







#### DISCLOSURES

#### <u>Financial</u>

- No relevant financial relationship exists.
- Ms. Adams is employed by ESC Region 11.
- Mrs. Londenberg is employed by ESC Region 12.
- Dr. Schmitt is employed by University of Texas at Austin.

#### **Nonfinancial**

- No relevant non-financial relationships exist.
- Ms. Adams is an ASHA member.
- Mrs. Londenberg is an ASHA and a TSHA member.
- Dr. Schmitt is an ASHA member.

## PLAN FOR TODAY

- How did we get here?
- What guides us?
- How might research support our practice?
- Where do we go from here?

**Goal**: GROWTH MINDSET You don't have to change *everything* to change *something*.



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#### ASHA



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No longer recommends specific caseload numbers

- No research to support a specific caseload size
- Needs of the students vary greatly and specific caseload number does not take into account this variation.

## WORKLOAD SURVEY RESULTS

Taken from Region 11 (Fort Worth area) and Region 12 (Waco area)....

- Pull-Out Therapy was the most popular service delivery option with classroom-based therapy coming in second.
- The #1 barrier identified in providing therapy to students was caseload size (with paperwork, meetings, and traveling struggles to follow).
- Rethinking Service Delivery Models...a final part of presentation but led us to wanting more...needed research



















## CONCLUSIONS....

- Every single time it came back to service delivery
- What we were missing = <u>RESEARCH</u> to back it up
- What matters in therapy???
- How do we make school based, student centered decisions that aligns with research?



















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Frame Your Clinical Question: PICO

Population: What are the characteristics and/or condition of the group?

**Intervention:** What is the screening, assessment, treatment, or service delivery model that you are considering?

**Comparison:** What is the main alternative to the intervention, assessment, or screening approach?

Outcome: What do you want to accomplish, measure, or improve?

ASHA EBP MODEL: STEP 1								
Population	Intervention	Comparison	Outcome	Question	]			
Children with Severe to Profound Hearing	Cochlear Implants	Hearing Aids	Speech and Language development	For children with severe to profound hearing loss, what is the effect of cochlear implants compared to hearing aids on speech language development?	WXX			
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ASHA EBP MODEL: STEP 1								
	Population	Intervention	Comparison	Outcome	Question			
	School Age Children with Language Disorders	50 reps during and 10 minute sessions	20 reps during a 30 minute session	Speech and Language development	For school aged children with language disorders, what is the effect of 50 reps in a 10 minute session compared to 20 reps in a 30 minute sessions on speech language development?	TEXAS Sevent Language Science Science		
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#### Gather the Evidence

**Internal evidence** refers to the data that you systematically collect directly from your clients to ensure that they're making progress.

**External evidence** refers to evidence from scientific literature—particularly the results, data, statistical analysis, and conclusions of a study.

#### ASHA EBP MODEL: STEP 3



When assessing the internal evidence, you are determining whether an intervention has impacted your client.

- Is your client demonstrating a response to the intervention?
- Is that response significant, especially for the client?
- How much longer should you continue the intervention?
  Is it time to change the therapy target, intervention approach, or service delivery model?





Critically appraising the external evidence can help you determine if the conclusions from one or more studies can help guide your clinical decision. To assess the external evidence, you should:

- determine the relevance to your question,
- appraise the validity and trustworthiness, and
- review the results and conclusions.

## ASHA EBP MODEL: STEP 4



#### Make Your Clinical Decision

The final step of the EBP process requires you to make a clinical decision. To make an evidence-based decision, clinicians must consider evidence (both internal and external), assess the appropriateness of their clinical experience for the situation, and review the individual client's perspectives and priorities—the three components of EBP.



#### IDEA



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#### Individuals with Disabilities Education Act

The Individuals with Disabilities Education Act of 2004 (IDEA) is the federal law that governs the special education process. One of the main purposes of IDEA is to ensure that children with disabilities have available to them a free appropriate public education (FAPE) that emphasizes special education and related services designed to meet their unique needs and prepare them for further education, employment, and independent living.

TEA

















#### CURRENT STATE OF AFFAIRS

Empirical support that therapy is effective

- Children who receive therapy/intervention show more growth in language and literacy skills than those who do not (e.g., Leonard et al., 2006; Tyler et al., 2003; van Kleeck, et al., 1998).
- Many possible "active ingredients" to account for growth... but don't know exactly what those are.

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## RATIONALE

If we are to implement best practices for children in speech therapy, we first need to understand the current state of affairs for school-based therapy

- What does school-based language therapy look like (business-as-usual)?
- What aspects of therapy relate to children's language outcomes?

