



PREDICTIVE SCHOOL READINESS SKILLS AND EXPERIENCES

KRFOUNDATION.ORG

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Today's Agenda

1. What are the key skills that predict kindergarten readiness?
2. What programs and best-practices have a big impact on K-readiness?
3. What do families believe, do and want for their children



We know more than ever before about what children most need to learn, what programs help them learn, and how we can understand if they are ready.

An agreed upon definition of kindergarten readiness, evidence-based approaches, listening to families and data are essential to accelerating opportunities in the early years and knowing if we are meeting our goals.

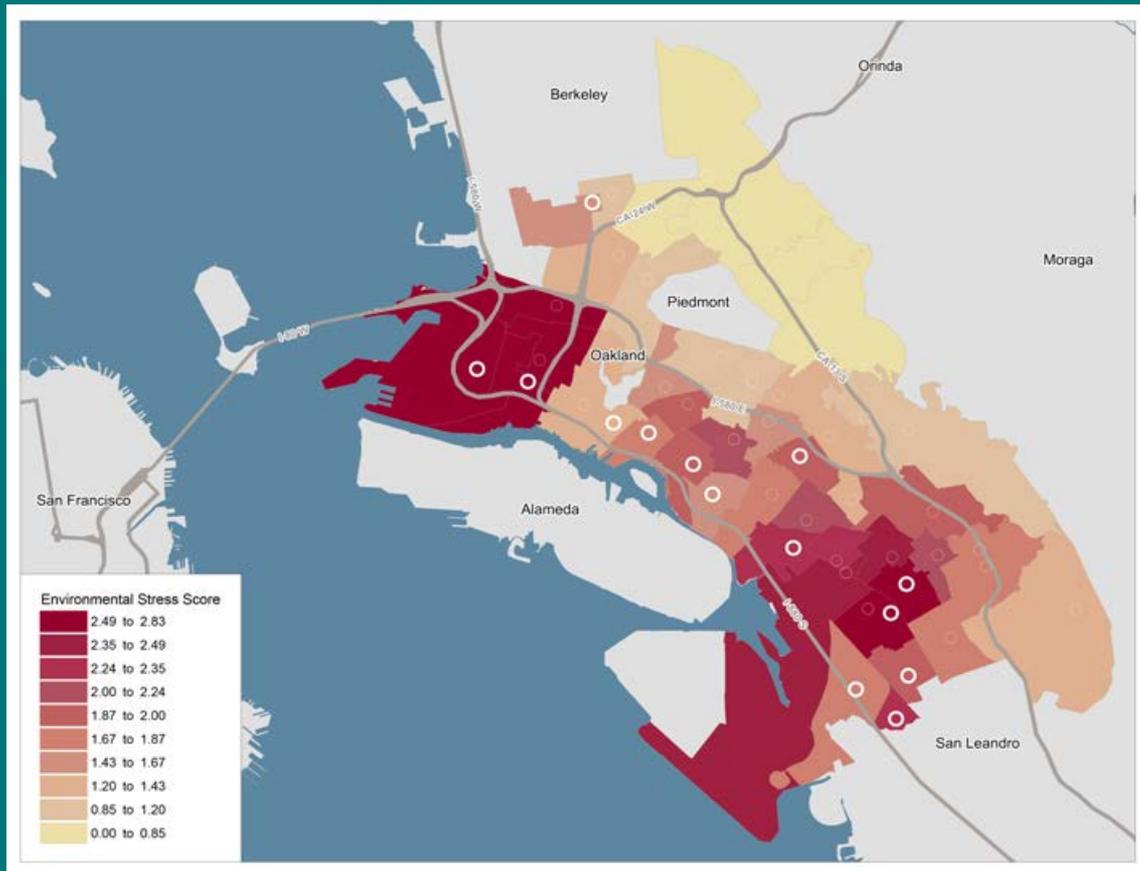


The Rainin Foundation has asked NORC at the University of Chicago to help answer 5 questions:

1. Define the key predictors of kindergarten readiness: What skills matter the most?
2. Conduct a literature review of effective practices for children 0-3, 3-5 and K-2 in social emotional development, oral language and literacy and early math: What programs have big impact?
3. Interview 440 Oakland families: What do families do, want, believe and value?
4. Create a Parent Family Community Engagement tool with the National Head Start Assn: How can we make the most of family engagement?
5. Provide review and analysis of kinder readiness assessments: How do we know if Oakland children are school ready?

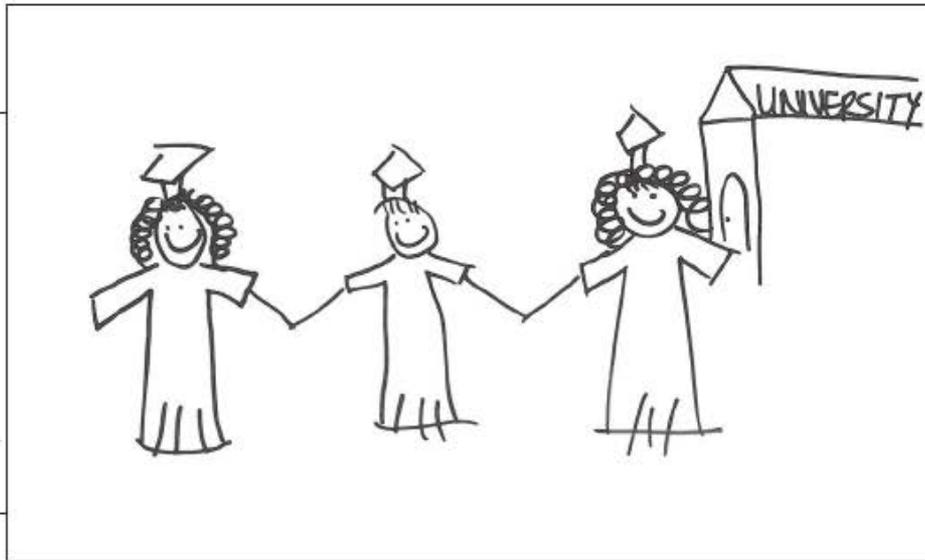


Interviewing Diverse Families from High-Need Areas Across Oakland

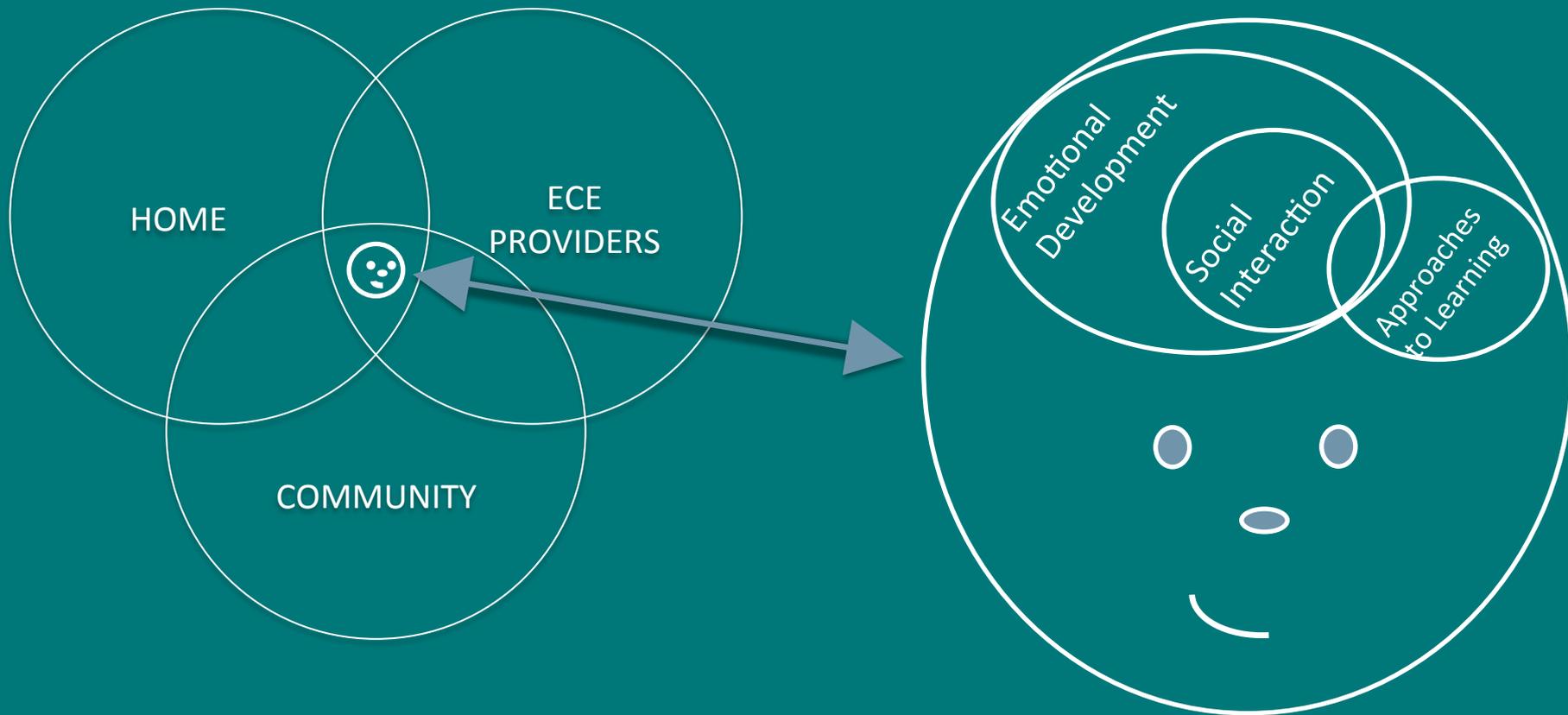


OUSD environmental stress z-scores mapped within OUSD elementary school boundaries. Colors represent environmental stress (e.g., unemployment, violence, vacancy, etc.) within .5 miles of OUSD elementary schools. Bold circles represent schools within whose boundaries NORC will conduct household interviews. Data courtesy of OUSD.

