



EFFECTS OF A VOCABULARY SCENARIO TECHNIQUE ON NINTH GRADE ENGLISH LEARNERS' VOCABULARY ACQUISITION

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— ABSTRACT —

The purpose of this study was to examine the effects of a peer led intervention aimed at improving vocabulary acquisition through explicit vocabulary instruction. The Vocabulary Scenario Technique English Learner Peer (VST-ELP) protocol was administered to the experimental group. The VST-ELP protocol used was an adapted version of the original Vocabulary Scenario Technique. The control group received typical vocabulary instruction from their classroom teacher. The experimental group participants made gains in mean scores from pre- to post-test measures. The results suggest that the Vocabulary Scenario Technique English Learner Peer Protocol was effective in proving the vocabulary acquisition of ninth grade English Learners (ELs). Practical implications are discussed, and recommendations provided.

Keywords: English learner, vocabulary acquisition, reading intervention, secondary education, literacy

Background

English learners (ELs) are described as individuals whose language backgrounds are other than English and they represent the fastest growing school-age population in the United States and have been projected to represent over 40% of the school-age population by the year 2030 (Matthews & Ewen, 2006; National Clearinghouse for English Language Acquisition [NCELA], 2006; Padolsky, 2005; Thomas & Collier, 2001). In comparison to native English speakers, ELs tend to exhibit lower academic achievement in areas like literacy due to English proficiency that is not yet developed to the extent where they can benefit fully from English-only instruction (August & Shanahan, 2006; Klingner, Artiles, & Barletta, 2006). For instance, at the secondary level, ELs face the challenge of learning content while improving their English language proficiency, both socially and academically (de Schonewise & Klinger, 2012). The consequences of limited reading proficiency can be significant, including limited academic success, fewer employment opportunities, financial difficulties, and a challenging overall existence in society.

Reading is described as a complex cognitive activity (Kamhi & Catts, 2012). The simple view of reading (Gough & Tunmer, 1996) consists of two components: decoding and linguistic comprehension. Scarborough (2001) The “Reading Rope” model further describes additional skills housed within these two components. For instance, vocabulary skills, background knowledge and print knowledge are needed for proficient linguistic comprehension, while decoding and phonological awareness is needed for word recognition. Reading skills develop on a continuum. In the early grades, literacy instruction focuses on teaching students to read and in later grades, students are being taught to read for understanding of current and new knowledge (Stone & Learned, 2014).

Vocabulary knowledge is one of the skills needed for language comprehension and is an important determinant of reading comprehension for both narrative and informational texts (Nakamoto, Lindsey, & Manis, 2008; Proctor, Carlo, August, & Snow, 2005). Beginning in the early grades, vocabulary predicts varying reading skills among monolingual children (Hemphill & Tivnan, 2008). However, for students with limited English proficiency, learning to read in English may be challenging if they do not have the necessary knowledge of English vocabulary (Lugo-Neris, Jackson, & Goldstein, 2010). Among ELs’ errors, vocabulary errors happen most often, occurring as frequently as three times more often than grammatical errors (Chung, 2012; Gass & Selinker, 2008). Estimates of the receptive vocabulary size of ELs before receiving formal school instruction vary

from 5,000 to 7,000 or even 10,000 words (Biemiller & Slonim, 2001; Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Chung, 2012; Graves, 2007). Graves (2007) suggested that an estimate of 3,000 to 6,000 English words is reasonable for ELs vocabulary size to be successful in comprehending text.

Vocabulary Knowledge and Reading Comprehension

Singleton and Shuleman (2019) define vocabulary as the words people must know to communicate effectively and exist in both oral and written modes. The breadth of vocabulary and depth of vocabulary knowledge are the two dimensions key to developing vocabulary knowledge; therefore, making learning a word a gradual process (Taboada, 2009). The breadth of vocabulary knowledge is defined as vocabulary size (Chung, 2012). The depth of vocabulary knowledge refers to literal meanings, connotations, antonyms, synonyms, morphological forms, and syntactical forms. Past studies (Sidek & Rahim, 2015; Beck & McKeown, 1989; 2007) have indicated that an extensive vocabulary is one of the strongest indicators of reading capability and comprehension. Studies have proven that one’s word knowledge is related to comprehension as early as elementary school and has the potential to impact high school as well (Neuman, Newman & Dwyer, 2011). The depth of vocabulary knowledge affects not only reading comprehension but also oral comprehension. It enables listeners to identify syntactic relationships, a requirement for sentence comprehension (Chung, 2012).

