IT Matters!

**Everything We Say and
Everything We Do**

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A Source of Strength for Our Students

"I hope all teachers recognize that what they say and do in the classroom has a lifelong impact on students."

**Dr. Robert Brooks, 2015,
Positive Emotions and
Purpose in the Classroom**

Reflection on your Understanding

- **A**ssimilate –a new idea or new knowledge "fits" with existing understanding, extending and deepening your learning.

- **Accommodate –** revising existing perceptions and understanding so that new information can be incorporated.

Learning Topics

1. It matters what words we use and how we say them.

2. It maters what we believe and understand.

3. It matters what tools and policies we use.

**Key Findings from
Child Development Research**

- How children feel is as important as how they think.

- Emotional development occurs on a parallel path to early literacy development—in the context of positive relationships.

—Neighborhoods to Neurons:
The Science of Early Childhood Development

Creating a Culture and Climate

- Language has impact and your words make a difference.

- Through your words, you can create a culture and climate that is safe, secure and filled with kindness.

- Through your words, you can establish relationships and teach social-emotional skills.

- The consistency, structure, and positive nature of your classroom will create a climate where students will feel safe, and which will encourage them to take social and academic risks.

(Paulson & Dodson, 2018. Let's Talk:
Nurturing Social Emotional Learning)

Language Can Lift Us Up!

- Positive language lifts us up, but negative language can hurt.
- Positive messages to a child can make him/her feel wonderful and filled with worth, while a negative message, even spoken in an off-handed manner, can be devastating.
- Language is a critical factor in creating a classroom climate that supports positive social learning, which in turn can support greater academic learning.

(Paulson & Dodson, 2018. Let's Talk: Nurturing Social Emotional Learning)

Language Exposure and Cultural Considerations

Casual Talk	Academic Talk (AT)
Social and interactive	Cognitive learning to advance intellect
Getting things done	Scientific understanding of the world
More restricted, concrete language	More elaborated, abstract language
Collectivist perspective - Quiet observation - Genuine information questions	Individualist perspective - Exhibitionist - Known information questions

(van Kleeck, 2014)

Cultural Considerations of Academic Talk (AT)

- **AT** questioning tends to be the register of families with higher socioeconomic status.
- **AT** questioning may not be used in all cultures.
- **AT** questioning may be used to chastise or tease children in some cultures.
- Some cultures may socialize their children to not respond to known information questions.
- The use of eye contact varies among cultures.

(van Kleeck, 2014)

AT Recommendation

Teacher might say:

"Because we are in school, I'm going to ask you and the other children questions I already know the answer to. If you know the answer, I want you to raise your hand, and tell me the answer. In school, tell me answers I already know so I can see if you know the answer. That helps me know if I am doing a good job teaching you. If you don't know the answer, that's okay too. Maybe another child or I will give the answer." (van Kleeck & Schwarz, 2011)

Bidialectal Considerations

- Students whose home language is different than Mainstream American English (MAE) may be *bidialectal.*
- Nearly half of the words in African American English (AAE) have different pronunciations from MAE.
- Having two pronunciations makes it harder to learn the spelling-sound mappings for these words.
- These effects could be greatly reduced by providing contextual cues that reliably indicated whether AAE or MAE is required. (Seidenberg, 2017)

How might this finding generalize to EL students?

Rich Language Input and Opportunities to Talk

Three Ts
1. **Tune In**
2. **Talk More**
3. **Take Turns**

Interactive and **child-directed** conversations from caregivers, who are **responsive** to children's comments, queries, and understandings are important and vital to children's language development and learning.

(From the 30 Million Word Initiative; Suskind, 2015)

Three Ts: Tune In, Talk More, Take Turns

- Tune in by noticing what students are attending to.
- Talk More by talking **with** children, not just **to** them, describing what is going on and narrating the routines and activities of the day
- "Taking turns" in conversation is the most valuable of the three **Ts** and includes strategies such as "serve-and-return" and "strive for 5."
- **Fourth T – Turn it Off**

Turn-taking Leads to Brain Development

A recent study from MIT (Gabrieli & Romeo, 2018) showed:

- The power of language for brain development has more to do with conversational turn-taking than just the number of words children hear.
- Broca's area in the brain showed more engagement during listening to voices and stories for children who had been engaged with more interactive language at home.

