Literacy and Evidence-Based Practices in Deaf Education: What We Know, What We Suspect, Where We’re Heading

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Evidence-Based Learning for Deaf and Hard-of-Hearing Students
Idaho Educational Services for the Deaf and Blind

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Agenda

1. Introduction
2. What is an evidence-based practice?
3. What do we know?
4. What do we suspect?
5. Where are we headed?
Are we there yet?

- Minimal change from 4th grade “glass ceiling.”
- 40 years of data and few results
- No support for common practices
- Smaller subgroup studies are much more hopeful
- More promising outcomes than previous studies
What do we know about our population and evidence-based practices in literacy for our population?
Age-appropriate language

Advantage in the literacy learning process

Characteristics of DHH readers

- Less aware of misunderstandings
- Rely more on pictures
- “Passive” readers
- Spend less than 12 minutes a day actively engaged in print
- Distinctly different DHH populations
What do we know for sure about literacy?

- What does the professional literature document for us with absolute certainty?

- Caveat- Lack of an evidence-base does not mean a practice is bad.
What is an evidence-base practice?

- Research design
  - Causality preferred
- Quantity of research
  - More than one study
- Quality of research
  - Meets standards
- Effect size
  - Statistical significance paired with minimum effect size
What Works Clearinghouse
http://ies.ed.gov/ncee/wwc/
What do we know about…

- vocabulary?
- reading comprehension?
- fluency?
- decoding or phoneme-grapheme correspondence?
Vocabulary
“Tentative Evidence- Based Practices”

- Using computers for vocabulary instruction
  - Luckner & Cooke, 2010

- Dialogic Reading
  - Fung, Chow, & McBride-Chang, 2005; Trussell & Easterbrooks, 2013

- Repeated readings or viewings
  - Cannon, Fredrick, & Easterbrooks, 2009; Guardino, Cannon, & Eberst, 2014
Vocabulary “Promising Practices”

- Repetition
- Meaningful use in natural, contextual situations
- Explicitly instruct all components of a word
- Tiered Vocabulary
  - Tier 3 - appear rarely
  - Tier 2 - appear frequently
  - Tier 1 - expect the students to know but they may not

Beck & McKweon, 2007;
Easterbrooks & Beal-Alvarez, 2013
Vocabulary
“Promising Practices”

- Relating to prior knowledge
- Chaining
  - fingerspell, point to word in print, give sign
- Pre-teaching vocabulary
  - Teach tier 2 and negotiate tier 3 with teacher
- Teaching figurative uses through *semantic equivalence* (i.e., explicit teaching)
  - “*hold the line*” = “*don’t give up*”

Easterbrooks & Beal-Alvarez, 2013
Word Walls
Semantic organization and concepts
Reading Comprehension and Grammar

Text Comprehension

The ability to **understand** meaning conveyed by print

Grammar

- Conveys meaning above and beyond vocabulary

The individual **pieces** of that meaning

words, phrases, sentences
Reading Comprehension
“Tentative Evidence- Based Practices”

- Explicit comprehension strategy instruction
- Teaching students story grammar
- Modified Directed Reading Thinking Activity- DRTA (Stauffer, 1969)
- Activating background knowledge
- Use of well-written, high interest texts
Reading Comprehension
“Promising Practices”

- Bi-Bi Approach
- Read Aloud
- Writing to Read
- Narrative Story Grammar
- Technology

Easterbrooks & Beal-Alvarez, 2013
Language Experience Approach

We made sundaes.
We used bowls and spoons.
We poured chocolate.
We said mmm...
## Contrastive Analysis

<table>
<thead>
<tr>
<th>English-Like</th>
<th>ASL-Like</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want roller coaster</td>
<td>Tomorrow what go to six flags</td>
<td>Tomorrow, I will go to Six Flags.</td>
</tr>
<tr>
<td></td>
<td>Eat what hot dog french fries</td>
<td>We will eat hot dogs and French fries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I watch TV every Monday.</td>
</tr>
</tbody>
</table>
Making Learning a Visual Process

**Theme:** LOST and FOUND

**Title:** Stellahuna

- **Interrupting Event:** It is night, and Stellahuna flies too far.
- **New Experience:** Stellahuna falls into a bird nest. Stellahuna eats a grasshopper. Baby birds sleep upside down. Mother Bird is angry.
- **First Event:** The owl attacks mother bat.
- **Follow up events:** Stellahuna is happy again.
- **Solution:** Mother bat finds Stellahuna.