Theories of reading development highlight the importance of vocabulary as well as breadth and depth of vocabulary knowledge (Li & Kirby, 2014; Lugo-Neris, Jackson, & Goldstein, 2010, Nation and Snowling, 2004); which is specifically the lexical quality hypothesis (LQH) (Shen, 2008; Johnston, Mercer, & Geres-Smith, 2018; Perfetti, 2007). According to the LQH, skilled reading depends on high-quality lexical representation; therefore, intervention for ELs consists of a strong focus on vocabulary development (Li & Kirby, 2014).

English Learners and Vocabulary Instruction

Interest in the relationship between vocabulary and reading comprehension has a long history in the research of English as a Second Language for Foreign Language (ESL/EFL) reading (Shen, 2008). For the past decade, growing attention has been placed on vocabulary instruction due to inadequate instruction in elementary and secondary classrooms (Sibold, 2011; Biemiller & Boote, 2006). Academic vocabulary, specifically the language that may occur in multiple contexts or the precise words that are presented in a specific context, can help students acquire new learn-

ing strategies and skills (Marzano, 2004). Furthermore, Sibold (2011) notes that vocabulary is notably more difficult to learn than conversational language because it is more abstract; therefore, heightening difficulty in acquisition. In the United States, there are no reliable estimates of the breadth of vocabulary of Spanish-speaking ELs upon school entry or of the magnitude of their vocabulary growth over a school year (August et al., 2005). ELs often feel that vocabulary is a frequent obstacle as they are immersed in the classroom, which is problematic with vocabulary being a critical component and correlates with how they read and comprehend text (Hunt & Feng, 2016; Silverman & Hines, 2009). For example, the National Assessment of Educational Progress (NAEP, 2009) revealed that ELs with varying backgrounds are below proficiency. Students often score below the proficiency level because they lack major components of good reading skills such as making inferences, making connections, and drawing logical conclusions (Cisco & Padrón, 2012).

For EL students, their development and English proficiency will take time. We are aware that they move along a continuum of overlap in stages of language acquisition, which allows the instructor to scaffold with varying strategies (Coady & Huckin, 1997; Meara, 1988). Instructional approaches of vocabulary have varied in the amount of emphasis placed on the explicitness or implicitness for teaching specific words, the types of vocabulary taught (text vs. content), and the depth and breadth of the words taught (Taboada, 2009). Explicit teaching of vocabulary words creates rich language contexts in which students are exposed to words on multiple occasions and where word awareness is created through the explicit focus on words (Taboada, 2009). Specifically, explicit teaching is characterized by the use of shared book reading, interactive hands-on activities, and repeated vocabulary knowledge as techniques found to increase vocabulary knowledge (Restrepo, Morgan & Thompson, 2013).

ELs typically move through different stages as they acquire English proficiency and they might need opportunities for comprehensible input; therefore, they need more instructional support (Deussen, Autio, Miller, Lockwood & Stewart, 2008). Effective vocabulary instruction emphasizes direct instruction (Sibold, 2011). By using direct instruction and elaborating on vocabulary instruction, teachers can incorporate relevance into before, during, and after reading stages of instruction (Sibold, 2011). During direct instruction, teachers help to facilitate the effectiveness by supporting student participation, checking for understanding of concepts, while practicing utilization of new words (Green, Stockholm,

Cearley & Sheffield-Anderson, 2015). There are several instructional practices for teaching vocabulary words, which include: (a) repetition, (b) signal word of the day, (c) talk through, (d) academic vocabulary journals, (e) graphic organizers, and (f) board games (Sibold, 2011). Green, Stockholm, Cearley, and Sheffield-Anderson (2015) reported that ELs who were exposed to activity-based practices to help them understand methods had more success in acquiring new vocabulary compared to those who received traditional methods of vocabulary exposure such as tests on everyday dictionary words.

