The Science of Early Learning

Rhode Island Governor's Summit on Early Learning

May 16, 2016

Bette Hyde, PhD

Retired Director of Early Learning, Washington State

I. Setting the Context

- Sharing lessons learned in Washington State
- Similarities between RI and WA
- Shared belief that human capitol is a State's greatest natural resource
- Disclaimers

RHODE ISLAND

Why Early Learning Matters

Early Learning Really Matters because…

- Longitudinal studies have **long –term positive benefits** for kids and families
  - HighScope Perry Preschool Study
  - Carolina Abecedarian Project
  - Chicago Child-Parent Center Program
- Benefits include:
  - Increased reading and math skills
  - Social competence
  - Staying in school
  - College attendance
  - Full-time employment in adulthood
- But, only if high-quality early learning program

Student Outcomes

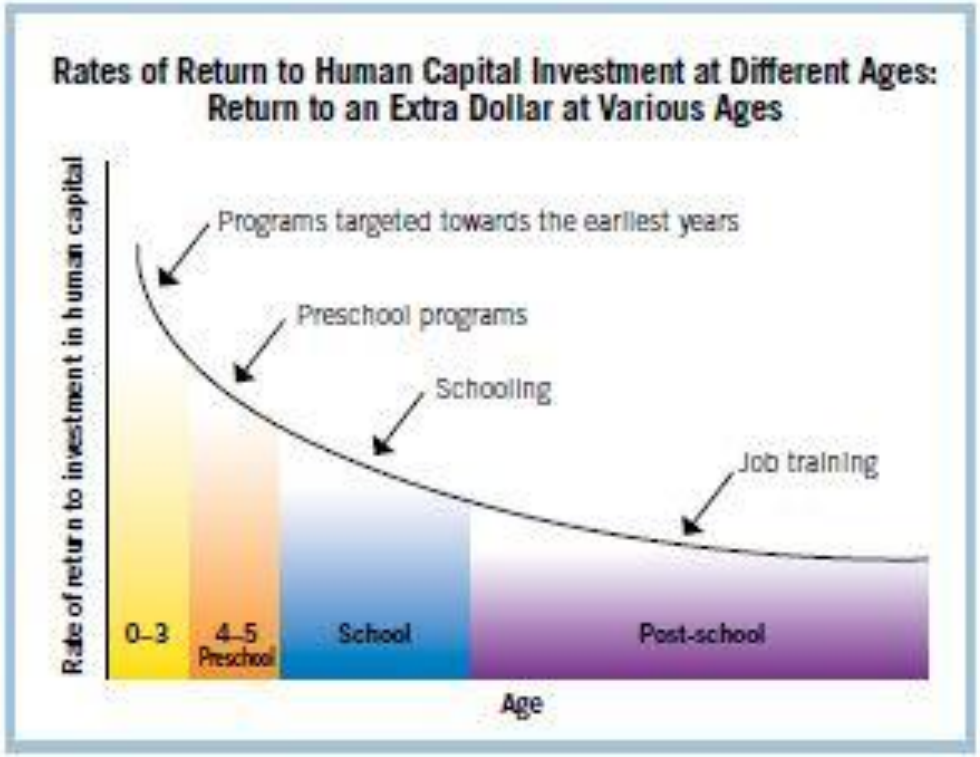
- Improved academic outcomes
  - Higher test scores
  - Fewer special education placements
  - Less grade repetition
  - More likely to graduate from high school
- Improved non-academic outcomes
  - Less crime
  - Fewer teen parents
  - Better self-regulation and emotional development

Early Learning really matters because…

- There are economic advantages to schools and society
  - Schools save money
    - Increased enrollments
    - Public goodwill/support for levies and bonds
    - Costs avoided for support programs
  - Society saves money
    - Incarceration decreases
    - Less welfare
    - More taxpaying citizens

GAIN: Gain a more capable, productive, and valuable workforce that pays dividends to America for generations to come.

Dr. Heckman's research on the rates of return to human capital investment at different ages clearly shows that the earlier the intervention occurs, the greater its payoff. Investments made from birth to age five yield the highest return. The later the investments are made, the lower the return on investment.



