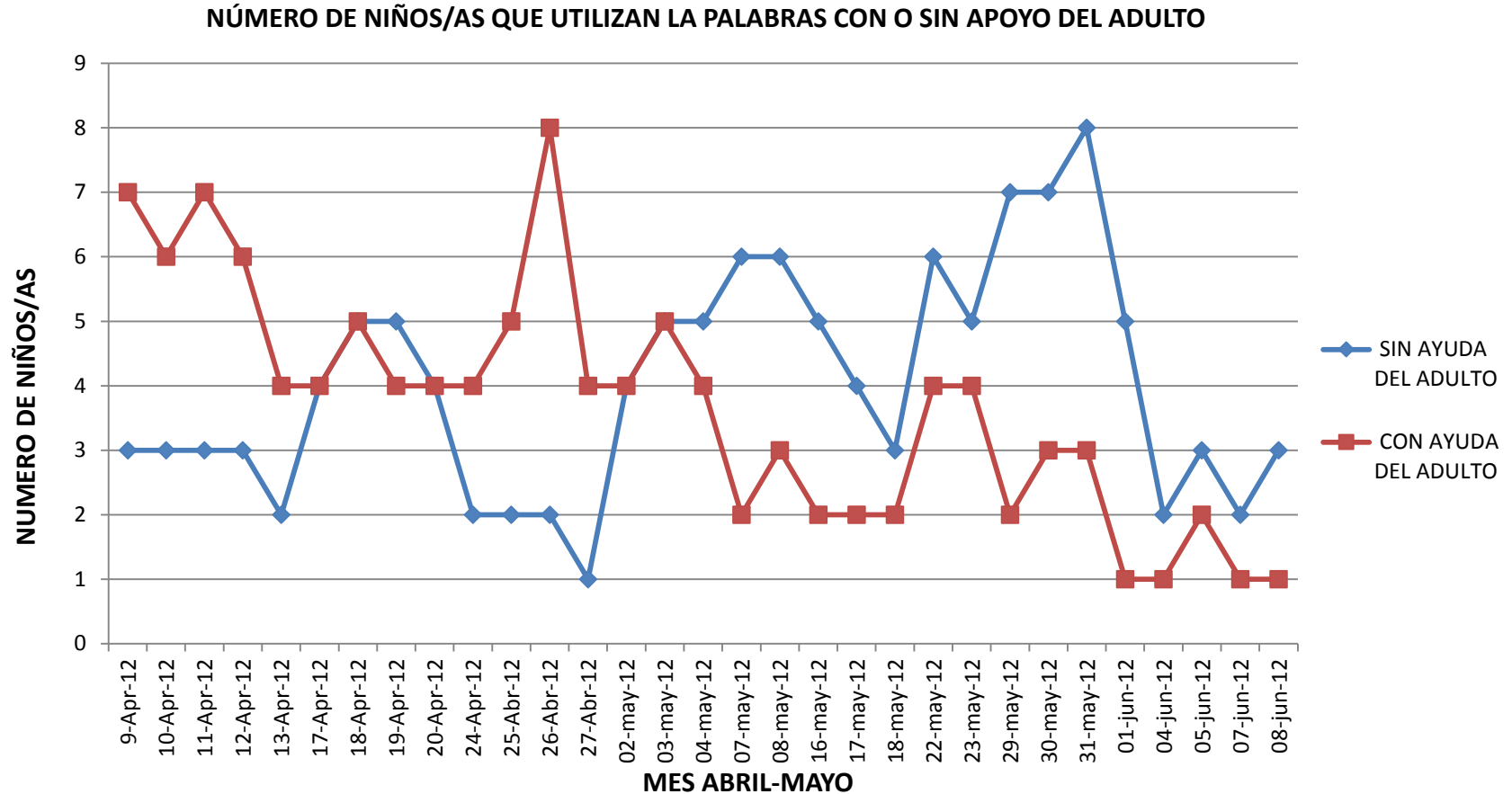
Woodcock-Munoz

Process measure:

1. N children using new word w help
2. N children using new work without help

PDSA Cycle to Build Vocabulary

Goal: to introduce 1 new vocabulary word per day with rotating strategies for incorporation of the new word



PDSA Cycle for Obesity Prevention

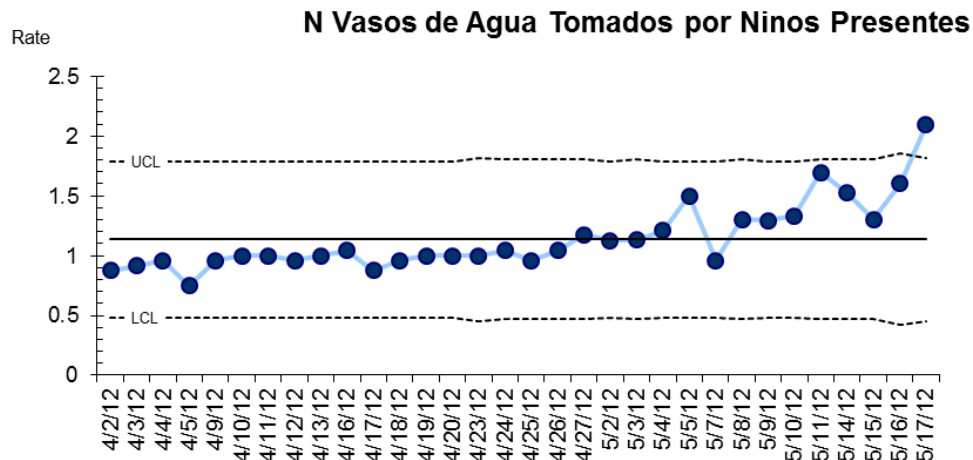
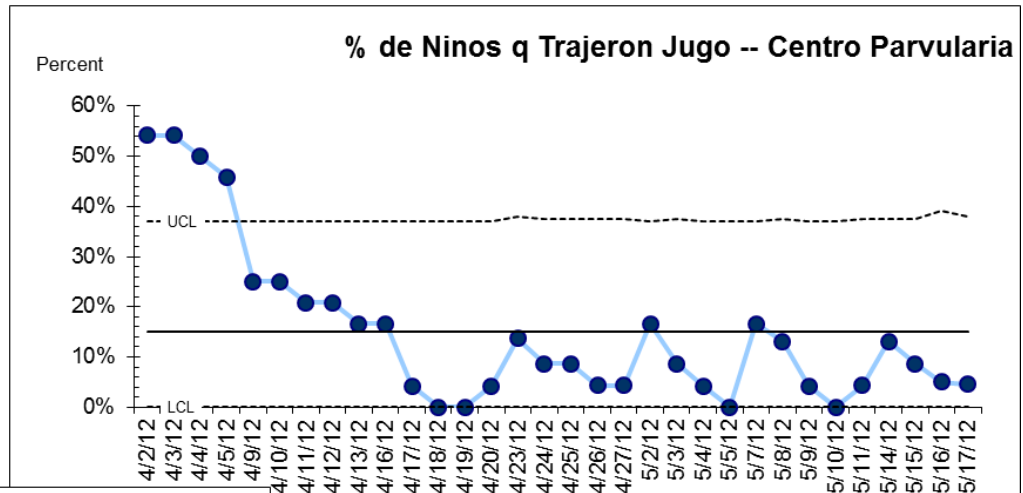
Goal: To eliminate sugar-sweetened beverages and increase water consumption in preschool classrooms



PDSA Cycle for Obesity Prevention

Goal: To eliminate sugar-sweetened beverages and increase water consumption in preschool classrooms

