

# Early bilingual vocabulary development in deaf children with Cochlear Implants educated in bilingual schools in Madrid

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## Abstract

There are several previous studies of deaf children with cochlear implants (CI) educated in oral schools. However there are very few such investigations of deaf children exposed to signed and spoken language simultaneously during development. While these early bilingual-bimodal programmes are quite rare in other countries they do exist in the Madrid area of Spain. The study reported here aimed to measure vocabulary development of deaf children learning spoken Spanish and Spanish Sign Language (LSE). Fourteen (14) deaf children with chronological ages of 17 - 62 months and hearing ages of 5-37 months were recruited along with hearing same chronological age matches. The deaf children were integrated into classroom groups with other hearing classmates, where all children were exposed to native models of both languages. In order to measure both languages the children were evaluated twice with 12 months between tests using a Spanish MacArthur-Bates Communicative Development Inventory (CDI) and a non-standardized test of early LSE vocabulary developed in our group. The results of the evaluations indicate all but two of the deaf children had spoken

language production within normal ranges and vocabulary improved significantly over the two time periods. Thus exposure to LSE did not have a negative effect on spoken language development as is alleged in some literature. Both LSE and Spanish production improve over the two time periods. Children use more LSE than Spanish in the first assessment but this trend is reversed in the second time period. This finding suggests children may use LSE as a bridge towards developing their spoken language vocabulary. In an analysis of the particular semantic distinctions encoded in the children's lexical items it was found that, as in previous literature in spoken language bilinguals, the deaf children have both similar and different lexical items across the two languages. When all vocabulary is combined in spoken Spanish and LSE the children have a larger set of semantic concepts in the combined bilingual lexicon than in each language taken separately. The deaf children in this education programme therefore have developed good spoken Spanish and LSE, as well acquired the cognitive advantages associated with bilingualism.

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