Phonological Awareness Knowledge: A Comparison of Teachers and Speech-Language Pathologists

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Purpose

To compare phonological awareness knowledge of groups of educators.
Summary of Findings

- SLPs have superior PA knowledge when compared to other groups of educators.
- One day of professional development in PA resulted in improved performance on measures of PA.
Background Information

- PA affects early reading outcomes, specifically word decoding skills (Bus & Van IJzendoorn, 1999).

- The National Reading Panel Report concluded that evidence-based reading instruction in the early elementary years should include phonemic awareness (National Institute of Child Health and Human Development, 2000).
Rationale

- Teachers may not have sufficient PA knowledge to deliver effective PA instruction (Cunningham, Perry, Stanovich, & Stanovich, 2004; Moats, 1994).

- Instructional materials offers insufficient support for teachers to provide effective PA instruction (Smith et al., 2001).

- SLPs may be best suited to provide PA intervention to children at risk for reading disabilities (Catts, 1991).
Research Questions

1. At pretest, do SLPs have superior PA knowledge when compared to other groups of educators?
2. At pretest, do Title I and special education teachers have more PA knowledge when compared to other teachers?
3. Does one day of professional development in PA lead to improved performance on PA tasks?
4. What performance patterns differentiate the groups at pretest and posttest?
### Methods: Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLPs</td>
<td>63</td>
</tr>
<tr>
<td>Kindergarten/First Grade Teachers</td>
<td>203</td>
</tr>
<tr>
<td>Special Education Teachers</td>
<td>55</td>
</tr>
<tr>
<td>Title I Teachers</td>
<td>94</td>
</tr>
</tbody>
</table>

- Professional experience averaged 17 years
- 69% had a master's degree
Methods: Pre/Post Test Measures

Three Phonological Awareness Tasks
The paper/pencil PA measure was adapted from Moats (2000).
1. Phoneme Segmentation Task
2. Phoneme Identification Task
3. Phoneme Isolation Task

Total points possible: 47
Methods:
Phoneme Segmentation Task

Participants indicated the number of sounds in 21 words.

- cat 3
- fuse 4
- show 2

Points possible: 21
Methods:

Phoneme Identification Task

Participants indicated which of the four words matched a sound in a target word.

- pull sugar tune cup fuse
- weight height friend cake paid

Points possible: 20
Methods:
Phoneme Isolation Task

Participants identified the third speech sound in each of six words.

- cat  t__ as in Toy
- joyless  l__ as in Love

Points possible: 6
Results: At pretest, do SLPs have superior PA knowledge when compared to other groups of educators?

- **YES**, SLPs had superior phonological awareness knowledge when compared to other educators.
Results: At pretest, do SLPs have superior PA knowledge when compared to other groups of educators?

\[ F(3,414) = 26.709, \ p = .00 \]
Cohen’s \( d = 1.09 \)
Results: At pretest, do Title I and special education teachers have more knowledge when compared to other teachers?

- **NO**, Title I and special education teachers were not more knowledgeable than other teachers.
Results: At pretest, do Title I and special education teachers have more knowledge when compared to other teachers?

No significant group difference
Results: Does one day of professional development in PA lead to improved performance on PA tasks?

- **YES**, there was a main effect for time. Mean posttest scores were higher than mean pretest scores.
Results: Does one day of professional development in PA lead to improved performance on PA tasks?

- Main effect for time, $F(1, 414) = 570.12, p=.00$
- Cohen’s $d = 1.05$

![Composite PA Score Chart](chart.png)

Pretest: 31.62
Posttest: 36.64
Results: Does one day of professional development in PA lead to improved performance on PA tasks?

- **YES**, all groups had posttest scores higher than pretest scores.

- Special education teachers had more gain when compared to other participant groups. $F(1,414) = 7.735, p < .05.$
Results: Does one day of professional development in PA lead to improved performance on PA tasks?

![Bar chart showing composite PA scores for SLPs, K and 1st, Title I, and Special Ed.](chart.png)

Significant differences between pre and posttest, all $p$ value $< .00$
Results: Does one day of professional development in PA lead to improved performance on PA tasks?

