

# **Non-Cognitive Abilities for the 21st Century: Insights from Developmental and Prevention Science**

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# “Non-Cognitive” Abilities

1. What are they?
2. Why are they important?
3. How do they develop?
4. How can they be strengthened?

# **1. What are “Non-Cognitive Abilities?”**

**They are NOT NON-COGNITIVE**

**Historically and Cross-Culturally,  
referred to as**

- Comportment, Conduct**
- Moral, Ethical, Character Development**
- Citizenship, Civic Education**
- Behavioral Health**
- Grit, Persistence, Resilience**
- Personality**

**In the U.S., the dominant “frame” is  
SOCIAL-EMOTIONAL LEARNING.**

**Five Core Competencies:**

- 1. Self-Awareness**
- 2. Social-Awareness**
- 3. Self-Management**
- 4. Relationship Skills**
- 5. Responsible Decision making**

## 2. Why are they important? They...

- are important in their own right...positively valued in most cultures (Torrente et al, 2014, under review).
- predict academic achievement and later educational and life outcomes (Heckman, 2006; Heckman & Kautz, 2012).
- are increasingly the target of education policies and programs (Learning Metrics Task Force, 2013).

# They...

- **shift the focus of educational policy and practice to developing the WHOLE CHILD.**
- **increase the importance of the education sector of societies to the health, labor and social protection sectors.**
- **are what most parents and communities care about the most.**

# **3. How do they develop?**

## **Insights from Developmental Science**

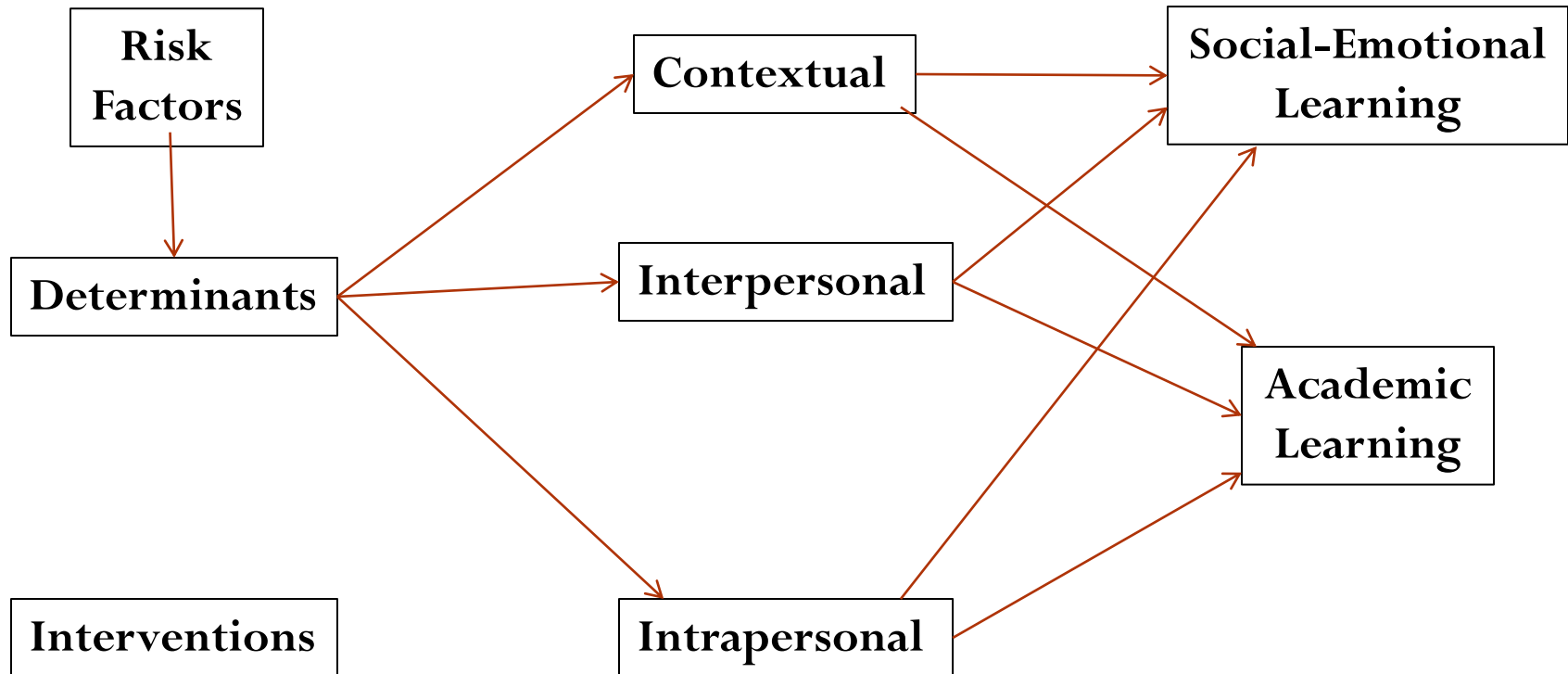
- **The emergence and importance of Theories of Change.**
- **Social-Ecological and Dynamic Process Theories.**
- **Neuro-Developmental Theories.**

