The Science Supporting Dual Language Learners

Science Matters! Series

February 18, 2020

The Campaign for GRADE-LEVEL READING

Ellen Galinsky

Moderator

Chief Science Officer

Bezos Family Foundation

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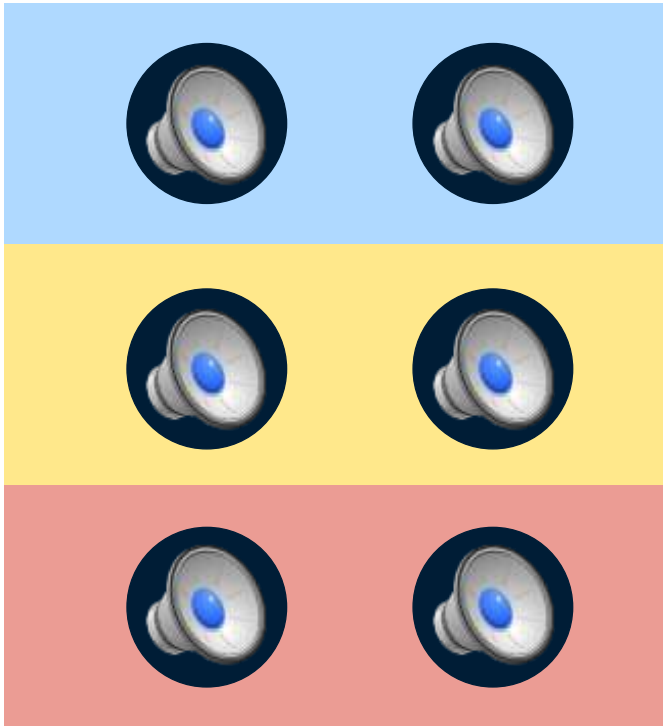
Author, Consultant

How Children Learn Language(s)

Sarah R. Lytle, Ph.D.

Director of Outreach and Education

Same or Different?



Same or Different?

English  

Spanish  

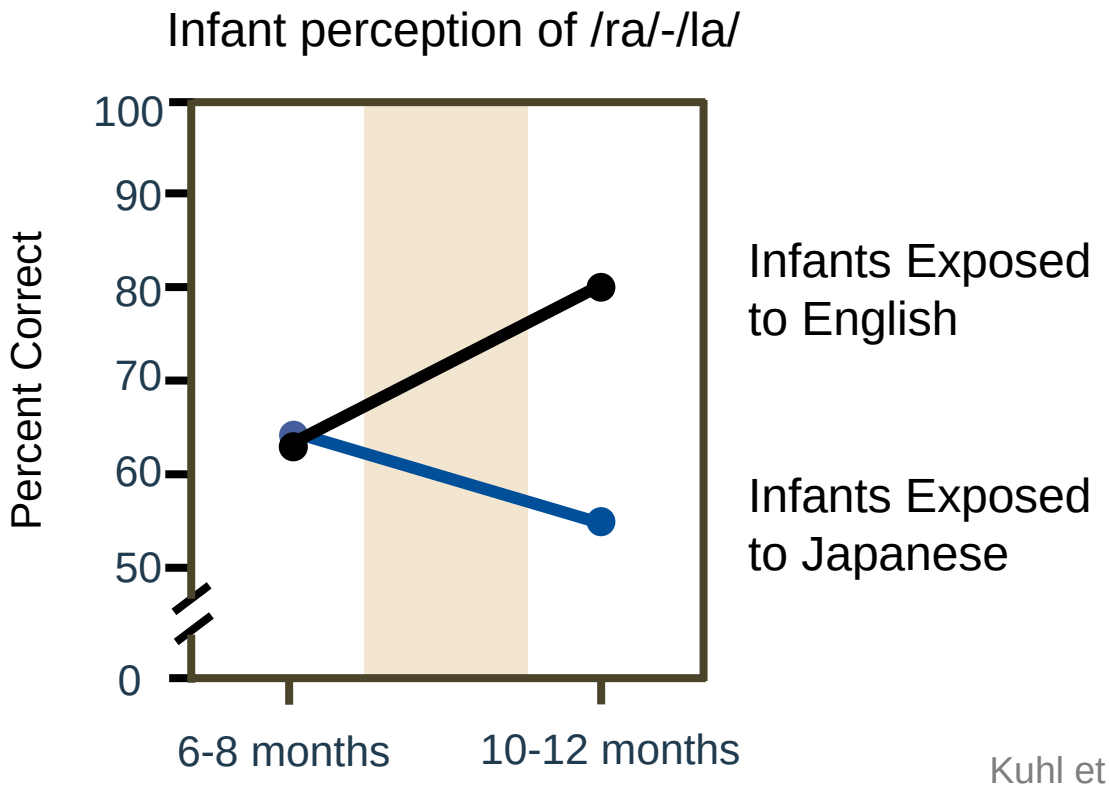
Hindi  

Language Learning Begins Before Birth

Moon, Lagercrantz, & Kuhl, 2016

Experiences Shape Language

Experiences Shape Language



Kuhl et al., 2006

Social Learning is Key

Live Interaction

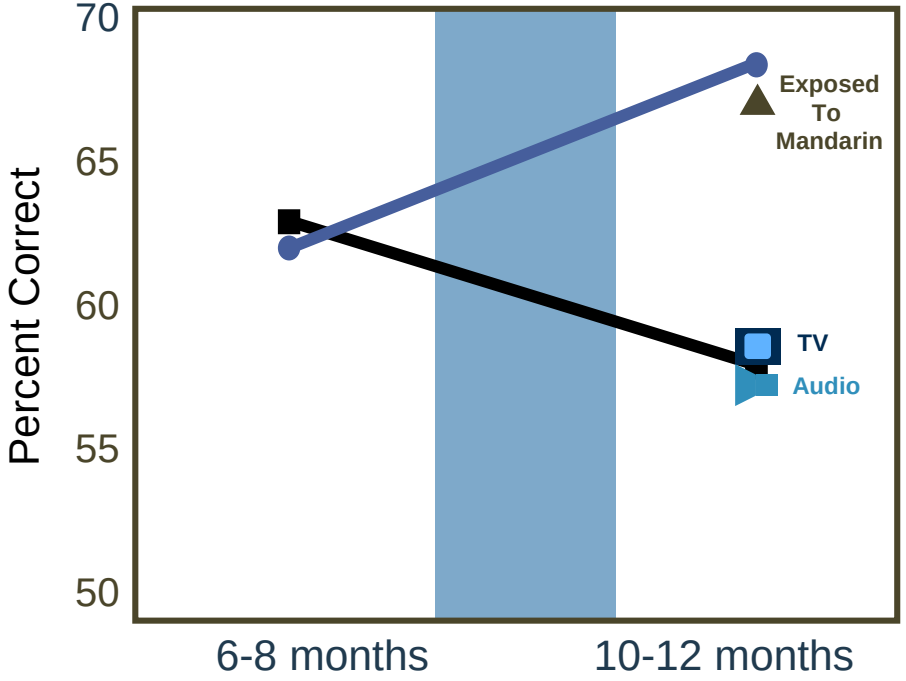
DVD Session

Audio Session

Do infants learn to discriminate Mandarin sounds?