![Composite PA score (Total Possible: 47)]

- **SLPs**: Pretest: 3.57, Posttest: 4.79
- **K and 1st**: Pretest: 5.32, Posttest: 6.40
- **Title I**: Pretest: 3.57, Posttest: 4.79
- **Special Ed.**: Pretest: 5.32, Posttest: 6.40
Results: What performance patterns differentiate the groups at pretest and posttest?

- Follow up analysis of the phoneme segmentation task.
  - Words divided into easy and difficult to segment words.
**Results:** What performance patterns differentiate the groups at pretest and posttest?

<table>
<thead>
<tr>
<th>Easy-to-Segment</th>
<th>Hard-to-Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>cat</td>
<td>stop</td>
</tr>
<tr>
<td>run</td>
<td>sing</td>
</tr>
<tr>
<td>chirp</td>
<td>think</td>
</tr>
<tr>
<td>yes</td>
<td>poison</td>
</tr>
<tr>
<td>show</td>
<td>squirrel</td>
</tr>
<tr>
<td>teacher</td>
<td>quick</td>
</tr>
<tr>
<td>does</td>
<td>box</td>
</tr>
<tr>
<td>sigh</td>
<td>start</td>
</tr>
<tr>
<td>ball</td>
<td>fuse</td>
</tr>
<tr>
<td>thin</td>
<td>use</td>
</tr>
<tr>
<td>knuckle</td>
<td></td>
</tr>
</tbody>
</table>
Results: What performance patterns differentiate the groups at pretest and posttest?

<table>
<thead>
<tr>
<th>Easy-to-Segment</th>
<th>Accuracy</th>
<th>Hard-to-Segment</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>cat</td>
<td>97%</td>
<td>stop</td>
<td>64%</td>
</tr>
<tr>
<td>run</td>
<td>92%</td>
<td>sing</td>
<td>51%</td>
</tr>
<tr>
<td>chirp</td>
<td>92%</td>
<td>think</td>
<td>50%</td>
</tr>
<tr>
<td>yes</td>
<td>89%</td>
<td>poison</td>
<td>43%</td>
</tr>
<tr>
<td>show</td>
<td>88%</td>
<td>squirrel</td>
<td>26%</td>
</tr>
<tr>
<td>teacher</td>
<td>87%</td>
<td>quick</td>
<td>23%</td>
</tr>
<tr>
<td>does</td>
<td>87%</td>
<td>box</td>
<td>22%</td>
</tr>
<tr>
<td>sigh</td>
<td>85%</td>
<td>start</td>
<td>10%</td>
</tr>
<tr>
<td>ball</td>
<td>84%</td>
<td>fuse</td>
<td>6%</td>
</tr>
<tr>
<td>thin</td>
<td>83%</td>
<td>use</td>
<td>6%</td>
</tr>
<tr>
<td>knuckle</td>
<td>78%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results: What performance patterns differentiate the groups at pretest?

- SLPs were better at segmenting both easy and hard words.
- At pretest, the mean score of the SLPs was 1.36 standard deviations above other educators on the set of hard words (Cohen’s $d = 1.36$).
Pretest Segmentation Accuracy:
SLPs vs. Other Educators

EASY WORDS

SLPs

Other Educators

HARD WORDS

SLPs

Other Educators
Results: What performance patterns differentiate the groups at posttest?

- Group differences were maintained at posttest.
- SLPs continued to be better at segmenting easy and hard words.
- At posttest, the mean score of the SLPs was .91 standard deviations above other educators on the set of hard words (Cohen’s $d = .91$).
Posttest Segmentation Accuracy:
SLPs vs. Other Educators

### EASY WORDS

- **SLPs**
  - 500.00
- **Other Educators**
  - 100.00

### HARD WORDS

- **SLPs**
  - 11.00
- **Other Educators**
  - 10.00
Segmentation Accuracy:
SLPs vs. Other Educators

PRE HARD WORDS

POST HARD WORDS
Summary of Findings

- SLPs demonstrated superior PA knowledge when compared to other educators.
- All groups of educators demonstrated gains in PA knowledge after attending one day of professional development.
Implications

- SLPs may be suited to serve both as direct service providers to children and as consultants to other educators.
- SLPs should explore opportunities to utilize their PA knowledge.
References


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