

Evidence based Case Study on the effectiveness of training of Vocabulary Knowledge Acquisition and Oral reading Fluency on Explicit Reading Comprehension using Digital Books

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Abstract

This study is a mixed-method single-case study, utilizing a 12-session online intervention program implementing a grade-appropriate 120-academic word informal reading inventory (IRI). The objectives of the study aim to (a) measure the growth of vocabulary breadth and vocabulary depth, (b) investigate whether improvements in vocabulary knowledge translate to oral reading fluency, (c) investigate whether improvements in vocabulary knowledge acquisition and oral reading fluency translate to explicit reading comprehension, and (d) measure the number of vocabularies acquired at the end of 12 sessions in online special education remediation. Pre- and post-intervention assessments measured vocabulary breadth and depth changes, oral reading fluency, and explicit reading comprehension. Vocabulary breadth and depth are assessed using the IRI, while fluency was evaluated based on reading accuracy, the frequency of short pauses, and the use of expressive elements like pauses at punctuation marks. Explicit reading comprehension was measured using curriculum-aligned passages followed by comprehension questions. Results indicate an increase in vocabulary knowledge, with breadth improving by 35.84% (from 49.16% to 85%) and depth by 40% (from 40.84% to 80.84%). There were observable improvements in oral reading fluency, including reduced reading miscues (from 33 to 5), short pauses (from 16 to 4), and increased use of expressive elements. Participant's explicit reading comprehension doubled from 46.67% to 93.35%. The findings demonstrate not only the efficacy of digital books in an online intervention program but also the potential for learning a second and third language, especially for bilingual children diagnosed with SLD and ADHD in India.

Keywords: accuracy; automaticity; expression; vocabulary breadth; vocabulary depth