Kuhl, Tsao & Liu, 2003

Children Learn From Others



Babies born in Taiwan

Babies born in Seattle

Kuhl, Tsao & Liu, 2003

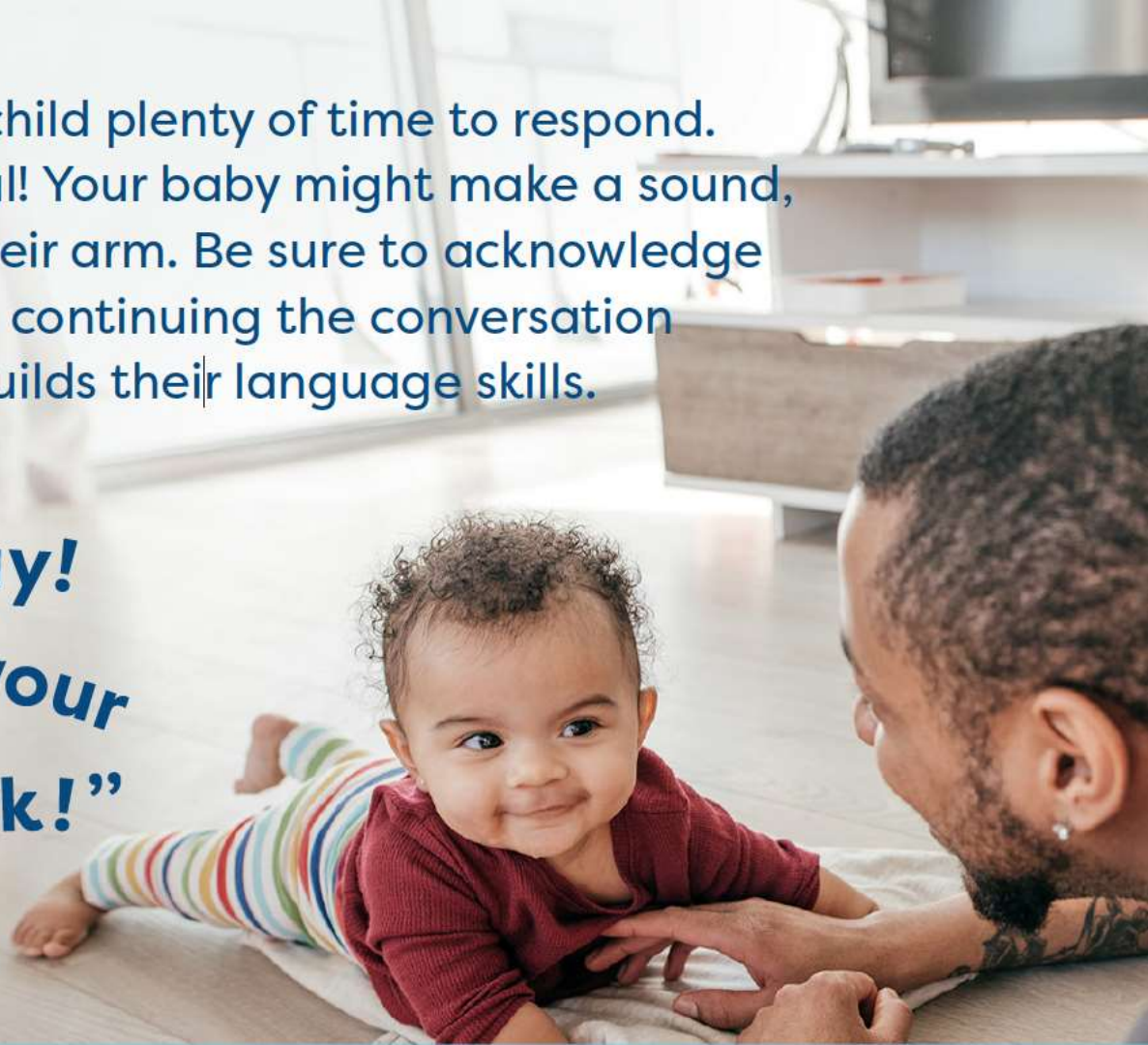
How To Use Parentese

Speak in a higher-pitched, sing-song tone of voice. Use real words – not baby talk like “goo goo” or “gaa gaa.”

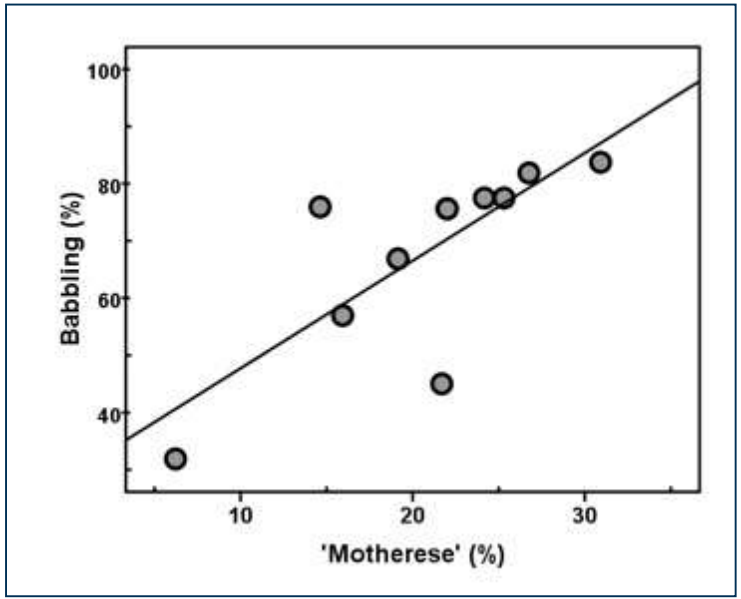
“Do you want to play with your big, red truck?”

Make sure to give your child plenty of time to respond. It's okay if it's non-verbal! Your baby might make a sound, laugh, or even wiggle their arm. Be sure to acknowledge them and reply! You are continuing the conversation with your baby, which builds their language skills.

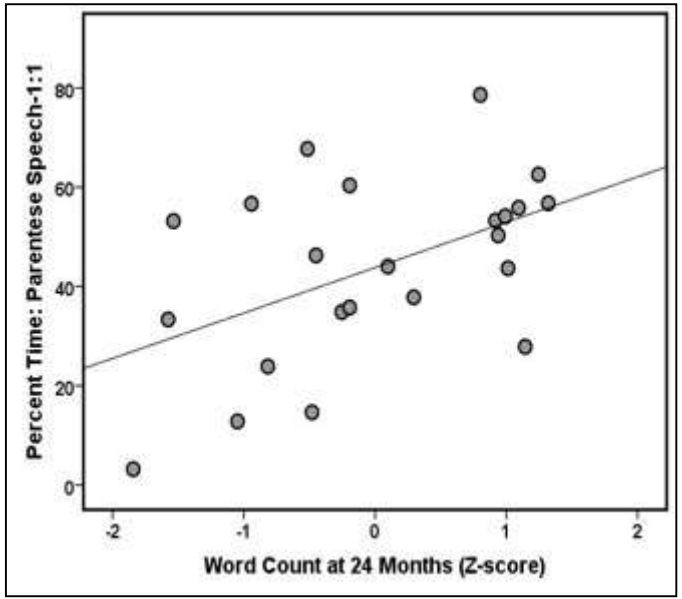
"You do? Okay! Let's play with your big, red truck!"



