Accelerated metalinguistic (phonological) awareness in bilingual children

Ruth Campbell and Efisia Sais, 1995

Study Summary: This study measured the lexical and sublexical (sound) phonological awareness of primarily-English-speaking children (average age 4;6) enrolled in two comparable kindergartens: monolingual English and bilingual English-Italian. It demonstrated that the children attending the bilingual school outperformed the monolingual-taught children—especially in reading-related areas—thereby lending support for the benefits of bilingual education, even in the pre-literate stage.

Theory development: Bilingual education wasn’t always assumed to impart a positive impact upon children. It formerly was believed to significantly impair a child’s cognitive development. More recent scholarship, however, has shown bilingual children to possess a stronger grasp of many aspects of language, ranging from semantics to syntax. This is part of the trend of generally advanced metalinguistic skills for the bilinguals.

➤ Advanced metalinguistic skills: indicate a more comprehensive grasp of language, as well as a general deeper awareness; characterized by “an accelerated ability to reflect upon and manipulate the forms of language.”

Due to its relationship with reading skills, phonological awareness is especially important to study as children become literate:

➤ Demonstrated reciprocal relationship between phonemic awareness and literacy.
  o The question, then, becomes whether bilingualism brings about a heightened phonemic awareness, and hence advanced reading skills
Method of testing: Tests were conducted in English and with one child at a time; 15 children from each school were examined.

1. Odd-one-out exercises
   i. 12 sets of four pictures, with a (initial) phonemic and a semantic odd-one-out (e.g.: bread, cake, carrot, clock; dog, cow, cat, cup)
   ii. Children asked to name the semantic odd one, then the phonemic

2. Morpheme (sublexical) deletion
   i. Researcher plays Puppet A, who says a two-part word (e.g. ice cream; moonlight, rainbow).
   ii. Child plays Puppet B, whose job is to repeat the last part of the word Puppet A just said (so: cream, light, bow)

3. Syllable deletion
   i. Same kind of puppet play as above, only this time Puppet A said only bisyllabic nonsense words (form CVCV), and Puppet B had to delete the first syllable

4. Letter detection
   i. 24 printed cards—8 letters, 8 numerals, 8 other symbols [e.g. #, &] presented to the child
   ii. Child asked if a letter was printed on the card, and if so, what letter

Results
*N.B.: Only 3 children—all from the bilingual group—were able to do the syllable-deletion exercise with any accuracy.

<table>
<thead>
<tr>
<th></th>
<th>Monolingual</th>
<th>Bilingual</th>
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<tbody>
<tr>
<td>Semantic o-o-o</td>
<td>76.75%</td>
<td>90.9</td>
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<tr>
<td>Phonemic o-o-o</td>
<td>48.3</td>
<td>80.0</td>
</tr>
<tr>
<td>Morphemic deletion</td>
<td>30.58</td>
<td>60.58</td>
</tr>
<tr>
<td>Letter identification</td>
<td>49.25</td>
<td>36.75</td>
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</tbody>
</table>

The bilingual students garnered stronger scores, on all but letter identification: suggests that the specific language (or language combination) in question does not affect overall score, but rather, that bilingualism leads to a more advanced metalinguistic skill set.

⇒ NB: correlations do seem to be strong, but be mindful of the small sample size
Age/maturity of the student also played a role in performance outcomes, namely bilingual students on average were a little younger: potential explanation for why they came out behind on the alphabet task?

Even though the children in the study at hand were pre-literate, there were still obvious benefits for the bilinguals. Furthermore, the results obtained from this study have been largely confirmed by similar studies done with slightly older, literate schoolchildren.

Yet, the tests done with older children—who are able to understand tasks related to phoneme blending, sound isolation, etc—demonstrate that the tests here would not be able to fully unveil the benefits of bilingual education.

Validity of the findings:

- Extent of bilingualism: None of the bilingual-educated children were as strong in Italian as they were in English, and some of the monolingual children had parents/caregivers who did not speak English natively (that is, they have bilingual experience outside the school).
- Language skills: the two groups of children were roughly equal when it came to general linguistic advancement (e.g., their vocabularies were comparable).
- Intelligence: general intelligence testing proved the two groups equal in that sense as well: the bilingual group was not, for example, more predisposed to play language games.
- Social bias: socioeconomic backgrounds of the children were careful controlled and accounted for.

Other tests would need to study more closely the link between IQ and language skills: would be able to more clearly show the differences of a bilingual education.

The Italian itself, however, may have provided a boost for the bilingual children:

- Italian has a more regular phonological system than English
- Children speaking Italian only performed up to a year ahead on these types of tasks when compared to children only speaking English

There is still overall support for the idea that bilingual education aids with advanced literacy.