RESEARCH ARTICLE

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Supplementing teacher knowledge using web-based Intelligent Tutoring System for the Text Structure Strategy to improve content area reading comprehension with fourth- and fifth-grade struggling readers

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The effects of teaching the text structure strategy using a web-based Intelligent Tutoring System for the Text Structure Strategy (ITSS) were examined with fourth- and fifth-grade children scoring below the 25th percentile on comprehension measures using the Gray Silent Reading Test (GSRT) and researcher designed assessment from 130 fourth-grade and 130 fifth-grade classrooms. The ITSS was designed to teach students how to select and encode strategic memory from expository texts. The system provides modelling, practice, assessment, scaffolding, and feedback to learners on identifying signalling words, summarizing, making inferences, generating elaborations, and monitoring comprehension. A large scale randomized controlled trial was conducted with 130 fourth-grade and 130 fifth-grade classrooms. Students completed GSRT- and researcher-designed measures of reading comprehension at pretest and posttests. An analysis of fourth-grade students using ITSS who scores less than the 25th percentile on the GSRT pretest showed small but meaningful effect sized on the posttests. The fifth-grade students in ITSS, who scored less than the 25% percentile on the GSRT pretest, showed the highest effect sizes (moderate to large effects) on the standardized test scores on the posttests.