Parentese Boosts Language



↑ Infant-Directed Speech
↑ Babbling



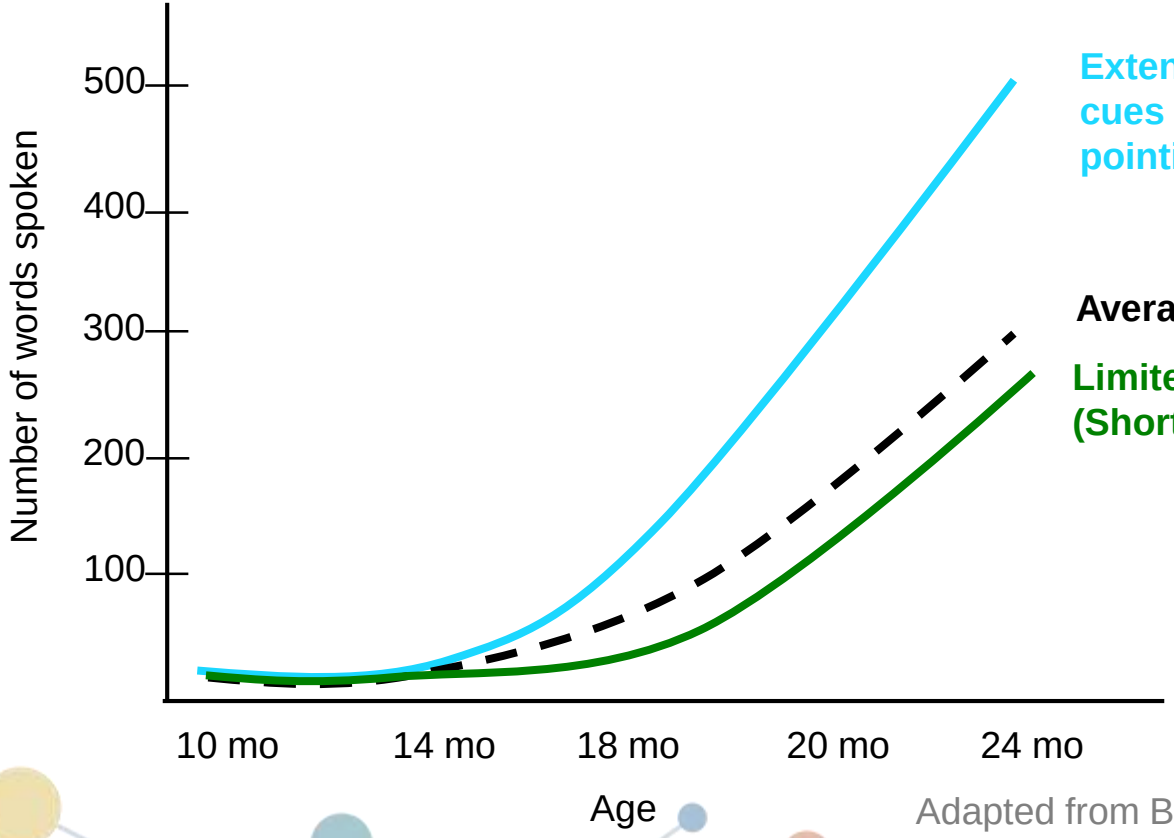
↑ Infant-Directed Speech at 12 m
↑ Vocabulary at 24 m

Garcia-Sierra et al., 2011

Back and Forth Interaction

Roseberry, Hirsh-Pasek, & Golinkoff, 2014

Social Cues Boost Learning



Extensive use of social cues (Long looks & pointing)

Average child

Limited use of social cues (Short looks, no pointing)

