

**Phonemic Awareness:**  
*What Skills How, When,  
To Whom, and How Much  
in the Age of  
Teachers Teaching Phonemic Awareness*

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Phon Aware Tx 1

### *The Plan*

1. Phonemic awareness & reading
2. Some other related concepts
3. Early and later tasks to teach
4. Teaching activities & materials
5. Scaffolding & ordering learning
6. Instruction intensity

Phon Aware Tx 2

**For More Ideas  
and Information**

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**Contextualized  
Language  
Intervention**

**Scaffolding PreK-12  
Literacy Achievement**

Teresa A. Ukrainetz, PhD

Phon Aware Tx 3

### Phonemic Awareness

- Understanding that speech is composed of minimal units of sound that are separable and manipulable
- Phoneme = a minimally contrastive unit of speech

*dogs* = /d/ /aw/ /g/ /z/      *clogs* = /k/ /l/ /aw/ /g/ /z/

- /r/ and /l/ are phonemes in English, but not Japanese
- /p<sup>h</sup>/ and /p/ are only phones in English

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### Why Phonemic Awareness Tx?

- Necessary for reading and spelling in alphabetic writing systems
- Very teachable skill
- Reading disabilities explained in part by phonemic awareness deficits
  - Part of phonological processing deficits
  - Developmentally-limited explanation (Stanovich)
  - Affects decoding initially, then decoding deficits and lack of reading affect comprehension (Matthew Effect)

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### Phonological Processing

- Deficits underlie most reading disabilities
- Three identified parts:
  1. Phonemic awareness
  2. Auditory memory (working memory for sounds)
  3. Phonological code retrieval (wordfinding)
- One part that would seem to fit but doesn't:
  - Phonology (AKA artic?)

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### Phonological Awareness

1. Phonemic awareness plus
2. Onset - rime (/d/-/awg/, /bl/-/awg/)
3. Syllables (/ba/-/na/-/na/)

Plus sort of but not really:

1. Words (hot-dog, I see mom)
2. Environmental sounds (tweet-tweet)  
*speech*

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### Other Terminology Related to Phon-

- 
- 
- 
- 
- 
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### Phonemic Awareness in Reading

- In scientifically-based curricula
- In NICHD (2000) report as 5 big areas of reading:
  - Phonemic awareness, phonics, vocabulary, comprehension, fluency
- In simple view of reading
  - Part of the Decode part of Decode+Comprehend
- In DIBELS progress testing for K-1
  - First phoneme matching, phoneme segmenting
- In actual teacher practices
  - Classroom instruction

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### So What Should SLPs Do?

- Formally our domain as an oral language skill important for reading
- Used to teach teachers about it but no longer
- Still our domain for children with language disorders
- But need to be strategic and efficient in tx, doing only what is needed

*For once, we may need to do less rather than more!*

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### OLD View of Developmental Order

3 yrs: Sounds & sentences tasks  
↓  
4 yrs: Rhyme & syllable tasks  
↓  
5 yrs: First phoneme tasks  
↓  
6-7 yrs: All other phoneme tasks in monosyllabic words  
↓  
8 yrs+: All other phoneme tasks in multisyllabic words  
*(some of us never learn Pig Latin!)*

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### Consider Complexity

- Consider the cognitive, memory, and linguistic demands
- Matching from 2 or 4 choices
- With or without pictures
- With known or unknown words
- On long words or short words...

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**NEW View of Developmental Order**

3 yrs: First phoneme tasks  
 ↓  
 4 yrs: First phoneme, rhyme, syllable tasks  
 ↓  
 5 yrs: Some other phoneme tasks  
 ↓  
 6 yrs: Other phoneme tasks in monosyllabic words  
 ↓  
 7 yrs+: Phoneme tasks in multisyllabic words

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**So What to Teach?**

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**Past Practices**

- Teach phonological awareness
  - Syllables and rhyme are obvious and easy
  - Entry into speech sound awareness
- Start with these large speech units
  - For preschoolers
  - K-1 tx progression
  - Initiate minimal speech unit after mastery of larger unit
- Phoneme achievements
  - Preschoolers introduced to first sounds
  - K could master first sounds
  - 1<sup>st</sup> could master simple segmenting

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**Revising the Recommendations**

- Larger speech units not an easier entry
- Some first phoneme tasks the easiest phonological awareness tasks
- Moving from syllable segmenting to phoneme segmenting can be confusing
- Don't spend time on supra-phoneme speech units
- A bit of rhyming can be helpful
- No set order needed, so long as enough help is given