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#### WHO DOES THIS INCLUDE?

Focus of the research: Children who qualify with a language impairment as primary diagnosis

#### May also have:

- Articulation/Phonological Disorders

- Fluency disorders - ADHD
- high functioning ASD
- Mild cognitive impairment

#### Who is NOT included?

- Students without language impairment Sensory impairments
- OHI that explains the language impairment (e.g., Down syndrome) Nonverbal/severe-profound disorders

#### WHO DOES THIS INCLUDE?



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But these data MAY apply to other populations of students

- EBP Triangle
- Your data/experience + client needs + research

#### Terminology

- DLD (Developmental Language Disorder) Primary language impairment that is developmental in nature May or may not include cognitive impairment



Study measures		
Child Measures	5 subtests of Language Nonverbal IQ 3 measures of literacy	
Weekly Therapy Logs	Average of 35 weeks (31 - 40)	
Video-Taped Sessions	LIOS	
Questionnaires	Family, Classroom Teacher, SLP	TEXAS
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Student's Name:		Ê	ę	rapy		, Ped	2	ALC: NO.	Group	) com	positio	,					Contact with Parent/	Contact with	
(First & Last)	(First & Last)	Day of Week	Start T	End Tir	No The Schedu	Studer Absent	Therap cancell # Othe	Therap cancell # Othe Studen		Select 0 & Selec	irade :t IEP I	(SG or N IN or IE	6) 4)	Th	erapy l	ocation	••	Caregiver?	Teacher?
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0	E			R	П	П	1	SG	MG	IN	IEPs	N/A	SR	GEN	SPED	01	CV	CV	





Part	ICIPANTS	
	SLP Demographics $(n = 75)$	
	Average Years Experience = 16 (Range 0 to 36 years)	
	All had state license	
	93.2% with CCC	
	97 % Female	
	Ethnicity: 90.4% Caucasian; 6.8% African American; 2.8% Hispanic	
	Child Demographics (n = 294)	
e	5 % Male; 34 % Female	
E	thnicity: 55.4% Caucasian; 9.5% African American; 3.7% Hispanic; 5.2% Other; 25.9% Unreported	
I	all Language (CELF-4 Core Language; M = 69.04; SD = 17.13)	TEXAS Moody
I	'all Basic Reading Skills (WJ-III Basic Reading Composite; $M = 92.13$ ; $SD = 15.30$ )	and Howing Science
F	Kaufman Brief Intelligence Test – Matrices (M = 88.28; SD = 12.10)	Region (72
		Root Dyper / Sets

VHAT MAKES THIS RESEAR	STEPS Study	
Children with low language but may not qualify for school-based services	Children diagnosed by SLPs in schools	
Rely on surveys and averages	Direct observation/weekly records	
Descriptive designs	Rigorous statistical analyses	
Conducted by researchers	Conducted by school-based SLPs	
Implications: These findings are immed serving children with DLD.	diately relevant to other school-based SLPs	TXAS Cody
Not prescriptive: Adds "research" comp	ponent to EBP Triangle to support your practice	jini jimi







#### WHAT IS BEHAVIOR REGULATION?

A child's ability to adjust his/her behavior to meet the demands of the therapy session or classroom by:

- -Remembering and following through with information (<u>Memory</u>)
- -Inhibitory preferred or desired actions in favor of more appropriate ones (Inhibition)
- -Attending to the most salient information (<u>Attention</u>)

#### background on Behavior regulation

Limited understanding of the relation between BR and outcomes for children with LI

Critical, given risk of poor short and long term language & academic outcomes

Behavior regulation in children with LI may be important in understanding who is – and is not – responsive to schoolbased language therapy

Must fundamentally improve our understanding of behavior regulation in children with LI

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## ENGAGEMENT

## Does behavior regulation, measured as ENGAGEMENT during therapy, relate to language gain?

Schmitt, M. B. (2020). Children's Active Engagement in Public School Language Therapy Relates to Greater Gains. American Journal of Speech-Language Pathology, 29(3), 1505-1513.

