ABSTRACT: **Purpose:** This quasi-experimental study investigated the effects of a direct vocabulary intervention program that was implemented in a typical public-school treatment setting with 2 5th graders who were English-language learners with significant language-learning disabilities. **Method:** The 10-week intervention targeted 10 words from the students’ current classroom social studies unit and was characterized by the presentation of simple definitions, use of the target words in context, creation of vocabulary maps, discussion and expansion of word meanings, and written language activities. **Results:** Improvement was noted on both students’ knowledge of the targeted words, and no change was observed on a set of untreated control words. **Conclusion:** These results lend preliminary support to the effectiveness of the direct vocabulary intervention approach for English-language learners with language-learning disabilities. **KEY WORDS:** school-based services, language disorders, intervention, cultural and linguistic diversity
and the classroom—is critical for students to master in order to understand difficult texts and content-area textbooks, solve mathematical word problems, and take tests (Cummins, 1984). ELLs face challenges because they often lack the academic English vocabulary necessary for understanding and learning from texts (Dutro & Moran, 2003; Garcia, 1991; Gersten & Baker, 2000; Verhoeven, 1990). Additionally, ELLs can have an impaired depth of word knowledge, even for frequently occurring words (August et al., 1999; Verhallen & Schoonen, 1993). Once established, differences in vocabulary knowledge tend to remain (Biemiller & Slonim, 2001; Hart & Risley, 1995; Juel, Biancarosa, Coker, & Deffes, 2003). Explicit vocabulary instruction in academic terminology and sophisticated vocabulary is one way that teachers can begin to close the vocabulary gap between ELLs and their English-dominant peers (Blachowicz, Fisher, & Watts-Taffe, 2005; Carlo, August, & McLaughlin, 2004; Graves, 2006; Snow & Kim, 2007).

**Vocabulary Instruction for Typically Developing ELLs**

Given the importance of vocabulary to oral and written language comprehension (National Institute of Child Health and Human Development, 2000), it is surprising that in the past 25 years, there have been few quasi-experimental or experimental studies focused on English vocabulary teaching among elementary-school language-minority children. This is in contrast to a great deal more research on vocabulary learning among monolingual English speakers (August et al., 1999; Verhallen & Schoonen, 1993). Once established, differences in vocabulary knowledge tend to remain (Biemiller & Slonim, 2001; Hart & Risley, 1995; Juel, Biancarosa, Coker, & Deffes, 2003). Explicit vocabulary instruction in academic terminology and sophisticated vocabulary is one way that teachers can begin to close the vocabulary gap between ELLs and their English-dominant peers (Blachowicz, Fisher, & Watts-Taffe, 2005; Carlo, August, & McLaughlin, 2004; Graves, 2006; Snow & Kim, 2007).

Perez (1981) reported a study of the vocabulary learning of 75 language-minority Mexican American third graders who received 20-min daily oral instruction in word meanings (e.g., synonyms, antonyms, multiple meanings) for 3 months. One group received instruction in pronounciation of the words and memorization of definitions. The second group used the same list of words and focused on making semantic maps with the words and making predictions of word meanings. A third group developed a matrix showing the relationships among the words and predicted word meanings. A fourth group completed the same chart as the third group and completed cloze sentences. The children in all four groups were asked to complete written recalls about the social studies chapter on the second and third days of the lessons and again 4 weeks later. The group that constructed relationship maps and completed cloze sentences outperformed the other groups. Perez concluded that active processing of word meanings leads to greater recall and understanding.

Another vocabulary study with ELLs examined the effectiveness of two techniques for presenting words to first-grade Spanish-dominant students who had been randomly assigned to one of two treatment groups (Vaughn-Shavuio, 1990). Both groups of ELLs received vocabulary instruction during a 30-min daily English-as-a-second-language class. One group was exposed to words that were presented in individual sentence contexts; the other group was exposed to words that were presented in meaningful narratives. This latter group was also provided with opportunities to dictate their own sentences using the target words and was shown picture cards that illustrated the word meanings. By the end of the training, the latter group, who had received the more elaborated instruction, showed better ability to use the English vocabulary.