It is evident a need exists for more experimental and quasi-experimental studies on approaches for enhancing ELs' vocabulary knowledge (Chung, 2012). Vocabulary knowledge plays a crucial role in closing the literacy achievement gap amongst ELs (Chung, 2012). The present study aimed to explore the effects of a Vocabulary Scenario Technique English Learner Peer (VST-ELP) protocol for ninth-grade ELs who struggled with literacy.

The following research questions were posed:

Research Question 1: When controlling for language proficiency, do ninth-grade ELs receiving peer-assisted vocabulary intervention with the VST-ELP protocol, demonstrate greater gains on a multiple-choice synonym test than EL ninth graders who are taught using typical vocabulary instruction by a ninth-grade EL teacher?

Research Question 2: When controlling for language proficiency, do ninth-grade ELs receiving peer-assisted vocabulary intervention with the VST-ELP protocol, demonstrate greater gains on a fill-in-the blank/word-bank sentence test than EL ninth graders who are taught using typical vocabulary instruction by a ninth-grade EL teacher?

Method

Procedures

We obtained institutional review board (IRB) approval from the authors' university as well as the school district's IRB where the study took place. The study set out to explore if EL ninth-grade students receiving intervention with the VST-ELP protocol made any gain scores on multiple-choice synonym test and word-bank sentence measure than their counterparts who did not receive this intervention, especially when we control for language proficiency. We controlled for language proficiency because even though the students, by their State-mandated Comprehensive English Language Learning Assessment (CELLA) scores, were deemed proficient in English

(i.e., able to speak and understand English), they still struggle with understanding synonym and sentence tests.

Thirty-six EL students were randomly assigned to experimental and comparison groups. The students were already assigned to reading classes per their scores on the Florida State Assessment reading portion. Even though participants were randomly assigned to either the experimental or comparison group, we classified this study as quasi-experimental because groups were not representative of a single population (Sprinthall, 2007).

The intervention and typical instruction were conducted simultaneously over a four-week time period. The experimental and comparison groups were each taught 32 words, eight words a week. The experimental group received the VST-ELP protocol from the lead researcher while the comparison group received their typical vocabulary instruction from their classroom teacher. Typical vocabulary instruction included methods used by the teacher to teach vocabulary.

Setting

The study took place in an urban Title 1 Central Florida high school. Table 1 describes the school district demographics, vis-à-vis the school (study site) demographics.

Table 1

Comparative Demographics of School District and ‘High School

Description	School District	High School
Caucasian	28%	2%
African-American	27%	84%
Hispanic	38%	10%
Asian/Pacific Islander	2%	1%
Multicultural	2%	3%
Exceptional Learning Students	22%	17%
English Learners	28%	12%

This particular high school has the largest population of Haitian American students in the district. For school demographic purposes, Haitian American students were counted as African-American.

Participant Selection and Randomization

After addressing all ethical considerations, 36 English learning students were randomly assigned to experimental and comparison groups. Two students

were not included due to their absences reducing the total participant number to 34. Eighteen students were in the experimental group, and 16 students were in the comparison group.

Eighteen (56%) participants were female and 14 (44%) were male. In the comparison group, there were five (31.3%) males and 11 (68.8%) females. However, in the experimental group, there were nine (56.3%) males and seven (43.8%) females. Median age of participants was 15 years ($M = 14.97$; $sd = .93$). Of the 34 participants sampled, 29 were Haitian and five Hispanic. All participants spoke another language apart from English at home – Haitian Creole (81.3%) and Spanish (15.6%).

The participating classes were two double block English learning reading classes. Double block classes mean that students are getting twice the instructional time that other students get. According to the Florida Department of Education, high school students who scored at Level 1 or Level 2 on the Florida Comprehensive Assessment Test reading portion and have intervention needs in the areas of decoding and/or fluency must have an extended block of reading intervention.