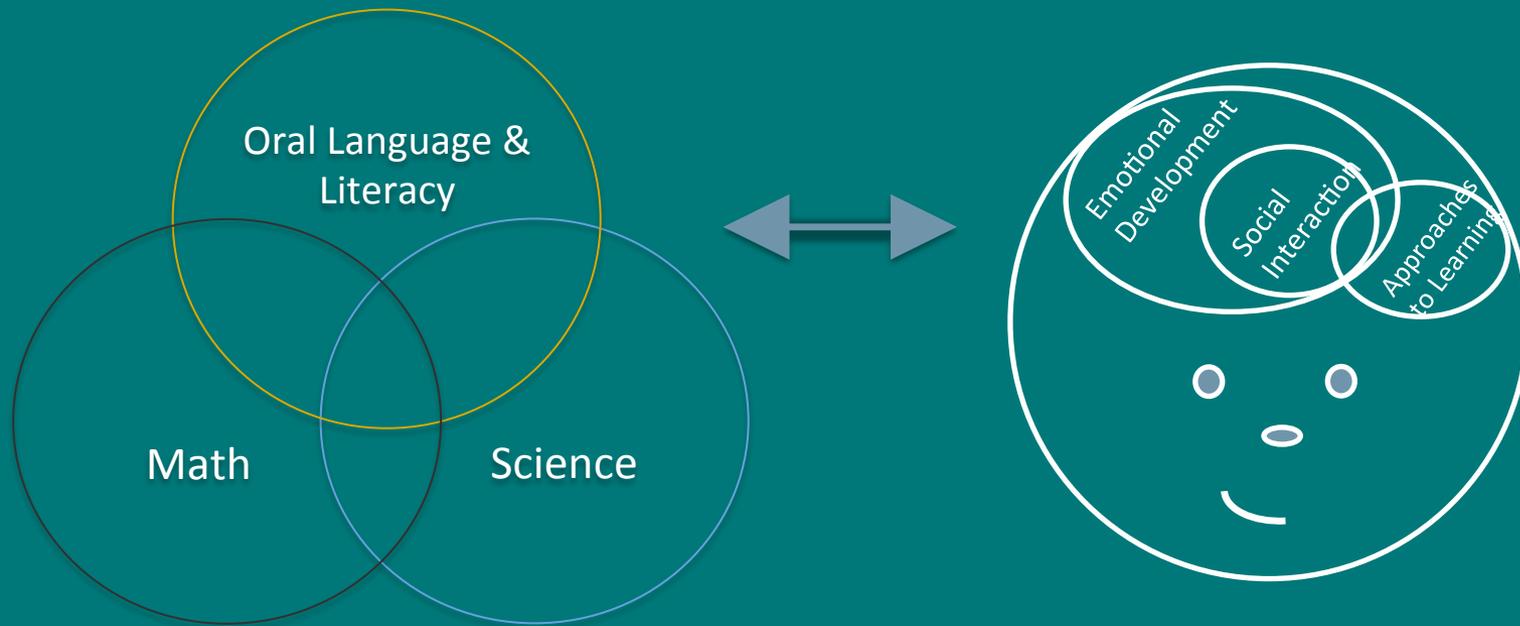
Families Have Big Education Dreams for their Children



Child Social-Emotional Development in Context



Skill Learning in Context



What are the consensus foundations of whole child development across state and federal standards?

- Oral Language and Literacy
- Cognition & General Knowledge (Math, Science, Social Studies)
- Social Emotional Development
- Approaches to Learning
- Creativity
- Technology
- Physical Development, Health & Safety





In early childhood, what domains and skills predict kindergarten readiness?

- Oral Language and Literacy
- Cognition & General Knowledge (Math, Science, Social Studies)
- Social Emotional Development
- Approaches to Learning
- Creativity
- Technology

- Physical Development, Health & Safety

Oral Language and Literacy: Definition

- ❖ The ability to listen, speak, read and write
- ❖ Oral Language is comprised of language comprehension (listen) and production (speak). Specific skills include:
 - ❖ Vocabulary
 - ❖ Conversation (questions)
 - ❖ Sentence Complexity (syntax)
 - ❖ Narrative/Exposition (fiction/fact)
 - ❖ Phonological awareness (rhyming, alliteration, blending, segmenting)
- ❖ Literacy is comprised of decoding (reading) and encoding (writing). Specific skills include:
 - ❖ Letter name identification
 - ❖ Letter sound correspondence
 - ❖ Concepts about print
 - ❖ Manual writing



Oral Language and Literacy: Predictive Skills

❖ Oral Language:

Skill	Predictor	Predicted Outcome
Vocabulary	Number of words (productive & receptive)	Phonological Awareness Sentence complexity (syntax) Story/Expository comprehension Early reading proficiency Later reading comprehension Fewer problem behaviors
Conversation	Amount of displaced (decontextualized) talk	Vocabulary Early reading proficiency Abstract Reasoning
Sentence Complexity	Correct word order Diversity in complexity	Early reading proficiency
Narrative/Exposition	Retell Comprehension	Vocabulary Early reading proficiency
Phonological Awareness	Ability to rhyme Alliteration fluency	Alphabet knowledge Ability to segment words Spelling Early reading proficiency

Oral Language and Literacy: Predictive Skills

❖ Literacy:

Skill	Predictor	Predicted Outcome
Letter Names	Letter name fluency*	Early reading proficiency Early writing proficiency
Letter Sounds	Letter sound fluency*	Early reading proficiency
Concepts About Print	Book and text knowledge	Later reading comprehension Spelling
Manual Writing	Ability to use a writing instrument	Fine Motor skills Later reading proficiency Later math proficiency

*Fluency = Number of accurate responses in a set period of time

Oral Language and Literacy: Effective Programs, Interventions & Best Practices

- ❖ What did we search for?
 - ❖ Programs, Interventions, Best Practices
 - ❖ 0-36 months and 3-5 years
 - ❖ Children, Parents, Caregivers, Practitioners

- ❖ How did we define 'Effective'?
 - ❖ Rigorous evaluation design
 - ❖ Statistical significance
 - ❖ Size of difference between treatment and control (effect size)
 - ❖ Small (.01 to .30)
 - ❖ Medium (.31 to .79)
 - ❖ Large (over .80)

Oral Language and Literacy: Effective Programs, Interventions & Best Practices

- ❖ Programs & Interventions with LARGE Effects:
 - ❖ Exemplary Model of Early Reading Growth and Excellence (EMERGE)
 - ❖ Exceptional Coaching for Language and Literacy (EXCELL)
 - ❖ Literacy Environment Enrichment Program (LEEP)
 - ❖ Early Reading First
 - ❖ Words of Oral Reading and Language Development (WORLD)
 - ❖ Hear and Say Reading with Toddlers

- ❖ Best Practices with LARGE Effects:
 - ❖ Dialogic Reading
 - ❖ Interactive Book Reading
 - ❖ Alphabet Letter Instruction
 - ❖ Structured Language Input
 - ❖ Storybook Reading to Increase Print Awareness
 - ❖ Deictic Gesturing

Oral Language and Literacy: Effective Programs, Interventions & Best Practices

- ❖ Programs & Interventions with MEDIUM Effects:
 - ❖ Minnesota Reading Corps (based on SEEDS)
 - ❖ Parent Directed Language Intervention
 - ❖ DLM Early Childhood Express supplemented by Open Court Reading Pre-K
 - ❖ Play and Learning Strategies (PALS)
 - ❖ Literacy Express Preschool Curriculum (LEPC)
 - ❖ Sound Foundations
 - ❖ Parent-Child Home Program (PCHP)
 - ❖ Getting Ready
 - ❖ Learning Connections
 - ❖ Breakthrough to Literacy (BTL)
 - ❖ Bright Beginnings
 - ❖ Curiosity Corner
 - ❖ Let's Begin with Letter People
 - ❖ Ready, Set, Leap!
 - ❖ Waterford Early Reading Program
 - ❖ Reach Out and Read
 - ❖ Abecedarian Project