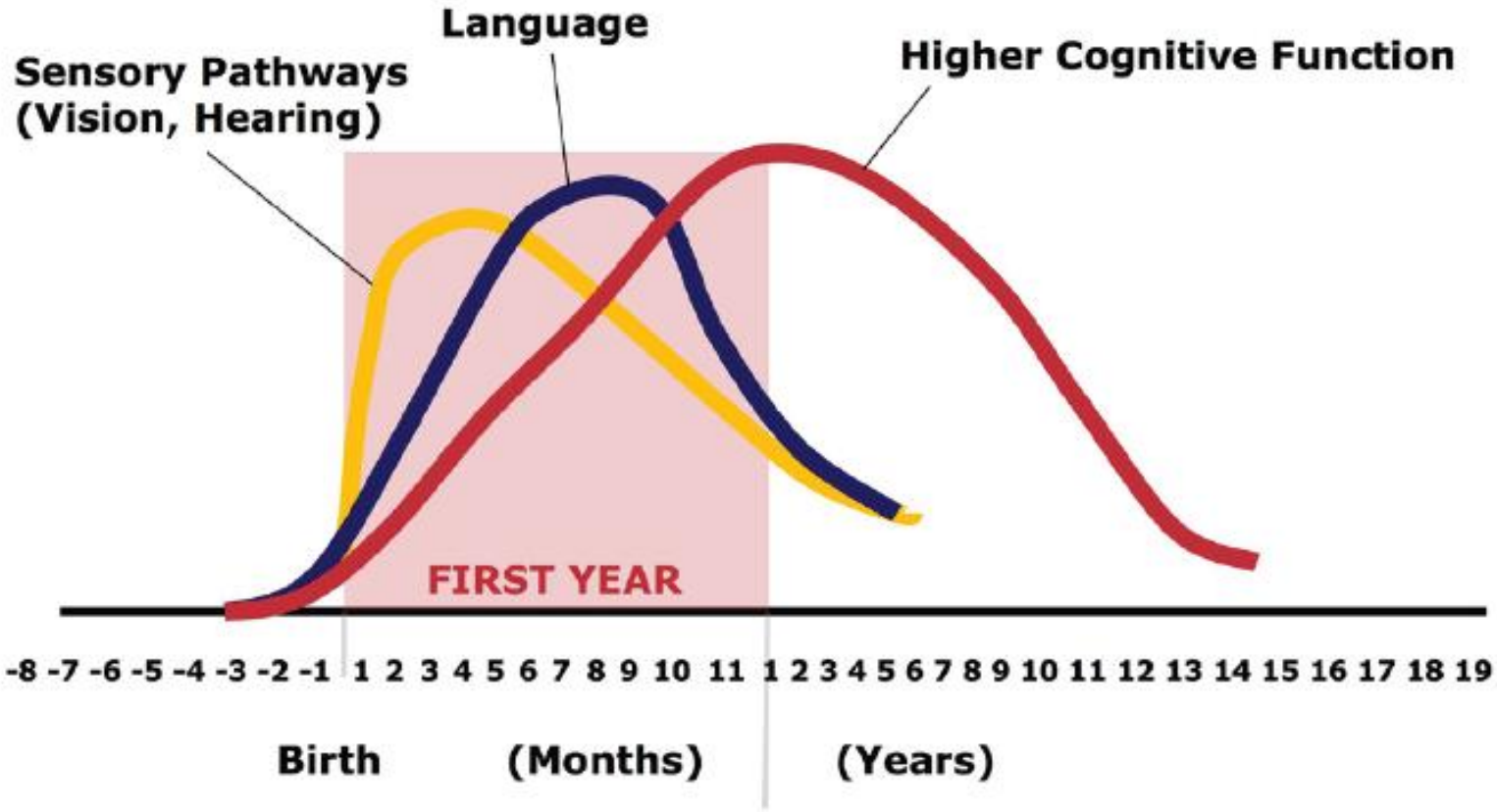
Early learning really matters because…

- The brain's architecture is "sculpted" the most in the first five year of life
  - The critical period to stimulate, nurture educate is when neurological maturation/sculpting is occurring the fastest
- There are 2,000 days between birth and kindergarten entrance. Every day counts!!