Carlo et al. (2004) examined the effects of an intervention that was designed to build depth of word knowledge and reading comprehension in 254 bilingual and monolingual students in nine fifth-grade classrooms. Instruction was provided four times per week for 30–45 min, target words were selected from brief reading passages, and activities were designed to help the children make semantic links to other words and concepts in order to attain a deeper and richer understanding of a word’s meaning. Following the intervention, the students showed improvement on several measures of vocabulary and comprehension.

Mosher (1999) used direct vocabulary instruction with 23 at-risk fourth graders from a variety of cultural and language backgrounds who scored in the below-average range on a standardized vocabulary test. Postintervention data indicated that the direct instruction of vocabulary through teacher-directed lessons and independent student lessons resulted in steady vocabulary growth. Thus, similar to the positive effects seen with native English speakers, direct and elaborated vocabulary instruction has some evidence to support its use with ELLs.

**Vocabulary Needs of Students With Language-Learning Disabilities (LLDs)**

Vocabulary challenges are compounded for ELLs who have LLDs, as these individuals often have more limited vocabulary knowledge than ELLs without LLDs and are at risk of wider language weaknesses and reading comprehension difficulties that can negatively impact their educational achievement (Nash & Snowling, 2006). Children with LLDs tend to read less, encounter fewer new words, learn less vocabulary, and understand less of what they read (Byrns & Dunnam, 2010). They have a smaller vocabulary size relative to their typical peers and may also demonstrate
word-finding difficulties (Newman & German, 2002), poor word-learning strategies (Ellis-Weismer & Evans, 2002; Gray, 2004), and higher error rates (McGregor & Windsor, 1996) in comparison to their typical-age peers. Additionally, Biemiller and Slonim (2001) found that children who enter school with limited vocabulary knowledge grow much more discrepant over time from their peers with rich vocabulary knowledge.

A few studies have investigated vocabulary intervention with preschool and early school-age ELLs with LLDs, with several specifically comparing bilingual intervention to intervention in the second language only (Perrozi, 1985; Perrozi & Sanchez, 1992; Thordardottir, 2010). The researchers found that vocabulary intervention resulted in positive changes, with greater changes seen following bilingual intervention. Bos, Allen, and Scanlon (1989) worked with 42 elementary bilingual students with learning disabilities, comparing the differential effects of three interactive cognitive strategies (i.e., semantic feature analysis, semantic mapping, and semantic/syntactic feature analysis) versus basic instruction in word definitions on vocabulary acquisition. Results indicated that the children using the semantic/syntactic feature analysis strategy scored significantly higher than the basic word definition instruction group on vocabulary measures. Beyond this study, a review of published efficacy research on language intervention for bilingual children with LLDs (Thordardottir, 2010) listed no other studies that examined vocabulary intervention with ELLs in the later elementary grades.

In summary, ELLs know fewer English vocabulary words than monolingual English speakers and know less about the meanings of these words (August et al., 2005). For ELLs with LLDs, these vocabulary learning challenges are compounded by additional linguistic difficulties. As practitioners, speech-language pathologists (SLPs) are called to address these students’ unique language/learning needs and, even further, to justify their clinical practices on the basis of research evidence (Justice & Fey, 2004). The latter task can be very difficult when, to date, very few intervention studies have been completed with ELLs with LLDs (Goldstein, 2006; Thordardottir, 2010).

**Direct Vocabulary Instruction**

Learning is fundamentally and profoundly dependent on vocabulary knowledge (Baker, Simmons, & Kame’enui, 1998). Students can learn vocabulary indirectly through exposure, conversations with others, being read to, or reading on one’s own (Cunningham & Stanovich, 1998). Students also learn vocabulary directly through explicit instruction, which should involve clear explanations of word meanings along with thought-provoking, playful, and interactive follow-up (Beck, McKeown, & Kucan, 2013). Instructional techniques for promoting vocabulary learning presuppose a relationship between vocabulary knowledge and reading comprehension (Pany, Jenkins, & Schreck, 1982). It is hypothesized that, if relevant vocabulary can be directly taught and learned before reading begins, then understanding of the meaning of the text will increase.