Oral Language and Literacy: Effective Programs, Interventions & Best Practices

- ❖ Best Practices with MEDIUM Effects:
 - ❖ Book Reading
 - ❖ Elaborative Reminiscing
 - ❖ Interactive Writing
 - ❖ Structured Language Input
 - ❖ Symbolic Gesturing
 - ❖ Parent Talk
 - ❖ Computer-Assisted Instruction Phonological Sensitivity
 - ❖ Video-based Dialogic Reading Training
 - ❖ Teacher Responsivity Education

Oral Language and Literacy: Effective Programs, Interventions & Best Practices

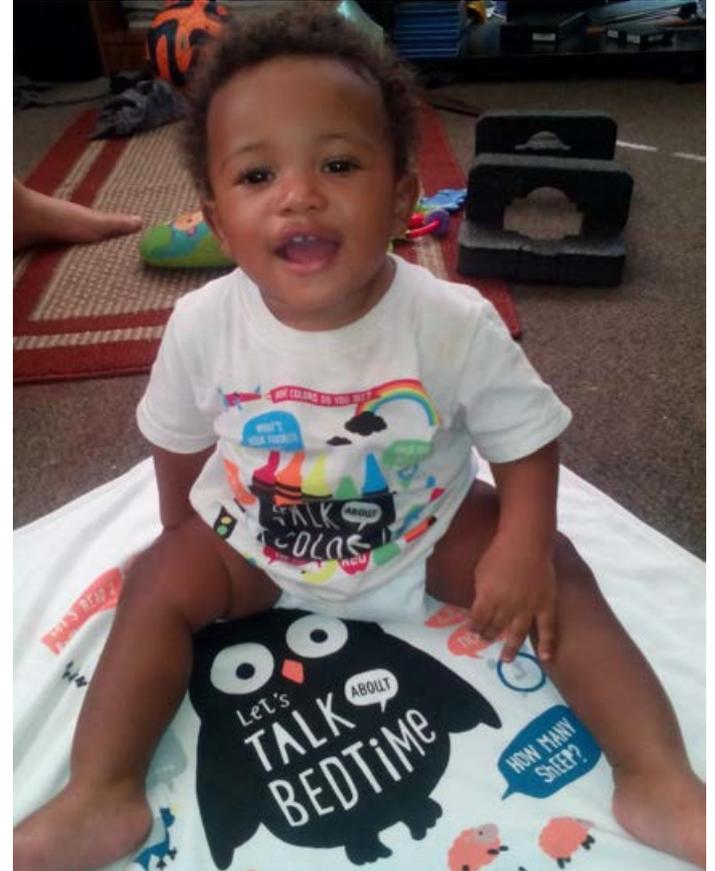
- ❖ Programs & Interventions with SMALL Effects:
 - ❖ Raising a Reader
 - ❖ Early Literacy and Learning Model
 - ❖ Project STAR (Sit Together and Read)

Oral Language and Literacy: “Active Ingredients”

- ❖ What activities have the biggest impact on child outcomes?
 - ❖ Active book reading and conversation (start early!)
 - ❖ Parent involvement (start early!)
 - ❖ Continuous assessments of child’s progress
 - ❖ Differentiated instruction
 - ❖ Small group instruction
 - ❖ Ongoing support for teachers for children’s specific skill development (coaching, PD)

Findings from the 2016 Oakland Household Interview

- ❖ Oral Language & Literacy



Frequency of Reading to Child

- ❖ **43%** of respondents read to their child every day
- ❖ **9%** of respondents rarely read to their child (never or several times a year)
- ❖ 85% of respondents in High SES read to their children every day

Respondent Beliefs About Early Reading

- ❖ **73%** agree or strongly agree that parents who have trouble reading themselves can still help their young child learn to read (89% High-SES Neighborhood).
- ❖ **74%** of respondents strongly agree that letting *babies* play with picture books is the first step in teaching them how to read (90% High-SES Neighborhood).
- ❖ **59%** of respondents think a child is ready to be exposed to reading and books as an *infant* (0-6 months) (83% High-SES Neighborhood)

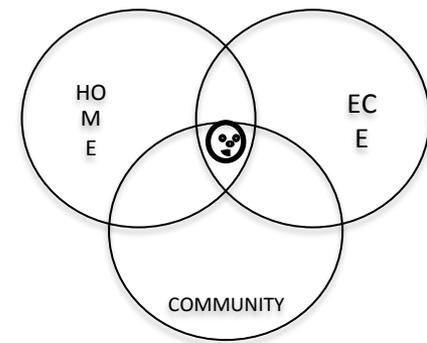
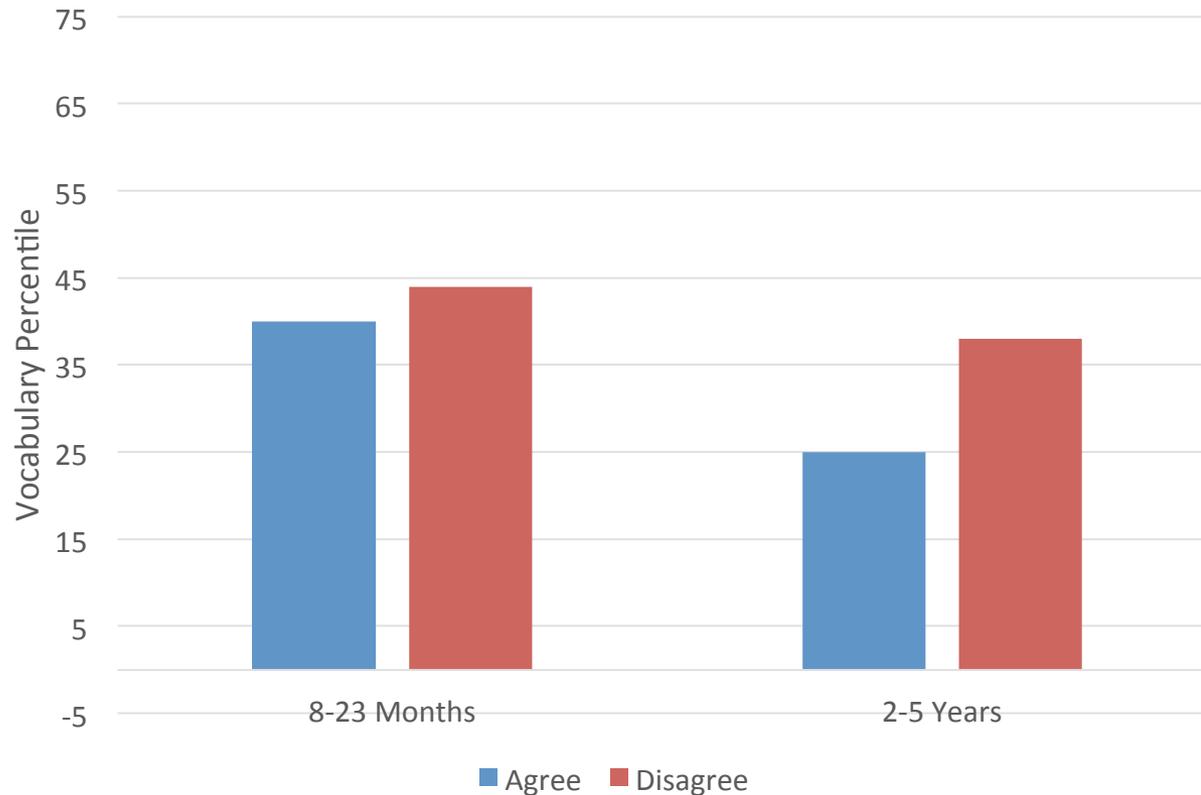
Respondent Beliefs About Early Reading (Toddlers)

- ❖ **53%** strongly agree that adding descriptions and other words when reading a story helps *toddlers* understand the story (67% High-SES Neighborhood).
- ❖ **40%** somewhat or strongly agree that letting a *toddler* skip words and pages teaches the toddler bad reading habits (3% High-SES Neighborhood).
- ❖ **39%** somewhat or strongly agree that letting a *toddler* move around while listening to a story teaches the toddler bad listening skills (7% High-SES Neighborhood).
- ❖ **32%** somewhat or strongly agree that reading the same book over and over will keep *toddlers* from learning new words (0% High-SES Neighborhood).