Sugar sweetened
beverages



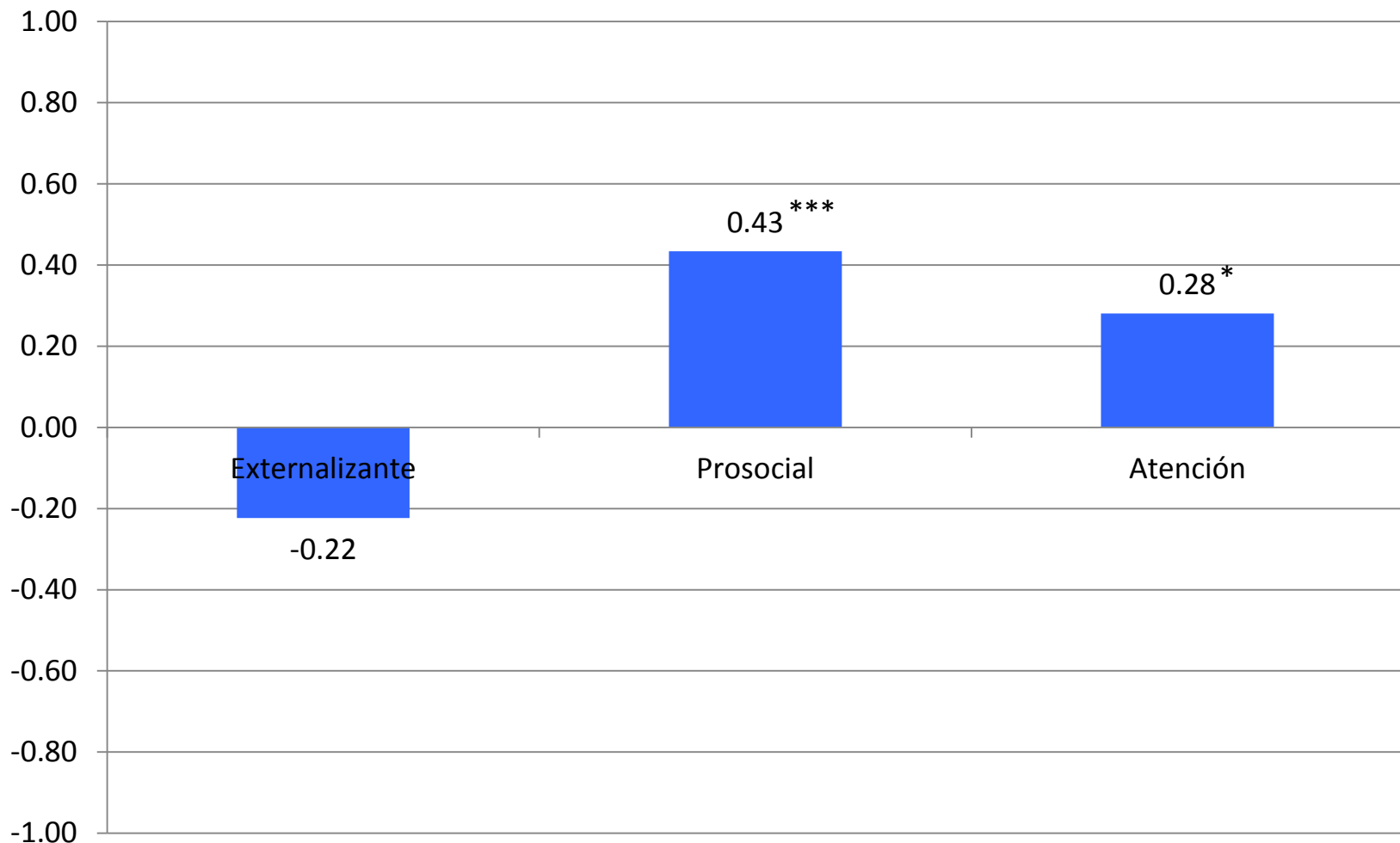
Water consumption

Impacts on Language and Literacy of UBC Version 2 in Region VI

(

- Goal set by stakeholder learning community: from 12 minutes to 30 minutes per day of evidence-based language instruction
- **Impact on early literacy skills (relative to control group in original Santiago experiment): $+0.38^{**}$ effect size (Godoy Ossa et al., 2014)**
- **Impact on vocabulary within Region VI compared to non-CQI-implementing UBC classrooms (Arbour et al., 2015, *BMJ Quality and Safety*): $+0.31$**