# Reduced-Form Theory of Change

## INFLUENCES

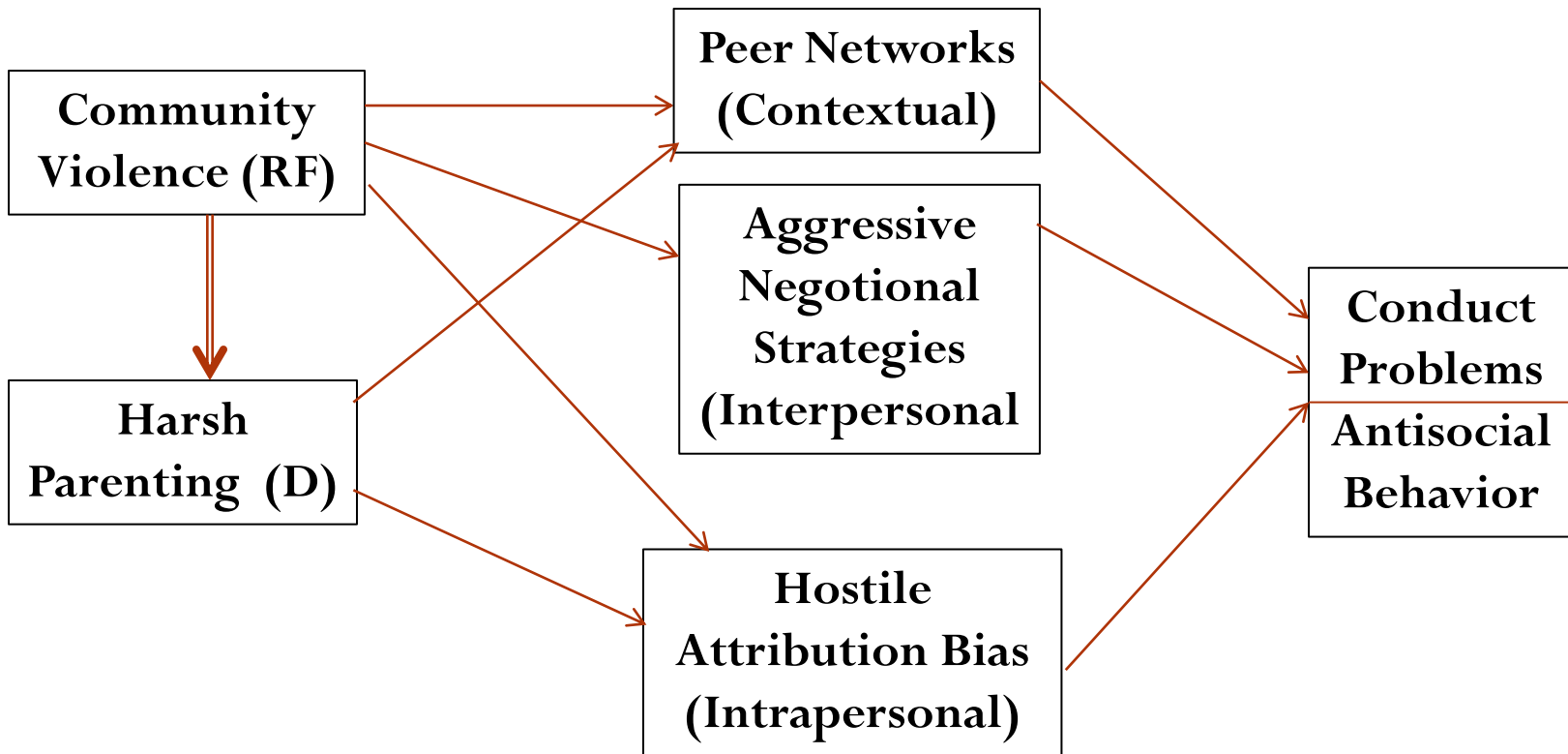
## MEDIATING PROCESSES

## OUTCOMES





# Social Information Processing Theory (Dodge, 1991, 2011)



# Other Relevant Theories

- **Theories of Intelligence:**  
**Entity (Effort) vs. Incremental (Ability) Theories (Dweck)**
- **Stereotype Threat (Steele and Aronson)**
- **Genetic Variability in Sensitivity to the Environment (Boyce; Belsky & Pluess).**