Going Deeper in Vocabulary

❖ HOME: Attitudes and beliefs

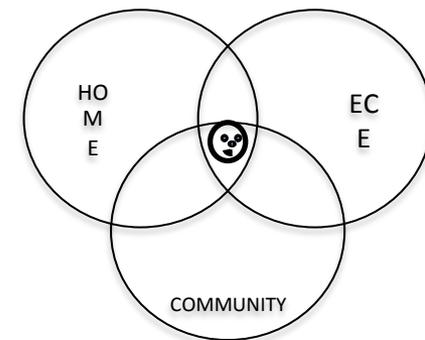
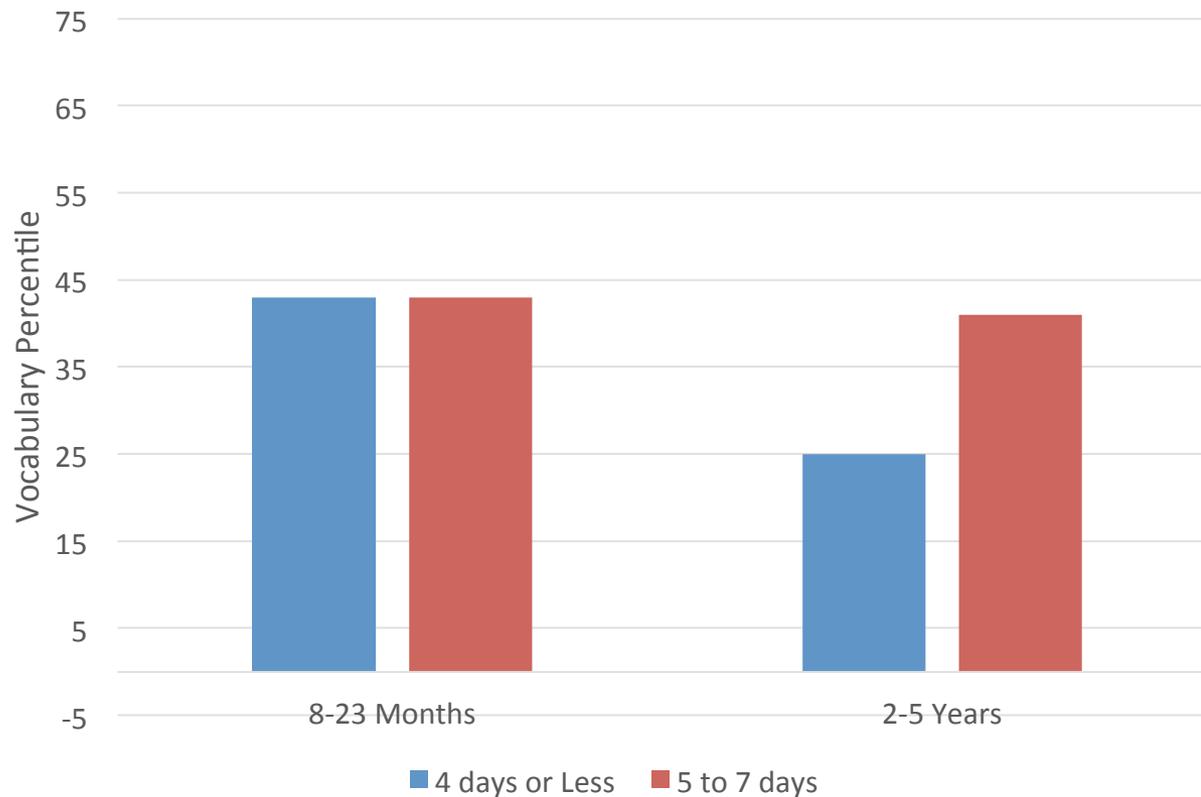
- ◆ “Infants learn very little about language in the 1st 6 months of their life”



Going Deeper in Vocabulary

❖ HOME: Frequency of Reading

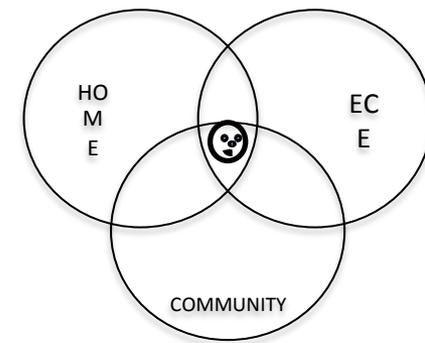
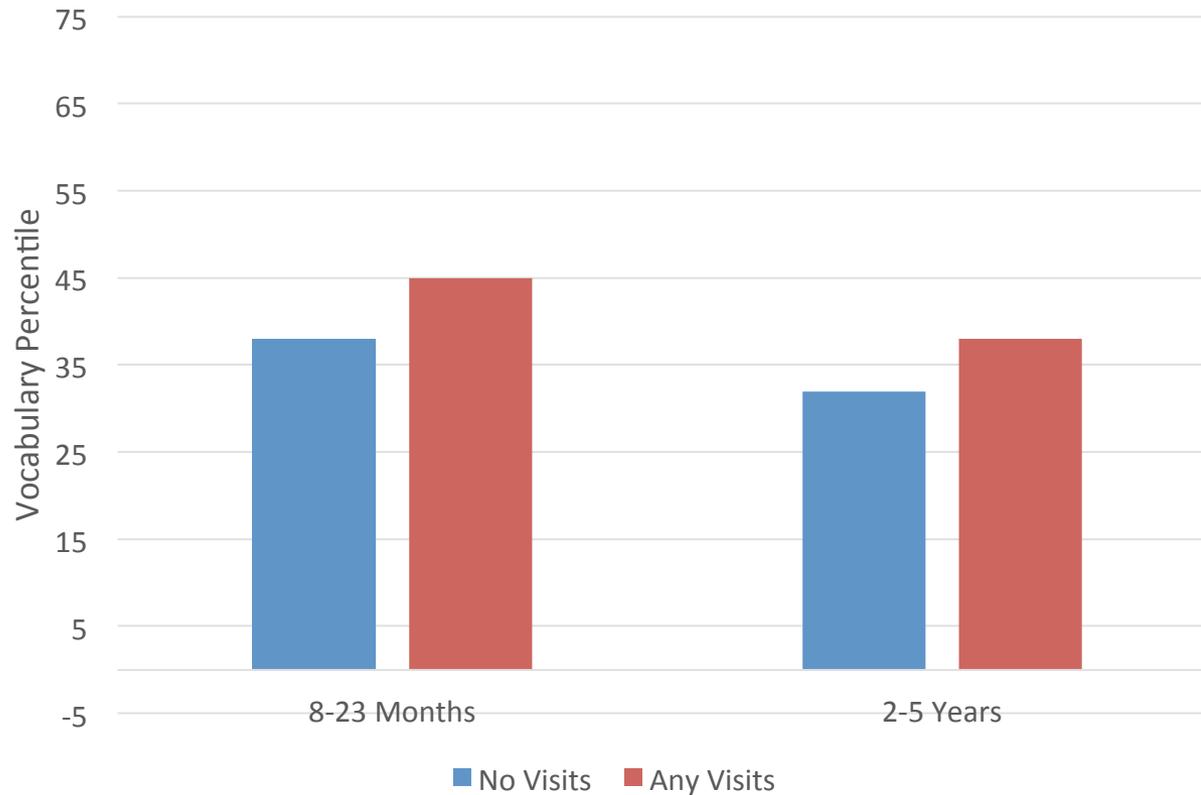
◆ Days per week



Going Deeper in Vocabulary

❖ **COMMUNITY: Library attendance**

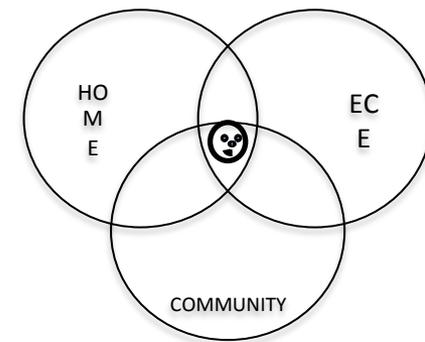
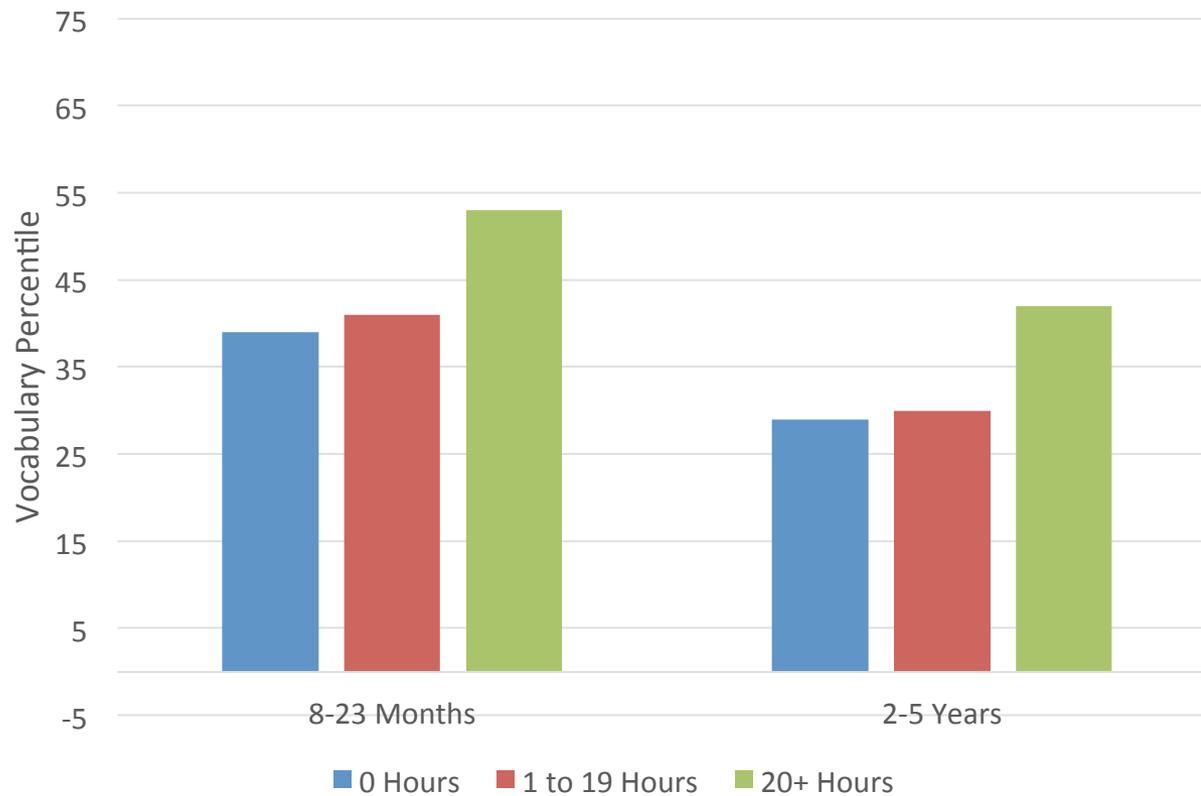
- ◆ Frequency of visits in the past year