Center on the Developing Child
HARVARD UNIVERSITY

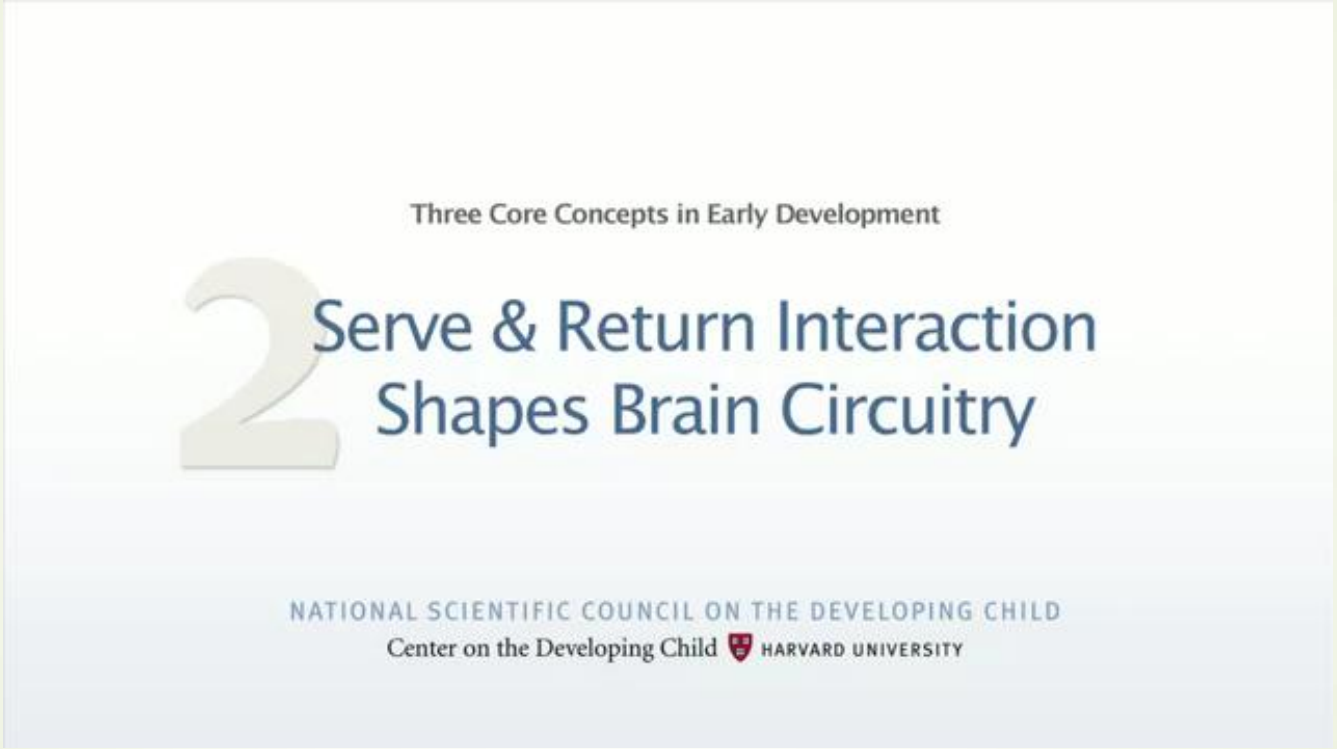
Human Brain Development

Neural Connections for Different Functions Develop Sequentially



Source: C.A. Nelson (2000)

Center of the Development Child Harvard University



Harvard Center for the Developing Child "One Science"

- Clear, convincing hard science of this critical development period in early childhood
- Neurological development, interpersonal potential, and physical health are shaped during this one early period of development.
- Developmental period is true for all children in all cultures
- "One Science" applies to all professionals – health care providers, social services providers and educators.
- This one period sets the potential for children's academic skills, graduation from high school, lifelong healthy adjustment and economic independence.

Harvard Center for the Developing Child "One Science"

- Foundation of physical health (reactivity) and cardiovascular functioning) shaped during these same early three years
- During this one period, if a child has positive interaction with attentive care givers his/her development will be healthy.
- During this one period, if the child is exposed to adverse childhood experiences (ACES), his/her development will not be healthy development. In fact, the more ACES the child is exposed to, the worse the prognosis of a child's healthy development.
- "One Science" is clear that to produce healthy development and mitigate the impact of ACES, children need simply exposure to a caring, attentive caregiver.

Policy Implication

- If you really do believe this, policy implications are quite clear
  - Invest in young children and their families
  - Look for/expect their strengths/believe in them
  - Be sure policies are truly "family focused"
  - Be sure policies demand high quality services and support

Policies, cont…

- Be sure polices ensure continuity of care
- Be sure to embrace cultural diversity
- Be sure we are educative/supportive, not punitive
- Be committed and committed for the long haul

III. Strategies to Implement a Science-based Early Learning System (top 5)

1. A Clear Vision and Plan
   - In science, research has an explicit hypothesis and explicit methodology
     - …So too the State Plan needs measureable outcomes sought and the specifics interventions to do so
     - …In fact, we need more data on what works with whom, when, and why

- "Owned" by multiple constituents
  - …Social Psychology literature is replete with the finding that people demonstrate stronger support if they believe they helped create the idea
  - …Everyone needs a "seat at the table"
  - …Plan must be developed iteratively

- Plan should be concise/simple/user-friendly
  - …constituents should "see" themselves in it
- Plan should be phased-in, multi-year
  - …Cannot do everything well all at once
- Whether you begin there or not, will always need "the big picture"
- Vision: All children will enter school healthy, capable, and confident

2. Strong Partnerships

- Early learning is the work of the State, not any one department or individual
- Need partnerships among:
  - Governor's Office and Legislature
  - State agencies, K-12, organizations, and higher education
  - Local organizations, agencies, and service entities
  - Businesses and philanthropy
  - The Public