Adapted from Brooks & Meltzoff, 2008

Ask open-ended questions

Follow the child's lead

Explore in new ways

Co-play

Comment on discoveries

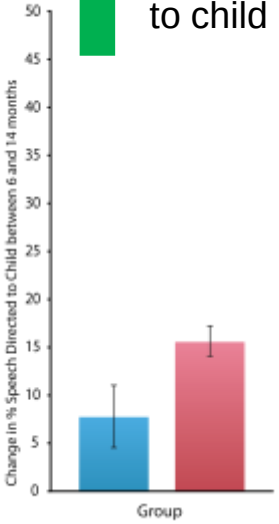
Parent Coaching Works

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

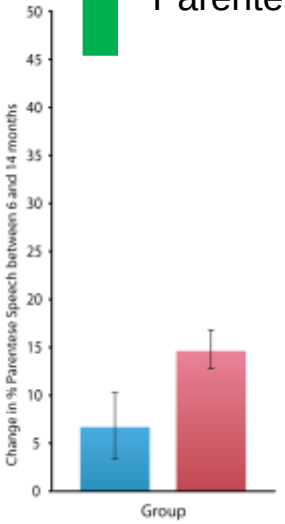
Ferjan Ramirez et al., 2018; 2020

Parent Coaching Works

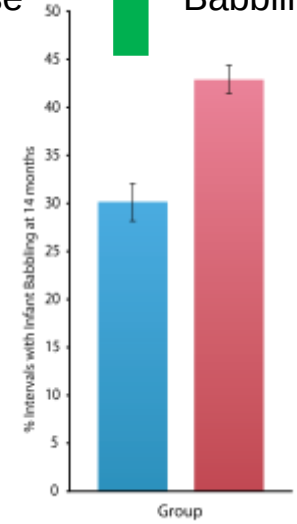
Language to child



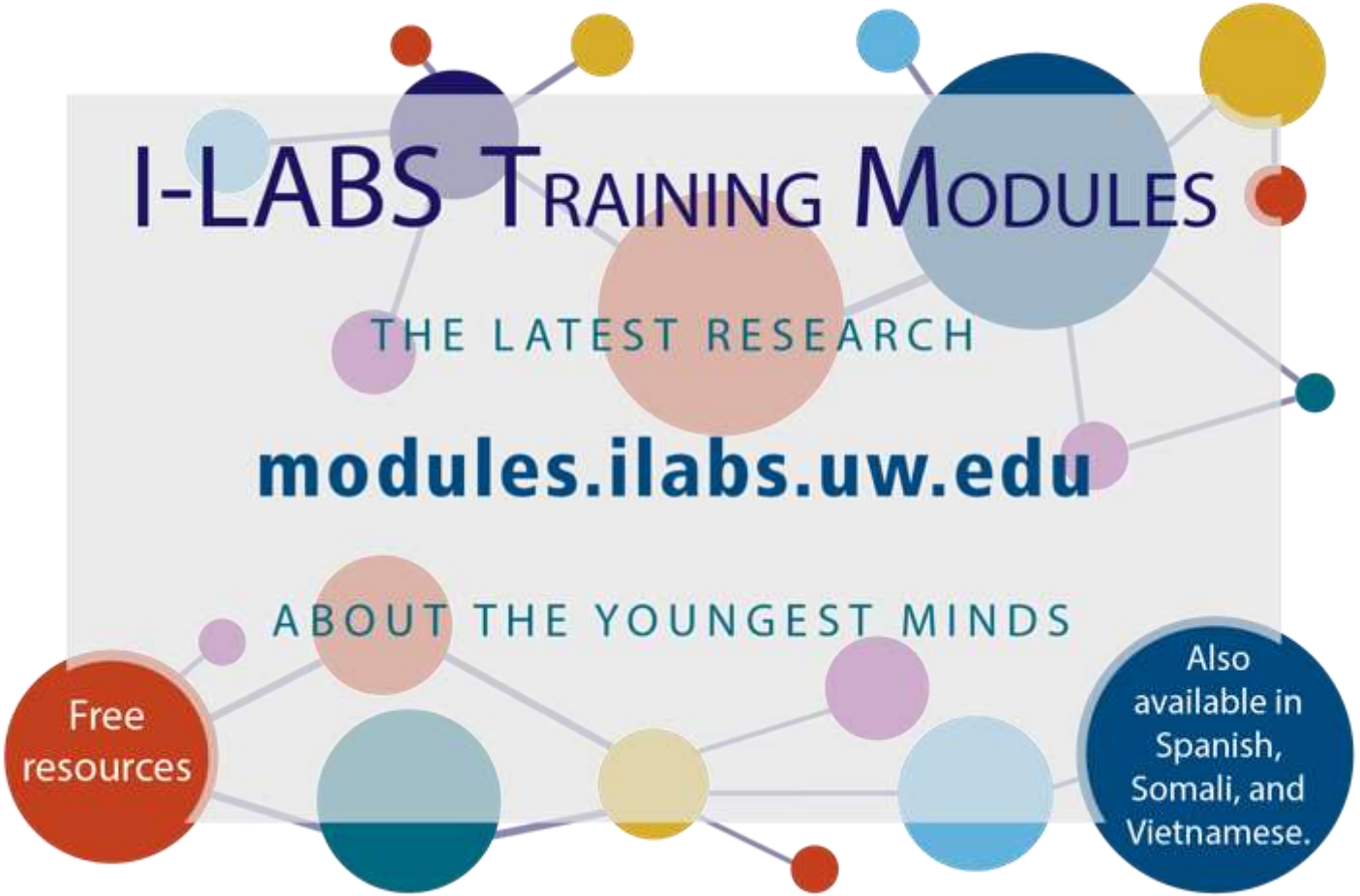
Parentese



Babbling



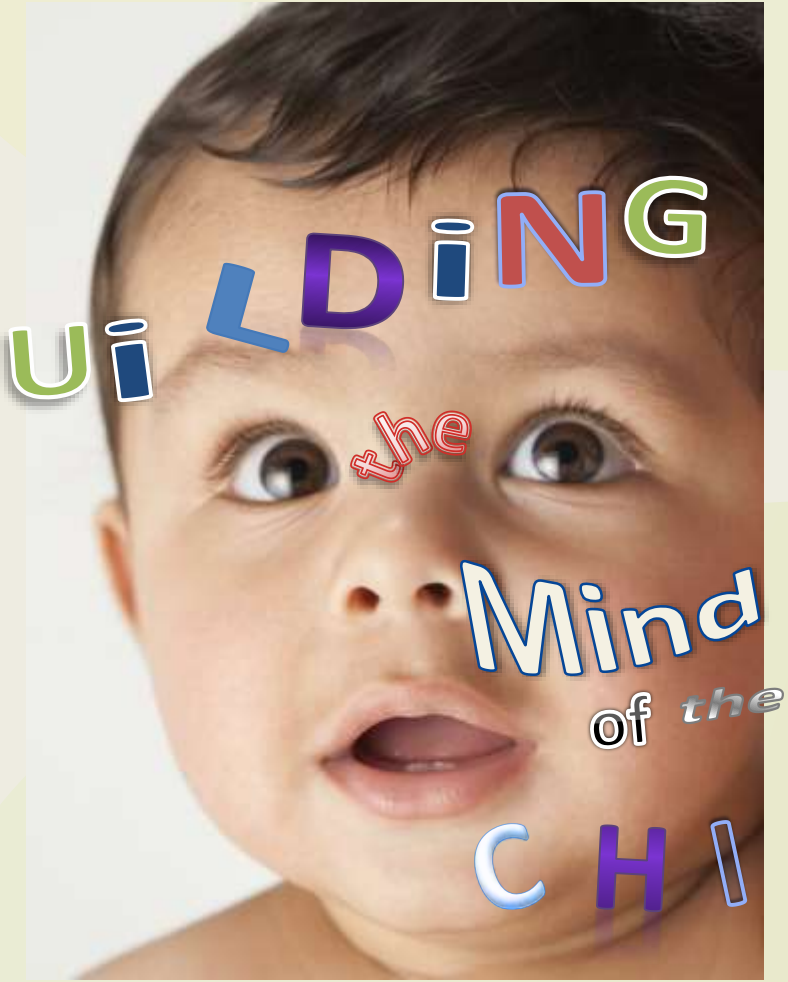
Ferjan Ramirez et al., 2018; 2020


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!

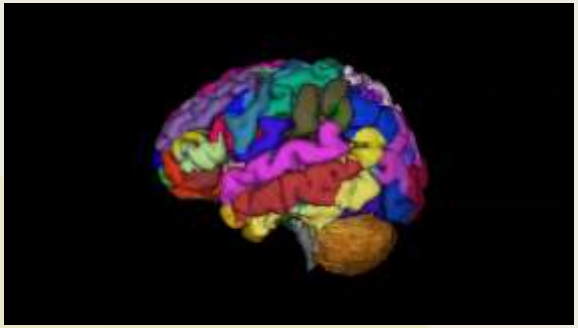
Bilingual Babies: What's the Brain Got To Do With It?

Patricia Kuhl, Ph.D.
Professor & Co-Director, Institute for Learning & Brain Sciences
Director, NSF Science of Learning Center (LIFE Center)
Bezos Family Foundation Endowed Chair in Early Learning
University of Washington, Seattle