Positive quasi-experimental effects of UBC V.2 in Region VI on Socio-Emotional Development



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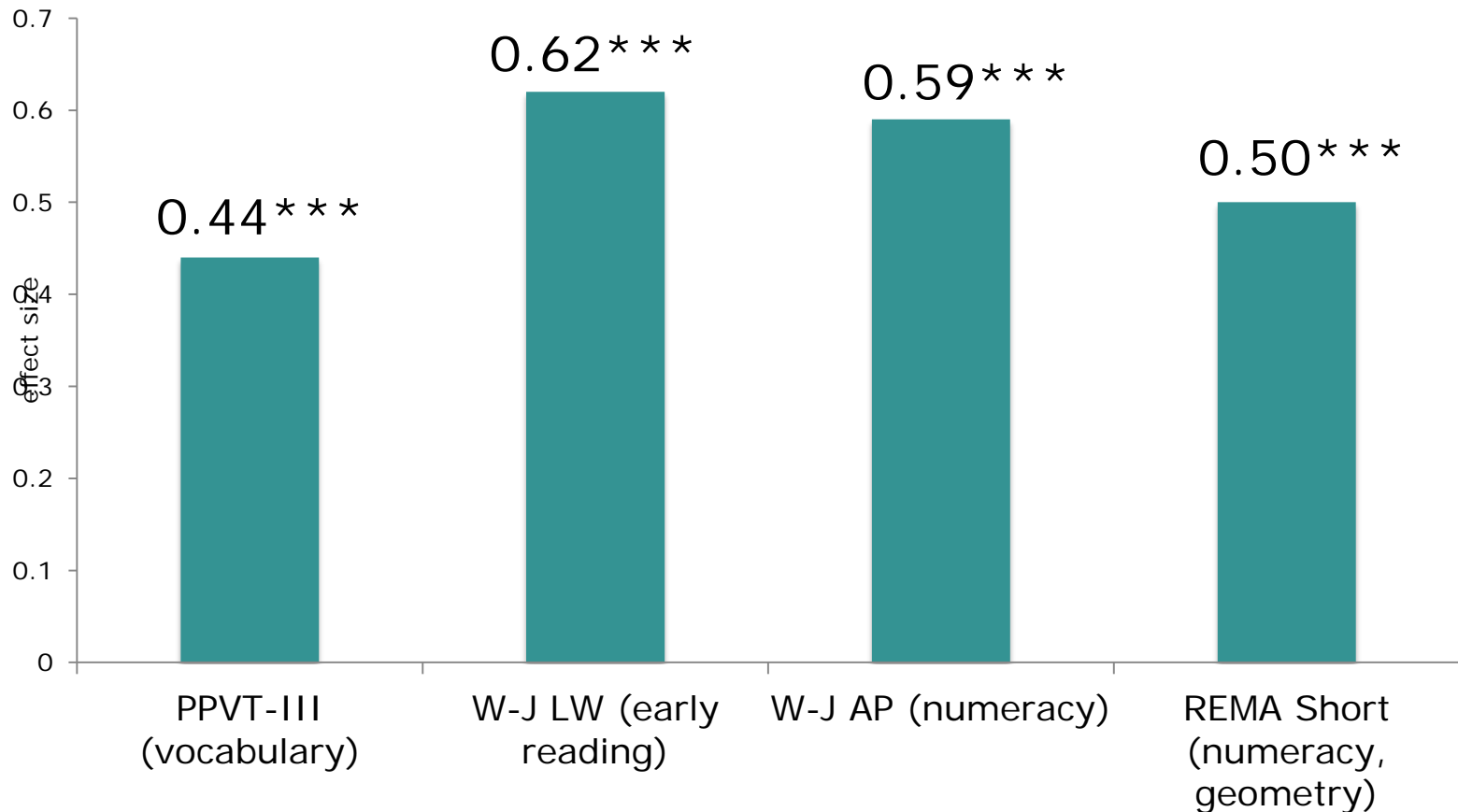
**II. FROM BIG TO BETTER
EXAMPLE FROM BOSTON**