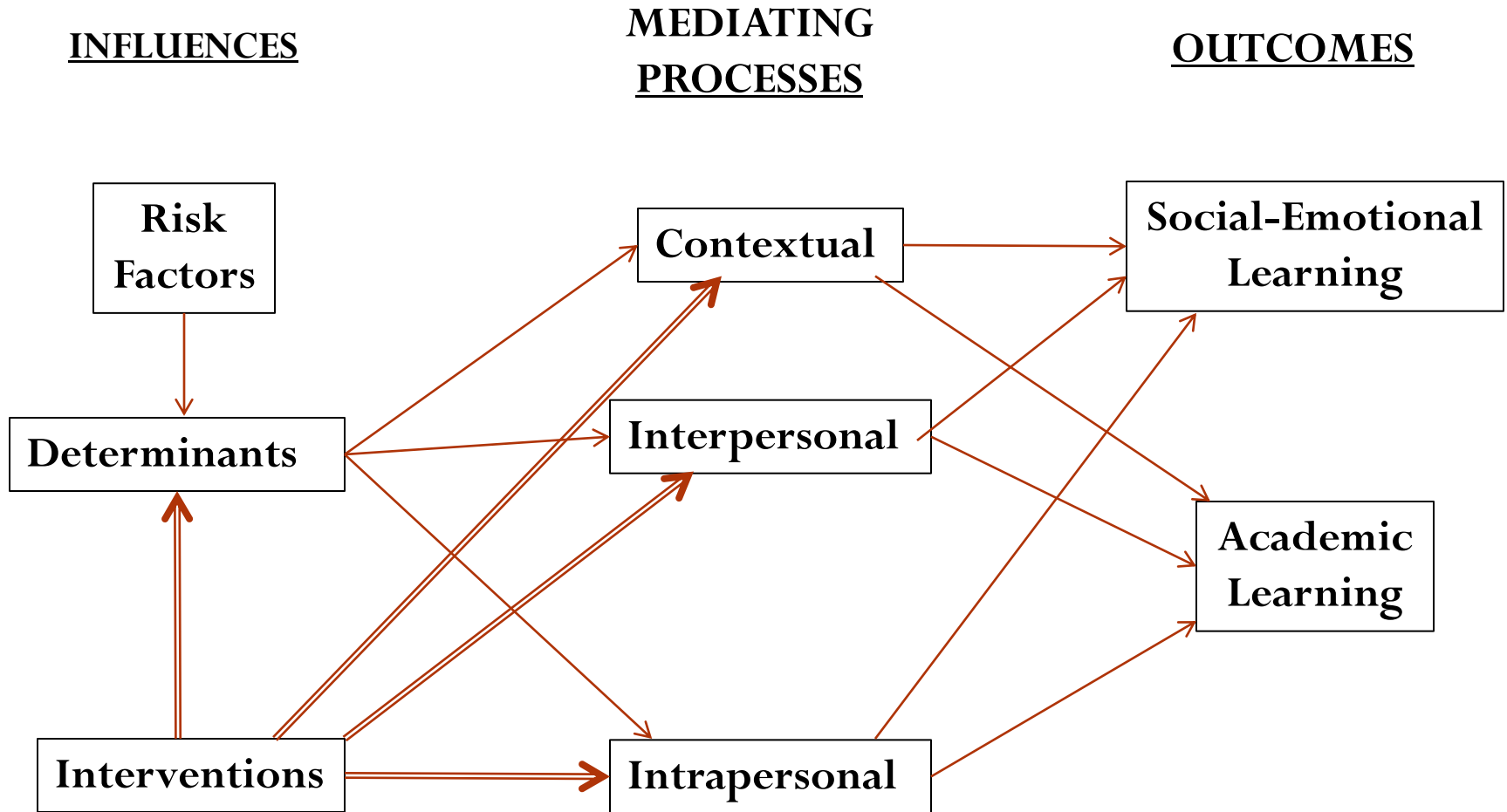
## **4. How can they be strengthened?**

**Insights from Prevention Science.**

**By using developmental science to inform the design and evaluation of preventive interventions.**

- **Target risk factors and determinants.**
- **Target mediating processes:**
  - **Contextual**
  - **Interpersonal**
  - **Intra personal**

# Reduced-Form Theory of Change



# TWO DECADES OF INCREMENTAL IN DEVELOPMENTAL AND PREVENTION SCIENCE

Durlak, J. et al. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. Child Development.