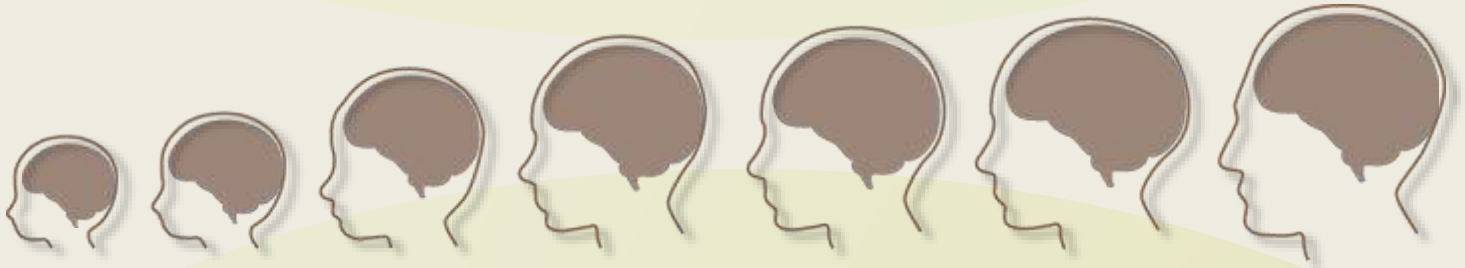
Brain Function

Brain Structure



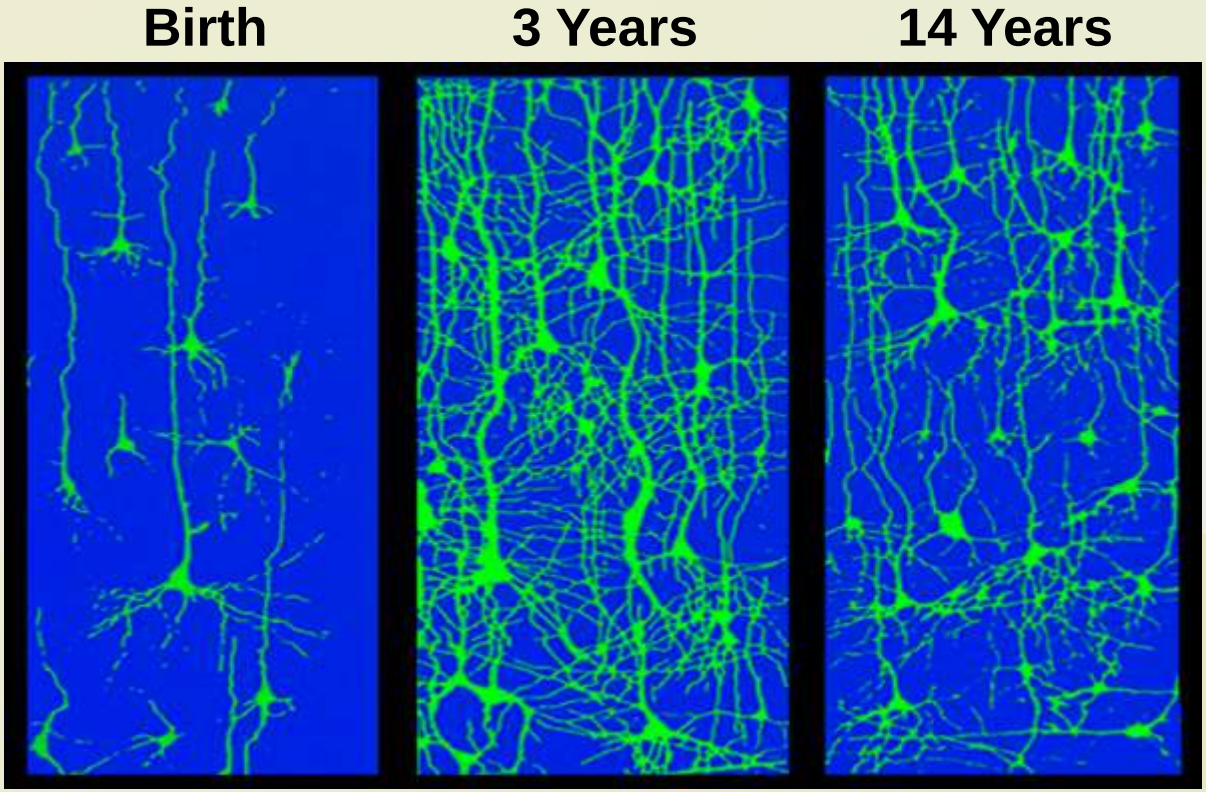
From Research
to Practice

Brain Growth:
Birth to Adulthood



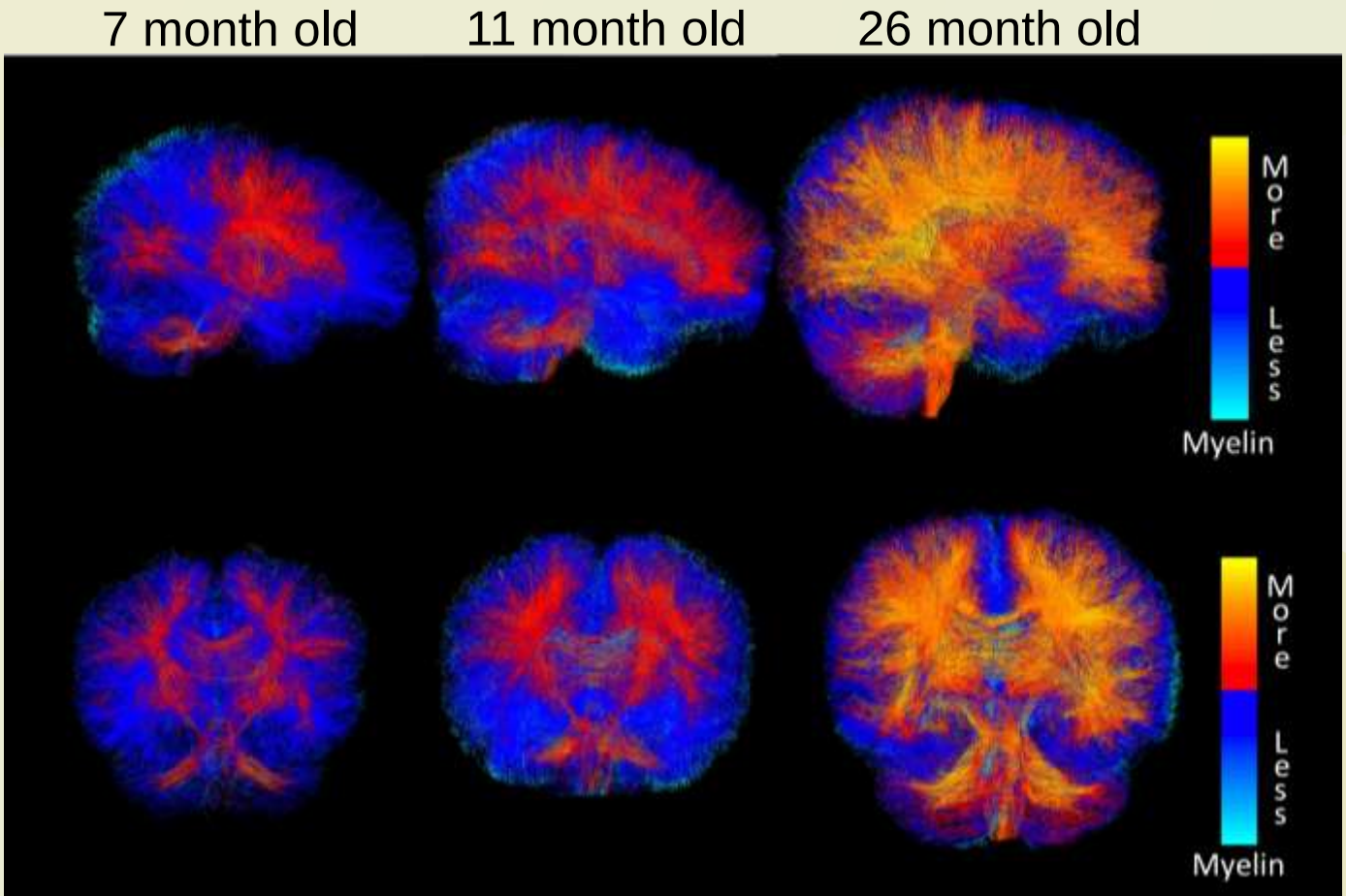
Birth	1 year	3 years	5 years	7 years	10 years	Adult
25%	70%	85%	92%	95%	98%	100%

Building Connections in the Brain: 1 Million/sec!

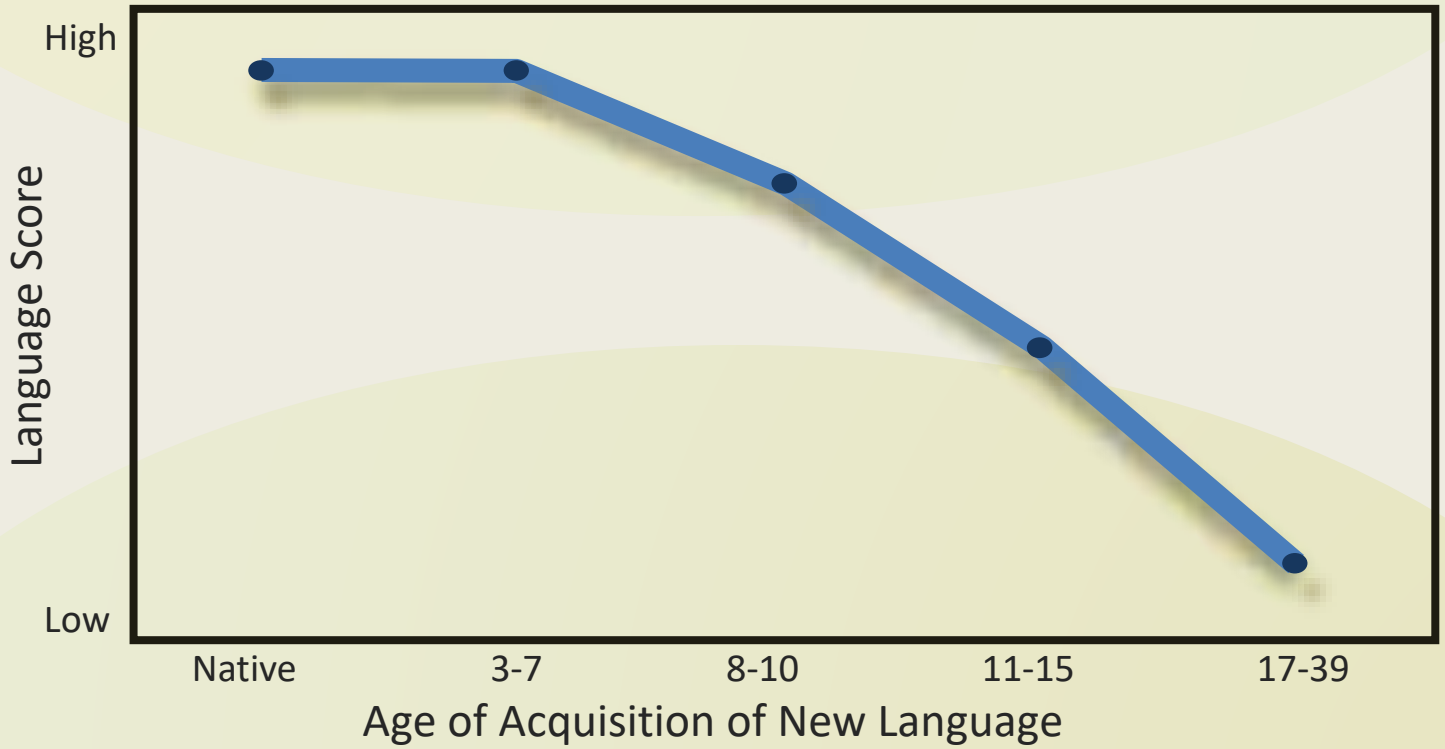


Synapses proliferate, and then are “pruned”!

