Understanding the impact of language acquisition and use on early literacy achievement within an RTI model

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Perspectives on Language Acquisition
- When developing language assessments, it is imperative to understand the language skills being measured, the stages through which language proficiency is developed (Wolf, Farnsworth, & Herman, 2008) and how to address the multidimensional facets of language acquisition and proficiency (Abedi, 2008).
- More specifically, when designing measures for Spanish, English Bilinguals (SEBs) it is critical to acknowledge that children are exposed to varying levels of Spanish (L1) and English (L2) across settings.
- Current approaches emphasize the role of simultaneous and sequential learners where simultaneous learners are exposed to both languages early in life and sequential learners are exposed to one language first and then the second later (Paradis, Nicoladis, Crago & Genesee, 2011).
- Theoretical perspectives, such as Usage-Based Theory (O’Grady, 2008) posits that reduction in overall exposure to a language may impact a child’s rate of acquisition.

Current Approach & Research Questions
With these perspectives in mind, we explored if the level of exposure in each language impacts actual performance on Spanish language and literacy measures to answer the following research questions:
1. To what degree do language profiles emerge based on level of exposure?
2. To what degree do such language profiles differentially impact item responses?

Method, Results & Discussion

To empirically test for profiles of exposure (high, low, etc.) we asked parents to respond to a series of questions about their child’s primary language for speaking, as well as what the child hears during the weekday and during the weekend in four daily time periods (see Figure 2).

Scores were computed on a 0-16 scale for three primary variables, English, Spanish and Both. Results were used in a cluster analysis to examine the degree to which profiles of performance were present. (see Figure 3).

Conceptually exposure may exist across two continuums of language: Spanish and English, where skilled monolingual speakers exist at one end (high exposure) and struggling monolinguals exist at the other end (low exposure). Balanced bilinguals would theoretically present as “high exposure” in both English and Spanish.

Membership in English and Spanish were indicated as scores above 11 (75th percentile). Cluster analysis revealed that the Spanish and Both profiles emerged as unique clusters, but that English did not emerge as a strong cluster. As a result, we dropped English monolingual acquisition from our analysis.

Once membership was identified we completed Differential Item Functioning analyses to determine if performance from each group, Spanish monolinguals (sequential learners) and Both (simultaneous learners) was statistically different on four Spanish individual Growth and Development Indicator (S-IGDI) tasks (see Table 1).

Table 1. Differential Item Functioning by Task

<table>
<thead>
<tr>
<th>Task</th>
<th>n of Spanish</th>
<th>n of both</th>
<th>Number of items in task</th>
<th>Number of items with DIF*</th>
<th>Number of items with contrast greater than +/- 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Sounds/Primeros Sonidos</td>
<td>111</td>
<td>105</td>
<td>75</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Sound Identification/Identificación de Sonidos</td>
<td>110</td>
<td>107</td>
<td>75</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Expressive Verbs/Verbos Expresivo</td>
<td>118</td>
<td>100</td>
<td>75</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Storybook/Vamos a la Tienda</td>
<td>123</td>
<td>110</td>
<td>69</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

These findings suggest that while a conceptual argument for different performance profiles for SEB students with levels of high and low exposure can be made, and cluster analysis demonstrate their presence, the data provided do not support unique item response profiles, and in turn suggest unique expectations, such as Tier-level benchmarks (within an RTI model) or performance standards specific to language acquisition may not be appropriate. However, while this study examines level of exposure, it does not examine quality of language within exposure levels, which may also contribute to SEB student performance profiles.

References available upon request