We can use this information to help plan for the language we use at school.

The 30-Second Conversation

- **Use this simple activity to:**
  - Actively engage in conversation.
  - Nurture oral language.
  - Nurture self-esteem.
  - Encourage sharing and deepening of relationships.
- Take 30 seconds each day to engage in authentic conversations.
- Notice changes in children's responsiveness.

What's in a Word: Vocabulary Instruction

- Vocabulary instruction should include elements of word structure (phonology and orthography), context (semantics and syntax), and morphemic analysis skills (Baumann, Edwards, & Boland, 2003; Brusnighan & Folk, 2012).

- Students entering ninth grade needed to know and understand an estimated 88,500 word families. (Nagy & Anderson, 1984)

Vocabulary Levels

- **Tier 1 words** "high-frequency words"
  - those that make up the bulk of words in any genre, spoken or written
- **Tier 2 words** "high utility general vocabulary"
  - uncommon in casual conversation but are part of the core written language that students encounter
    - Importance and utility across contexts
    - Conceptual understanding
    - Instructional potential
- **Tier 3 words** "highly specialized vocabulary"
  - Unusual words that are specific to a topic, not used in conversation

(Beck, McKeown, & Kucan, 2013)

Preparing to Teach Vocabulary

Step 1
- Identify all the words that most children are <u>unlikely</u> to know. (in a read-aloud book, thematic or learning unit)

Step 2
- Select a small set of vocabulary words to target.
- Select a small set of words that are:
  - Necessary for comprehension
  - Usable in children's lives
  - Able to be taught multiple times across the curriculum
  - Related to other vocabulary being taught

(Christ & Wang, 2012)

Preparing to Teach Vocabulary

Step 3

- Determine what methods will best support children's acquisition of the selected vocabulary
- Directly teach the word's meaning if there are no meaning clues in text

      or

- Teach a word-learning strategy if there are meaning clues in context
- Read all other words without teaching their meaning.

(Christ & Wang, 2012)

Teaching Vocabulary

1. Say the word and provide a **child-friendly definition** or explanation using multisensory connections.
   - Gesture
   - Picture
   - Printed word
2. Have the **children repeat** the word.
3. Provide **other contexts** for the word to reinforce its meaning.
4. Have the children describe the word meaning to a **shoulder buddy**.

(Adapted from Beck et al., 2013)

Beliefs based on opinion or science?

"One thing that we've learned from climate change and the other issues over which we have polarization in this country is that facts aren't the thing that change people's beliefs. In fact, confronted with data that contradict deeply held beliefs, instead of bringing people closer together, it can have the paradoxical effects of entrenching them further."

   Seidenberg, 2017, *Language at the Speed of Sight*,

Approaches to Reading Instruction

"The prevailing approaches to reading instruction in American schools are inconsistent with basic things scientists have discovered about how children learn to read. Many educators don't know the science, and in some cases actively resist it. The resistance is the result of beliefs about reading that have been deeply held in the educational establishment for decades, even though those beliefs have been proven wrong by scientists over and over again."

(*Language at the Speed of Sight*, Seidenberg, 2017)

Instructional Approaches

- Preservice teacher education often applies the constructivist philosophy (Vygotsky) to teaching based on a premise that children should not be taught by explicit instruction but by discovery in naturalistic problem-solving contexts.

(Seidenberg, 2017)

Vygotsky's Theoretical Perspective

- Young children need to acquire a set of fundamental cognitive, linguistic, and social-emotional competencies for all learning.
- Skills include oral language, deliberate memory, focused attention, and self-regulation.
- Children require explicit instruction by teachers or parents and do *not* automatically acquire these skills.

(Zaporozhets, 1978)

What about Discovery Learning?

- For discovery learning to be effective, it needs to be closely coupled to explicit guidance and instruction. (Mayer, 2004)

- Young children need lots of repetition to learn and remember new things. (Bedrova & Leong, 2005)

What about assessment practices?

- Education, as a discipline, has placed much higher value on observation and hands-on-experience.
- The lack of science literacy, combined with deep faith in the validity of personal observation, creates vulnerability to claims that are intuitively appealing but unproven or untrue.
  - Close observation is important yet not very informative about what and how children learn.