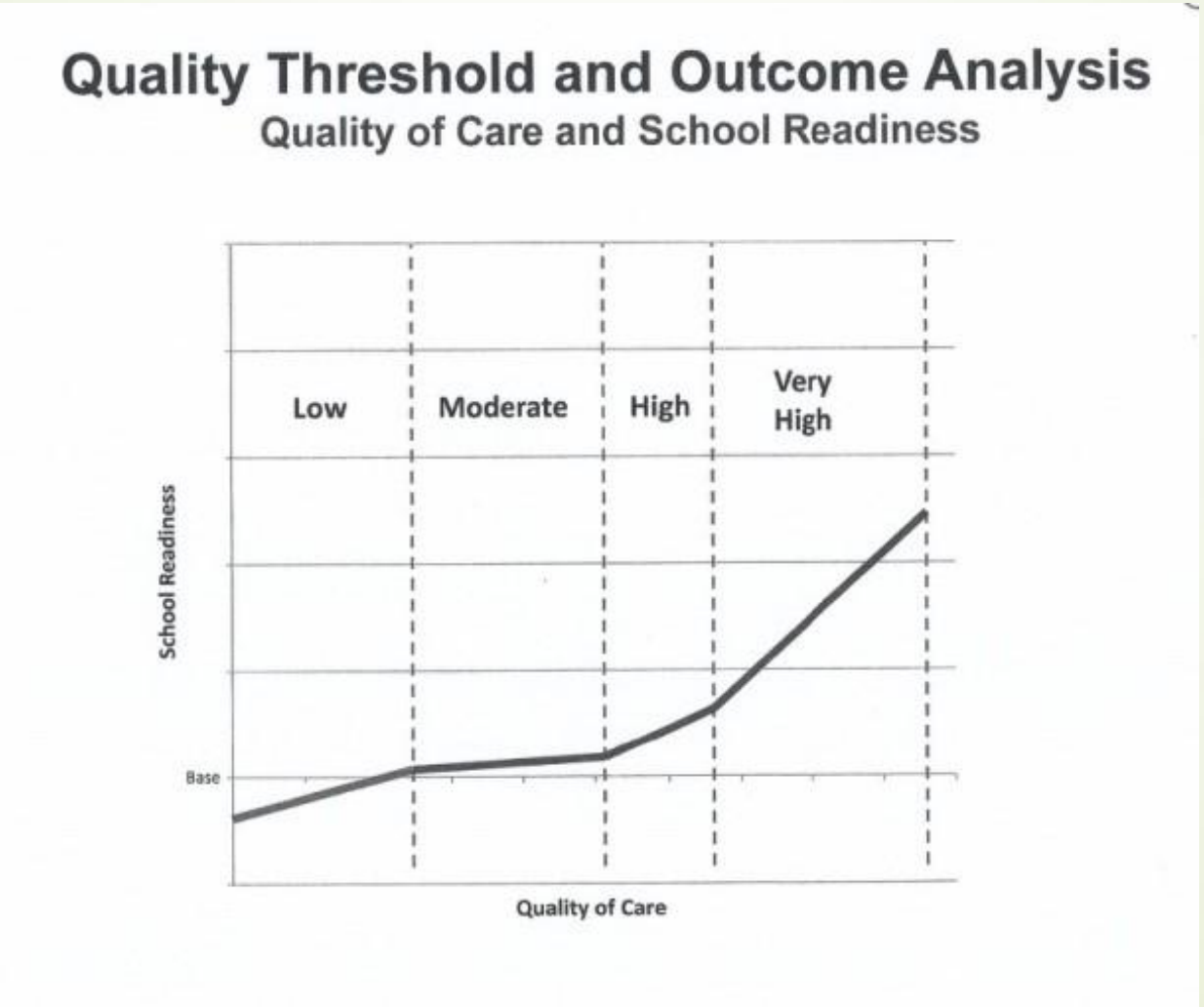
- Need everyone's skills/resources and specific roles
- Partnerships need to be reciprocal
- E.g. Washington State's Early Learning Partnership
  - Includes:
    - Early Learning
    - K-12
    - Thrive WA
    - Department of Health
    - Department of Social/Health Sciences
    - Tbd

- Met together at University of Washington's Institute for Learning and Brain Science (ILABS)
- Meet monthly, working group
- Choose annually which of 36 strategies to work on together
- Publish progress reports annually to the legislature and the public

3. Focus on Quality

- Not either access or quality – BOTH!
- Teacher's interactive/instructional skills, class size, length of day, length of year, number of years- all impact quality

Minnervino graph



J. Minnervino, September 2014, Bill and Melinda Gates Foundation

Quality for Children includes:

- Aligned expectations for children, birth-grade 3
- "Whole child" outcomes for children, birth-grade 3
- Growth/gain measures for children, birth-grade 3
- A kindergarten assessment process between PK and K-3 teacher and families

- Primary grades measures of children's progress
- Developmental screening to identify special needs
- An interactive longitudinal data system linking child outcome to demographics and specific interventions
- E.g. Washington State Guidelines

Quality for Families includes:

- Access to physical, emotional, dental, health care
- Access to prenatal health care
- Information in multiple formats and languages about:
  - Early brain development
  - What quality looks like
  - Available quality programs and subsidies
  - Available developmental screenings and resources