(Ukrainetz, 2008; McGee & Ukrainetz, 2009; Ukrainetz, in press)

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**Current Recommendations**

- Teach phonemic awareness
  - Rhyme and syllable not needed for reading/spelling
  - Rhyme and syllable not needed for entry into phonemes
- Right from the get-go
  - Start with phonemes for K and preschoolers
  - Use rhyme incidentally to highlight sounds of words
- Phoneme achievements
  - Preschoolers can master first sounds (many without explicit instruction)
  - K can master simple segmenting

*So that should save time!*

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**A Window Into Increasing Awareness of Speech Sounds**

- teaching
- Data collected in 2005 and 2007
- Pre-test first phoneme isolating:
  - 2005, = 15, = 1.2 (2.0), 0 ≥ 8/10
  - 2007, = 24, = 5.3 (4.2), 12 ≥ 8/10
  - (37) = 3.528, = .0011, = 1.19
- Pre-test letter names:
  - 2005, = 14.9 (10.5); 2007, = 20.1 (8.7)
  - not sig diff, = 0.50

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### The Many Phonemic Awareness Tasks

*So teach phoneme awareness, but through which tasks?*

- Generating words based on first (alliteration), last, or other word positions
- Isolating phonemes in beginning, final, or other word positions
- Matching words based on first, last, or other word positions
- Blending phonemes into words
- Deleting and substituting phonemes in beginning, final, or other word positions
- Segmenting simple and multisyllabic words into phonemes...

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### Making Tasks Harder or Easier

- Tasks can be made harder by increasing cognitive and memory demands
- e.g., phoneme matching
  - Match from two words
  - Match from four words
  - With or without pictures
  - With known or unknown vocabulary

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### Selecting Tasks to Teach

1. Isolating first phonemes
2. Matching first phonemes
3. Segmenting simple words into phonemes
4. Blending simple words from phonemes

*Just teaching these should save time.*

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### What About the Fancy Tasks?

1. Words that sound different from how we spell them
    - *butter, been, words*
  2. Especially the vowels
    - /u/ as in *moo, through, do, lieu, new, blue, tune*
- Don't teach to listen hard
  - Sounding out words necessary but not sufficient
  - Most are recognized as VOIs (visual orthographic images)

*So this could save time...*

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### What About These Fancy Tasks?

1. Deleting and substituting
  - change the /g/ in     to /t/
2. Multisyllabic words
  -
3. Deleting and substituting communicatively
  - Pig Latin

Maybe there are benefits, but not from gaining advanced phonemic awareness

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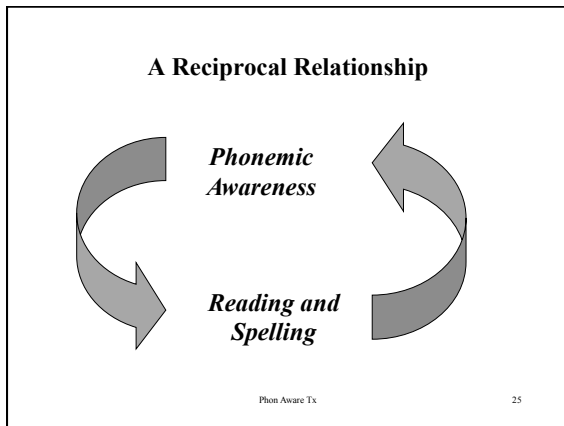
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### Fancy Phonemic Awareness for Older Students

- Phonemic awareness contributes little to reading ability beyond 3<sup>rd</sup> grade level
- Advanced phonemic awareness tasks involve cognitive operations, memory, and spelling
- Reading and spelling experiences improve phonemic awareness

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### But if You Want Fancy...

Lindamood Phoneme Sequencing Program (LiPS, Lindamood & Lindamood, 1998):

- Structured hierarchical procedure with step-by-step tasks and prompts
- Blocks and letter-blocks represent phonemes in nonsense & real words
- Initiated with articulatory phonetics instruction on distinctive features (stop, fricative, alveolar)
- Invented vocabulary to describe articulators (tip tapper, lip popper, skinny air)
- Often extended time of 1+ years
- Phonemic awareness, letter-sound correspondence, auditory memory, word retrieval, conventional spelling

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### Fancy Tasks for Spelling

- The fancy tasks often involve spelling, so that is good
- But better to work directly on spelling
  - in writing and reading
  - in a more motivating, meaningful manner
  - for older students
- And remember that listening hard can make your spelling worse!
- What about all that work holding *exclamation* in your mind while you sound it out and move blocks around? Is there anything good about that?...