Boston: Redirecting existing funds to quality improvement

- Boston Public Schools' (BPS) universal preK program: rapid expansion, 2006-2008; BA level teachers paid at K12 scale
- 2008 assessment of observed quality: **mediocre levels**
- **Decision to stop expansion and invest in quality through developmentally focused curricula + coaching**
- Choose evidence-based language and math **curricula** (OWL and Building Blocks) for district-wide implementation
- In-classroom **coaching** supports (one set of coaches supporting 2 curricula)
- **Research Question: What are the causal impacts of BPS preschool on children's language, pre-literacy, math, and executive function at the beginning of kindergarten?**

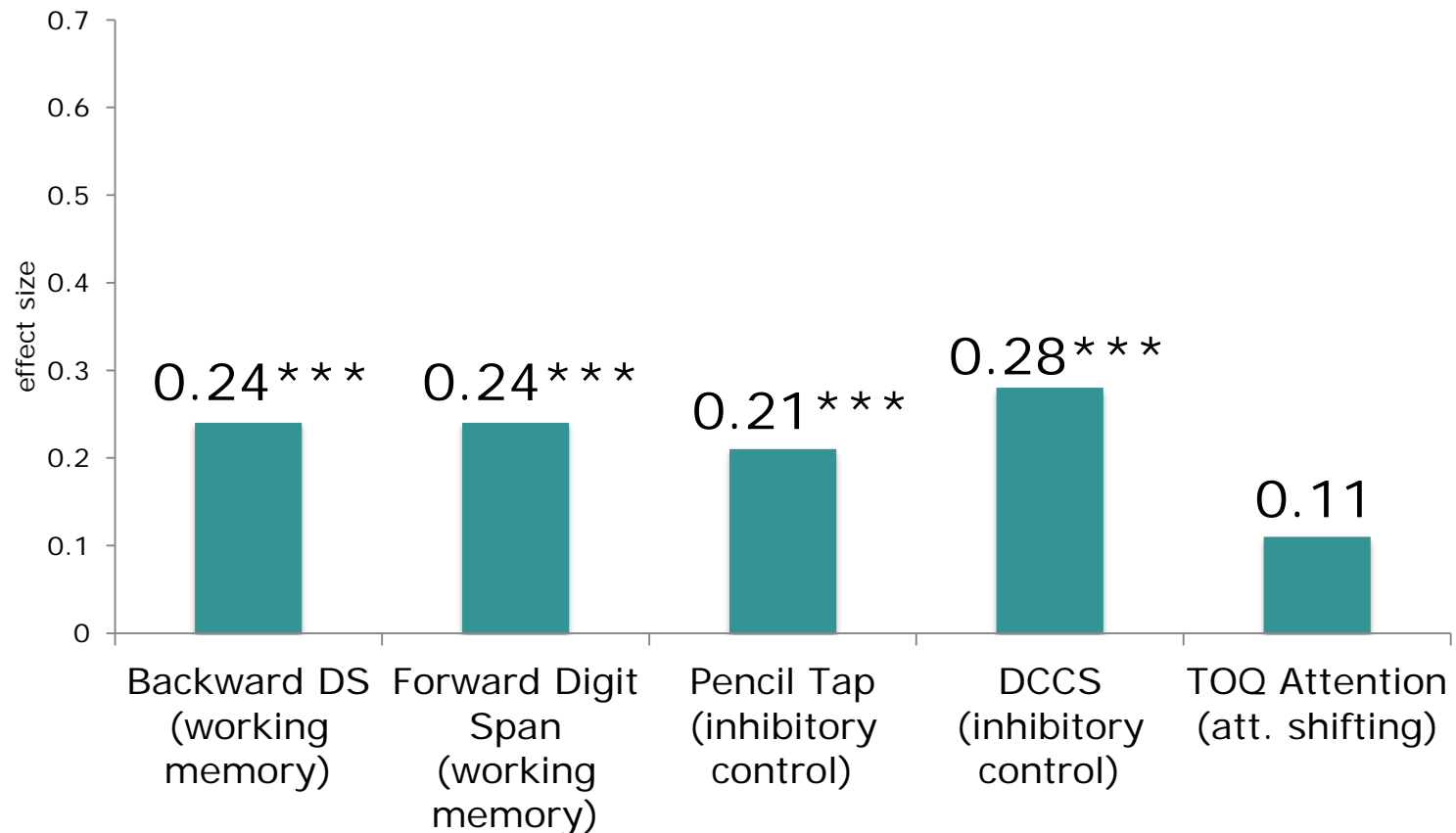
Largest effects on language and math of public preschool to date in the US

