

Writing development in signing and non-signing deaf children using cochlea implants or hearing aids

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How do writing features look in the new generation of CI-implanted deaf children and children using hearing aids, over time and from a sign language perspective? Little is known about how this group's varying knowledge of sign language might relate to their literacy. Many studies do not include signing knowledge as a variable, or lump together alternative communication tools with sign language. The outcomes have been shown to be mixed – some studies have reported that those children without sign language knowledge perform better on some tests of literacy compared to their peers with sign language knowledge (i.e. Geers et al. 2017), while other studies have shown the vice versa (i.e. Hassanzadeh 2012; Amraei et al. 2017; Gärdenfors et al. 2019).

To examine the importance for sign language on writing proficiency, seventeen participants between the age of 8.7 and 18.7 were recruited to this study. Nine of the participants master Swedish sign language (STS) and spoken Swedish, and eight participants have no, or limited knowledge in STS, using spoken Swedish only. To examine sign language proficiency, the participants took a sign language test (Schönström & Holmström 2017).

In the writing task, the participants were asked to re-tell a cartoon. Thanks to a keystroke logging tool, the participants' writing process could be analyzed. The results were examined with the following independent variables: sign language knowledge, hearing technology (CI/hearing aid) and age. Not surprisingly, an age effect was found in almost every writing result. Additionally, the result indicates that there was no evidence of any delays in the signing group. In contrast, they showed several advantages over their age-matched peers without signing knowledge in almost every writing feature. The signing children, on average, expressed more words, made fewer spelling errors, showed greater lexical diversity and showed significantly greater adjective density and more adjective attributes. From a cross-modal, crosslinguistic perspective, this is interesting because adjectives and adverbs are often morphologically integrated in depicting signs in the form of oral adverbs in sign languages (Bergman 1982).

The study indicates that sign language knowledge may facilitate literacy, and this finding does not indicate that knowledge in sign language in addition to spoken language is harmful for the children. It may in fact be advantageous for them, not only in terms of literacy, but also socially.

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