

## Reading Comprehension in Profound Deaf Readers

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**Abstract :** Research show that reduced functional hearing has a detrimental influence on the ability of an individual to establish proper phonological representations of words, since the phonological representations are claimed to mediate the conceptual processing of written words. Word processing efficiency is expected to decrease with a decrease in functional hearing. In other words, it is predicted that hearing individuals would be more capable of word processing than individuals with hearing loss, as their functional hearing works normally. Studies also demonstrate that the quality of the functional hearing affects reading comprehension via its effect on their word processing skills. In other words, better hearing facilitates the development of phonological knowledge, and can promote enhanced strategies for the recognition of written words, which in turn positively affect higher-order processes underlying reading comprehension. The aims of this study were to investigate and compare the effect of deafness on the participants' abilities to process written words at the lexical and sentence levels through using two online and one offline reading comprehension tests. The performance of a group of 8 deaf male students (ages 8-12) was compared with that of a control group of normal hearing male students. All the participants had normal IQ and visual status, and came from an average socioeconomic background. None were diagnosed with a particular learning or motor disability. The language spoken in the homes of all participants was Persian. Two tests of word processing were developed and presented to the participants using OpenSesame software, in order to measure the speed and accuracy of their performance at the two perceptual and conceptual levels. In the third offline test of reading comprehension which comprised of semantically plausible and semantically implausible subject relative clauses, the participants had to select the correct answer out of two choices. The data derived from the statistical analysis using SPSS software indicated that hearing and deaf participants had a similar word processing performance both in terms of speed and accuracy of their responses. The results also showed that there was no significant difference between the performance of the deaf and hearing participants in comprehending semantically plausible sentences ( $p > 0/05$ ). However, a significant difference between the performances of the two groups was observed with respect to their comprehension of semantically implausible sentences ( $p < 0/05$ ). In sum, the findings revealed that the seriously impoverished sentence reading ability characterizing the profound deaf subjects of the present research, exhibited their reliance on reading strategies that are based on insufficient or deviant structural knowledge, in particular in processing semantically implausible sentences, rather than a failure to efficiently process written words at the lexical level. This conclusion, of course, does not mean to say that deaf individuals may never experience deficits at the word processing level, deficits that impede their understanding of written texts. However, as stated in previous researches, it sounds reasonable to assume that the more deaf individuals get familiar with written words, the better they can recognize them, despite having a profound phonological weakness.

**Keywords :** deafness, reading comprehension, reading strategy, word processing, subject and object relative sentences

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