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### But Maybe It is Intense Quality Tx More than LiPS?

- *Reading* SLD : --> For both txs, rdg accuracy & compreh average range, rate improved, 40% no longer SPED (Torgesen et al., 2001)
- *Language*: Computerized or SLP tx for 6-9yr SLI: **indiv 100 min/day for 8 wks** --> For all txs, big changes in standardized language measures incl phonemic awareness & auditory temporal proc (Gillam et al., 2008)

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### To Whom?

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### Who Should Get PhAware Tx?

- Children on our IEPed caseload (Tier III)
  - First phoneme awareness for preschool
  - Basic phonemic awareness for K-2, depending...
  - Fancy phonemic awareness for 3+, depending...
- No Tier I teaching, no Tier II tx
  - Teachers doing basic phonemic awareness as part of Tier I and II reading instruction

*You can be an extra pair of hands, but don't have something else you should be doing?*

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### Phonemic Awareness Tx Need

- Basic phonemic awareness (isolating, segmenting, blending)
- Indicators:
  - Low on first phoneme isolating or matching
  - Low on phoneme segmenting
  - Spelling is pre-phonetic or missing phonemes:

**m mom      ab cat      sa sun**  
  
**pas place      fat fast**

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### Phonological Processing Tx Need

- AKA fancy phonemic awareness tx
- Indicators:
  - Low on auditory memory and rapid automatized naming (CTOPP)
  - Spelling shows conventional spelling but getting lost in multisyllabic words

**decious delicious**  
**camatily calamity**

- Or spelling process shows forgetting and repeated tries even if the answer is correct

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## How to Teach?

Approaches, procedures, activities, materials

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### Overview of Phonemic Awareness Instruction

1. A culmination of a vertical hierarchy of environmental sound, word, syllable, rhyme, and phoneme activities (NO)
- 2.
3. **tasks**

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### Phonemic Awareness in Daily Life

- Sound play
  - Rhymes
  - Preschool joke talk
  - Pig Latin
- Talk about text
  - Let's read a story
  - Let's write a story

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### Remember the Reciprocal Relationship

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### Phonemic Awareness Activities

1. Name play
  - No materials needed
2. Contrived drill-games
  - Matching, Fishing, Guess-the-Word
  - Artic cards, phonology cards, plastic food, puzzles
3. Shared books
  - Alphabet
  - Alliterative
  - Rhyming
4. Message Writing
  - Writing to dictation, child writing
  - White board, paper, or computer

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### Drill-Games

boy bus mouse

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### Alphabet & Alliterative Books

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### Focus on the Sounds Not the Letters

Dog dance

- Big BEAR buys a bike
- Little BEAR buys a bike

Big B buys a bike. Bb

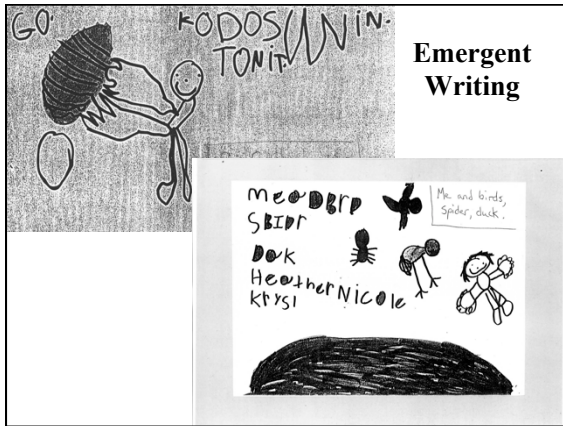
### Rhyming Books

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### The Story of Fred

### Mini Rhyme Stories

- Use rhyme as a tool not as a tx objective



RAISE with Phonemic Awareness	
Repeated Opportunities	e.g., Isolate + segment two words per pg for 5 pgs = 20 opps
Attention	Appealing rhyming books, message writing, & games with phon awareness tasks highlighted & reinforced
Intensity	Grps of 2-3 ch, 30 min/wk for 8-10 weeks
Systematic Support	<i>Structural scaffolds:</i> rhyming to highlight form over content; letters to represent phonemes; simple single skill games <i>Interactive scaffolds:</i> Wait for answer, stress a sound, give hand cues, model, expand part to full segmentation
Explicit Skill Focus	Focus on phonemic awareness over letters or vocabulary

