How Do We Best Measure Phonological Awareness?
The Development of New Individual Growth and Development Indicators (IGDIs)
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**Introduction**
- Research in assessment has highlighted the use of phonological awareness as a proxy for early literacy development. Early phonological awareness significantly correlated with later reading skills. **CORRELATIONS** (Anthony & Lonigan, 2004).
- Specifically, one type of measure—General Outcome Measures (GOMs)—have been used to assess these skills using tools such as Individual Growth and Development Indicators (IGDIs; McConnell, McEvoy, & Priest, 2002).
- GOMs are brief, easy to use, cost-effective, sensitive to growth over time, and suitable for use over one academic year.
- Highlighted here is the development or revision of four measures of phonological awareness.
  - Rhyming (with revised directions)
  - Alliteration (revised presentation)
  - Sound Blending
  - Syllable Segmenting

**Methods**
- A comprehensive literature review conducted to operationally define the domain of preschool phonological awareness and to examine how domain was measured in the past.
- Operational definition of phonological awareness:
  - Phonological awareness is the ability to detect and manipulate the sound structure of words independent of their meanings. (Phillips, Clancy-Menchetti, Lonigan, 2008).

**Phase 1:**
- A series of 4 measures was developed, piloted, revised and subjected to field testing with a small sample of preschool aged children (n = 47).
- Three measures were then chosen for further piloting in Phase 2 (Rhyming, Alliteration, Sound Blending).
- Measures were selected using the following criteria:
  - GOM criteria (usability, sensitivity to growth, etc.)
  - Percentage of children scoring a zero (floor effect)
  - Evaluation of descriptive statistics (mean, SD, skew, kurtosis, ratio of mean to SD)

**Phase 2:**
- Larger, more diverse sample from four states.
- Children given the 3 phonological awareness IGDIs 30% of sample given Test of Preschool Early Literacy (TOPEL)
- Results for Phase 2 are highlighted here.
- Rasch Modeling was used to determine difficulty of each item and place each item on the trait scale.

**Results**

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Ratio SD/ Mean</th>
<th>Children scoring zero (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alliteration</td>
<td>706</td>
<td>4.02</td>
<td>3.27</td>
<td>.81</td>
<td>23.37</td>
</tr>
<tr>
<td>Rhyming</td>
<td>709</td>
<td>5.01</td>
<td>4.44</td>
<td>.89</td>
<td>24.54</td>
</tr>
<tr>
<td>Sound Blending</td>
<td>598</td>
<td>4.55</td>
<td>6.33</td>
<td>1.39</td>
<td>54.35</td>
</tr>
</tbody>
</table>

**Discussion**
- **In Phase 1, 2 of the 4 measures were normally distributed.**
- **Correlations with TOPEL—Phase 2:**
  - Alliteration .28
  - Rhyming .40
  - Sound Blending .58
- **Correlations with age—Phase 1 (.55–.67) or Phase 2 (.17–.19)?**
- Rasch modeling scales indicate item difficulties are most variable for Sound Blending, followed by Alliteration and finally Rhyming.

**References**

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