Making the Connection: Linking Early Brain Development Research to Practice

Infant/Toddler Specialist Network, Child Care State Capacity Building Center (SCBC) Hot Topic Webinar
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Welcome and introductions

April Westermann, M.Ed.
Region X Infant/Toddler Specialist
State Capacity Building Center

Holly H. Wilcher, Ph.D.
Region IV Infant/Toddler Specialist
State Capacity Building Center
Who is with us today?

Please share your name, role, and state, territory, or tribe.
Objectives

- Identify the rationale for making the connection from research to practice.
- Examine and discuss the importance of infant/toddler brain development.
- Share and explore approaches to applying research to improve the quality of infant and toddler care.
Framing the topic

“In the absence of responsive caregiving … the brain’s architecture does not form as expected, which can lead to disparities in learning and behavior.”

Experiences build brain architecture

Activity

What one gift would you give to infants and toddlers, to support their brain development?
Guest speaker

Welcome:
Dr. Sarah Lytle, Director of Outreach and Education
Institute for Learning & Brain Sciences (I-LABS)
University of Washington
Our earliest experiences build the foundational architecture of our brains.
Supporting Early Brain Development
Supporting Early Brain Development

Have a conversation
Supporting Early Brain Development

Have a conversation

Share your thinking
Supporting Early Brain Development

- Have a conversation
- Follow their lead
- Share your thinking
Supporting Early Brain Development

Have a conversation

Follow their lead

Share your thinking

Be a regulator
Supporting Early Brain Development

- Have a conversation
- Follow their lead
- Share your thinking
- Model persistence
- Be a regulator
Supporting Early Brain Development

- Have a conversation
- Follow their lead
- Be a regulator
- Share your thinking
- Model persistence
- Make it predictable
Can caregivers be coached?

- Coach feedback on recordings of language at home
- Listen to audio samples
- Discuss upcoming language milestones
- Find times for interactive activities, like book sharing
Caregiver Coaching Works

Language to child
Parentese
Babbling

Ferjan Ramirez et al., 2018; 2020
How to Teach Responsively
Click on the video below to watch an example of responsive teaching. As you watch, think about the tutor’s role during the experience:

– How does the tutor let the children take the lead?
– How does the tutor make the interaction fun, relevant, and responsive?

Wiring the Brain for Language
To speak a language, our brains must wire together many different areas. Particularly important are the speaking and the listening areas. Young children activate these regions of their brains while they listen to you talk. You can support this process by speaking to them often with rich language, parentese, and encouraging them to “talk” back – whether using words, sounds, their eye gaze, gestures, or other responses.
SparkLing™ Language Curriculum

- **Bar Chart 1:**
  - X-axis: Age groups (months) 0-14, 14-20.5, 20.5-27, 27-33.5
  - Y-axis: English vocalizations
  - Comparison: Intervention vs. Control

- **Bar Chart 2:**
  - Comparison: Monolingual English 20mo vs. Monolingual English 16mo
  - X-axis: Start, End
  - Y-axis: English CCT score

*Ferjan Ramirez & Kuhl, 2017*
I-LABS Online Modules

Module 1: Introduction to I-LABS
Time to Complete: 10 minutes

Module 2: Why the First 2,000 Days Matter: A Look Inside the Brain
Time to Complete: 20 minutes

Module 3: The Importance of Early Interactions
Time to Complete: 20 minutes

Module 4: The Power of Learning through Imitation
Time to Complete: 20 minutes

Institute for Learning & Brain Sciences
Voices from the Community

“...a lot of people look at it like, oh they just babysit...[the module content] empowers [the staff] more to really value what they do, and say hey I am a brain builder.”

“It was really useful to see something that I could show to parents that was so visual that they didn’t need to understand any educational jargon in order to really get the message.”

“I am really happy I’ve found the modules, and I’ve shared them with my friends, and I am trying to convince everybody that they should have a look – everybody.”
I-LABS Training Modules

The Latest Research

modules.ilabs.uw.edu

About the Youngest Minds

Free resources

Also available in Spanish, Somali, and Vietnamese.
Thank you!
Questions?

Thank you, Dr. Lytle!
Welcome:
Dr. Jennifer Fung, Research Scientist and Professional Development Specialist
Haring Center for Inclusive Education
University of Washington
Early Intervention to Address Developmental Delays: Shaping Effective Professional Development
Early Intervention: Why?

> Early relationships, stimulating environments, and an active, engaged child shapes brain growth and development …

> But, what if a child is unable to fully act on their environment or engage in relationships with the people in them?
Early Intervention: Why?

> High quality early intervention services can change a child’s developmental trajectory and improve outcomes for children and families.
Early Intervention: Who?