(Seidenberg, 2017)

Professional development and coaching matter.

Effective PD includes:

- Opportunities for teachers to be reflective of their own practices to accommodate and challenge their current knowledge and beliefs (Guo et al., 2012; Weber-Mayrer, Piasta, & Pelatti, 2015)
- Direct explanation and modeling of important component early literacy, math, and social/emotional skills, and
- Practice of instruction based on those concepts in the context of real-world preschool classrooms (Klein & Knitzer, 2006; Landry, Anthony, Swank, Gunnewig, & Monseque-Bailey, 2009 – reported in NSEC

Developmentally Appropriate Practice (DAP)

A hallmark of developmentally appropriate teaching is **intentionality**.
Good teachers are intentional in everything they do:
- setting up the classroom,
- planning curriculum,
- making use of various teaching strategies,
- assessing children,
- interacting with them, and
- working with their families.

(NAEYC, 2009)

Economic and Societal Impact of Early Childhood Education

- Investing in **high-quality** universal prekindergarten:
  - Takes only eight years for its benefits to exceed costs.
  - Improves economic growth and eases a range of societal issues.

(Business insider.com, Lynch & Vaghul, 2015)

Prekindergarten Matters!

Overview of Prekindergarten Programs

In the 2014-15 school year: (Barnett et al., 2016)

- 55% of all 3-and 4-year-olds were enrolled in preschool.
- 29% of 4-year-olds were enrolled in public pre-kindergarten.
- 42 states and the District of Columbia had public pre-k programs.
- 1.35 million 3- and 4-year-olds were served, 3 million were not.

Percentage of Four-Year-Olds Served by State Pre-K Programs in 2015

- **Less than 5%:** Minnesota, Mississippi, Missouri, Nevada, Ohio, and Rhode Island
- **Between 5% and 25%:** Alabama, Arizona, California, Colorado, Connecticut, Delaware, Kansas, Massachusetts, North Carolina, Oregon, Pennsylvania, Tennessee, Virginia, and Washington
- **Between 25% and 50%:** Arkansas, Illinois, Kentucky, Louisiana, Maine, Maryland, Michigan, Nebraska, New Jersey, New Mexico, New York, South Carolina, and Texas
- **Greater than or equal to 50%:** Georgia, Florida, Iowa, Oklahoma, Vermont, West Virginia and Wisconsin

Prekindergarten Program Impacts

- Greater improvement is seen in learning for economically disadvantaged children and dual language learners than for more advantaged and English-proficient children.

  (Phillips et al. 2017)

Curriculum matters!

A well-implemented, evidence-based curriculum with carefully sequenced lessons that support, build on, and can be adapted to each stage in a child's learning progression is more effective.

(Clements et al., 2013; Gelman & Brenneman, 2004; Newmann et al., 2001; Shanahan & Lonigan, 2013)

Comparative Impacts on School Readiness of Preschool Learning Curricula

Whole-child curricula
- emphasize child-centered, active learning by strategically arranging the classroom environment, and
- promote learning by encouraging children to interact independently with the equipment, materials, and other children.

Skill-specific curricula
- embed learning in playful activities, including story-book reading, games, art, and discovery activities that are conducted in both small and large group contexts.
- These may be used to supplement an early learning curricula

(National Survey of Early Care and Education (NSECE), 2016)

Curriculum	Pre-k centers	Head Start
Whole-child curricula	41%	73%
• Creative Curriculum	(32%)	(55%)
• High Scope	(7%)	(17%)
• Montessori	(2%)	(1%)
Skills-based published curricula (including math and/or literacy)	25%	20%
Other approaches	34%	7%
• no curriculum	(12%)	(2%)
• developed locally	(22%)	(5%)
TOTAL	100%	100%

(NSECE, 2016)

Figure 1. Impacts of Various Curricula on Academic Outcomes
(Shown as Fractions of a Standard Deviation)

Broad ranges from .70 to 0 in literacy studies
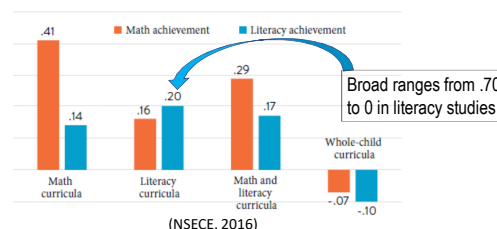
(NSECE, 2016)

(The ".41" entry on the first bar means that the math curricula could close about 40% of the low/high income gap in math achievement.)