- 200 studies over 20 years; 200,000+ children in elementary, middle and high schools.
- 1/2 true experiments;  
1/2 quasi experiments
- Average “impacts” across studies:
  - Social-emotional processes = .57
  - Social-emotional outcomes = .22-.24
  - Academic outcomes. = .27

# PROGRESS NEEDED IN IMPLEMENTATION SCIENCE

## “The Science of Delivery”

James Kim, President, World Bank

S sequenced

A active

F focused

E explicit

Yes = Double Impact

No = Zero Impact

# 4Rs

## Research Collaborators:

Joshua Brown, Fordham  
University

Stephanie Jones, Harvard University

## Action Collaborators:

Tom Roderick, Morningside Center  
NYC Public Schools

## Funders:

IES

NIMH

CDC

W.T. Grant Foundation

## History:

Aber, L., Brown, J., Jones, S., &  
Roderick, T. (2010). SEL: The history of  
a research-practice partnership. *Better:  
Evidence-based Education*, (2), 14-15.

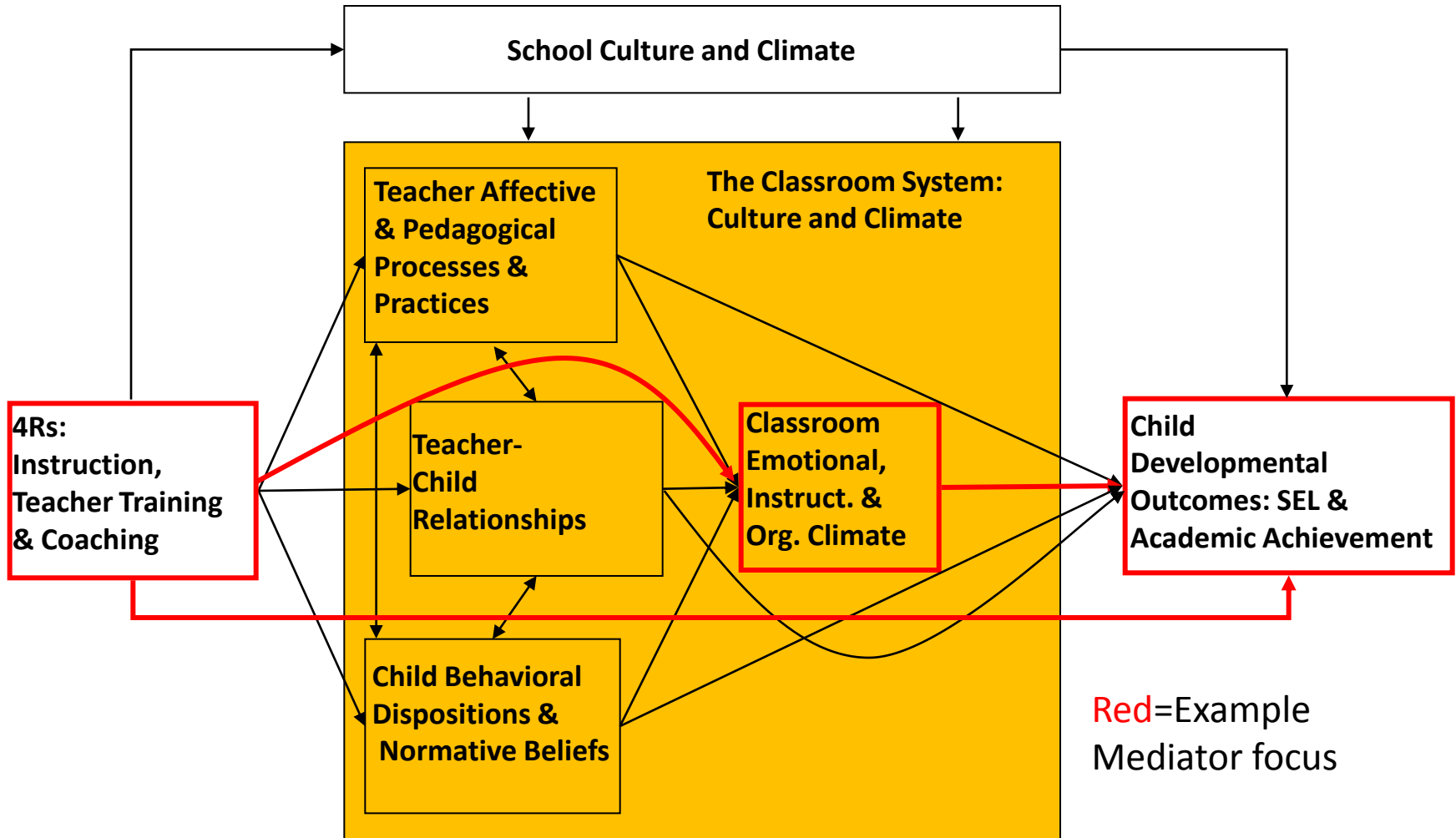
# The 4Rs Program

- **Universal, school-based intervention in literacy development, social-emotional learning, and conflict resolution.**
- **2 Primary components:**
  - **7-unit literacy-based curriculum in conflict resolution and social-emotional learning.**
    - Each unit organized around grade-appropriate book, includes 2 literacy activities, and 3-5 SEL lessons.
  - **Training and ongoing coaching of teachers in the delivery of the 4Rs curriculum.**
    - 25 hours introductory training
    - Ongoing classroom coaching, minimum 12 contacts

**Developed and run by: Tom Roderick, Morningside Center for Teaching Social Responsibility  
([trodderick@morningsidecenter.org](mailto:trodderick@morningsidecenter.org))**



# 4Rs Theory of Change: Focus on Classroom System



Theoretical Frameworks: Ecological Systems, Developmental Cascades, Transactional Systems;  
From: Jones, Brown & Aber (2008), *Changing schools and community organizations to foster positive youth development*;  
Aber, Brown, Jones, Berg & Torrente (2011), *Development & Psychopathology*.