Funded by: American Speech-Language Hearing Foundation 2012 Student Research Grant in Early Childhood Language Development

#### ENGAGEMENT

- *N* = 137
- 2 video taped therapy sessions per child (278)
- Coded across 4 levels of engagement in 15
  - minute intervals:
  - Off Task
  - Passive
  - Intermittent
  - Active
- Analyzed in HLM

Engagement	Definition	Examples
Active	Verbally or nonverbally participating in activity; on target; may or may not be accurate	Answers questions Follow directions Volunteers information on topic
Intermittent	Child fluctuates between active and passive engagement	In one interval, child answers a question but otherwise watches and waits
Passive	Focused and attentive, but not speaking or responding	Looking in direction of activity Quietly waiting for turn
Off Task	Uninvolved in directed task	Looking away from task/SLP Refusing to participate Physically disengaged

Code	N	Intervals	Minutes
Off Task	135	1.58 (0 - 20.50)	0.39 (0 - 5)
Passive	135	25.67 (2 - 63.50)	6.4 (.5 - 15.8)
Intermittent	135	52.69 (13.5 - 103.50)	13.17 (2.5 - 25.87)
Active	135	11.59 (0 - 64.00)	2.8 (0 - 16 min)











- Special Populations



# IMPLEMENTATION IDEAS

- Gather baseline data judgment free!
- How many opportunities for active engagement? Identify reasons for lack of active engagement.
- Based on your baseline data, set a goal for increasing active engagement over a 9-week reporting period
- Attempt strategies for increasing active engagement Give children active roles during story readings



## ENGAGEMENT: IMPLEMENTATION IDEAS

- ٠ Adapt therapy structure to allow for increased active engagement
  - Peer-to-peer interactions
  - Self-paced participation
  - Let children take data (for themselves or others) -Embed physical activity to increase engagement

and reduce need for breaks









Group Composition in School-Based Language Therapy: The Role of Peers on Language Outcomes

Region 6

Schmitt, M.B., Hutchins, C.. (In Preparation)

GROUP COMPOSITION DEFINED												
Student's Name: (First & Last)	Day of Week Start Time	End Time	No Therapy Scheduled	Stud en t Absent	Therapy cancelled	a Other Students	Group compositi Select Grade (SG or & Select IEP (N or 1	on* MG) EPs)	• Therapy Location**	Contact with Parent/ Caregiver?	Contact with other Teacher?	
	M Tu W Th F						G MG IN IEPs SG MG IN IEPs SG MG IN IEPs SG MG IN IEPs SG MG IN IEPs	N/A N/A N/A N/A N/A	SR GEN SPED OL SR GEN SPED OL SR GEN SPED OL SR GEN SPED OL SR GEN SPED OL	NALP ESVHW CV	NALP ESVHW CV	
	Group	o Size	1				Peers		Setting			TEXAS Mody
π	ot <mark>al #</mark> o	f Th	əra	py	Se	ssi	ons An	aly	zed: <u>10,8</u>	<u>19</u>		REGI <sup>®</sup> N <sup>11</sup> Alguer (12















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<b>Relation</b>	Relation to Spring language					
	Coefficient	Robust SE	t	df	p-value	
Intercept	70.55	1.36	51.90	72	<.001	
Traditional	1.33	0.99	1.34	158	0.182	
Intercept	70.55	1.36	51.98	72	<.001	
Large Group	-1.81	0.65	-2.76	158	0.007	
Intercept	70.54	1.34	52.56	72	<.001	
Inclusion	2.14	0.98	2.18	158	0.031 Automatica	



## GROUP COMPOSITION: PT 2

#### Peer Effects in Language Therapy for Preschoolers with Developmental Language Disorder: A Pilot Study

Funded by Texas Speech-Language-Hearing Foundation

Schmitt, M.B., Tambyraja, S., Siddiqui, S. (In Revision). Peer Effects in Language Therapy for Preschoolers with DLD: A Pilot Study.

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## PILOT STUDY: PEER EFFECTS

30 Preschoolers from a Head Start Preschool

- 20 preschoolers with DLD
- 10 preschoolers with Typically-Developing Language (DLD)

Randomly assigned to intervention (TX with TDL) or control (TX with another child with DLD)

8-week intervention; pre/post test

Thematic units; Soft scripted across all areas of language

E	EFFECT SIZE ESTIMATES								
	Language Domain	Experimental	Control DLD	Experimental vs Control DLD					
	Narrative	0.87	0.18	0.33					
	Syntax	0.36	0.10	0.24					
	Morphology	0.46	0.08	0.68	With				
	Vocabulary	0.16	0.37	0.06	REGIONI Argion (12				

## MAJOR FINDINGS

- 1. ALL children in study showed growth in language over 8 week period
- 2. Children with DLD benefitted MORE when received therapy with a child with TDL than another peer with DLD.
- 3. Children with TDL made gains in their language, too (NO HARM!)
- 4. Important proof of concept work; aligns with peer effects in educational research.