In a summary of published research on vocabulary instruction (Jitendra, Edwards, Sacks, & Jacobson, 2004), one approach that proved successful in improving the vocabulary skills of ELLs and of students with LLDs was direct instruction. Direct instruction of vocabulary includes an explicit, systematic presentation of a word and its meaning (Swanson, Hoskyn, & Lee, 1999). During direct instruction, teachers facilitate the active participation of students, check for student understanding of the target words, and provide repeated opportunities for the students to use the new words in context. Such activities include having students define the target words orally, use these words in sentences, select correct word meanings in multiple-choice formats, discuss word meanings in context, and/or match words and meanings in a game format (Paul & Norbury, 2012). This approach has been found to be effective in increasing word knowledge and reading comprehension for students with learning disabilities (Jitendra et al., 2004). Bryant, Goodwin, Bryant, and Higgins (2003) reported that students who received some activity-based methods or elaborated exposure along with traditional instruction did better learning new vocabulary than students who received dictionary instruction alone. Given its reported success with ELLs and with students with LLDs, direct instruction of vocabulary was chosen to facilitate vocabulary growth with two fifth-grade students who were ELLs with diagnosed LLDs.

**Treatment Research in a Public-School Setting**

One additional consideration in planning this intervention study was the practicality of establishing experimental control and gathering sufficient data to show treatment effects within the confines of a typical speech-language treatment caseload. This idea of implementation science, or the investigation of how what we do actually works in practice, was recently addressed at the American Speech-Language-Hearing Foundation’s 2014 Implementation Science Summit. Implementation science was defined by one presenter as “the study of variables and conditions required to promote the systematic uptake, sustainability and effective use of evidence based programs and practices in typical service and social settings” (Boothroyd, 2014).
Although not measured with specific dependent variables in this preliminary study, the concept of implementation has applicability as intervention in a real-world, school-based setting can be fraught with problems such as controlling for the effects of ongoing classroom instruction, dealing with scheduling changes and student absences, adding in time for additional progress measurement, and maintaining the integrity of the treatment program while serving a full caseload of students. Although these difficulties are significant, there is a dearth of clinical research evidence available in the area of language disorders in children (Cirrin & Gillam, 2008), and even less is known about the practicality of conducting intervention studies in school-based settings. Thus, preliminary evidence about a treatment program gathered in a clinical setting can provide some assurance that the approach can be effective for the students and worth the time and effort required for gathering additional experimental evidence. Therefore, this study addressed the following research question: Can small-group direct vocabulary instruction in a public-school speech-treatment setting result in increased vocabulary knowledge for two fifth-grade ELLs who have been diagnosed with significant LLDs?

**METHOD**

**Participants**

The female participants (Student 1 and Student 2), ages 11;9 (years;months) and 11;6, respectively, were enrolled in an urban public-school, fifth-grade classroom in North Texas. Both participants spoke Spanish as their primary language and English as their secondary language and received all instruction in English (dual-language services ended after third grade). They qualified as students with a learning disability, qualified for speech-language services due to significantly below-average standardized language test scores (e.g., Clinical Evaluation of Language Fundamentals—Fourth Edition, Spanish [Wiig, Semel, & Secord, 2003, 2006] Core Language Scores of 75 and 78), had normal vision and hearing, had expressive and receptive language goals on their individualized education plans, received speech-language services together in two weekly 30-min sessions, and were treated in English by two graduate students who were licensed speech-language pathology assistants.

The participants’ relevant standardized IQ, achievement, and language test results are provided in Tables 1 and 2. Per teacher report, both students were struggling in their content-area classes (e.g., science, social studies), with grades of Cs or lower. Participation in the federal lunch program was used as a general index of socioeconomic status, and the percentage of students enrolled in the federal lunch program at the girls’ elementary school was 98%. Institutional review board approval was obtained for the study.