**Mother Bat and Stellahuna fly. They eat fruit.**
Chunky Monkey

• We derive meaning by decoding *chunks* of words, not by decoding individual words.

• This is called “sentence parsing”
  ◦ Good parsers are good readers
  ◦ Poor parsers are poor readers.
“Parsing” example

“The man who had a toupee, which was old, looked amusing.”

• Importance of punctuation
  ◦ If you ask a deaf child “What looked amusing?” she would likely say “a toupee” because it is the closest noun in closest proximity to the word “amusing”
Fluency

- Minimal Evidence
  - Luckner & Urback, 2011
  - Repeated readings of word lists
  - Repeated readings of passages
  - Repeated readings of word lists and passages

- More questions than answers
  - Oral reading fluency
  - Signed reading fluency
Fluency
“Promising Practices”

- Time engaged in task
  - Mastery of decoding
  - Fluent model
  - Independent reading time
  - Integrated practice
  - Practice monitored by the teacher

- Repeated readings
  - Independent reading level
  - Motivating and interesting books
  - Student choice
  - Goal-oriented
  - Self-graphing
  - Read with other students

Easterbrooks & Beal-Alvarez, 2013
Decoding
“Tentative EBPs”

- Grapheme-Phoneme Correspondence
  - Visual Phonics
  - Lexicalized Fingerspelling and Chaining
  - Iconic/Semantic Representation
    - Tucci, Trussell, & Easterbrooks (2014)
Decoding “Promising Practices”

- Morphographic or morphological decoding
- Contextual decoding
- Syntactic decoding
  - Based on the knowledge of the structure of sentences
    - “The limo driver poked his car by the fire hydrant.”
    - Substitution of one verb for another
- Semantic decoding
  - “New York City has many vehicles in the streets: taxis, buses, cars, vans, and trucks.”
    - If the student knows buses, cars, and trucks, he can likely deduce that ‘vehicles’ applies to these words

Easterbrooks & Beal-Alvarez, 2013
To summarize...

- We need to be using EBPs.
- The evidence base in deaf education is woefully inadequate.
- Teachers need to take an active role in documenting effectiveness.
So what’s a teacher to do?
Flow Chart of Decision-Making to Determine Evidence for a Practice, Material, Strategy or Intervention

1. Identify the practice, material or strategy under consideration.
   Is there a strong evidence base for its use with DHH children?

2. Is it effective with hearing children with emerging evidence for DHH children?
   Yes
   No

3. Does the practice, material, or strategy incorporate several of the Causal Factors associated with positive learning outcomes?
   Yes
   No

4. Investigate a different practice, material or strategy.
Causal Factor

- A good teaching practice, (not intervention, method, material or strategy) that leads to positive student outcomes
What are the causal factors?

1. Higher order thinking skills (HOTS)
2. Communication (CO)
3. Visual Support (V)
4. Explicit Instruction (E)
5. Scaffolding (S)

HOTS & COVES

Easterbrooks & Beal-Alvarez, 2013, Easterbrooks, 2010
Higher Order Thinking Skills (HOTS)

Evaluate
Judge the Value - of Alternatives

Synthesize
Put Together Knowledge - into a New Whole

Analyse
Break Down Knowledge - to Find Meaning

Apply
Use Your Understanding - in a New Way

Comprehend
Show Understanding - Summarize or Explain

Know
Recall Information
Communication

Children whose teachers are better communicators learn more.

Hermans, et al 2008

Vocabulary and grammar work together as a team.

(Kelly, 1996)
Visual Support

- We imagine the meaning of the words we hear in our mind’s eye.

- Children need to learn to imagine the meaning of the words they are reading.
Explicit Instruction

Figure 1. Percentile scores on Woodcock-Johnson Broad measure of Reading Comprehension

- Whole Language
- Embedded Phonics
- Systematic Explicit Phonics
Scaffolding and a More Knowledgeable Other (MKO)
Final words take us back to the beginning…

- Children who are identified and served early *acquire language and literacy skills* at a level superior to those who are not identified and served early. “*Early*” means 6 months.
Questions?

Please feel free to email questions or needs! Thank you so much for listening!

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