Once students were assigned to the experimental and comparison groups, they were placed in dyads according to their language proficiency levels. Stu-

dents’ language proficiency levels were determined by their CELLA scores. The No Child Left Behind (NCLB, 2001) provided for creation of Assessments of EL students that aligns with rigorous state standards. Based on that mandate, the CELLA is one of the four assessments that many secondary schools utilize to test their English learners (Bunch, 2011). The CELLA assessment was created to reflect the reality of the process for instruction and acquisition

in diverse classrooms today for EL students. There are some students who quickly make continuous progress in developing reading, listening, writing and speaking, while others struggle in varying areas in English (Rebarber, Rybinski, Hauck, Scarcella, Buteux, Wang & Cho, 2007). The CELLA design addresses legitimate concerns for educators who support the wellbeing and success of EL students. In secondary schools, the CELLA test helps to determine if the students are prepared to exit the EL program, but some schools use it to keep programs accountable in providing appropriate services for the students (Rebarber, Rybinski, Hauck, Scarcella, Buteux, Wang & Cho, 2007) For this study, the student language proficiency levels were determined by their CELLA scores.

The students were placed in eight dyads. The dyads consisted of one student who was proficient in English and one student who was not proficient in English. Students identified as being proficient or high intermediate in speaking English according to their CELLA were selected to be interpreters for their peers who were identified by the CELLA as either a beginner or lower intermediate in speaking English. Once the interpreters were identified, they received a 30-minute training by the lead researcher the day before the intervention began. The training consisted of showing the interpreters how to use their prompts for interpreting.

The classroom teacher providing the typical vocabulary instruction was an English to Speakers of Other Languages (ESOL) teacher. She had a background in Spanish and a teaching certificate in ESOL and world language Spanish as well as endorsements in reading and ESOL.

Experimental Measures

An informal synonym test and fill-in-the-blank/word-bank sentence test was developed and used as pre-and post-test measures for both the experimental and comparison groups. The synonym test was developed and used for the Vocabulary Scenario Technique (VST) pilot study (Ehren, Zadroga, & Proly, 2010). The fill-in-the-blank/word bank sentence test was developed and used for the Spielvogel (2011) Vocabulary Scenario Technique- Language Sensitive (VST-LS) study. The VST-LS had a less intensive protocol that included 14 word encounters and was conducted at an elementary school. The synonym test was developed from a corpus of 44 Tier-2 words selected from a reading passage being taught during the time of the study. The classroom teacher selected the words based on their complexity compared them to previous words the students had learned in class. The results of the synonym test led to another corpus

of words that met the criteria of more than 50% of the students not knowing the word. These words were then used for the fill-in-the-blank sentence test.

The lead researcher utilized the VST-ELP protocol for the experimental group. The VST was first created as a protocol intended for use by speech-language pathologists and teachers for direct vocabulary intervention in a classroom or therapeutic setting (Ehren, 2008). The VST, created to meet the needs of students at different English proficiency levels allows the speech-language pathologist and/or teacher to provide scaffolding to students as they experience several encounters with new words (Ehren, Zadroga, & Proly, 2010). Specifically, it is an explicit instructional technique grounded in scenarios, short stories of two to five sentences that are created to reverberate with students' experiences and explicate the meaning of the targeted words. The scenarios provide a base for language-focused vocabulary instruction which include listening, reading, speaking, and writing (Ehren et al., 2010).

Intervention for Experimental Group

The VST-ELP protocol required student encounters, which is defined as the number of times the students were exposed to the English target words. The protocol presented 20-word encounters to participants. After the word was presented to the group, the lead researcher held up a written sign that read "interpret." This prompted the interpreters to turn to their peer in their dyad and provide the English instruction in the peer's primary language for their understanding. For the purpose of this study, this act was described as the interpreting moment.

For day one and two of the protocol, the lead researcher taught four words each day and the students experienced 16 encounters with those words. Encounter one was a visual display of the vocabulary scenario presented by the researcher on paper. Encounter two allowed the peers in the dyads to interpret the scenario. In Encounter three, the first author required the students to suggest a synonym for the word. Encounters four and five allowed the peers in the dyads to interpret the word and suggest a synonym. In Encounter six, the group was required to read the scenario aloud with the target vocabulary word and the synonym. Encounters seven and eight required the students to write the target word on their portable word wall. Encounters nine and ten, required the students to write the target word and think about how they could use the target word in a sentence. Encounters 11 and 12 allowed the students to create sentences using the target word (these sentences were elicited from students who did not require interpretation). Encounters 13 and 14 allowed

the first author to select the best sentence using the target word and write it on the board for the students to copy on the back of their portable word walls. Encounter 15 allowed the peers in the dyads to interpret the information for reviewing the words and saying the synonyms together. Encounter 16 allowed for another recital of the synonym in unison by the class. On day three, the students were introduced to the morphological variations of the eight words they learned during the week. The morphological variations were encounters 17-20.