**Vocabulary Measures**

Ten history words from the fifth-grade social studies textbook chapter that were to be targeted in the students’ upcoming unit were provided by the classroom teacher. Upon evaluation, the word list included:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Student 1</th>
<th>Student 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WISC–4 Verbal Comprehension</td>
<td>69</td>
<td>93</td>
</tr>
<tr>
<td>WISC–4 Perceptual Reasoning</td>
<td>79</td>
<td>104</td>
</tr>
<tr>
<td>WISC–4 Working Memory</td>
<td>74</td>
<td>80</td>
</tr>
<tr>
<td>WISC–4 Processing Speed</td>
<td>94</td>
<td>100</td>
</tr>
<tr>
<td>WISC–4 Full Scale IQ</td>
<td>73</td>
<td>92</td>
</tr>
<tr>
<td>WJTA–III Oral Language</td>
<td>53</td>
<td>69</td>
</tr>
<tr>
<td>WJTA–III Listening Comprehension</td>
<td>61</td>
<td>66</td>
</tr>
<tr>
<td>WJTA–III Oral Expression</td>
<td>44</td>
<td>61</td>
</tr>
<tr>
<td>BVAT Bilingual Verbal Ability</td>
<td>69</td>
<td>78</td>
</tr>
<tr>
<td>BVAT English Language proficiency</td>
<td>48</td>
<td>62</td>
</tr>
<tr>
<td>BVAT Picture Vocabulary</td>
<td>unavailable</td>
<td>46</td>
</tr>
<tr>
<td>BVAT Oral Vocabulary</td>
<td>60</td>
<td>73</td>
</tr>
<tr>
<td>BVAT Verbal Analogies</td>
<td>58</td>
<td>80</td>
</tr>
</tbody>
</table>

**Table 1.** Intelligence test (Wechsler Intelligence Scale for Children—Fourth Edition—Spanish; WISC–4; Wechsler, 2005), achievement test (Woodcock-Johnson III Tests of Achievement: English; WJTA–III; Woodcock, McGrew, & Mather, 2007), and Bilingual Verbal Abilities Test (BVAT; Ruef, Munoz-Sandoval, Cummins, & Alvarado, 1998) performance ratings for Students 1 and 2.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Student 1</th>
<th>Student 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Core Language</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Receptive Language</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Expressive Language</td>
<td>51</td>
<td>53</td>
</tr>
<tr>
<td>Language Content</td>
<td>58</td>
<td>62</td>
</tr>
<tr>
<td>Language Memory</td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td>Spanish Core Language</td>
<td>75</td>
<td>78</td>
</tr>
<tr>
<td>Receptive Language</td>
<td>82</td>
<td>85</td>
</tr>
<tr>
<td>Expressive Language</td>
<td>77</td>
<td>78</td>
</tr>
<tr>
<td>Language Content</td>
<td>74</td>
<td>79</td>
</tr>
</tbody>
</table>

**Table 2.** English and Spanish Clinical Evaluation of Language Fundamentals—Fourth Edition (Wiig, Semel, & Secord, 2003, 2006) core and index scores for Students 1 and 2.
several words that were considered more "general purpose" or Tier 2 words (Beck et al., 2013) such that they were for mature language users and could be applicable in a variety of reading contexts or across more than one content area (e.g., *debt, act, protest, repeal, quarters, merchants*) and others that were more low frequency and specific to the academic unit being taught, or Tier 3 words (*e.g., parliament, taxation, and massacre*; Beck et al., 2013). A set of science words from a fifth-grade classroom unit on the skeletal-muscular system was also gathered but remained untreated so as to serve as a control measure. Definitions in both word sets were equated for length (average definition length: 7.5 words). Before treatment began, the students’ knowledge of both the social studies and science words was examined through completion of a paper–pencil task in which the students matched each target word to its definition. The items were read aloud to the students so that reading ability was not a detriment to task performance.