Going Deeper in Vocabulary

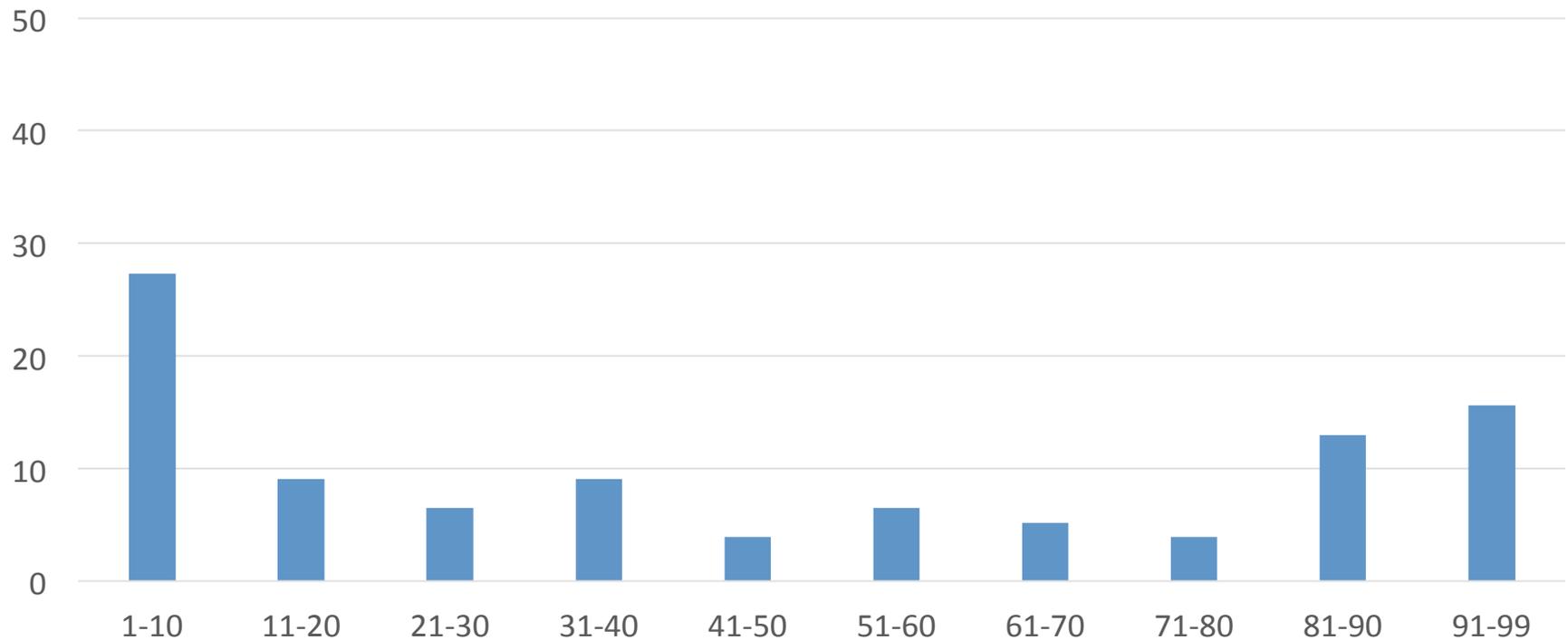
❖ ECE: Child Care/PreK

- ◆ Amount of time in non-household member child care/PreK



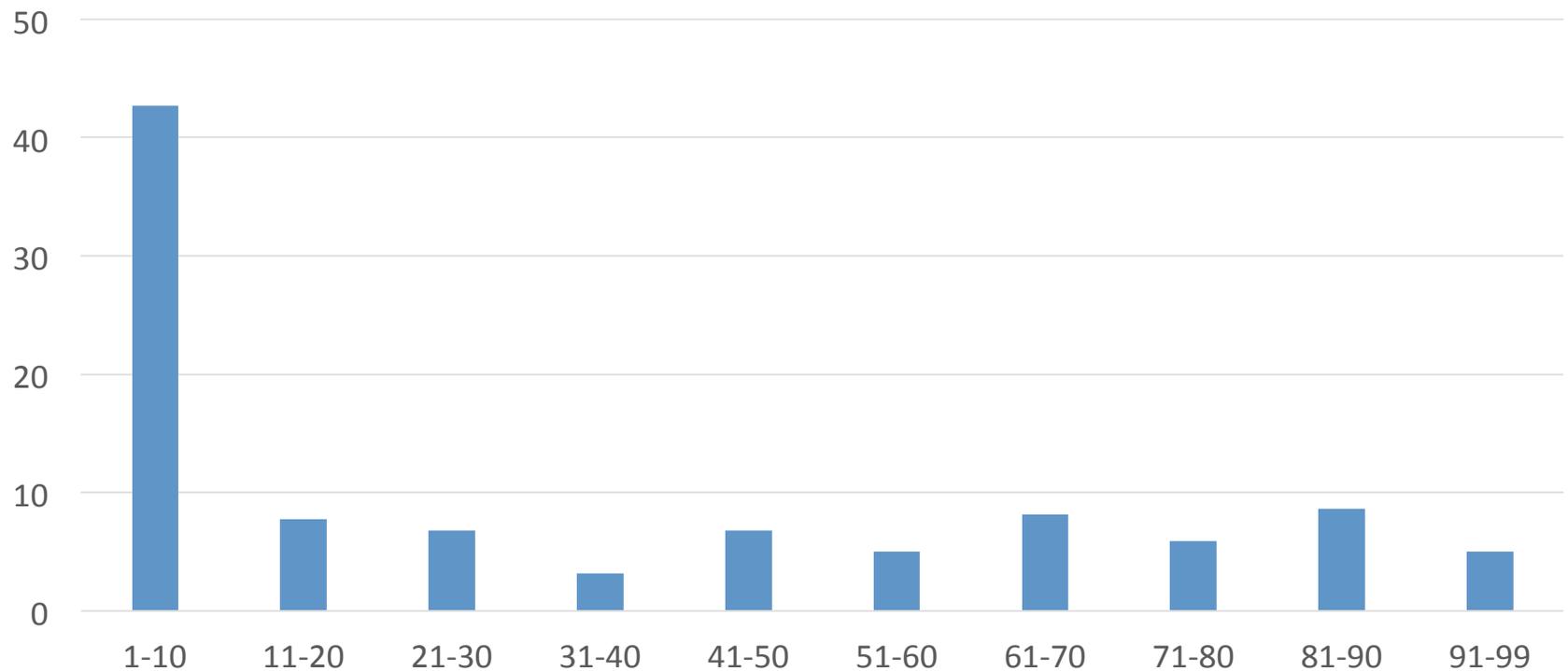
8-23 Month Old's PRODUCTIVE ENGLISH Vocabulary by National Percentiles

- ❖ 27% of 8-23 month-old children were in the bottom 10% on productive vocabulary
- ❖ 16% of 8-23 month-old children were in the top 10% on productive vocabulary