Other NSECE (2016) Findings

- Math and literacy skills of low-income children are a full year behind those of high-income children at the time of kindergarten entry.
- Self-regulatory "approaches to learning" skills are about half as large as academic achievement gaps.
- Behavior gaps are about one-quarter the size of gaps in academic skills.

One Year in Age

Academic
Self-Regulation
Behavior

0   0.2   0.4   0.6   0.8   1
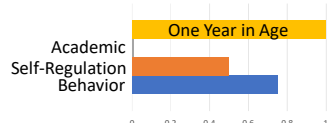
Assessment processes matter.

Assessment:
- Informs instruction
- Identifies children who require intensified instruction and intervention
- Help educational programs make systematic improvements   (NAEYC & NAECS/SDE, 2009)

Performance-based tasks provide more reliable and valid assessment data than **observation** and **checklists** for early literacy skills (Shanahan & Lonigan, 2013) and in assessing executive function skills (Denham et al., 2011; Willoughby et al., 2016).

Get the best information in the shortest time.

- Teacher-child modulated learning is more effective than child-modulated learning. (Connor, Morrison, & Slominski, 2006)

I DO - Valuable learning experiences occur when adults provide children with the "tools" they need to then make child-guided learning experiences valuable. (Shanahan & Lonigan, 2013)   WE DO
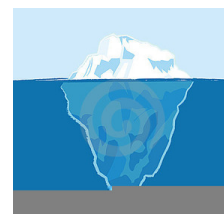
YOU DO

Statistical Learning

Explicit instruction (the visible tip of the iceberg)
Leads to
Implicit learning (the submerged part of the iceberg)

"Semi-supervised within an implicit experience."   (Seidenburg, 2017)

Teaching executive function matters.

Predictive indicators across the developmental domains in early childhood

Health Physical
- Precision in movement
- Visualspatial skills
- Executive function

Approaches to Learning
- Executive function
- Emotional regulation

Social Emotional
- Executive function

Cognitive
- Numeral identification
- Subitizing (how many)
- Ordinality (1st, 2nd, 3rd)
- Executive function

Language and Literacy
- Vocabulary
- Letter naming
- Phoneme isolation
- Executive function

Executive Function (EF)

- set of cognitive and behavior processes that help children remain on-task and goal-oriented.

  3 Main Component Skills
  - Cognitive flexibility
  - Working memory
  - Inhibitory control

- These skills represent interconnected and correlated processes. What is unclear is how early in development these processes become distinct.

Blair & Diamond 2008; Carlson, Zelazo, & Faja 2013; Diamond 2013; Garon, Bryson, & Smith 2008; Hughes 2011; Jacques and Marcovitch 2010; Meuwissen and Zelazo 2014)

- **Cognitive flexibility** - involves thinking about something in multiple ways—for example, considering someone else's perspective on a situation or solving a problem in multiple ways.
- **Working memory** - involves both keeping information in mind and, usually, manipulating it in some way.
- **Inhibitory control** - is the process of deliberately suppressing attention (and subsequent responding) to something, such as ignoring a distraction, stopping an impulsive utterance or action, or overcoming a highly learned response.

Blair & Diamond 2008; Carlson, Zelazo, & Faja 2013; Diamond 2013; Garon, Bryson, & Smith 2008; Hughes 2011; Jacques and Marcovitch 2010; Meuwissen and Zelazo 2014)

Important Stages in Early Childhood

- Infant/toddler stage
  - Foundations for all learning domains are established
- Preschool stage
  - 90% of basic oral language structures in place
  - Critical Age Hypothesis (Bishop & Adams, 1990)
- Early school years
  - Changes in brain functioning in language learning areas

Brain Structure Changes with Learning

- **Activity-dependent**: neural circuits need to be consistently activated over time to be strengthened.
- Those that are rarely excited may be pruned away.
- Brains do not develop passively, but only in an environment of **social responsiveness** and **social interaction**.