Growth of Baby Brain Connections



The ‘Critical Period’ for Language

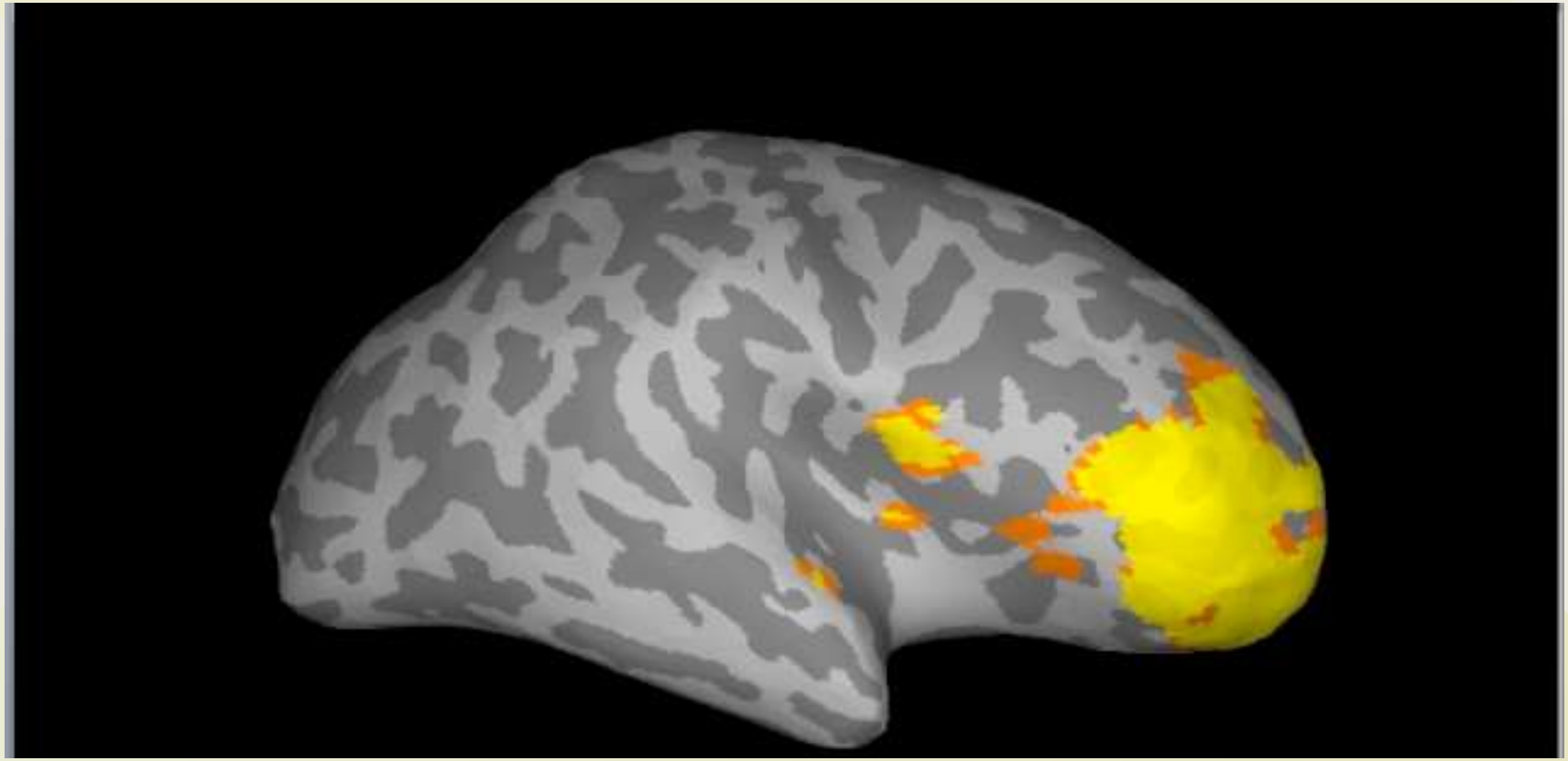


Magnetoencephalography (MEG)

Baby MEG

Imada, et al., *NeuroReport*, 2006; Kuhl, et al., *PNAS*, 2014

Bilingual Babies Show Prefrontal Activation: Greater Cognitive Flexibility



Ferjan-Ramirez, Ramirez, Taulu, Clarke, & Kuhl, Developmental Science, 2017

Tests of Executive Function: 11-Month-Old Monolingual Child

Conboy, Sommerville, & Kuhl (2017)

Tests of Executive Function: 11-Month-Old Bilingual Child

Conboy, Sommerville & Kuhl, 2017

Creating a Bilingual Education Program for Infants and Young Children

Brain-Based Method and Curriculum: SparkLing™

- High Quantity of language input
- High Quality input: “parentese ”
- Highly Social: interactive games and activities
- Children encouraged to “talk ” (even if just “babbling”)
- Multiple native speakers provide input
- Play based instruction, with weekly themes

Ferjan-Ramirez & Kuhl, *Proceedings of the National Academy of Sciences,* 2020

Bilingual Learning: Madrid!

Naja Ferjan-Ramirez & Kuhl, *Mind, Brain, and Education,* 2017

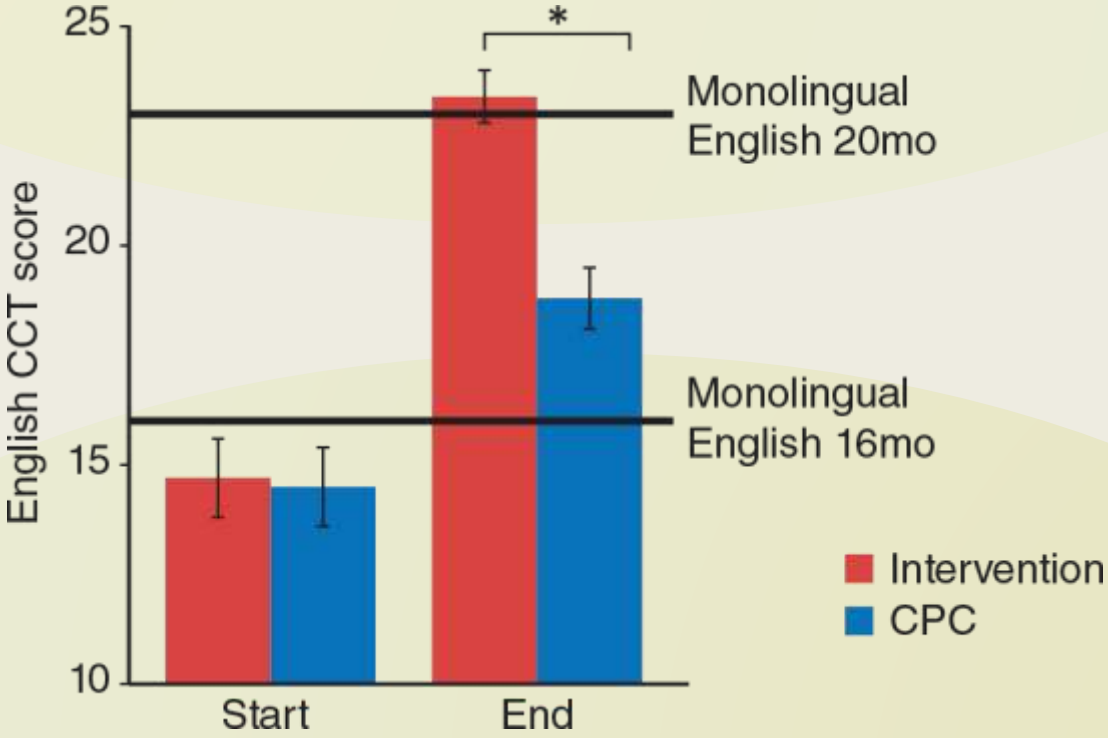
Classroom Activities

Naja Ferjan-Ramirez & Kuhl, *Mind, Brain, and Education*, 2017

Classroom Activities

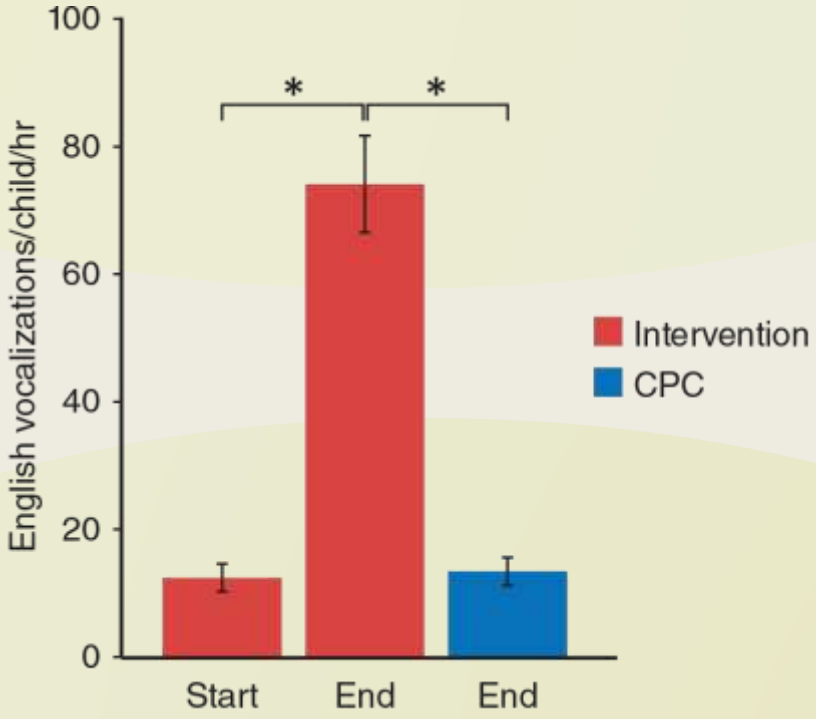
Naja Ferjan-Ramirez & Kuhl, *Mind, Brain, and Education*, 2017