# Results

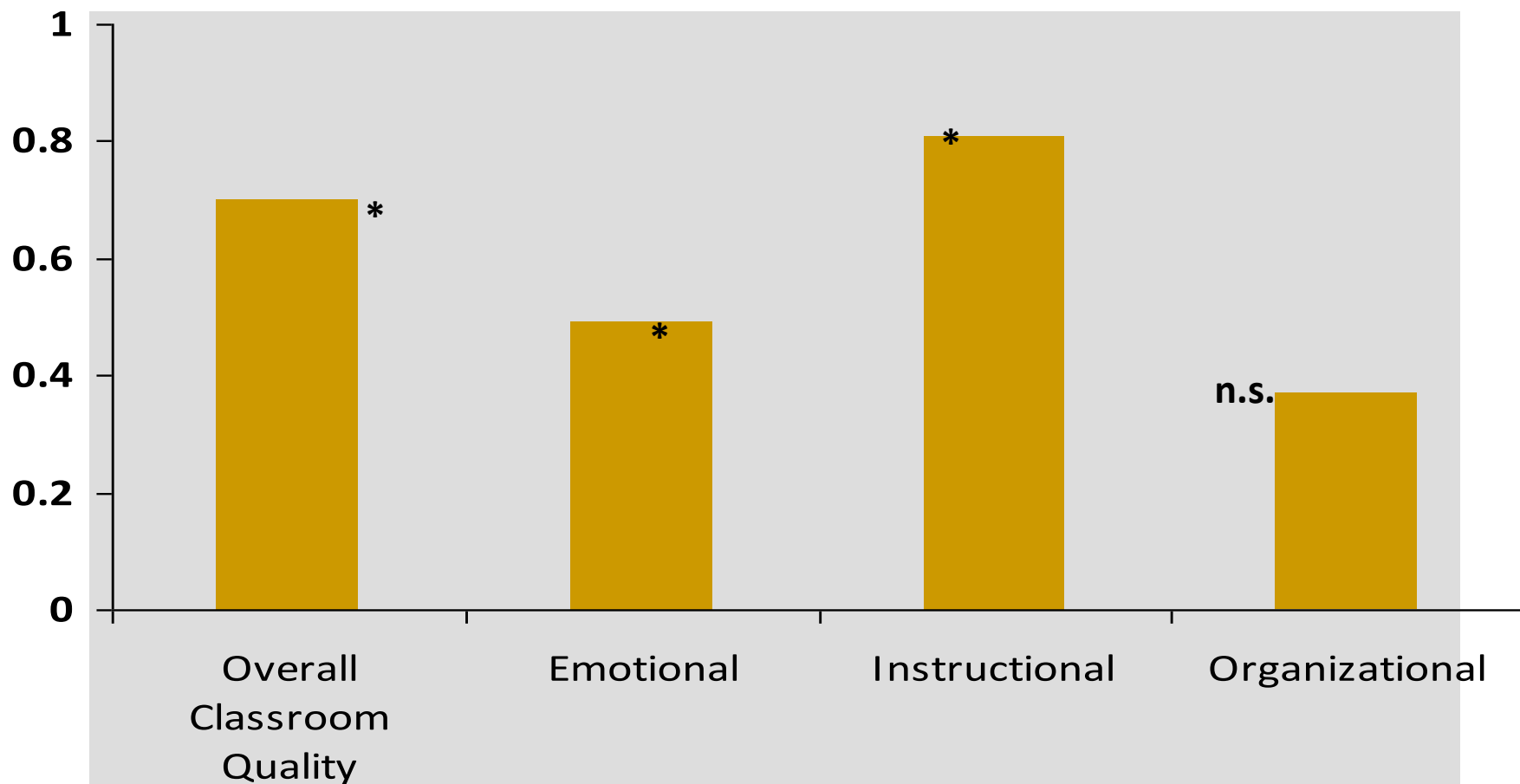
## Main Effects of 4Rs

### **Key Question:**

What are the main effects of the 4Rs Program on classroom processes and on child-level social-emotional and academic processes and outcomes?

# Impacts on Classrooms (CLASS)

Classrooms in the Tx group had higher Spring **Overall Classroom Quality** scores, accounted for by higher mean **Emotional Support** and **Instructional Support** scores, than the control group.



From: Brown, Jones, LaRusso & Aber (2010), *Journal of Educational Psychology*.