### Gillon Intervention Recommendations

- Integrated with sound-letter instruction
- Phoneme level
- Skill mastery or integrated multiple skill approach
- Individual or small group for tx
- Program flexibility
- Following general language instruction

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### Talking about Speech Sounds during Book Sharing

- *There was a boy named Fred. He didn't want to go to bed.*
- What are the rhyming words?
- What is the first sound of *Fred* and *bed*?
- Let's count the sounds in *Fred* and *bed*, get your fingers ready. Which is longer?
- I'm going to say the sounds of another word that rhymes with *Fred* and *shed*. /r-E-d/

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### Talking about Speech Sounds while Message Writing

- Let's write *Happy Birthday Mom*.
- What is the first sound in *happy*? I will write that.
- Let's say all the sounds in *happy*. Fingers ready? /h-ae-p-i/ 4 sounds, I will write the letters.
- There should be 4 letters for 4 sounds, but writing is funny sometimes, 4 sounds, 5 letters!

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### Vertical vs Horizontal Task Order

<p><b>Vertical</b></p> <ul style="list-style-type: none"> <li>• Single subskill or task focus</li> <li>• Contrived, controlled tasks</li> <li>• Ordered in difficulty</li> <li>• Mastery of each task before the next</li> <li>• Minimal instructor support during task</li> </ul>	<p><b>Horizontal</b></p> <ul style="list-style-type: none"> <li>• Multiple subskill or task foci</li> <li>• Purposeful, complex tasks</li> <li>• Varied difficulty</li> <li>• Varied performance across tasks</li> <li>• Interactive scaffolding matched to need</li> </ul>
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### Why Horizontal?

- Vertical discrete skill is conventional approach and is simpler to execute and collect data in structured, contrived games
- Horizontal requires a skilled clinician to dynamically scaffold child in purposeful and complex activities

*Why bother?*

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### Why I Like Horizontal

- Alternative to vertical
- Less advance planning
- Learned more like in daily life
- Taught like other language skills
- Allows child self-regulated learning
- Allows me to respond to need in the moment
- Allows variation in level within a group
- Uses my favs: good books and message writing
- More interesting for everyone

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### Scaffolding Phonemic Awareness

- Dynamic interactive individualized instructional moves
  - support active learning
  - lead to greater independence
  - in activity beyond current independent performance
- Horizontal ordering
  - Integral part
  - From imitation to independence
- Vertical ordering
  - Light scaffolding possible
  - Heavy to moderate indicates need to back up

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### Scaffolding Phoneme Isolation

Heavy	Isolate and exaggerate phoneme in isolation and in the word, point to mouth and tell children to look, say the correct response, elicit response from child.	What is the first sound in <i>milk</i> , /m/m/m/m/m/ <i>milk</i> ? Watch my mouth, /m/m/m/m/ <i>ilk</i> . The first sound is /m/. You say /m/.
Moderate	Isolate phoneme and exaggerate, point to mouth and tell children to look, exaggerate phoneme in word (use two or more depending on need).	What is the first sound in <i>milk</i> ? /m/m/m/m/ <i>milk</i> ? (point to mouth).

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### Arriving at Independence for Isolation

Light	Emphasize beginning phoneme in the word.	What is the first sound in <u><i>milk</i></u> ?
None	Ask the question	What is the first sound in <i>milk</i> ?

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### Scaffolding Beyond The First Attempt

High Scaffolding:  
 SLP: Okay Amanda, here's another one for you. What's the first sound, Amanda, look at me. What's the first sound in *dare*?  
 A: Don't you dare!  
 SLP: What's the first sound in *dare*?  
 A: /g-g-g/  
 SLP: Look at my mouth -- /d-d/  
 A: D  
 SLP: D is the letter. The sound is /d/  
 A: /d/  
 SLP: Good job! /d/ is the first sound in *dare*

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Scaffolding Segmenting		
Heavy	Isolate and raise finger for each phoneme in the word. The child copies and counts. Confirm correct number, repeat segmented sounds.	The word is <i>red</i> . Get your fists ready to count the sounds. /r/ (raise one finger) Say the sounds with me. /E/ (raise second finger). Yes, /r/ /E/ /d/. How many sounds? Count my fingers. Right three sounds. /r/ /E/ /d/
Moderate	Get mouth ready to say the first phoneme, but pause for children to say it, raise finger, then mouth sound but pause for the other phonemes. Have child tell how many phonemes.	The word is <i>red</i> . Get your fists ready. You say the sounds this time (mouth /r/ and raise finger). /E/ (raise finger), /d/ (raise finger)? Yes, /r/ /E/ /d/. How many sounds?