Intervention for Comparison Group

The ESOL teacher used a different method of instructing the control group but used the same vocabulary words as was used with the experimental group. The students who were in the comparison group were not grouped into dyads. Many of the students in the comparison group had various levels of English proficiency, but they often interpreted for one another in the classroom during vocabulary and other instructional activities.

The classroom teacher began by dividing the group into two teams. The teacher introduced the target words to each team to determine if the students were familiar with it. If a team was familiar with the word, she would then ask for their interpretation of the word. If the team's interpretation of the word was correct, she continued. If the team's interpretation of the word was incorrect, she would instruct students to review the word (such as looking at the beginning, middle, and end of the word) to see if they recognized any familiarities with it. If the teams were still not familiar with the word, the teacher provided the definition, synonym, and antonym for the word. The teams were then instructed to fold a piece of paper into four squares and write the word in the middle and in the top left they wrote the definition.

Once the students finished discussing the word, they completed a review. The method of review used was similar to the game of Taboo. It required that the students be divided into two teams. The teacher wrote the word on a piece of paper. An individual from each team showed the word to his or her team. The other team had to then attempt to guess the vocabulary word. The teams were allowed to act out the words and use other words to guess the targeted vocabulary word. Once a team member guessed the correct word, they had to provide the definition, synonym, and antonym.

Analysis

Raw data for participants were entered into SPSS V26, where descriptive statistics were used to analyze

participants' demographic information. Participants' pre and post-test scores were classified as dependent variable; the two groups, the independent variable, and the CELLA scores was the covariate. Because of the classification of these variables, the test most suited to address the research questions was the analysis of covariance (ANCOVA; Field, 2013; Lomax & Hahs-Vaughn, 2012). In conducting an ANCOVA, we want to establish that there is no mean difference in the dependent variable (post-test scores) between groups (comparison and experimental) when controlling for the covariate (CELLA scores).

We chose to use a one-way analysis of covariance (ANCOVA) to address the research problem – holding CELLA scores constant, what gain scores are identified in experimental group versus comparison group when the VST-ELP protocol is used in teaching 9th grade EL students synonyms and sentence completion? The ANCOVA is an extension of the one-way analysis of variance (ANOVA). However, whereas the ANOVA explores differences in group means, the ANCOVA identifies differences in adjusted means – means that have been adjusted for the covariate (Lomax & Hahs-Vaughn, 2012). We statistically control for a covariate when there is an indication that a “confounding variable” will affect the results (Field, 2013).

Some assumptions to consider when conducting an ANCOVA include independence of observations, which means our groups need to be two or more (i.e., experimental and comparison); our covariate and dependent variable should be continuous; normal distribution of the covariate and dependent variable; covariate should have a linear relationship to the dependent variable; and homogeneity of variance (Lomax & Hahs-Vaughn, 2012). The Levene's test is used to assess for homogeneity of variance. If the significant value in the Levene's test is more than .05, then the assumption has been met. Finally, a grouped scatter plot of the variables is used to test the assumption of linearity.

Results

Descriptive data for all of the dependent measures are presented in Table 2. Some of the participants had missing data because even though they were present for the pretest, they were absent during the post-test measurement. We were therefore left with 14 participants in the comparison group and 15 in the treatment group.