EF Development

Infants:
- Shift attention or avert gaze when overwhelmed
- Self-soothe by sucking on fingers or pacifier

Toddlers:
- Focus attention for short periods
- Adjust behavior to achieve goals
- Begin to label feelings
- Briefly delay gratification
- Turn to adults for help with strong feelings

(Rosanbalm & Murry, 2017)

EF Development

Preschoolers:
- Recognize a growing array of feelings in self and others
- Identify solutions to simple problems
- With support, use strategies like deep breaths and self-talk to calm down
- Focus attention and persist on difficult tasks for increased lengths of time
- Develop perspective-taking and early empathy

(Rosanbalm & Murry, 2017)

Executive Function Later in Childhood

- EF skill and neural development in the prefrontal cortex peak in early to mid-adulthood and then exhibit gradual decline across the lifespan.
  (Zelazo et al. 2013, 2014)
- EF skills may be undifferentiated set of cognitive skills in early childhood and subsequently differentiate during the transition to middle childhood.

Another finding:

- Studies have provided consistent evidence for linear improvements in EF between 3 and 6 years of age, with some evidence that changes may be more pronounced for 3 to 4 versus 4 to 6 years of age.

Self-Regulation:

- Is an internal mechanism that underlies intentional and thoughtful behavior.
- Is used to control impulses both to start doing something (when the activity is not desired) and to stop doing something (when the activity is desired).
- Is needed for delayed gratification and to control impulses long enough to think about the consequences of one's actions or to consider other choices.

Self-Regulation (*continued*)

- The development of self-regulation skills is related not only to social interactions but also to academic achievement.
- Children who are not able to control their emotions at four years of age are not likely to be able to follow instructions or directions at six years of age and, in middle and high school, may not become reflective learners. (Bodrova & Leong, 2005)

Social Emotional Learning

Social and emotional learning (SEL) is the process through which we develop and effectively use the knowledge, attitudes, and skills necessary to:

- understand and manage emotions,
- set and achieve positive goals,
- feel and show empathy for others,
- establish and maintain positive relationships,
- make responsible decisions.

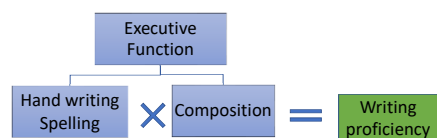(Collaborative for Academic, Social, and Emotional Learning (CASEL), 2017)

Smile Meditation

Close your eyes, breathe, and smile!

It only takes 30 seconds to help children calm down!

Simple View of Reading and Writing

Decoding × Comprehension = Reading proficiency

Executive Function

Hand writing Spelling × Composition = Writing proficiency

(Moats & Tolman, 2018)

Required Skills for Early Writing

❖ Combination of linguistic, motor, and cognitive (Executive Function) skills

Oral Language	Print Concepts	Letter Knowledge	Phonemic Awareness
Motor Planning	Visual-motor Integration	Kinesthesia	In-hand Manipulation
Executive Function	Inhibition Self-regulation	Working Memory Planning	Goal Setting

(Graham & Harris, 2000)

Teaching and Executive Function

- Explicit instructional cueing helps to develop self-regulation, which leads to other executive function skills.
  (McCloskey & Perkins, 2012)

Strategies to Facilitate Executive Function Skills:

- Provide a warm, responsive relationship
- Structure environment with consistent, predictable routines and expectations
- Teach and coach self-regulation skills through modeling, instruction and opportunities for practice
  - Skills like identifying and expressing emotions, calming down, waiting, solving problems…
    (Rosanbalm & Murry, 2017)

Teaching Strategies:

1. Teach *reflection* by providing opportunities for children to notice challenges, pause, consider their options, and put things into context prior to responding.

2. Help children learn to identify the "end goal" and plan what the steps are and materials needed to get to the end goal.

(Developingchild.harvard.edu)

Take Home Points

- Your expertise and understanding of the tools used, procedures established and the policies used matters.
- Your teaching philosophy matters. A research-based approach, proven to be effective, provides the best learning outcomes for students.
- Your language matters and is key to the creation of the climate and culture in your classroom that can change a child's life.

Thank you !

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