> **Children under the age of 3 who:**
  - Demonstrate developmental delay
  - Established physical or mental condition with a high probability of developmental delay
  - Illegal substance abuse or withdrawal symptoms
  - Substantiated case of abuse or neglect

> **In some states:**
  - Children who would be at risk of developmental delay without early intervention services
Early Intervention: How?

> Key principles of Part C
  – Family-centered and capacity building practices
  – Meaningful intervention in natural environments
Early Intervention: How?

- Based on developmental science
  - Relationship-based
    - Nurturing, responsive interactions
  - Environments
    - Target active engagement
Early Intervention: How?

> Specialized
  – Intensity
  – Instructional strategies
  – Focus of intervention
Effective Professional Development

> Features of high quality PD
  - Achieves desired outcomes
  - Emphasizes high leverage content
  - Fits the context
  - Uses adult learning practices

(Adapted from National Center on Quality Teaching and Learning)
Professional Development Outcomes

(Aadapted from National Center on Quality Teaching and Learning)
Aligning PD Outcomes + Activities

Use new skills in context
Develop skills
Knowledge
Awareness

Discussion
Lecture
Reading

These low-complexity PD strategies are most likely to increase awareness or knowledge

(Adapted from National Center on Quality Teaching and Learning)
Aligning PD Outcomes + Activities

Use new skills in context
Develop skills
Knowledge
Awareness

Role play or case study
Practice with feedback
Modeling in context

Complexity

These medium-complexity PD strategies are most likely to develop skills

(Adapted from National Center on Quality Teaching and Learning)
Aligning PD Outcomes + Activities

(Adapted from National Center on Quality Teaching and Learning)

Use new skills in context
Develop skills
Knowledge
Awareness

Coaching/Mentoring
Follow-up from PD activity
Action planning

Complexity

These high-complexity PD strategies are most likely to increase use of skills in context

(HARING CENTER FOR INCLUSIVE EDUCATION)
## PD Activities + Outcomes

(Adapted from “Student Achievement Through Staff Development,” by B. Joyce and B. Showers, 2002, p.78. Copyright 2002 by the American Society for Curriculum and Development.)

<table>
<thead>
<tr>
<th>Training Components</th>
<th>Knowledge</th>
<th>Skill Demonstration</th>
<th>Use in the Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory and Discussion</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Sample PD Offering: QRIS Coaches

PD outcomes:
- Increased awareness and knowledge
- Skill development
Sample PD Offering: QRIS Coaches

> PD activities:
  - Short-term internships
    > Lecture
    > Demonstration
    > Facilitated observation
    > Guided debrief
  - Ongoing coaching
  - Consultation
  - Resource library
Thank You!
Questions?

Thank you, Dr. Fung!
State examples
Massachusetts: Brain Building in Progress

- Raises public awareness and involvement in young children’s development and learning by highlighting the importance of brain development and why it matters
- Brain Building Zones
- Reaches varied audiences
Georgia – *Better Brains for Babies*

**Formed in 1998**

- To share new research on early brain development

**Training for Trainers**

- Over 500 adult educators/trainers trained in science of early brain development
- Three rounds of Continuous Quality Improvement (CQI)
- Better Brains for Babies Educator community and application process

**Training Materials and Resources**

- Connect brain research to practice for infant and toddler caregivers
- Translated in Spanish

Wrap-up and conclusion
The caregiver’s role in supporting early brain development

- Understand developmental needs
- Support secure attachment
- Promote close, caring relationships
- Engage in reciprocal interactions
- Respect individual needs
- Create an environment that invites exploration and discovery
- Support emotional regulation
5 steps for brain-building serve and return interactions

1) Notice and respond to children’s serves.
2) Return the serve by supporting and encouraging the child.
3) Name what a child is seeing, doing, or feeling.
4) Take turns and wait, keep the interaction going.
5) Practice endings and beginnings.

Video: 5 Steps for Brain-Building Serve and Return

Brain development is important!

- Responsive and reciprocal interactions (serve and return) cornerstone to healthy brain development
- Social emotional development
- Language acquisition
- Identity
- Self-regulation
Infant/Toddler Resource Guide

Resources

- ZERO TO THREE. The growing brain from birth to 5 years old, a training curriculum for early childhood professionals. [https://www.zerotothree.org/resources/1831-the-growing-brain-from-birth-to-5-years-old-a-training-curriculum-for-early-childhood-professionals](https://www.zerotothree.org/resources/1831-the-growing-brain-from-birth-to-5-years-old-a-training-curriculum-for-early-childhood-professionals)


- Center on the Developing Child at Harvard University. Serve and return. [https://developingchild.harvard.edu/science/key-concepts/serve-and-return/](https://developingchild.harvard.edu/science/key-concepts/serve-and-return/)

State Capacity Building Center,
A Service of the Office of Child Care

9300 Lee Highway
Fairfax, VA 22031
Phone: 877-296-2401
Email: CapacityBuildingCenter@ecetta.info

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