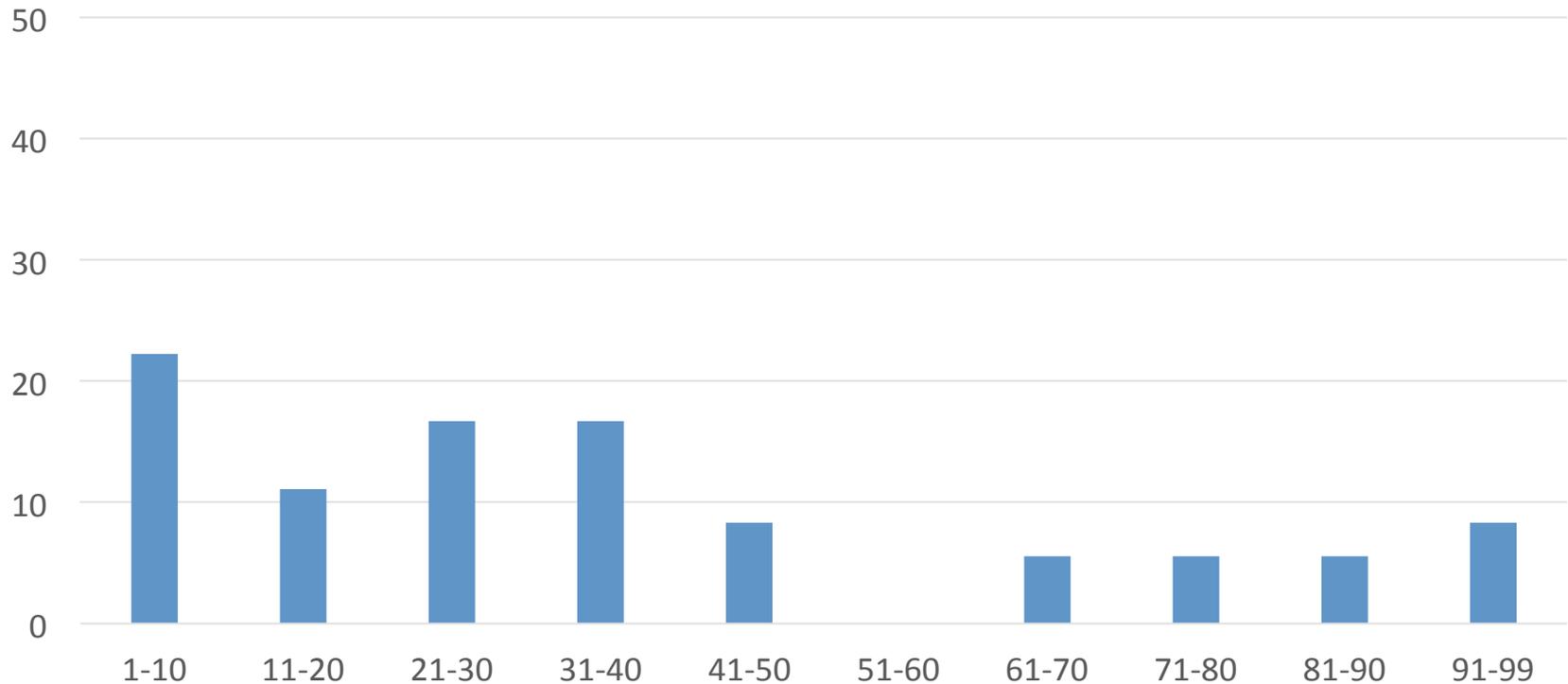
24-72 Month Old's PRODUCTIVE ENGLISH Vocabulary by National Percentiles

- ❖ 43% of 24-72 month-old children were in the bottom 10% on productive vocabulary
- ❖ 5% of 24-72 month-old children were in the top 10% on productive vocabulary



8-23 Month Old's PRODUCTIVE SPANISH Vocabulary by National Percentiles

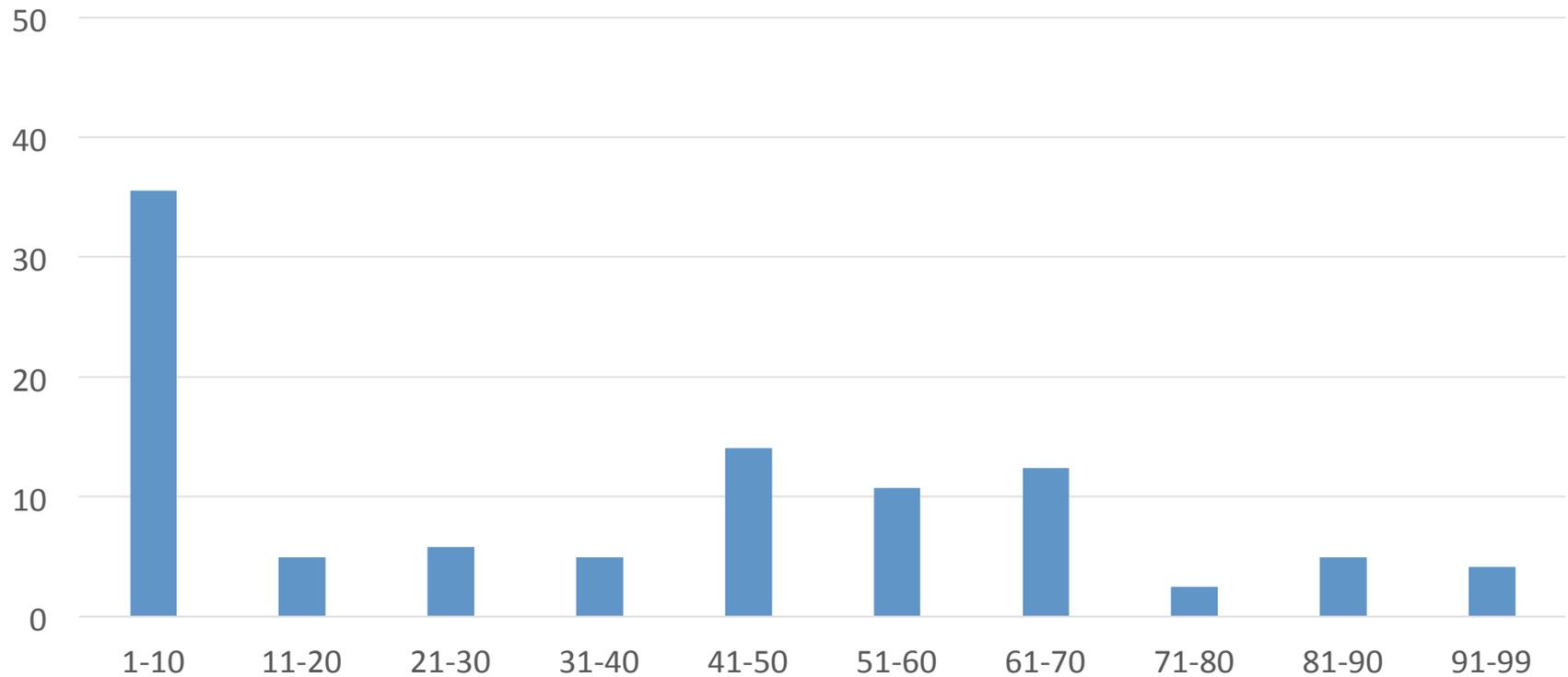
- ❖ 22% of 8-23 month-old children were in the 1-10th percentile in productive vocab



24-72 Month Old's PRODUCTIVE SPANISH Vocabulary by National Percentiles

36% of 17-30 month-old children were in the bottom 10% on productive vocabulary

4% of 17-30 month-old children were in the top 10% on productive vocabulary



Child Development & School Readiness

- ❖ 14% of respondents had concerns about how their child was learning PreK or School skills
- ❖ 17% of respondents were concerned with their child's learning, development or behavior.



3 to 6 Year-Old Child's Academic Preparedness for PreK or Kindergarten

- ❖ **55%** of respondents rated their children as somewhat prepared academically
- ❖ **9%** of respondents rather their children as not at all prepared academically

76% of respondents in the high SES neighborhood rated their children as very prepared (compared to 32% in other regions)



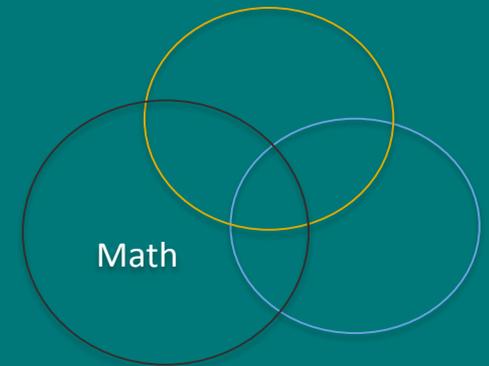
Oral Language and Literacy

Questions?



