

How Much Evidence is “Enough?”: Tensions Between Teachers’ Perceptions of Impact and Distal Measures of Vocabulary Learning

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Background/Design. Given the link between vocabulary and reading development, learning to effectively use word learning strategies is important for all students (e.g., Graves, 2016; Snow & Kim, 2007; Stahl & Nagy, 2006), especially English learners (ELs) (August & Shanahan, 2006; Goldenberg, 2013) and students from low-income families (Hart & Risley, 1995; Wright & Neuman, 2014). To determine the efficacy of a supplementary curriculum (Word Learning Strategies, or WLS) for developing upper-elementary students’ vocabulary acquisition skills and reading comprehension, we conducted a study with a true, group-randomized, experimental design with two cohorts. Ninety-three classrooms were randomized to a treatment (n=46) or control (n=47) condition. The combined analytic sample included 43 treatment teachers (n=1130 students) and 44 control teachers (n=1115 students). The treatment classes implemented the WLS curriculum, and control classrooms implemented their usual English Language Arts practices.

Purpose. This presentation will describe the impact of WLS on students’ test scores related to vocabulary and reading comprehension, and how those findings may or may not align with teachers’ perceptions of the intervention’s impact on students. In keeping with the conference theme, we will discuss the tensions and tradeoffs in our project findings.

Setting/Participants. This study takes place in diverse public elementary schools throughout the state of CA. This presentation will report on data from 87 4th grade classrooms from 19 districts. On average, approximately 76% of participating students received free-and-reduced lunch and 44% were ELs.

Intervention. The WLS program provides 15 weeks of whole-class instruction for 4th grade classes; 22 remedial, web-based lessons for students needing more practice; three web-based lessons on Spanish cognates for Spanish-speaking ELs; and three web-based lessons for all students on idioms. WLS is typically delivered three days a week for about 30 minutes per day. The program includes four main instructional sections about how to derive the meaning of unknown words: Word Parts; Context; Dictionary; and Combined Strategy (combining word parts, context, and dictionary strategies).

Data Collection and Analysis

Fidelity of Implementation

(1) **Teacher Logs:** These logs were aligned with the WLS curriculum to provide a measure of fidelity of implementation. General reporting categories included: (a) amount of time devoted to WLS; (b) use of various WLS teaching strategies; (c) teachers’ perceptions related to student understanding; and (d) problems encountered during implementation.

(2) **Classroom Observations and Teacher Interviews:** Classroom observations and teacher interviews were conducted with 27 treatment teachers and 13 control teachers. The observations

provided documentation of: (a) the WLS components covered; (b) resources and equipment used; (c) classroom set-up; and (d) a snapshot of student activities. Teacher interviews focused on: (a) teachers' use of the WLS curriculum; (b) student engagement and learning; and (c) feedback on the WLS training.

Student measures included:

(1) The WLS Test is a 34-item test created by the developer of WLS. It assesses student knowledge of prefixes, suffixes, context cues, as well as the Word Parts Strategy, the Dictionary Strategy, and the Combined Strategy. Thirty-five percent of the assessment tests knowledge, and 65% tests application. In an earlier pilot study, Cronbach's alpha for the entire instrument ranged from 0.875 at pre-test to 0.921 at post-test.

(2) The GMRT (MacGinitie, MacGinitie, Maria, & Dreyer, 2002) includes two subtests—vocabulary and comprehension. Kuder-Richardson Formula 20 (KR-20) was utilized to assess the reliability index for the subtests. Internal reliability coefficients were .80 and .90 for the vocabulary and comprehension subtests respectively.

(3) The VASE Assessment (Scott, Flinspach, Vevea, & Castaneda, 2012) is a 24-word assessment that: 1) tests students' familiarity with grade-level vocabulary in math, science, social studies, and language arts; 2) provides diagnostic information about specific aspects of their word knowledge; and 3) measures their vocabulary growth over the school year and across 4th and 5th grades. Results from prior analyses indicated that the VASE Assessment has good convergent and construct validity. The internal reliability coefficient was 0.95.

Results:

Log, interview, and observational data indicate that treatment teachers implemented the curriculum with a high degree of fidelity. Teachers indicated WLS was easy to implement and to integrate into their ELA instruction. They also believed it is appropriate for 4th grade and explicitly teaches critical skills that are aligned with the Common Core and absent from many of their regular ELA curricula. Finally, teachers reported that their students enjoyed and benefitted from the WLS lessons.

To analyze the impact of the program, two-level hierarchical linear modeling (HLM) was applied to analyze student outcomes. Preliminary results indicate that the program was significantly and positively associated with gains in students' vocabulary learning as measured by the proximal Word Learning Strategies Test, after accounting for differences in baseline test scores.

The impact of the program was also positively associated with gains in students' vocabulary knowledge as measured by two distal measures: the VASE Assessment and the Gates-MacGinitie Reading Comprehension Sub-Test, as measured by after accounting for differences in baseline measures. However, the differences on these two tests were not statistically significant. Clearly, there are tensions between teacher's perceptions, as well as student performance on the proximal measure, and student performance on the distal measures.

Conclusions:

So, does WLS “work?” According to the proximal WLS test, classroom observations, and teacher interviews, it did. Teachers felt the intervention was easy to implement without extensive training, and that students were highly engaged. Teachers who were interviewed expressed the belief that the intervention helped students. For example, some observed that some of their students used the strategies that they had learned when reading text material not associated with the WLS curriculum. The use of the WLS also led to increases in teachers’ awareness of strategies that they could use to support vocabulary and reading comprehension.

Teachers in the treatment group wanted to continue to use the curriculum after completing the study. Several wanted to know what the “data” showed about the impact, while others were confident that it had made a difference. Clearly, the evidence that is convincing for teachers does not necessarily meet the “gold standard” that researchers are trained to use in their search for high-quality evidence.

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