

"From Word to Sign": Developing a Reading Application for Deaf and Hard of Hearing Israeli Sign Language (ISL) Users (Poster)

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**ממילה לסימן: פיתוח אפליקציה לסיוע בקריאה עם שפת סימנים,
עבור אנשים חרשים וכבדי שמיעה
(פוסטר)**

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Abstract

Deaf and Hard-of-Hearing people (DHH), often face significant difficulties in reading acquisition (Convertino, Borgna, Marschark, & Durkin, 2014; Mitchell & Karchmer, 2011). Crucially, an impairment in this basic skill leads to negative impacts in other aspects of life (Trezek, Wang, & Paul, 2011). Numerous studies have demonstrated that access to a sign language for DHH individuals results in improved reading acquisition (Dammeyer, 2014; van Berkel-van Hoof, Hermans, Knoors, & Verhoeven, 2016). Research of this nature led me to develop "From Word to Sign", a reading app tailor-made to this population, designed to improve reading skills for native users of sign language. The premise for this app development is the assumption that an assistive technology using sign language may significantly improve the reading of this population.

Rational: Developing "From Word to Sign" app: While People with specific reading disorder can use reading software when confronted with an unclear word, DHH people cannot benefit from this hearing based option. The "From Word to Sign" app enables them to compensate of their reading disability: when they face an unclear word, they can touch the word in order to operate the extension. Then they can see a short video in the sign language of that specific word that they are required to comprehend.

Test report: The application test session included five deaf immigrants aged 30-50. They were recruited for this session study through personal acquaintance with the author as their Hebrew teacher. Two-hour meetings were established with each participant, asking them to read a Hebrew text with the possibility of "recitation" and translation of unfamiliar words using Israeli Sign Language (ISL) with the app - which presents the word, its sign, and denotation. After reading the text, I asked them to sign the text in ISL.

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Preliminary findings: Two participants in the pilot successfully achieved complete reading comprehension using the app while, in contrast, three achieved partial comprehension. Moreover, a review of the data from the app revealed nine areas of difficulties faced by participants: new words, words with multiple ISL translations, multi-word terms, visually similar signs with different denotations, enunciation, high-register words seldom used in daily practice, conjugations, noun modifying verbs, and visual demonstration.

Conclusion: The app should be examined and exposed to a larger group of deaf, native-born readers without additional impairments. In addition, by setting a pilot team of teachers, who teach DHH students, we will collect a wide range of findings and conclusions, in order to optimize its development. The pilot team will be responsible for updating online reading texts and will report on the effectiveness and the difficulties in using the app.

Keywords: Deaf, Reading App, Sign Language References.

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