The history and science vocabulary paper–pencil matching tasks were administered twice, 2 days apart, to establish stable baseline performance before treatment. During the initial baseline tasks, the clinicians also inquired about the students’ answer choices (*e.g., Why did you choose that one as the right answer?*). Each student chose the correct meanings for one to two words on one or more of the baseline tasks, but neither child chose the same correct answer each time, nor could explain the answer choice by providing additional clarification. Thus, these answers were not thought to indicate a true understanding of the words, and vocabulary performance on both measures was deemed stable. The same social studies and science vocabulary tasks were re-administered four times during the 11-week treatment phase, constituting an AB design with an untreated control condition. All task administration took place in the speech room.

**Vocabulary Intervention**

Following baseline data collection, the participants were seen for 30-min sessions once weekly in the school’s speech room for direct vocabulary instruction (their second weekly 30-min session was devoted to addressing their other language goals). Nine sessions of direct vocabulary instruction were completed. The treatment schedule is provided in Appendix A. Intervention began by introducing the 10 history vocabulary words to the students. Simple, kid-friendly definitions (see Appendix B for example definitions) were provided and discussed with the students, and the concepts were tied to information or experiences they were familiar with (*e.g., an example of *debt* would be asking your parents to buy something for you and you agree to pay them back. The money you owe to your parents is your *debt*.*). With clinician scaffolding, the students created a ring of vocabulary word cards with a word on one side and its definition on the other. These cards were referred to during the next several treatment sessions for assistance in reviewing and remembering the word meanings. The word meanings were reviewed at the beginning of each session, and the words were also discussed in sentence contexts (*e.g., “The troops’ quarters were at the back of the camp.”*). Vocabulary maps (Byrns & Dunnam, 2010; see Appendix C for an example of a vocabulary map), discussion questions (*e.g., “How would you feel if the government repealed the law that allowed you to drive at 16 and changed the age to 21?”*), written application activities (*e.g., “Pretend you are a colonist in 1763 and write a letter to the British about why you don’t like what they are doing.”*), and games (*e.g., guessing and defending the correct definition to earn points*) were completed to help deepen the students’ understanding of the social studies words.

As treatment progressed and the students became more familiar with the definitions, the vocabulary rings were removed from treatment. Words with multiple meanings (*e.g., *quarters, act*) were also addressed, and their additional definitions were provided and discussed in order to deepen the children’s semantic knowledge. The linguistic complexity of the intervention tasks was progressive. Specifically, the students began with completing tasks that required them to recognize the definitions and then moved to tasks that involved using the words in sentences or providing the target word when given contextual clues.

**RESULTS**

The purpose of this study was to examine the treatment effects of direct vocabulary instruction that was implemented with two fifth-grade ELLs with LLDs. In order to examine changes in comprehension of history vocabulary words over time, we collected data in baseline (A) and treatment (B) conditions. Additionally, comprehension of untreated science vocabulary words was measured over time to serve as a control condition.

To examine treatment effects within a single-subject experimental design, data can be visually examined for changes in level, trend, and/or slope (Byiers, Reichele, & Symons, 2012). Thus, we graphed both sets of vocabulary scores separately for each student, allowing for comparison of social studies vocabulary performance across baseline and treatment.
conditions and to science vocabulary performance in a baseline condition only (see Figures 1 and 2). Per visual inspection of the baseline conditions, both students demonstrated relatively stable performance on both word sets. Although Student 1 had what appeared to be a slight upward trend in her social studies baseline data, her one to two correct answers were attributed to guessing, and her actual knowledge of the words was felt to be consistent. She demonstrated 0% correct identification of the untreated science words on both baseline measures. Student 2 demonstrated stable baseline scores on the social studies vocabulary task and a slight rising trend on the untreated science words.

**Figure 1.** Student 1’s performance on the social studies and science vocabulary comprehension tasks during baseline (Sessions 1 and 2) and treatment (Sessions 3–12) conditions.