English Word Comprehension Before and After



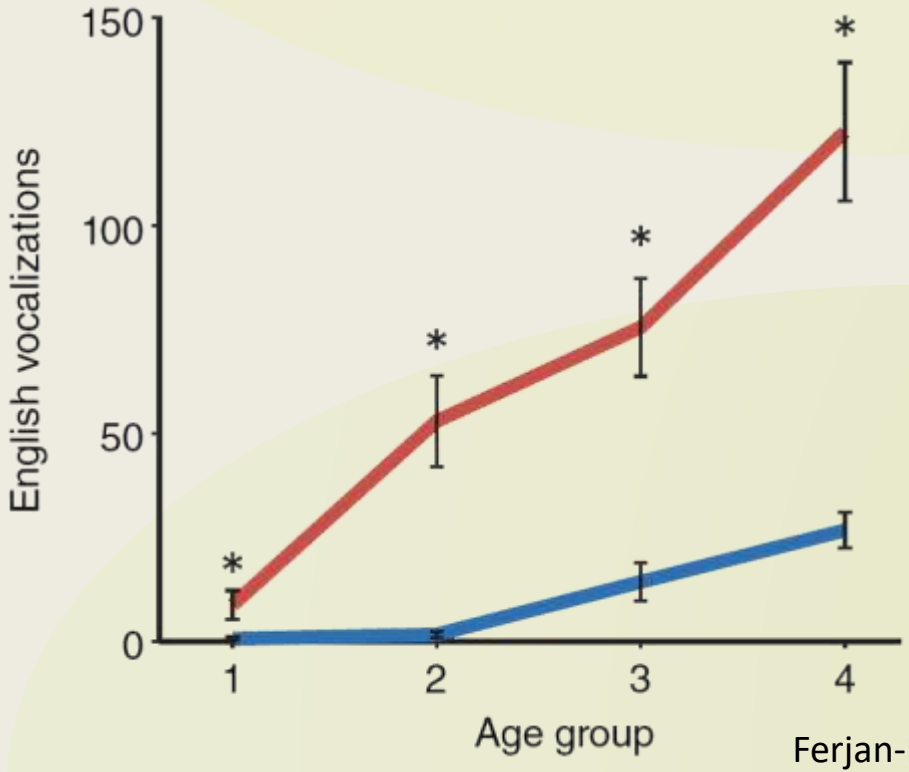
Ferjan-Ramirez & Kuhl, *Mind, Brain, & Education,* 2018

Child Vocalizations In English per hour/per day



Ferjan-Ramirez & Kuhl, *Mind, Brain, & Education,* 2018

I-LABS bilingual learning in school: 18 weeks, 1hr/day



Intervention
CPC

Age Group
1 - 7-14 months
2 - 14-20.5 months
3 - 20.5-27 months
4 - 27-33.5 months

Children who experienced I-LABS Bilingual Baby method and curriculum show extraordinary gains compared to children who experienced current bilingual teaching methods in use in Madrid.

Ferjan-Ramirez & Kuhl, *Mind, Brain, and Education*, 2017

SparkLing

Home Dashboard Lesson Plans Help FAQs Logout

Unit 2 | 2C | **Concept 2: Teaching Language through Playful Learning**

Progress: 1 2 3 4 5 6 7 8 9 ✓

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?

‹ Previous Next Step ›

SparkLing

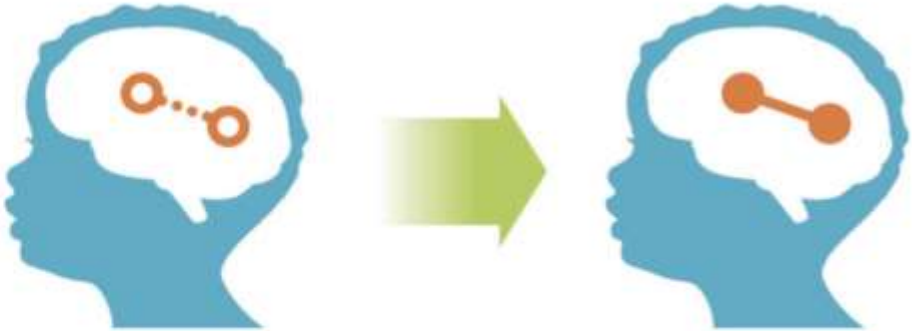
Home Dashboard Lesson Plans Help FAQs Logout

Unit 2 | 2B | **Concept 6: Active Language Learning**

Progress: 1 2 3 4 ✓

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.



‹ Previous Next Step ›

Social, Playful, Intense, Fun!

Graduation Day for Bilingual Children!

Ferjan-Ramirez & Kuhl, 2017, *Mind, Brain & Education*

Thank You!

Language Models and Approaches to Promote Kindergarten Readiness for Dual Language Learners: Where are the Gaps in Our Knowledge?

Dr. Linda Espinosa
Professor Emeritus
University of Missouri, Columbia

Demographic Urgency:

Diverse group that is growing—in size and diversity of backgrounds:

- In U.S., in California, in Head Start, in state PreK programs
- Number of different languages
- DLLs show achievement discrepancies throughout schooling: K entry, third grade reading and math, high school completion

What Does Recent Science Tell Us About Best Approaches to Early Bilingualism and Long-term School Success for DLLs?


Promoting the Educational Success of Children and Youth Learning English
Promising Futures
The National Academies of
SCIENCES · ENGINEERING · MEDICINE
1

Strong Evidence for…….

1. ALL infants, toddlers, preschoolers have ***capacity*** to learn more than one language and balanced bilingualism carries significant social, linguistic, cognitive, and cultural benefits
2. Those DLLs with more ***balanced bilingual skills*** showed greatest advantages.
3. Beginning bilingual exposure ***before 3 years of age*** leads to best proficiency in English long-term.
4. Children need language exposure from ***competent speakers*** of that language---importance of good language role models with sufficient exposure, ~40%

Need to know more about specific curricular approaches to promoting early bilingualism in current context

Strong Evidence cont……..

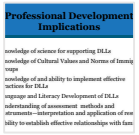
5. Language interactions need to be ***frequent, responsive to child's interests, expanded and varied*** to promote oral language development.

6. Emphasis on ***oral language skills*** during ECE

7. ***Stronger L1 and English skills*** at kindergarten entry predicted best school outcomes.

8. ***L1 must be explicitly and systematically supported*** or it will decline once DLL children are exposed to English.

Need to know more about how to implement different program approaches.



Strong Evidence cont……

9. ***Specific instructional approaches and strategies*** (scaffolding language to promote English comprehension) are important for bilingual progress.

10. ***Frequent assessment***---formative—is essential to program effectiveness.

11. ***Families*** must be involved in education of DLLs.