# Impacts on Children after Two School Years

## Developmental Processes

- Hostile Attributional Bias /Decrease
- Aggressive Interpersonal Negotiation Strategies/Decrease
- Social Competence/Increase

## Social-Emotional Outcomes

- Aggressive Behavior/Decrease
- ADHD Symptoms/Decrease
- Depressive Symptoms/Decrease

# OPEQ

**Research Collaborators:** Jeannie Annan and  
Anjuli Shivshanker,  
International Rescue Committee

Catalina Torrente and Ed Seidman,  
New York University

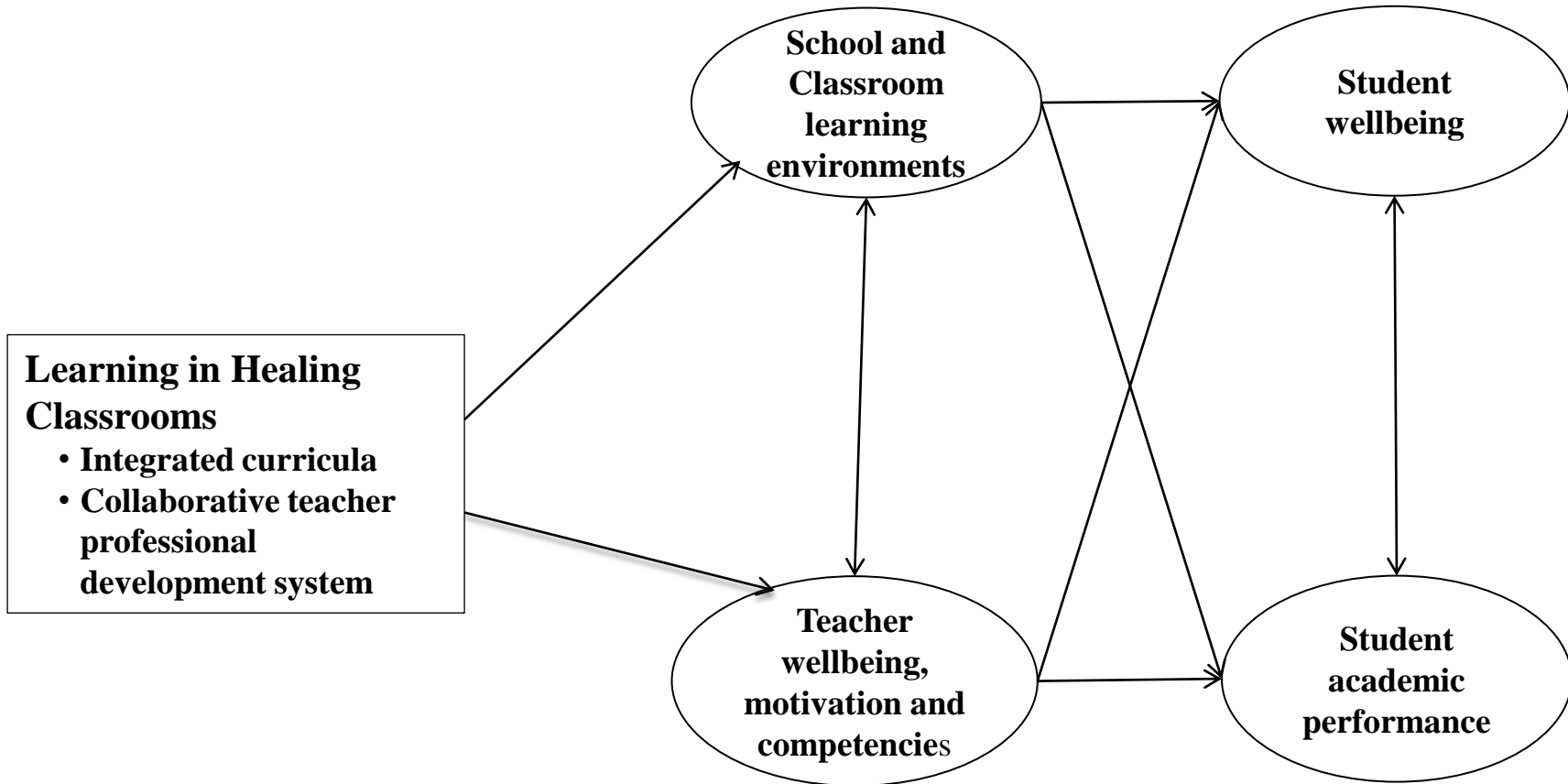
**Action Collaborators:** International Rescue Committee  
DR Congo, Ministry of Education