Per visual inspection of the treatment condition, both students demonstrated an upward trend and/or a rising slope in performance on the social studies vocabulary task directly following the onset of direct vocabulary instruction. Overall, Student 1’s social studies vocabulary comprehension scores improved from 20% at baseline to 80% accuracy post intervention, and Student 2’s scores improved from 10% at baseline to 100% accuracy post intervention. One hundred percent of these data points were nonoverlapping (i.e., no vocabulary task scores returned to baseline levels once treatment was initiated). Last, per visual inspection of the untreated science vocabulary data during the treatment phase, the students demonstrated no change (Student 1) or a downward trend (Student 2) in science vocabulary knowledge. Overall, the students’ ability to identify the meanings of these words began and ended at 0%.

**DISCUSSION**

This study provides preliminary evidence that the use of direct vocabulary instruction can have a positive effect on the word knowledge of students who are learning English as a second language and who also have significant LLDs. Data from all three analyses support this conclusion. First, improved performance from the initial baseline was seen on both students’ vocabulary scores. Second, 100% of nonoverlapping data indicated that, once direct vocabulary instruction was started, the students’ performance on the vocabulary measure never regressed to pretreatment, baseline levels. Third, no improvement was seen in the students’ knowledge of the untreated science words. A control measure such as this provides some reassurance that the changes seen in vocabulary performance were not a result of maturation, practice effects, or participation in the classroom curriculum.

Several additional observations can also be made. The first is that these students were indeed able to learn the meanings of the complex words, despite the severity of their LLDs and the fact that services were provided in English only. The combination of second-language learning and an LLD can make learning new academic vocabulary a daunting task. Given this challenge, some researchers have recommended that bilingual children receive intervention that incorporates both languages (American Speech-Language-Hearing Association, 1985). Yet, the reality of the public-school setting is that many of these students are served by monolingual clinicians and are treated in the community language.

Recently, Thordardottir, Rvachew, and Menard (2012) found no significant difference between...
monolingual and bilingual treatment groups when using focused stimulation to increase the mean length of utterance of 4-year-olds. Although the current study involved older students who were no longer in dual-language classrooms, their bilingual verbal abilities (see Table 1) and overall language abilities in English (see Table 2) were very low. The direct instruction approach allowed the two students to understand and store word meanings and even apply them in different contexts and written language activities. Their improved performance on the targeted vocabulary words provides additional evidence that intervention in the community language, in this case, English, can be effective in improving language skills in ELLs with LLDs. In addition, the classroom teacher reported increased participation in classroom discussions and improved performance on the social studies unit exam from which the target words were selected.

Second, when considering how much treatment is necessary (i.e., treatment “dosage”) for these students to be successful in learning a new concept, this study provides a starting point for future research. Although some improvement was demonstrated soon after treatment began, the data collected in the time series design provided evidence that the girls were not proficient in their understanding and use of the majority of the targeted vocabulary words until around the eighth treatment session. In their summary of vocabulary intervention research, Jitendra et al. (2004) described several intervention studies using direct vocabulary or cognitive strategy instruction with typically developing ELLs or with monolingual English speakers with learning disabilities that followed similar time frames (e.g., seven to ten 30- or 50-min sessions across 5–10 weeks). Future research might identify how much intervention is necessary for learning to take place and could also identify the most effective location for service delivery.

The students in the current study had been struggling to learn and perform successfully in their social studies classroom, which is not uncommon for students with LLDs. Additional studies might compare direct vocabulary instruction implemented in the classroom, either via the SLP or in consultation with the classroom teacher, with a small-group intervention like the one in this study. Teachers who teach vocabulary explicitly and daily, targeting key academic terms and high-utility vocabulary words, can make meaningful differences in a child’s vocabulary and future academic success (National Center for Reading First, 2008). At this juncture, we just do not have sufficient knowledge about the success of this type of classroom intervention with ELLs with LLDs or, for that matter, a body of even general empirical evidence demonstrating the effectiveness of inclusion intervention by SLPs.