Arriving at Independent Segmenting		
Light	Get the mouth ready to say each phoneme. Raise finger for each phoneme. Say aloud only the middle sounds.	The word is <i>red</i> . Get your fists ready. (mouth the sound /r/), /e/, (raise fingers), (mouth /d/). Yes, /r/ /e/ /d/. How many sounds?
None	Ask the question.	Say the sounds in <i>red</i> .

**Scaffolding Segmenting a Simple Word**

Light Scaffolding, Simple Word:  
 SLP: How many sounds are in the word *the*? Show me the sounds. Tap my fingers and show me.  
 J: /th-e/  
 SLP: Yes! /th-e/, /th-e/. Two sounds.

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**Scaffolding Segmenting a Hard Word**

Light Scaffolding, Complex Word:  
 SLP: What's the next word?  
 J: Titanic  
 SLP: Titanic! That has a lot of sounds in it. What do you think the first sound is?  
 J: /T-i-tan-i-c/ (sticks out five fingers as he says sounds).  
 SLP: Good! You counted most of the sounds.  
 J: There's five sounds.  
 SLP: Okay, that was good for such a long word.

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**Scaffolding Tips**

- In the zone – Give enough help for success with effort, and vary effort vs success
- Becoming aware of mouth and ear – initiating phoneme awareness
- Use salient phoneme contrasts initially – /p/ vs /s/ vs /n/
- The adult model – the old qn of telegraphic vs correct language
- Almost there – responding to partially correct performance
- Segmentation – mouth and finger assists segmentation
- Blending -- Closed choices with pictures/objects

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**How Much?**

For a year? 2 years?  
15min a week? 60min a week?

The evidence on tx intensity, to appear in  
*Topics in Language Disorders* (Fall, 2009)

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### Teaching Episode

- First, to determine intensity, must know your minimal teaching unit (Warren, Yoder, & Fey, 2007)
- Episode = Initiation, Response, Evaluation (IRE)
- But may also have
  - Clinician model without response
  - Peer response heard as model
  - Choral response belonging to whom?
  - Multiple task IRE

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### Combining Tasks in a Complex Teaching Episode

- Let's see if *sun* and *slow* match. What is the first sound in *sun*?
- Let's say the all the sounds in *sun*. You start, the first sound is --
- What am I holding in this bag? /P-i-ch/. *Peach*. Your turn. You say the sounds in the next word and I will guess.

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### Intensity Evidence to 2001

- obtained significant and large gains
- Intensity has varied considerably:
  - Session lengths of 15 to 90 minutes
  - Frequencies of 1 to 5 times weekly
  - Durations of 4 to 32 weeks
  - Individual, group, and whole class arrangements
  - Learners from 4 to 8 years, of a range of abilities
- No report of number of teaching episodes
- Rarely treatment fidelity or child attendance info

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### Ehri et al. (2001) Meta-Analysis

- Part of NRP (2000)
- Evidence for phonemic awareness treatment effects
- 52 studies with 96 treatment-control comparisons reviewed
  - Mixed pre-phonemic and phonemic
- Results:
  - Small group better than individual or whole class
  - Typical learners had larger gains than weaker learners
  - 1-2 tasks better than 3+ phonemic/pre-phonemic tasks
  - **5 to 18 hours best, with no difference in this span**

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### Examples with Typically Developing Children

- **Maybe 6 months** if the full phonological spectrum, with whole K class 15-min daily instruction:
  - Brady et al. (1994), moderate gains on segmenting:  $d = 0.57$
- **Maybe 7 weeks** if phoneme-level only and small K groups, 3-4x/wk of 20-30 min. instruction:
  - Ball & Blachman (1988): Say-it-and-move it blank/letter tiles; Segmenting: vs no-tx & letter tx,  $d = 1.85$ ,  $d = 1.67$ .
  - Ukrainetz et al. (2000): Sound talk embedded in rhyming books and shared writing activities; Segmenting:  $d = 1.37$

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### Tx Intensity for Children with Language Impairment

- 7 controlled group studies at phoneme level (incl. rhyme) for 4-7 yr olds
  - Warrick et al. (1993), van Kleeck et al. (1998), Gillon (2000, 2005), Segers & Voerhoeven (2004), Denne et al (205), Hesketh et al. (2000)
- 4 included other speech/language objs
- Individual or small group, 3-20 hrs
- **Best results for 12-20 hours, large segmenting effect ( $>d = 1$ )**

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### Does the Old Evidence Still Apply?