**Funders:** USAID          NoVo Foundation

# **Opportunities for Equitable Access to Quality Basic Education (OPEQ)**

- **Goal: Improve teacher performance and student academic and social-emotional outcomes.**
  - 3 Provinces: Katanga, South Kivu, North Kivu
  - 350 schools; 500,000 children
  - 2010-2015
- **Method: Implement a curriculum that integrates SEL into reading and math.**
- **Evaluation: School-Cluster Randomized Trials (start date)**

# OPEQ Theory of Change



# **Learning in Healing Classrooms Impact Evaluation**

- **3 Eastern Provinces of DRC**
- **88 Clusters; 140 Schools**
- **Lotteries in sub-province to start LIHC in 2011, 2012. 2013**
- **3 waves of data: 2010, 2012, 2012**
- **Culture adapted, pre-tested measures of all constructs**
- **Real world challenges to implementation and evaluation**

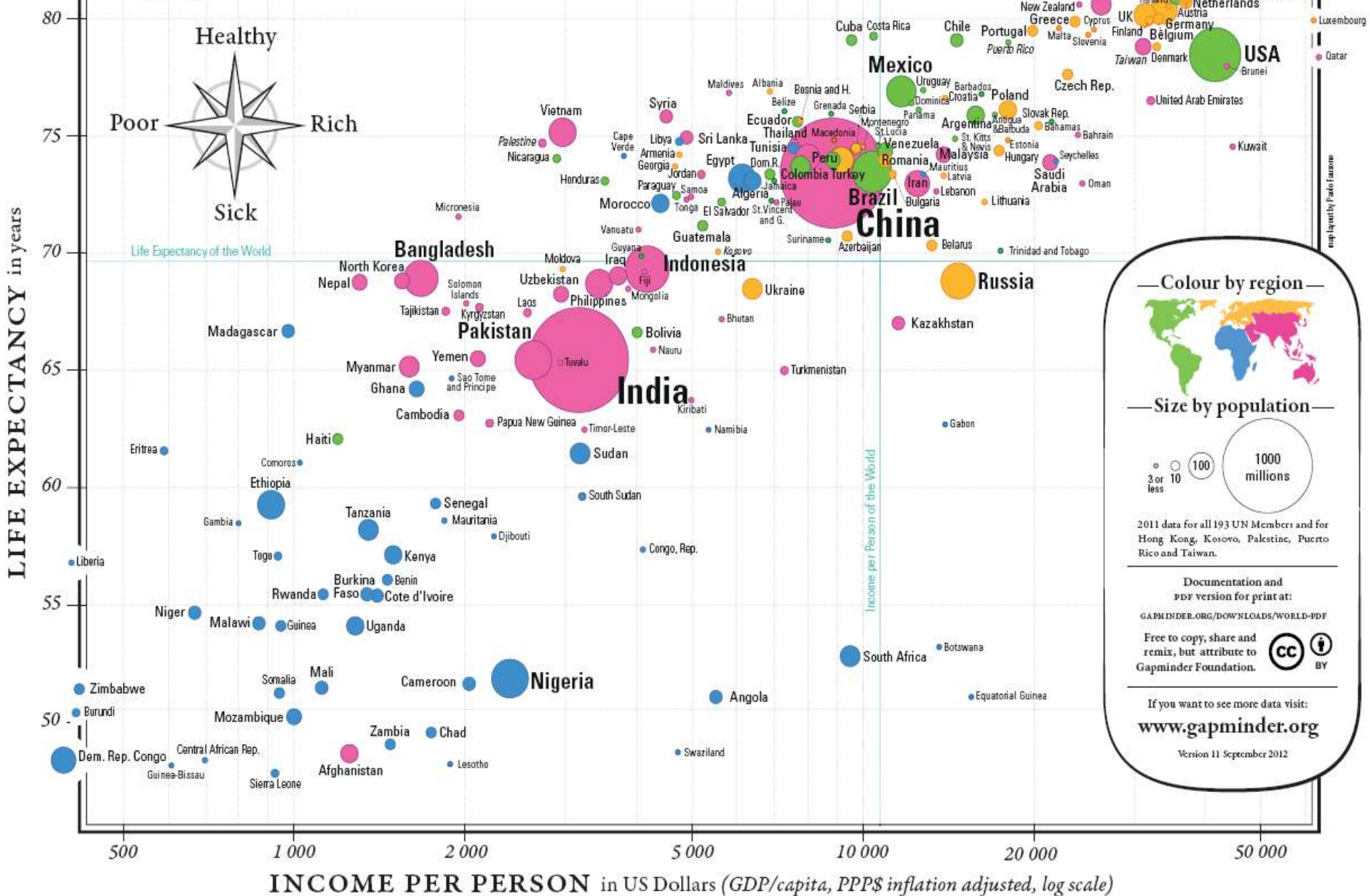


# Summary of Year 1 Impacts


- **Children's perceptions of teachers and schools as**
  - + **Caring and Supportive**
  - **Predictable and Cooperative**
- **Academic performance**
  - + **Reading**
  - n.s. **Addition/subtraction**
  - + **Geometry**
- **Well-being**
  - n.s. **Mental Health Problems**
  - n.s. **Victimization**

# GAPMINDER WORLD 2012

Mapping the Wealth and Health of Nations



# Building a Science for Action:

- **Multi-level, Dynamic**   
Ambitiously Transdisciplinary
- **Attentive to Basics**
  - Causal Inference/ Internal Validity
  - Theories of Change/ Mechanisms of Action
  - Generalizability/ External Validity
  - Heterogeneity of Impact/ by subpopulation, by context.
- **Effective Collaborations across cultures of**
  - science: research/ evaluation
  - action: program/ policy.

# Building a Science for Action:

- **Cumulative/Revisable**