Weiland & Yoshikawa, 2013, *Child Development*



Positive Effects on All Three Dimensions of Executive Function Skills

Weiland & Yoshikawa, 2013, *Child Development*



Large reductions in societal disparities in skills at school entry

- Subgroups of interest: Free/reduced lunch (poverty status), race/ethnicity
- Boston Public Schools Preschool program:
 - **Reduced disparities substantially by class and race**
 - **Completely eliminated disparities between Latino and White students in early literacy and math skills.**
 - Video available at restoringopportunity.com (Duncan & Murnane, 2014)

Current Expansion “Out” to Community Providers

Mayor’s policy goal: doubling Boston prekindergarten capacity by 2018 through a **mixed-auspice approach but a single program model**.

- Pilot of Expansion of the Model to Community Providers:
- Instructional materials and support to **integrate the BPS language, literacy, and mathematics curricula** (*Opening the World of Learning* and *Building Blocks*, respectively) and assessments into the classroom;
- **Professional development alongside BPS early childhood teachers;**
- **Bimonthly one-on-one coaching** focused on the language, literacy, and mathematics curricula to translate new knowledge into practice in the classroom;
- **Monthly cross-site meetings of directors and instructional leaders;**
- **Supplementation to their salary and benefits** as requested by center directors
- Modify curriculum for extended day and to improve alignment with K-2nd grade efforts

After 18 months of implementation

(Yudron & Weiland, 2015)

- At Baseline: Language / literacy instructional quality (ELLCO; Smith, Dickinson et al 2002) and math instructional quality (COEMET; Sarama & Clements, 2009) on average 1SD below levels in BPS PreK classrooms in schools in same neighborhoods
- Improvements in observed math and language / literacy instructional quality after 18 months of implementation
- Gap in observed quality reduced between community providers and school-based model
- Math instruction broadens beyond very basic counting and shapes to wider range of reasoning and skills
- Currently – scaling further to Boston’s Head Start programs and larger range of community providers—(BPS is a recipient of federal Preschool Expansion Grant)

**LOOKING AHEAD TO POST-2015:
HOW TO IMPROVE QUALITY AT
SCALE IN ECE TO ENSURE
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**III. DEVELOPING AN
OBSERVATIONAL MEASURE OF THE
QUALITY OF EARLY CHILDHOOD
EDUCATION IN LOW AND MIDDLE
INCOME COUNTRIES:
THE MELQO PROJECT**

What is MELQO?

A global effort to promote improved measurement in early childhood.

MELQO = Measuring Early Learning and Quality Outcomes

An initiative of UNESCO, UNICEF, the World Bank, and the Brookings Institution

Goals of MELQO-

What did we start out trying to solve?