- Studies until recently contrasted phonemic awareness tx to regular classroom instruction with no phonemic awareness,
- BUT now...
  - One of the 5 pillars of reading (NRP, 2000)
  - Part of K-1 standardized reading dx (DIBELS)
  - Often taught in RTI
- **So how much is enough for tx with classroom phonemic awareness instruction?**

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### A Study of Intensity

Ukrainetz, Ross, & Harm (2009)

- English learners, with low letter and first sound knowledge on DIBELS
- 11 hours of phonemic awareness treatment:
  - Concentrated (CP, 3x/wk, Oct - Dec)
  - Dispersed (DP, 1x/wk, Oct to March)
  - Vocabulary control (CON, 1x/wk to March)

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### Programming Intensity

- $\geq 5$  teaching episodes per task & child across 3-4 activities  $\geq 20$  episodes per session
- Number of teaching episodes roughly controlled in 3 ways:
  1. Maximum of 30 minutes for all sessions
  2. Consistent number and array of activities
  3. Minimum number of teaching opportunities per session

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### Dose Form

Order	Horizontal
Tasks	First isolate, last isolate, blend, segment
Activities	Name, picture, object, book, & writing activities (fingers for segmenting)

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### Dose Strength

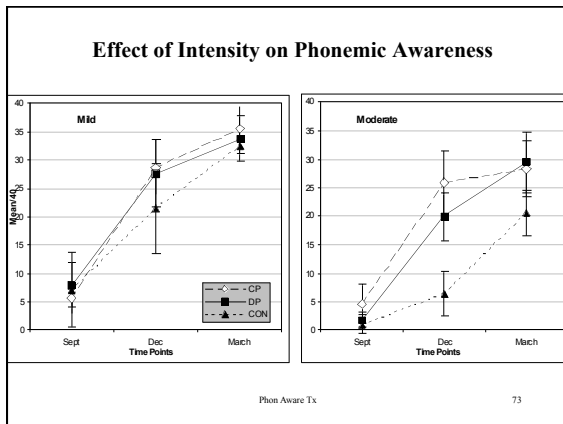
Grouping	3 children
Session length	30 minutes
Episodes (IRE +)	$\geq 5$ per task per child = 20 + listening to 1/2 the 40 peer models /. Session dose = 40 episodes

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### Dose Frequency & Duration

Frequency	1 or 3
Duration	8 or 24 weeks
Total time	12 hours of tx
Total intensity	960 teaching episodes

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### Results for Phonemic Awareness Intensity Tx

- Over a school yr, for SLP tx and classrm instruction
  - English learners = native English speakers
  - Short intense tx = long weekly tx
  - Ks with moderate deficits benefit more than those with mild deficits
  - At-risk Ks improve a lot with only classroom instruction and incidental self-regulatory gains from tx for another area
- Phon Aware Tx 74

### Recommendations for Phonemic Awareness Intensity

- Total intensity
  - 5-18 hours for typical ch
  - 12-20 hours for ch w/ lang imp
- **Most of this in the regular classroom**
- Additional tx?
  - 8 sessions of 20 episodes per child?
  - 5 episodes per child in tx sessions on other goals over 24 sessions?
  - An additional boost for our kids, but not a lot

*Spend the time you save on increasing intensity for other language skills*

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### Phonemic Awareness in Summary

1. Tier I and II -- teachers handling phonemic awareness
2. Tier III -- us, but strategically and efficiently
3. Teach at the phoneme level
4. Teach isolating, blending, and easy segmenting
5. Don't teach students to listen really hard
6. Use drill-game and purposeful print activities
7. Use RISE in all tx activities
8. Get good at scaffolding
9. Use vertical or horizontal ordering
10. Match scaffolding to child need and task difficulty

*\* A little quality tx will go a long way for this teachable skill \**

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