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## **GROUP COMPOSITION:** IMPLEMENTATION IDEAS

- Share these data with your colleagues and open
- Identify who on your caseload you want to consider re: peer effects
  - Who isn't making expected progress?
  - Special Populations
  - Which groups fall in the "large group" category?



## GROUP COMPOSITION: IMPLEMENTATION IDEAS

Who on your caseload could be a model for someone else? Consider re-arranging 1 or 2 of your groups. Rather than grouping by similarities, group by a balance of strengths and weaknesses.

- Articulation/typical language + language/typical articulation
- Strengths in pragmatics + weak pragmatics
- Mild impairment + more severe impairment
- Cross age groups



## **GROUP COMPOSITION:** IMPLEMENTATION IDEAS

#### Considerations for including children without IEPs into therapy:

- Inclusive/push-in treatment sessions

- Assign roles during story reading (listen for Vocab targets, past
- Split the time to allow for smaller aroups

























#### RESEARCH QUESTIONS

1.Do we see differences in treatment intensity across individual children?

2. To what extent does cumulative intervention intensity predict children's language gain?

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TR	TREATMENT FREQUENCY								
	SLP Logs	Ν	Mean	SD	Range				
	Frequency (from logs)								
	Time/Week (min)	233	36	12.2	14.1 - 82.7				
	Time/Year (hrs)	233	17	7.1	2.5 - 46.8				
	Sessions/Week	233	1.3	.47	.5 - 4.1				
	Sessions/Year	233	46.4	16.6	16 - 15				
	Cancelations/Year	233	10.2	6.9	0 - 46	Speech Language Sector Language and Diseases Sciences			
	Absences/Year	233	2.2	3.5	0 - 42	REGI <b>R</b> N Region (1			
						Index Chipan			




VARI	ABILITY IN CUMULATIVE II	NTERVENTIC	on inte	NSITY		
		n	м	SD	Range	
	Dose (minutes)	233	11.8	4.7	0.9-23	-
	Frequency (sessions)	233	46.4	16.6	16-154	
	Cumulative Intensity (minutes)	233	535.9	275.4	28 - 1645	TEXAS Montp Sensor Recommendation
						Require 12



Т	REATMEN	nt sche	DULES		17. T	
		TX 1	TX 2	TX 3	TX 4	
	Dose	4 Exposures	4 Exposures	20 Exposures	20 Exposures	
	Frequency	1/week	5/week	1/week	5/week	
	Duration	10 weeks	10 weeks	10 weeks	10 weeks	
	Cumulative Intensity	40 Exposures	200 exposures	200 exposures	1000 exposures	
	Description	Low Dose Low Frequency	Low Dose High Frequency	High Dose Low Frequency	High Dose High Frequency	REGIONII
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R	ESULTS				17. I	
		TX 1	TX 2	TX 3	TX 4	
	Dose	4 Exposures	4 Exposures	20 Exposures	20 Exposures	
	Frequency	1/week	5/week	1/week	5/week	
	Duration	10 weeks	10 weeks	10 weeks	10 weeks	
	Cumulative Intensity	40 Exposures	200 exposures	200 exposures	1000 exposures	
	Description	Low Dose Low Frequency	Low Dose High Frequency	High Dose Low Frequency	High Dose High Frequency	Scotl Jacoby Scotl Jacoby Scotland
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## CONCLUSIONS

Do differences in intensity matter?

**Yes** – individual differences among children in treatment intensity relate to their language gains over time

**AND** More  $\neq$  Better







## Treatment Intensity: Implementation Ideas

Gather data within current scheduling constraints Present data plus visual abstract to ARD committee Advocate for alternative schedule of services based on this research AND your data.

- Low Dose/High Frequency (5 min sessions 4x/week)
- High Dose/Low Frequency (30 min sessions every other week)

\*IMPORTANT: In our research, the length of session was irrelevant. Dose = time on languagel So if you modify the schedule of services, this time needs to be dedicated to schedule, filler activities, listening to stories being read)\*



#### TREATMENT INTENSITY: CURRENT STUDY

#### Testing the Causal Relation Between Treatment Intensity and Children's Language Gains

- NIH-Funded :
- Providing Tier-2 Vocabulary intervention to ALL children randomly assigned to frequencies and dose
- Children ages 5:0 6:11 with LI in schools •
- Virtual; Technology Provided

Help us by distributing flyer to children/families who may be interested.

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