- ✓ Calls for globally comparable measures of young children's development
 - (Sustainable Development Goals, impact investors, etc)
- ✓ Existing tools are expensive and/or difficult to adapt
- ✓ Need for tools that can be useful in settings and systems level
- ✓ Linking quality of settings with child development outcomes

Can we build on what exists to achieve this?

What do the MELQO instruments cover?

Two instruments:

1. Assessing children's development
2. Measuring the quality of preschool settings

Goals of the MELQO Quality Instrument

(being developed by Aboud, Rao, Yoshikawa with input from TAG)

- Provide a national or regional / subnational picture of the quality of pre-primary education – e.g., through a probability or representative sample of pre-primary education settings.
- NOT recommended to inform hiring / firing decisions but to:
- Inform quality improvement efforts
 - Improvement of curriculum and materials
 - Professional development / in-service training of teachers, supervisors and trainers
 - Feedback and reflection sessions among teachers
 - Pre-service training for pre-primary teachers as well as for supervisors / trainers / ministry staff

Components of the MELQO Quality Instrument

- Observation tool for use in the classroom / program itself during at least a half day of activities (Captures SETTING)
- Teacher interview (Captures SETTING and SYSTEM)
- Supervisor interview (Captures SYSTEM)
- Several questions on parent survey to cover experiences of parent engagement

Domain:	Constructs:	Source:
Environment and physical setting (SE, ST)	Safety Organization of space and materials	Observation
Family and community engagement (SE, SY)	Supporting positive parenting and child development practices Engaging families and communities in the program	Teacher survey Parent Survey
Personnel (ST, SY)	Knowledge, Skills, qualifications Supervision, In-Service Training and Management	Teacher survey Supervisor survey
Interactions (SE)	Positive Interaction Feedback/Scaffolding	Observation
Inclusiveness (SE)	Program meets the needs of all children	Observation and Supervisor survey
Program organization and curriculum (SE)	Language Development Curricular areas (Math; Science; Arts); Lesson planning Child Choice	Observation
Health, Hygiene, and Protection (SE, SY)	Promotion of health and nutrition practices Social protection and child protection Healthy environment	Observation Teacher survey

Next Steps for MELQO Quality Instrument Piloting and Testing

- Adaptation for Colombia also in piloting phase (with Ponguta, Kagan, Yoshikawa, the *De Cero a Siempre* national commission on early childhood, and Ministerio de Educación Nacional)
- 2016: National validation samples in Tanzania and Colombia
- With partnership of Ministries of Education in both countries
- Plans for future piloting in larger number of countries

Conclusion: Quality Improvement at Scale in Global Early Childhood Education

- Post-2015: Assure and Improve Quality:
- Consider in-classroom observation and mentoring support for improvements in quality at large scale, with developmentally-focused curricula depending on cultural context
- Engage stakeholders in mission of continuous quality improvement with learning communities and networks across preschools and administrative levels
- Link measures of quality to professional development and both monitoring and aspirational aspects of national quality M&E system
- New public-private partnerships to enhance capacity

- MELQO quality and leadership team: Frances Aboud, Nirmala Rao, Abbie Raikes, Amanda Devercelli, Kate Anderson
- UN SDSN: Chandrika Bahadur, Guido Schmidt-Traub, Jeffrey Sachs
- Fellow ECD members of the UN SDSN Thematic Group on Early Childhood Development and Education: Pia Britto,, Joan Lombardi, Ingrid Pramling Samuelsson, Irwin Redlener, Louise Zimanyi
- Chile team: Marcela Marzolo, Ernesto Treviño, Catherine Snow, Diana Leyva, Mary Catherine Arbour, Fundación Educacional Oportunidad, Universidad Diego Portales
- Boston team: Christina Weiland, Jason Sachs, Boston Public Schools
- **NYU Global TIES for Children Center:** Larry Aber, Carly Tubbs, Alice Wuermli, Mahjabeen Raza, Dana Burde, Ed Seidman

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