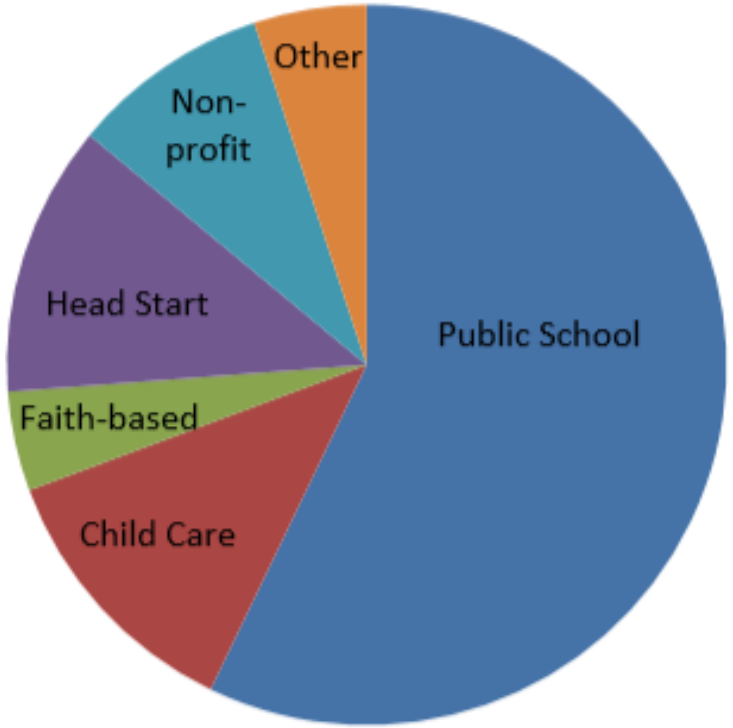
- Updates on variety of supports
  - Parent advisories
  - Play and Learns groups
  - Library resources
  - VROOM
  - Valuing family input, voice and input

"Quality for Early Learning Teachers/Providers includes:

- Objective, credible early learning standards for teachers/providers of children, birth-grade 3
- A system of supports to "grow" instructional quality
  - Professional development, including PK and K-3 teachers
  - Incentives
  - Scholarships
  - Coaching

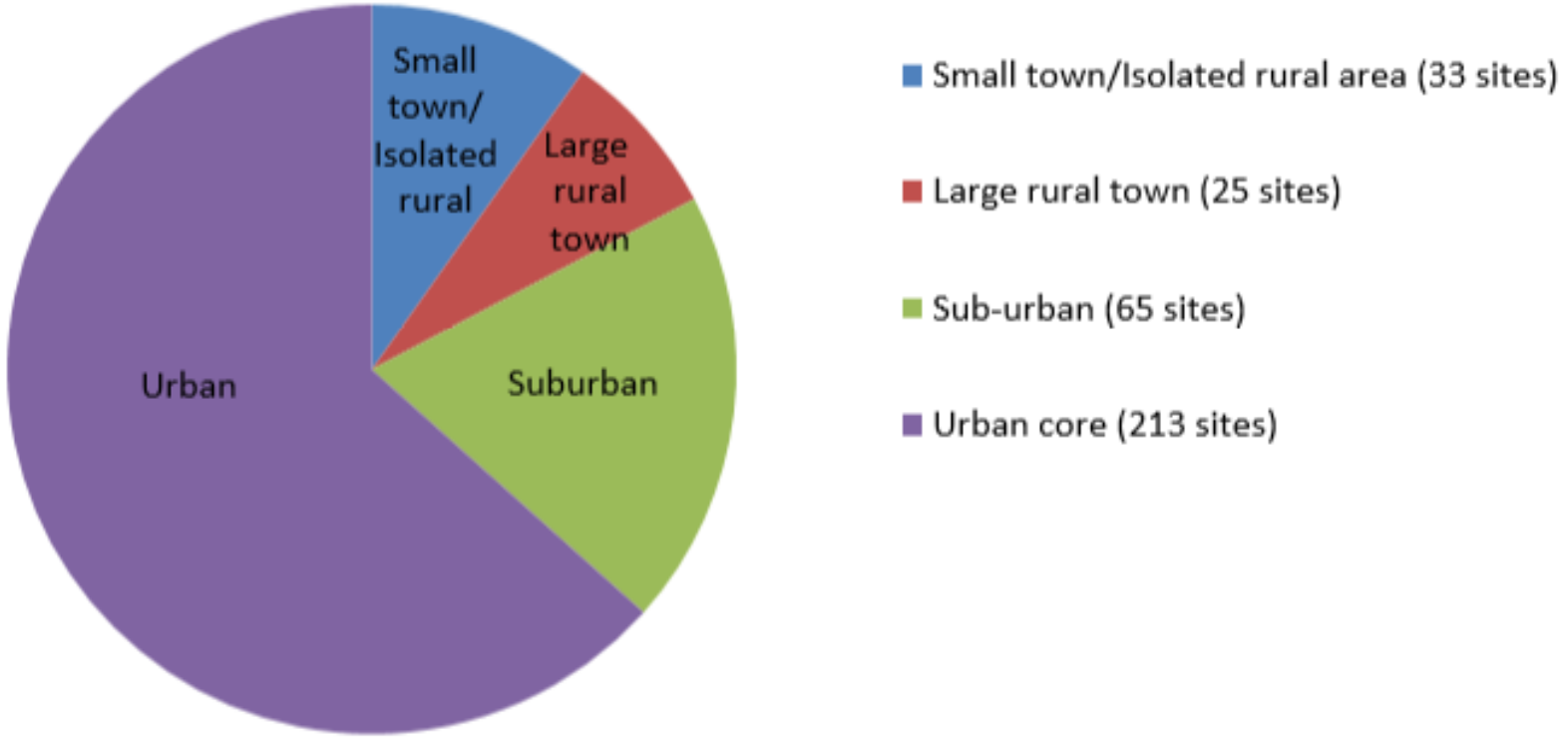
- Need to phase in teachers/providers requirements
- Need both "carrots & sticks"
- Partnership are essential with
  - K-12
  - Higher Education
  - Child Care
  - Local Agencies
- E.g. Washington State's QRIS – Early Achievers