12. ECE teachers need ***specific training and competencies*** to meet needs of DLLs.

Home Language Loss

- Retention and development of the home language is important for personal, socio-cultural, educational & economic reasons
- Historically, in U.S. studies DLLs tend to lose home language: evidenced in studies of proficiency, preference, incomplete or non-native competence, reduced vocabulary, processing speed
- More loss, the earlier exposure to English
- Parents play a key role in maintaining home language skills

Qualifications of ECE Professionals Who Work with DLLs

- *an understanding of language development and the relationship between first and second language development;*
- *an understanding of the influences of sociocultural factors on language learning;*
- *knowledge of and ability to implement effective practices for promoting the successful education of DLLs/Els including early intervention strategies for DLLs/Els with disabilities;*

- *an understanding of assessment instruments and procedures and of the interpretation and application of assessment results for DLLs/Els;*
- *development of skills for establishing respectful partnerships with families of DLLs/Els;*
- *development of skills to advocate on behalf of DLLs/Els;*
- *attitudes and dispositions that value, support, and promote early bilingualism for DLLs (CA).*

Source: NASEM (2017). *Promoting the Educational Success of Children and Youth Learning English: Promising Futures*. Washington, DC: The National Academies Press (p.477).

Unfortunately, in most states there are no consistent criteria for ***identifying DLLs*** during PreK years or standard requirements for ***teacher qualifications*** for those in ECE who work with DL children and families.

Need: 1) better assessment tools and methods with common criteria, 2) standards for ECE teacher qualifications

Child Development Research: Implications for PreK Practices for DLLs

- 0-5 years are critical for first and second language development
- High variability in language/literacy development of DLLs
- Language development of DLLs looks different from EOs
- **All** children have capacity and experience benefits from bilingualism
- ***Advantages of bilingualism are greatest when DLLs have similar levels of proficiency in L1 & L2***
- Amount and quality of language interactions **from competent speakers** related to DLLs' language development

Individual Differences

- Not all DLLs achieve the same high levels of DL competence

- Variations in acquisition patterns and outcomes are usually linked to:

  - initial age of exposure: before three years of age!
  - amount of exposure: total and proportion
  - quality of exposure: responsive, varied and contingent
  - continuity of exposure: PreK-12
  - crosslinguistic differences
  - socio-cultural influences

Basic Principle of Best Practices for ECE for DLLs

Early proficiency in both L1 and English at kindergarten entry is critical to becoming academically proficient in second language. Consistent approaches PreK to Grade 3 supports ongoing achievement.

Systematic exposure to English and ongoing support of L1 is critical.

Language Approaches for DLLs

- ***Dual language*** models recommended, but often not possible: balanced approaches that provide equal opportunities to learn content in both languages

- ***Primarily English with support for L1*** *(most common)*
  - Set of strategies that all ECE staff can implement to support all DLLs
  - Global high quality is important, but not sufficient

Personalizing Instruction

(Espinosa, Oliva-Olson, Magruder, 2010)

A continuum of support for dual language learners

What is POLL?

- Designed for PreK, currently being adapted for infant-toddler settings
- Basis for the Fresno Language Project; dissemination in two additional counties
- Includes:
  - *Family Engagement Strategies*
  - *Environmental Supports*
  - *Instructional and Assessment Strategies*

Resources

First 5 California State Website: Dual Language Learner Resource Guide
https://drive.google.com/file/d/1tb5Rn2aohb1xAsRFIbaPdWIpU7Ax2ZM_/view

Head Start Early Childhood Learning and Knowledge Center (ECLKC)
https://eclkc.ohs.acf.hhs.gov/search/eclkc?q=Dual+Language+Learners

Institute for Learning and Brain Sciences (iLabs) Training Modules – University of Washington
http://modules.ilabs.uw.edu/outreach-modules/

First 5 California: PD2GO series:
http://www.ccfc.ca.gov/partners/PD2GO/index.html

National Academies Press Website:
http://bit.ly/2nObDhP

- Free PDF of Report
- Toolkit for practitioners
- DLL Quiz


obrigado
Dank U
Merci
mahalo
Köszi
спасибо
Grazie
Thank you
mauruuru
Takk
Gracias
Dziękuję
Děkuju
danke
Kiitos

Questions & Discussion

Upcoming GLR Learning Tuesdays Webinars:

BIG BETTABLE WEBINAR

Investing in Parents as a “Big Bet”

Tuesday, Feb. 25, 3 p.m. ET/12 p.m. PT

SCIENCE MATTERS! SERIES

Moving from “Trauma Informed” to “Asset Informed” Care

Tuesday, Mar. 3, 3 p.m. ET/12 p.m. PT

PRODUCTIVE PARENT/TEACHER PARTNERSHIP WEBINAR

Promoting Strong Parent-Teacher Relationships

Tuesday, Mar. 10, 3 p.m. ET/12 p.m. PT

Please join us!

GLR Learning Tuesdays

The Campaign for GRADE-LEVEL READING

Science Matters! Webinar Series

The Science of Dual Language Learning | Feb 18, 2020

Presenter & Moderator Bios

MODERATOR: Ellen Galinsky

Ellen is the chief science officer at the Bezos Family Foundation, where she also serves as executive director of Mind in the Making. She remains president of Families and Work Institute. Her life's work revolves identifying important societal questions as they emerge, conducting research to seek answers, and turning the findings into action. She strives to be ahead of the curve, to address compelling issues, and to provide rigorous data that can affect our lives. Ellen has conducted research on child care, on parent-parent professional relationships, on parental growth and development, on early learning, and on work and family life, including directing or co-directing the largest ongoing nationally representative studies of employers and employees. Here career highlights include writing more than 100 books and reports including her latest best-selling Mind in the Making and over 300 articles, serving as a child care expert in the TV series *What Every Baby Knows* with Dr. T. Berry Brazelton; serving as a parent expert in the *Mister Rogers Talks to Parents* TV series; being the elected President of the National Association for the Education of Young Children; and being elected as a member of National Academy of Human Resources.

PRESENTERS

Dr. Linda M. Espinosa

Dr. Espinosa is Professor Emeritus of Early Childhood Education at the University of Missouri, Columbia and has served as the Co-Director of the National Institute for Early Education Research (NIEER) at Rutgers University and Vice President at Bright Horizons Family Solutions. Dr. Espinosa served on the Head Start National Reporting System (NRS) Technical Advisory Group as well as the Secretary's Advisory Committee on Head Start Research and Evaluation. Dr. Espinosa also served as the lead consultant for the LAUSD Transitional Kindergarten program development team and she is a member of the Council for Professional Development Governing Board. She was a member of the National Academy of Sciences, National Research Board Committee on Early Childhood Pedagogy project and a contributing author to *Eager to Learn: Educating Our Preschoolers,* published by the National Academies of Science. Dr. Espinosa's recent research and policy work has focused on effective curriculum and assessment practices for young children from low-income families who are dual language learners. She has published more than 90 research articles, book chapters and training manuals on how to establish effective educational services for low-income, minority families and children who are acquiring English as a second language.

Pat Kuhl

Dr. Patricia K. Kuhl holds the Bezos Family Foundation Endowed Chair in Early Childhood Learning, Co-Director of the UW Institute for Learning and Brain Sciences, and Professor of Speech and Hearing Sciences at the University of Washington in Seattle. She is internationally recognized for her research on early language learning and bilingual brain development, for pioneering brain measures on young children, and for studies that show how young children learn. She presented her work at two White House conferences (Clinton White House in 1997 and Bush White House in 2001). In 2014, Dr. Kuhl was awarded an Honorary Doctorate from Stockholm University, and in 2015 the George A. Miller Prize in Cognitive Neuroscience. Dr. Kuhl received the American Psychological Association's Distinguished Scientific Contributions Award in 2018, and received an Honorary Doctorate from the Erikson Institute in 2020. Dr. Kuhl is co-author of *The Scientist in the Crib: Minds, Brains, and How Children Learn* (Harper Collins).

Sarah Lytle

Dr. Sarah Lytle is the Director of Outreach and Education at the Institute for Learning & Brain Sciences (I-LABS) at the University of Washington. Sarah's team communicates the latest science of child development to those who can act on it. In recent years, the team has reached hundreds of thousands of parents, educators, policymakers, and opinion leaders, both locally and nationally. Under Sarah's leadership, the Outreach and Education team launched an online library of free training modules designed to make science accessible to a broad audience. Dr. Lytle has a B.A. in Psychology and Spanish from the University of Notre Dame and a Ph.D. in Developmental Psychology at Temple University, where she studied the role of social cues in infants' and toddlers' language learning from screen media. Sarah is a member of the Zero To Three Academy of Fellows.