Using Noldus' The Observer XT to analyze videotaped footage of Deaf signers learning to read with a tutor

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Despite years of research on reading problems in deaf students, we still do not know how deaf signers who read well actually crack the code of print [1]. Three factors have recently been discussed in the literature as having an impact on the reading outcomes of deaf readers. First, the use of specific signing skills, namely fingerspelling, initialized signs and chaining has been suggested as a way to create associations between sign and print. Second, it has been suggested that deaf teachers and hearing teachers make different use of these skills. Third, students who are taught by deaf and hearing teachers seem to also use different reading strategies that reflect the mode of teaching to which they are exposed. Using video analysis with the Noldus system, we have conducted a study that brings together these three areas of questioning to go beyond establishing links between reading ability and signing ability. Using Noldus software, we analyzed the actual online behavior of deaf LSQ-signing children and their tutor.

Objectives of the study

The study examined how signers of Langue des signes québécoise (LSQ) [1] read a text in French.. We aimed 1) to go beyond the deaf reader's reading scores to find observable strategies for approaching print; and 2) to determine whether the use of fingerspelling, initialized signs and chaining during instruction influence reading outcomes, namely text comprehension.

Participants

Three case studies were conducted with three adolescent males who were profoundly deaf from birth. Their primary language was LSQ and their written mode of communication was French. Two tutors also participated in the study – the first was hearing with a native competence in French and a near-native level of signing competence; the second was deaf with native competence in LSQ and near native competence in written French. The choice of a hearing and a deaf tutor reflects our belief that signing behavior and teaching practices may differ as a result of language background as demonstrated by Padden and Ramsey [2,3].

Signing and reading measures

Participants' French reading was measured with 2 tests, the reading comprehension subtest of the French version of the Canadian Achievement Test, the *Test de rendement pour francophones* [4] and the French version of the Peabody Picture Vocabulary Test (PPVT, 1991) known as EVIP (*Échelle de vocabulaire en images Peabody*). A demographic questionnaire also yielded information regarding age of sign language acquisition, language of parents (deaf or hearing), language of siblings, use of LSQ, and reading behavior.

[1] *Langue des signes québécoise (LSQ) is the sign language used by deaf individuals in French parts of Canada.*

Procedure

Participants were asked to read and retell a text with the help of a tutor. They were then videotaped reading the story, signing "aloud" (with assistance if needed) and then retelling it (with prompts if needed). Stimulated recall sessions [5] were then conducted by a trained research assistant, with the assistance of an LSQ-French interpreter. Stimulated recall involves the teacher or student in an interview while watching the videotape of the reading and retelling activity he or she has participated in. The student and/or teacher is encouraged to comment on the reading activity process and to provide insight about how the student was able to achieve an understanding of the text with or without help. The interviews focused on what specific LSQ skills (i.e. fingerspelling, initialized signs, chaining) and what reading strategies (seeking meaning or word attack) were used by the teacher and student to understand the text. These sessions were videotaped for later analysis.

Each of the three participants interacted with both tutors on separate occasions reading a different text each time. This allowed a comparison of the strategies used by all three signers/readers in constructing meaning from text. An additional comparison was obtained from observing each of the three students interacting with both types of tutors. It was hypothesized 1) that the better reader would use a seeking meaning strategy for comprehending the text while the weaker reader would favor a word attack strategy; 2) that the deaf tutor would make more use of fingerspelling, initialized signs and chaining than the hearing tutor; and 3) that the weaker reader would achieve better understanding of the text when reading with the deaf tutor.

Analyses

All video footage was analyzed using the Noldus The Observer XT software. Both the story reading videos and the stimulated recall videos were converted into computerized files. The stimulated recall videos with the student and that of his teacher were then coded for strategies used in constructing the meaning of the text. Variables observed for each type of strategy include their frequency and their efficacy (did it work?) We then were able to compare strategies used by each teacher (deaf and hearing) with all three students. A second comparison between all three students sought differences between the better reader and the weaker reader in the study.

The use of video analyses and especially the Noldus The Observer XT software allowed us to gain a sense of each teacher's style of teaching through an in-depth analysis of the types and frequency of strategies used with all students, regardless of a student's profile. We were then able to show differences between the hearing teacher and the deaf teacher. For example, the deaf teacher relied more on *meaning-making* strategies while the hearing teacher used more *word attack* strategies. It was also possible to reanalyze the data with a focus on students leading to a finding that students used different strategies with each teacher, seemingly adapting to the style of the teacher.

Conclusion

Our presentation will describe the study in detail with a step by step look at the methodology used. Examples of videos and of analyses will be given as a way to illustrate how the Noldus The Observer XT software can be used effectively to analyze online data with a particular emphasis on sign language studies. Implications for future studies involving signing participants will be discussed.

References

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