Number of sites by location type:



- Public School (192 sites)
- Child Care Centers (41 sites)
- Faith-based Facilities (15 sites)
- Head Start Facilities (41 sites)
- Non-profit Organization Building (30 sites)
- Other (17 sites)

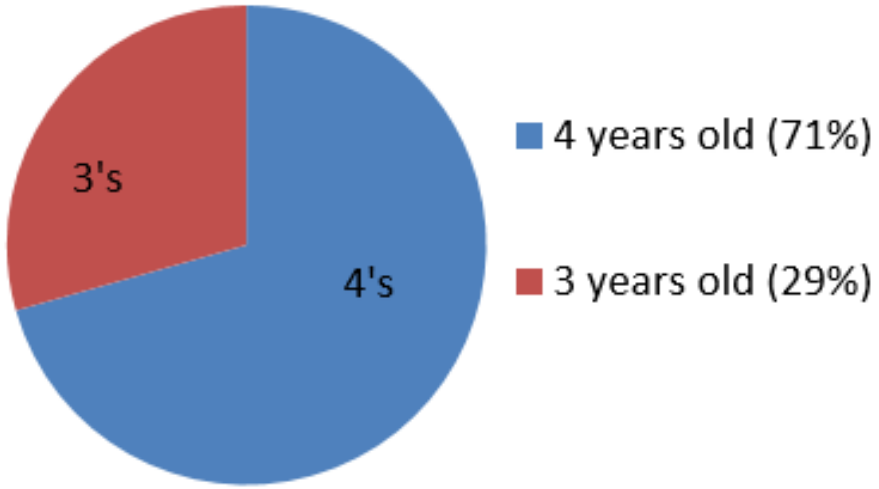
Population density at physical location of ECEAP sites:



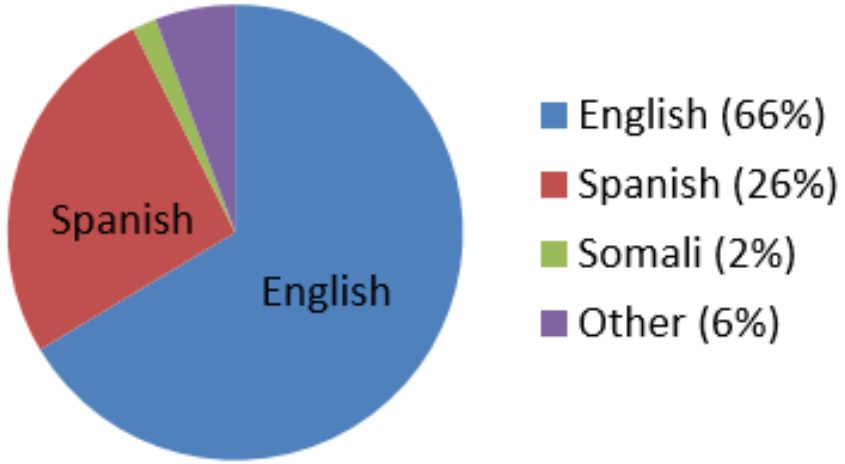
Child Characteristics

n = 11,353

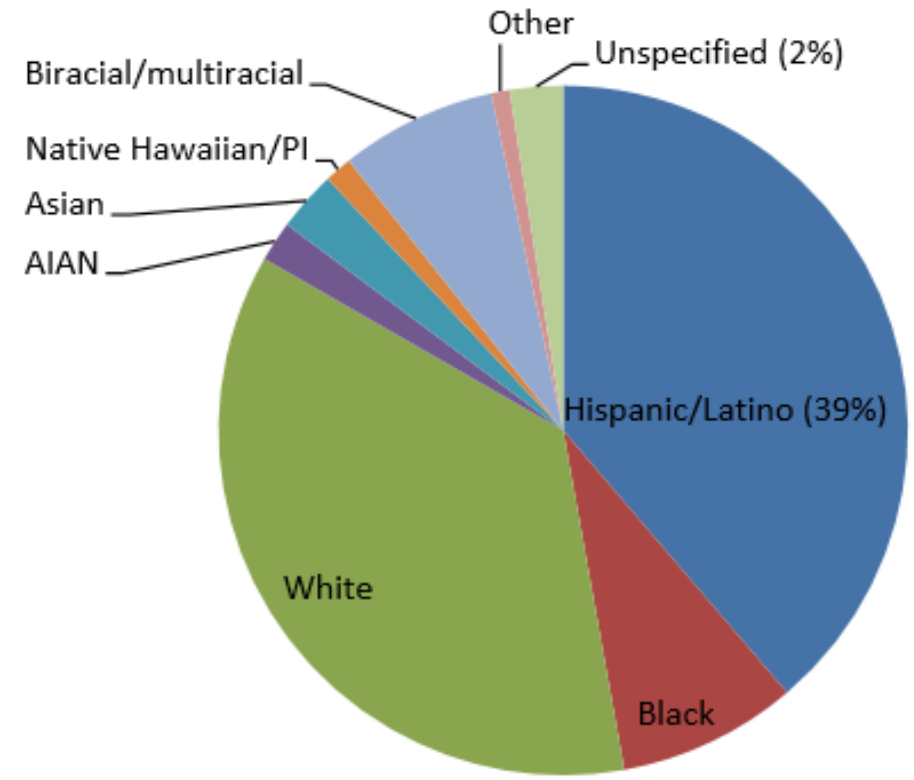
Age on August 31



Home Language



Race and Ethnicity



- Hispanic/Latino (39%)
- Black/African American, not Hispanic (8%)
- White, not Hispanic (36%)
- American Indian/Alaska Native, not Hispanic (AIAN) (2%)
- Asian, not Hispanic (3%)
- Native Hawaiian/Pacific Islander (PI), not Hispanic (1%)
- Biracial/multiracial, not Hispanic (7%)
- Other, not Hispanic (1%)
- Unspecified (2%)

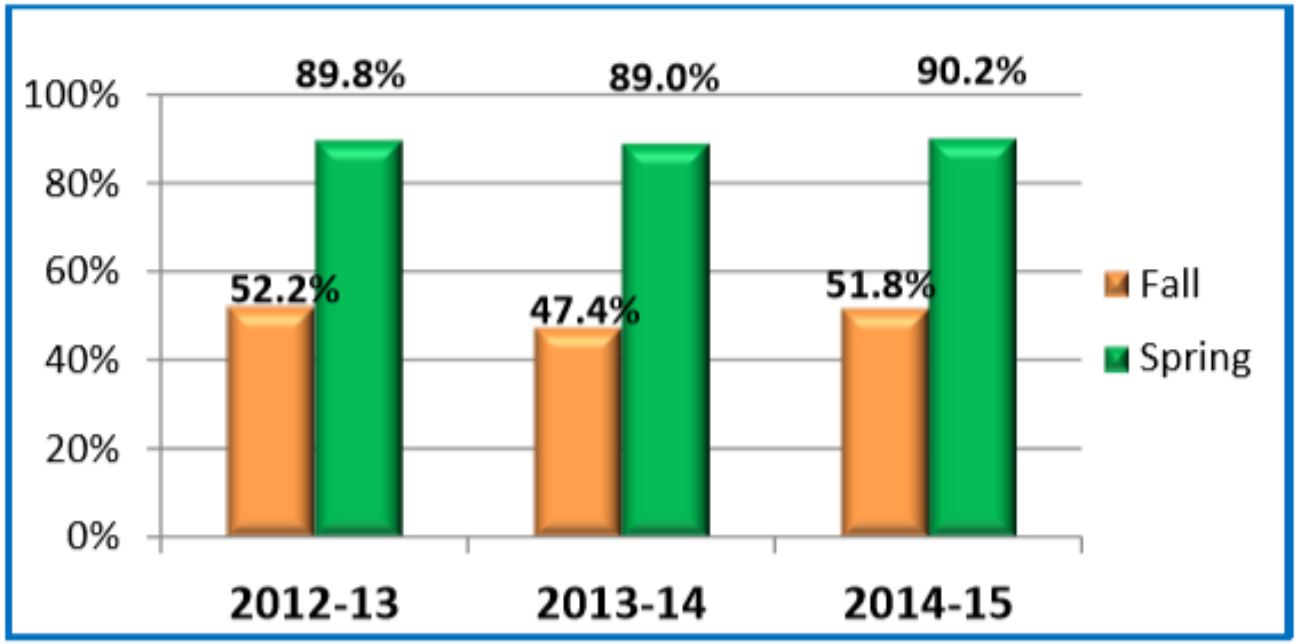
Language Development

Percent of children at or above age level in this domain, in fall (beginning of school year) and spring (end of school year.

