The rise and fall (and rise again) of a small-group instructional program to teach students text structures to promote comprehension: Results from two randomized studies.

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Background/Context: Prior research has shown that understanding the features of narrative text structure, or Story Grammar, (e.g., characters, plot, setting) helps children form a better understanding of the whole story (e.g., Rapp, vand den Broeck, McMaster, Kendeou & Espin, 2007). However, expository text structures are not always obvious (Catts, Deane et al., 2006). Meyer (1985) described the following major types of text structures: (1) Sequencing; (2) Cause/effect, which delineates one or more causes and then describes the ensuing effects; (3) Compare/contrast, and problem/solution, which poses a problem or question and then gives the answer. To date, the youngest students participating in empirical studies of expository text structure were second graders, and they were trained only in cause and effect (Hall, Sabey & Mc Clellan, 2005; Reutzel, Smith, & Fawson, 2005). No studies with kindergarten or first grade students have been conducted, and no studies that focused on sequence or cause/effect are available in the literature to date.

Purpose: This proposal features two studies of text structure instruction in elementary schools. Study one was a feasibility study to determine whether text structure instruction can improve language and literacy skills and if students can learn these text structure skills at kindergarten, first, and second grade. Study one was guided by the following researching questions: (1) Is it feasible to conduct an expository text structure instruction with elementary readers? (2) Are findings promising that TEXTS led to improved knowledge of text structure? (3) Are findings promising that TEXTS could increase language and literacy outcomes? Based on the results of the feasibility study, an efficacy study was designed to test the relative effectiveness of the TEXTS intervention alongside other language and literacy interventions which had demonstrated positive effects on literacy outcomes in prior feasibility studies. Thus the guiding research question for study two was: (1) What is the comparative effect of TEXTS on kindergarten, first, second, and fourth grade literacy outcomes?

Setting/Participants: TEXTS intervention studies were conducted in moderately sized southern school districts with some rural and urban poverty. Study one, designed to determine the feasibility of the TEXTS intervention with elementary age students and to determine evidence of impact, was conducted in four schools. Approximately fifty students in kindergarten, first, and second grade qualified for the intervention from a sample of one hundred and fifty students per grade. These students had below average scores on the Woodcock Johnson Passage Comprehension test and weak text structure comprehension as evidenced by their score of less than fifty percent on the text structure screener. Study two, designed to determine the comparative efficacy of the intervention alongside other literacy
interventions, was conducted in fifty similarly high poverty schools with sample sizes of one hundred and fifty students in each grade and across multiple counties. Students in the efficacy study who qualified for the intervention were those with expressive vocabulary skills at or below the 45th percentile.

**Research Design and Intervention:** In study one, students were screened for qualification with a text structure comprehension screener and the Woodcock Johnson Passage Comprehension test. Below average scores on both measures qualified children for randomization in the TEXTS feasibility study. Before the intervention began, a battery of language and literacy measures including listening comprehension, decoding, and vocabulary was administered. Qualifying students were randomly assigned to one of three text structure conditions. Students received four weeks of instruction in one of the following conditions: sequencing, cause and effect, or compare and contrast instruction. During the four weeks of intervention, students participated in 20 minutes of instruction within their assigned text structure, four times each week. Lessons included clue word instruction and practice, text reading, graphic organizers, and visual examples or manipulatives. Weekly progress monitoring measures were administered to measure mastery of the text structure. In study two, students were randomized into one of five conditions consisting of four interventions or a business as usual control condition. One of the four interventions was TEXTS. Students received a pretest battery of language and literacy measures followed by twelve weeks of text structure instruction, four weeks of sequencing, four weeks of cause and effect and four weeks of compare and contrast. Interventions were provided once daily for 20 minutes, four days a week. Lessons were similar to those in the feasibility study with revisions to improve passage readability and grade leveling.

**Results:** Results for study one suggested that students with weak comprehension skills could be taught strategies for text structure comprehension. Multi-level models indicated that students experienced significant improvement ($d = .3-1.02$) on the text structure screener items for the structure they were taught when compared to the counterfactual questions (problem and solution). In some cases, text structure instruction on a particular structure seemed also to impact their comprehension of other text structures. Descriptive analyses of weekly progress monitoring measures suggested that most students mastered the structure of sequencing within two weeks, cause and effect within four weeks, whereas compare and contrast was not mastered by most students after four weeks. For study two, no significant differences were found on language and literacy measures for students participating in the TEXTS intervention compared to those in the control conditions for kindergarten, first, and second grade students. In fourth grade, significant (one-tailed, $d = .2-.3$) effects were detected on measures of vocabulary (EOWPVT), listening comprehension (OWLS), and academic knowledge (Woodcock Johnson Academic Knowledge).

**Conclusions:** Results of study one suggested that text structure instruction held promise to increase text structure comprehension and related outcomes. However, when compared against other language and literacy interventions, TEXTS did not show evidence of comparatively better improvement on literacy outcomes for
kindergarten, first, and second grade student. In contrast, fourth grade results from study two suggest that text structure instruction shows promise of improving literacy-related outcomes and should be further investigated to determine the relative impact of the intervention. In terms of replication, differences in qualification measures between study one and study two may have impacted the type of students participating in the intervention and therefore the impact of the intervention. Additionally, findings from the progress monitoring measures in study one suggest that students may require differential amounts of time in each text structure in order to demonstrate mastery. Ongoing studies of TEXTS are addressing this artifact and potential implications of adaptive interventions will be discussed.