Cognition & General Knowledge: Definition

- ❖ Cognition & General Knowledge is typically defined by three primary subdomains: Math, Science and Social Studies.
- ❖ Math is comprised of number sense, spatial cognition (geometry), patterns (algebra), and measurement. Specific skills include:
 - ❖ Cardinality
 - ❖ Ordinality (counting, one-to-one correspondence, number ID)
 - ❖ Relative set size
 - ❖ Operations
 - ❖ Shapes (composition and decomposition)
 - ❖ Mental rotation
 - ❖ Pattern recognition
 - ❖ Linear measure



Cognition & General Knowledge: Predictive Skills

❖ Math:

Skill	Predictor	Predicted Outcome
Ordinality (number)	Numeral recognition Count list fluency	Math proficiency Operations Math problem-solving K-science proficiency Early Reading skills
Relative size (number)	Ability to visually discriminate	Math proficiency
Mental rotation (space)	Ability to rotate objects	Math proficiency
Shape (space)	Shape recognition	Math proficiency Early Reading skills Science proficiency
Patterns recognition (algebra)	Ability to identify patterns	Math proficiency Early Reading skills Science proficiency

Cognition & General Knowledge : Math

Effective Programs, Interventions & Best Practices

- ❖ Programs & Interventions with LARGE Effects:
 - ❖ Building Blocks
- ❖ Programs & Interventions with MEDIUM Effects:
 - ❖ Pre-K Mathematics
- ❖ Programs & Interventions with POSITIVE Effects:
 - ❖ MyTeachingPartner – Math & Science
 - ❖ Let's Think! & Maths!
 - ❖ One-to-One Play
 - ❖ Linear Number Games
 - ❖ BedtimeMath*

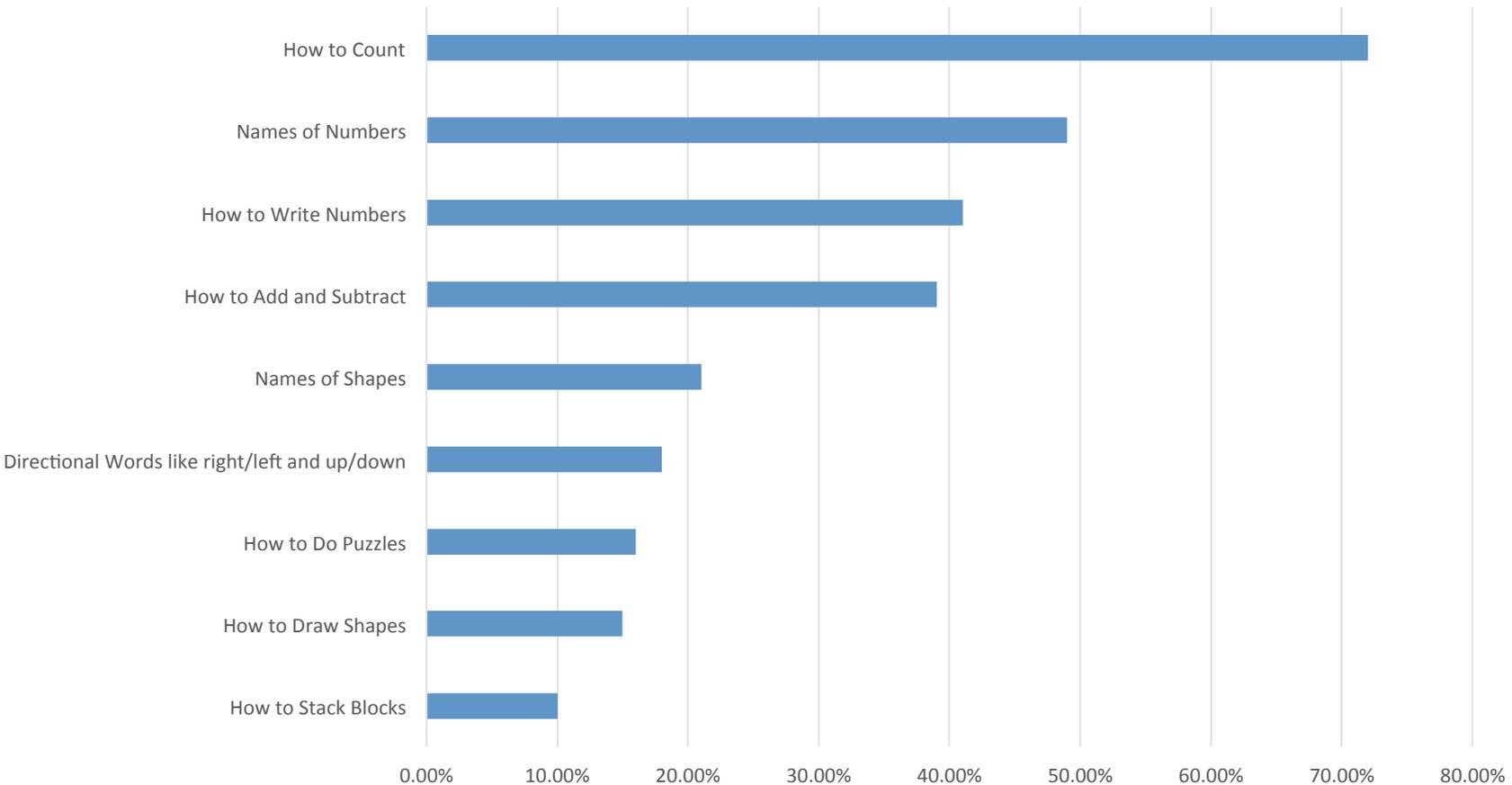
Findings from the 2016 Oakland Household Interview

❖ Math



Math Skills

- ❖ Percentage of respondents who think these math skills are most important to learn



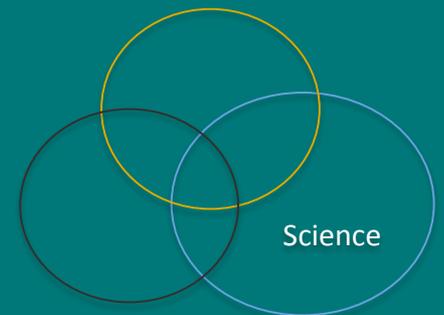
72% think counting is the most important math skill to learn

Cognition & General Knowledge: Definition

- ❖ Science is comprised of process skills related to the scientific method and content knowledge related to the natural sciences.

Specific skills include:

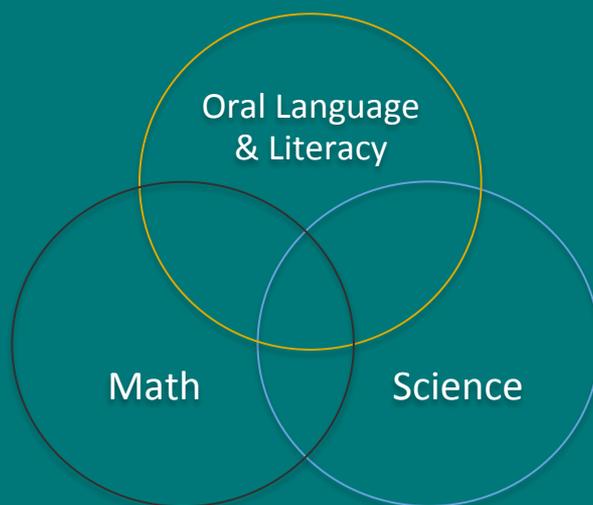
- ❖ Observing
 - ❖ *Asking questions
 - ❖ *Generating hypotheses and predicting
 - ❖ Experimentation or testing
 - ❖ *Summarizing or analyzing data
 - ❖ *Communicating results
-
- ❖ Critical thinking
 - ❖ Logic and reasoning
-
- ❖ Earth Science (weather, environment, etc.)
 - ❖ Space Science (planets, stars, etc.)
 - ❖ Physical Science (gravity, velocity, etc.)
 - ❖ Life Science (plants, animals, health, etc.)
 - ❖ *Measurement and classification



Cognition & General Knowledge: Predictive Skills

❖ Science:

Skill	Predictor	Predicted Outcome
Scientific Method	Amount of exposure (earlier is better)	K-science Proficiency Achievement in formal science instruction
	Size of scientific vocabulary (unique words)	K-science Proficiency Understanding of scientific concepts
Content Knowledge	Amount of knowledge	K-science Proficiency





Cognition & General Knowledge
Questions?

Social-Emotional Development: Definition

- ❖ Social-Emotional Development is comprised of two subdomains, Emotional Development and Social Interaction.
- ❖ Emotional Development refers to children's ability to regulate their emotions. Specific skills that enable emotion regulation include:
 - ❖ Emotion knowledge
 - ❖ Self-awareness
 - ❖ Self-confidence, independence & self-direction
 - ❖ Flexibility in changing environments
 - ❖ Perspective taking
 - ❖ Empathy
- ❖ Social Interaction refers to children's development and maintenance of relationships with others. Specific skills that support positive social interactions include:
 - ❖ Awareness and respect for others
 - ❖ Following routines and rules
 - ❖ Concept of fairness



Social Emotional Development: Predictive Skills

❖ Emotional Development:

Skill	Predictor	Predicted Outcome
Emotion knowledge	Understanding of self and other emotions	Later academic achievement
Emotion regulation	Ability to “appropriately” regulate emotions	Later academic achievement

Social Emotional Development: Predictive Skills

❖ Social Interaction:

Skill	Predictor	Predicted Outcome
Develop & maintain relationships with others	Ability to maintain positive relationships with peers	Math proficiency Early Reading skills
	Teacher-child relationship quality	Math proficiency Early Reading skills
	Parent-child relationship quality	Math proficiency Early Reading skills Approaches to Learning Positive classroom behaviors

Social-Emotional Development: Effective Programs, Interventions & Best Practices

- ❖ Programs & Interventions with MEDIUM Effects:
 - ❖ Recognizing, Understanding, Labeling, Expressing and Regulating Emotions (RULER)
 - ❖ Positive Parenting Program (TripleP)
 - ❖ Incredible Years

