Identifying Gaps in our Knowledge of Literacy in Children with Cochlear Implants

What do we want to know next and why?

Heather Hayes, Ph.D.
Director of Deaf Education Studies, Associate Professor
Program in Audiology and Communication Sciences

No disclosures to report
Objective

Identify 3 areas of literacy research that warrant additional exploration

- Diverse population of children with CIs
- Effectiveness of classroom practices
- Alternatives to traditional experimental methodology
Diverse Populations

Children and Youth who are D/HH
GRI, 2011

<table>
<thead>
<tr>
<th></th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>46.6</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>25.3</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>14.8</td>
</tr>
<tr>
<td>Multiethnic background</td>
<td>8.2</td>
</tr>
<tr>
<td>Asian</td>
<td>3.5</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Diverse Populations

- Economically Disadvantaged: 38%
- English Language Learner: 23%

GRI, April 2011
Per No Child Left Behind reporting measures
Diverse Populations

Languages Used in the Home
GRI, 2011

<table>
<thead>
<tr>
<th>Language</th>
<th>Proportion of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>82.3%</td>
</tr>
<tr>
<td>Other</td>
<td>25.2%</td>
</tr>
<tr>
<td>Spanish</td>
<td>21.9%</td>
</tr>
<tr>
<td>ASL</td>
<td>5.8%</td>
</tr>
</tbody>
</table>
Diverse Populations

• Yet, who participates in our literacy research?
  • Per the U.S. Census Bureau (2014)
  • *32% of population ages 25+ have earned a bachelor’s degree or higher*

College+ = 72%
Webb et al. (2015)

M yrs parent ed = 16
Geers & Hayes (2011)

College+ = 84%
Lederberg et al. (2014)

M level parent ed = college grad
Nittrouer et al. (2012)
Diverse Populations

• Where are the gaps? What next?

  • Effects of low SES/parental education backgrounds
    • Effects of toxic stress may be different for d/hh populations than on general populations?

  • Effects of languages spoken at home
    • bilingual spoken, bilingual visual/spoken, minority language at home
U.S. Dept of Education (2011)

66% of these students in class with peers 80%+ of day

- Public Schools (87%)
  - Separate Schools (9%)
  - Residential, Home, Hospital, Jail (3%)
  - Private schools (1%)

- Diverse populations
- Classroom practices
- Alternative methodology
Classroom Practices

• What is being taught?
• Easterbrooks, Lederberg, & Connor (2010)
  • 18 classrooms, 40 children ages 3-6 years
  • Early Language and Literacy Classroom Observation (ELLCO) tool

“Most classrooms of deaf and hard of hearing students tended to focus less than optimally on those characteristics identified as being associated traditionally with good emergent literacy environments for children with normal hearing.”
Classroom Practices

- Effectiveness of literacy practices for children with CIs?
  - Only 2 studies to my knowledge that were experimental or quasi-experimental design (using regression, not correlational work)
    - Lederberg, Miller, Easterbrooks, & Connor (2014)
      - *Foundations* curriculum for preschoolers, most with CIs
    - Easterbrooks et al. (2015)
      - *CLAD* project, many with CIs, waiting for results!
  - Ferrell, Bruce, Luckner (2014)
  - Webb et al. (2015)
    - suggests the same practices as for hearing children
Alternative Research Methods

- Issue of low-incidence population is a substantial hurdle

- Diverse populations
- Classroom practices
- Alternative methodology

Diagram:
- Statistics
- Low N
- Costs
- Funding
Alternative Research Methods

- Council for Exceptional Children
  - *Standards for Evidence-Based Practice in Special Education* (2014)

- No correlational, descriptive, or qualitative work can be considered as evidence for best practices

- Only experimental designs with group comparisons, and gold-standard single-subject case designs acceptable

- Diverse populations
- Classroom practices
- Alternative methodology
Alternative Research Methods

Options?

• Large N studies
  • Webb et al. (2015) – 7 years to collect data, had to lump Ss together
  • Lederberg et al. (2014) – 4 years to implement, used research teachers

• Rigorous Single-case or single-subject design?
  • Kratochwill et al. (2013) – suggestions for rigorous SS research

• Collaboration
  • Data collection that is ongoing and systematic
  • E.g., Child Language Data Exchange System
A broader issue
In summary

Literacy Research:

* Diverse populations
* Classroom practices
* Alternative methods

Decision-Making

- Federal Departments
- State Education Agencies
- Local Area Education Agencies
- District-, Building-, and Classroom-level
Thank you!

Heather Hayes, Ph.D.
hhayes@wustl.edu
Web: pacs.wustl.edu
Twitter: @hhayesPACS