Last, this study provides anecdotal evidence to support the implementation of a treatment research protocol in a public-school treatment setting. Specifically, an experimental intervention program was identified and was successfully integrated into the existing treatment schedule, and baseline and treatment data were systematically collected to document client improvement and treatment effects. Future research from an implementation science perspective might involve the measurement of specific variables to provide insight into the practicality of intervention research in a public-school setting. Such variables might include measurement of the amount of extra time required to search the literature and design and carry out a treatment study, examination of treatment fidelity, or a survey of SLPs’ attitudes about research (e.g., a self-rating scale).

Limitations

There were several limitations to this study. The quasi-experimental design only allowed for preliminary evidence of treatment effects. Additionally, treatment with only two participants limits generalizability. It cannot be assumed that vocabulary knowledge would improve in children with other disabilities or that performance on this study’s task would generalize to other vocabulary tasks. There was also a risk for examiner bias because the clinicians administering the treatment also completed all of the data collection. Another limitation was that the school year ended shortly after vocabulary intervention was discontinued, so there was no opportunity to take an additional posttreatment measure to assess the maintenance of vocabulary knowledge. Last, additional measures of reading comprehension would have provided further support for instructional success following treatment, but service delivery time constraints prohibited additional testing.

Conclusions

This study, although only providing preliminary evidence of the use of direct vocabulary intervention for ELLs with LLDs, brings some important issues to the forefront of school-age language treatment research. First, the issue of dosage became apparent: How much treatment time is necessary and should be allocated to vocabulary learning for ELLs with LLDs? Second, the study brings to bear the issue of service delivery, both with regard to the use of the community language (vs. in combination with a student’s first language) and to the effectiveness of this type of intervention in the treatment room versus in an inclusion model where direct vocabulary instruction...

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is infused into the classroom. Last, the study provides evidence that quasi-experimental studies can be conducted in real-world settings. In summary, there is additional work to be done so that intervention programs such as direct vocabulary instruction, over time, become evidence-based options for school-age ELLs with LLDs.

REFERENCES


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APPENDIX A. TREATMENT SCHEDULE

Week 1: Administer baseline vocabulary tasks
Week 2: Administer baseline vocabulary tasks
Weeks 3–4: Direct vocabulary instruction
Week 5: Re-administer vocabulary tasks/Direct vocabulary instruction
Week 6–7: Direct vocabulary instruction
Week 8: Re-administer vocabulary tasks/Direct vocabulary instruction
Week 9: No treatment (spring break)
Week 10: Re-administer vocabulary tasks/Direct vocabulary instruction
Week 11: Direct vocabulary instruction
Week 12: Direct vocabulary instruction/Re-administer vocabulary task

APPENDIX B. WORD DEFINITIONS

Social Studies Definitions (treatment words): Average length: 7.5 words
Repeal – to take back or to cancel a law
Quarters – places to live
Parliament – the lawmaking part of the British government
Merchants – shopkeepers or other business people
Massacre – murder of people who cannot defend themselves
Protest – disapproval, disagreement, or complaint
Settlers – people who move to a new country or area
Debt – something that is owed or that one has to pay or perform for another
Acts – laws made and passed by the government
Taxation – when people are required to pay money to the government

Science Definitions (control words): Average length: 7.5 words
Femur – thigh bone
Cartilage – tough bands of tissue that hold bones together
Contract – to make or become shorter or smaller
Pivot – a pin on which something turns
Cardiac – related to, near, or acting on the heart
Joint – place where two or more bones are joined
Socket – an opening that forms a holder for something
Organ – part of an animal that does a particular job
System – group of organs that perform one or more vital functions
Hinge – a jointed piece that allows a swinging part to open
APPENDIX C. EXAMPLE VOCABULARY GRAPHIC ORGANIZER

2. Definition: Underline the key words

3. Illustration

1. Word

Quarters

4. Context: Circle the correct sentence

1. The girl had 3 dimes, 2 pennies, and 5 quarters.

2. The “quartering act” ordered the colonists to provide quarters for the British soldiers.

5. Words that are related: Choose one related word

A. Colonists
B. Laws
C. Money
D. Houses

6. My Definition: Write your own definition

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