- ❖ Best Practices with POSITIVE Effects:
 - ❖ Create a secure and predictable environment
 - ❖ Build positive teacher-child relationships
 - ❖ Promote positive social interactions (environmental strategies)
 - ❖ Help children manage their behavior
 - ❖ Individualize approaches to problem behavior

Findings from the 2016 Oakland Household Interview

- ❖ Social-Emotional Development

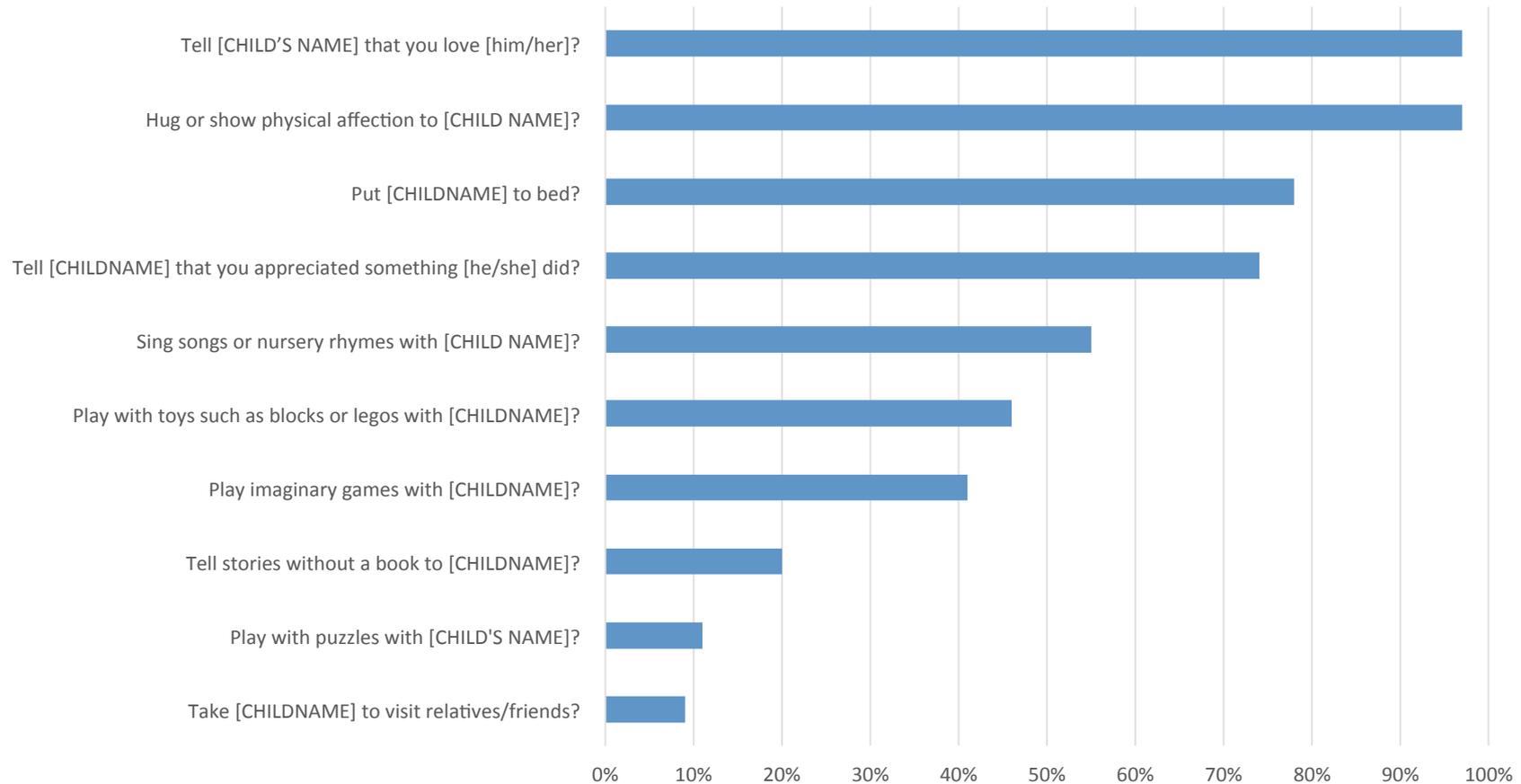


Household Routines

- ❖ 61% of households serve meals at a regular time
- ❖ 56% of children go to bed at a regular time daily
- ❖ 56% of children played outdoors often or very often (88% High-SES Neighborhood)
- ❖ 61% of respondents' stated that their work schedules or other commitments limit the time they have to play with their child

Typical Household Activities

❖ Percent of respondents who reported doing these activities 7 days a week



3 to 6 Year-Old Child's Social Preparedness for PreK or Kindergarten

- ❖ **48%** of respondents rated their children as very prepared socially for PreK or K
- ❖ **9%** of respondents rated their children as not at all prepared socially for PreK or K

71% of respondents in the high SES neighborhood rated their children as very prepared

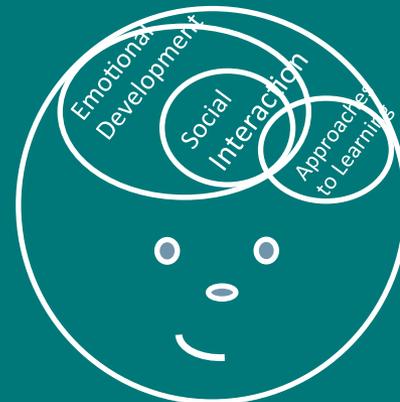




Social-Emotional Development Questions?

Approaches to Learning: Definition

- ❖ Approaches to Learning is comprised of the skills and behaviors children use to engage in learning, and is strongly tied to Social-Emotional Development. Specific skills and behaviors include:
 - ❖ Persistence
 - ❖ Attention
 - ❖ Motivation
 - ❖ Curiosity
 - ❖ Learning mindsets (incremental vs. entity)
 - ❖ Structured learning (goal setting, planning, organizing)



Approaches to Learning: Predictive Skills

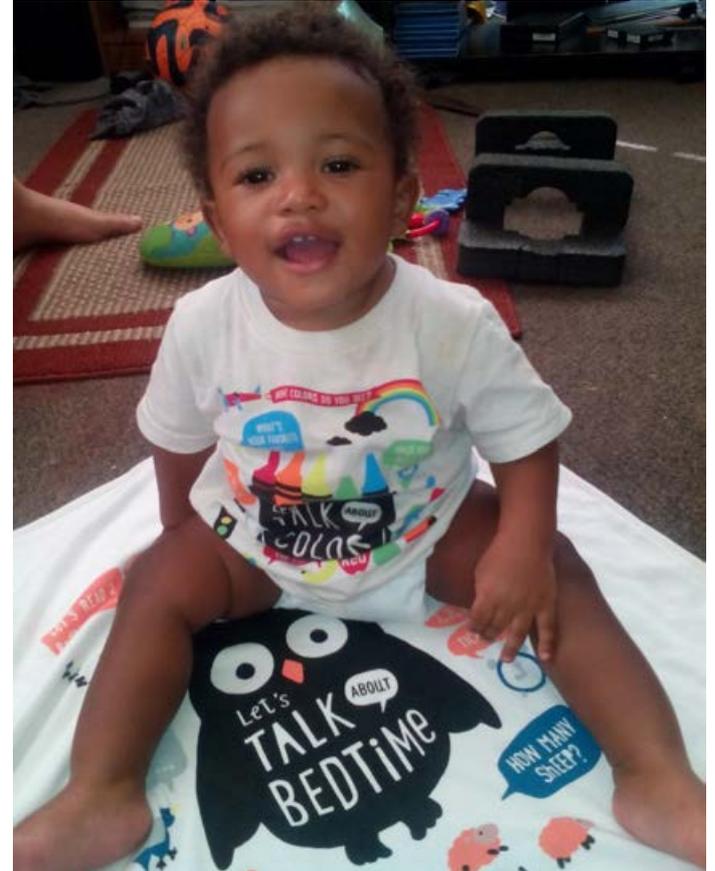
❖ Approaches to Learning:

Skill	Predictor	Predicted Outcome
Persistence	Ability to stay on task/topic	Later academic success (math, science, reading)
Attention		

Approaches to Learning: Effective Programs, Interventions & Best Practices

❖ Welcome to the cutting edge!

From our survey we learned that families are engaging their communities in this way...



Community Engagement

- ❖ 42% of respondents went to an event for their child in the past two years (High SES 67%)
- ❖ 67% of respondents had been to the local library
 - ◆ 68% went to the local library several times a month or more frequently
 - ◆ 92% go to the library for children's books





Approaches to Learning Questions?

“Active Ingredients” that have the biggest impact on child outcomes

- ❖ Start Early!!
- ❖ Active book reading and conversation
- ❖ Parent involvement
- ❖ Small group instruction
- ❖ Ongoing teacher support for children’s specific skill development (coaching, PD)
- ❖ Continuous quality assessments of child’s progress



Thoughts, Questions and Application

Thank you!

Krfoundation.org

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