For 2012-13, n = 4,479

For 2013-14, n = 7,058

For 2014-15, n = 7,211



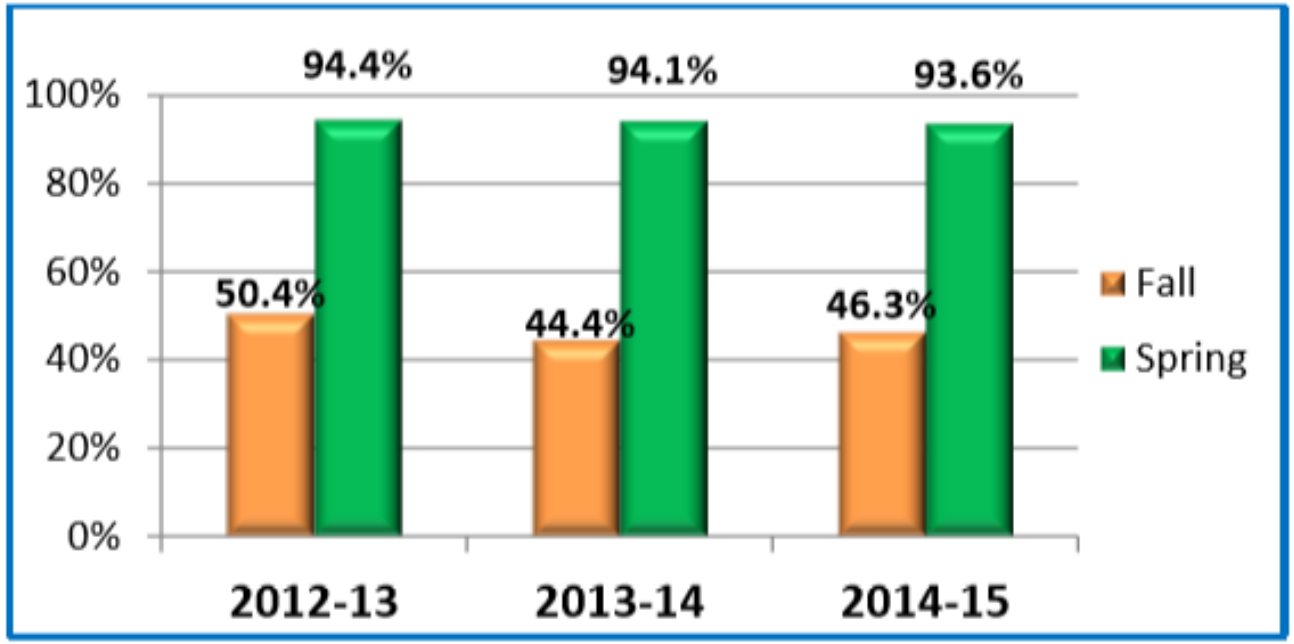
Literacy Development

Percent of children at or above age level in this domain, in fall (beginning of school year) and spring (end of school year.

For 2012-13, n = 2,100

For 2013-14, n = 6,918

For 2014-15, n = 7,022



Percentages Ready for Kindergarten Entry

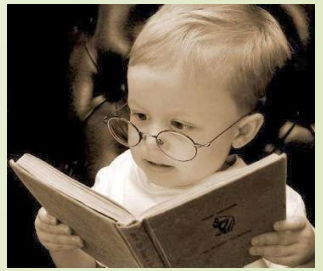
	ECEAP Pre-K (4-year-olds)			WaKIDS	
	Fall 2014 (November)	4's Spring 2015 (April-May)	Spring 2015, after two years of ECEAP	Fall 2015 Low Income only	Fall 2015 All WaKIDS
	n≈5,202	n≈5,201	n≈129	n≈23,793	n≈41,755
Social-Emotional	38.8%	92.1%	96.8%	68.1%	73.2%
Physical	42.1%	93.1%	98.5%	73.4%	77.3%
Language	41.8%	88.4%	96.2%	72.3%	78.9%
Cognitive	35.3%	92.7%	97.7%	57.4%	74.6%
Literacy	30.1%	88.0%	96.1%	73.2%	80.9%
Mathematics	8.8%	65.1%	79.7%	49.4%	60.8%

4. Ensure Accountability

- Invest in a multi departmental system to gather longitudinal outcomes/impacts
- Implement programs via scientific method pilot studies/Phase-in
- Reward programs that produce growth per child on "real" outcomes
- Modify programs with the aim of achieving "break through" results for children and families

- Continually seek input from the recipients of the programs about how the programs could be improved. Use the input in deliberations.

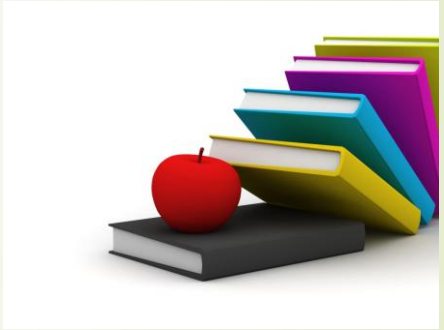
- Intentionally develop communications about this work and its outcomes
  - Clear vision with multiple messages
  - Different outcomes stressed per audiences
  - Different messengers
  - E.g. Washington State's Public Policy Institute



5. Plan for Sustainability

- Really hard!
- Make funding iterative
- Be opportunistic
  - Can state/federal legislation support our work?
- Cement good outcomes into State laws
  - Don't be shy
  - And continue to access outcomes

- "Layer" funding legally
  - Child Care Development Block Grant
  - Federal Special Education/State funds
- Think partnerships and the voice/skills the bring
  - Libraries
  - Children's Museums
  - Child Care providers
  - American Society of Pediatricians
  - Fight Crime/Invest in Kids
  - The Military



- Think outside the box
  - Partnerships
  - Philanthropy
  - Pay for Success
  - Medicaid

Take Away's

- There is both neurological/"hard" science and social science controlled study research that supports early learning as a way to produce school readiness, K-12 success, and healthy and productive adults.
- Positive results will occur only if early learning programs are of high quality and sustained.
- Early Learning offers a paradigm shift way of doing the State's business that yields good economic returns and healthier, more productive citizens.