  - Replications, Systematic Reviews, Meta-analyses
  - Deeply Theoretical
- **Transcend unuseful dichotomies:**
  - Nature/Nurture (G x E)
  - Objective/Subjective (construal)
  - Micro/Macro (context)
- **Global: Extend the Science and Policy/Practice to parts of the world with**
  - Majority Populations
  - Greatest Need

# A Science for Action requires:

- 1. Ethical Principles and Normative Goals.**
  - International Convention on the Rights of the Child.
  - Millennium Development Goals.
- 2. Criteria and Methods by which to Choose Priorities.**
  - A. Sen, Development as Freedom.
  - S. Alkire, “Why the Capability Approach?”
- 3. Data on variation in child well-being and child and family policy variation that promotes accountability within and across nations.**
  - J. Heymann, Children’s Chances.
  - UNICEF, State of the World’s Children.
- 4. The “Ideology of an Experimenting Society”?**

# The Experimenting Society will be:

- an active society, preferring exploratory innovation to inaction.
- an honest society, committed to reality-testing, to self-criticism, to avoiding self-deception.
- a scientific society, (willing) to change once advocated theories in the face of experimental and other evidence.

## The Experimenting Society (continued):

- a society committed to means-idealism as well as ends-idealism. As in the modern views of science, the process of experimenting and improving will be expected to continue indefinitely, without reaching the asymptote of perfection.
- a popularly responsive society, whose goals and means are determined by collective good and popular preferences.
- an egalitarian society, valuing the well-being and the preferences of each individual equally.

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