Table 2: Means and Adjusted Means for Variables

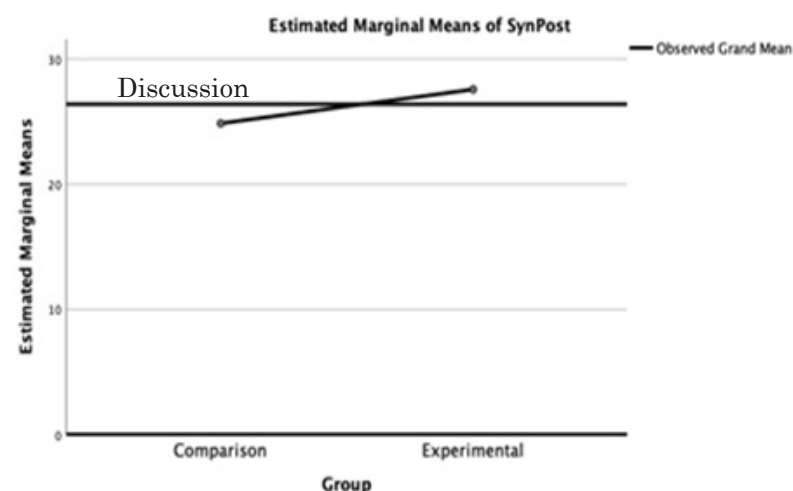
Group	N	Synonym			Sentence		
		Mean	SD	Adjusted Mean	Mean	SD	Adjusted Mean
Comparison	14	25.00	7.23	23.50	22.00	11.65	22.42
Treatment	15	26.07	8.12	27.47	24.07	11.83	23.68

The results of the ANCOVA suggest a statistically significant effect of the covariate on the dependent variable ($F_{\text{synonym}}[1, 26] = 6.51; p = .02$) with a moderate effect size (partial eta squared $[\eta^2] = .20$). The effect size suggests that about 20% of the variance in synonym can be accounted for by the VST-ELP protocol when controlling for CELLA scores. Difference between mean (26.07; $sd = 7.23$) and adjusted mean (27.47) indicated an improvement in synonyms. Mean score for comparison group, however, demonstrated a reduction between the mean (25.00; $sd = 7.23$) and the adjusted mean (23.50).

When the ANCOVA was performed for sentence completion, there was no statistically significant effect of the covariate on the dependent variable ($F_{\text{sentence}} [1, 26] = .53; p = .48$); effect size was small (partial $\eta^2 = .02$). Means for treatment group (24.07; $sd = 11.83$) was higher than the adjusted mean (23.68). Interestingly, the comparison group score increased from the mean (22.00; $sd = 11.65$) to the adjusted mean (22.42). These analyses are validated by the graphs (see Figure 1).

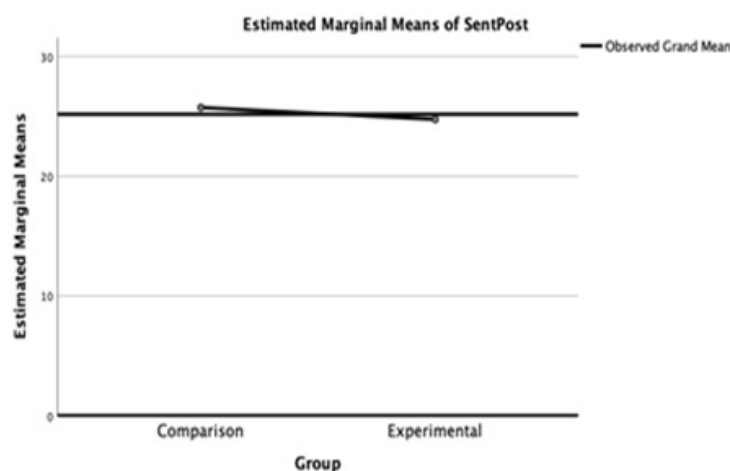
Figure 1

Graphs of estimated marginal means of synonym and sentence at posttest



Covariates appearing in the model are evaluated at the following values: SynPre = 22.13, SentPre = 20.17, CELLA_listening = 716.57, CELLA_reading = 710.17, CELLA_writing = 699.78

The purpose of this study was to examine whether an explicit method of teaching vocabulary, the VST-ELP protocol was effective for increasing the vocabulary of ninth-grade EL students. The results of repeated measures ANCOVA and ANOVA indicated the protocol to be effective in increasing scores of the experimental group on the synonym post-test. For the sentence test, the protocol was effective in increasing post-test scores for the experimental group.



Covariates appearing in the model are evaluated at the following values: SynPre = 22.13, SentPre = 20.17, CELLA_listening = 716.57, CELLA_reading = 710.17, CELLA_writing = 699.78

For Research Question 1, results from the descriptive statistics confirmed that the experimental group made higher gains on the synonym post-test than the comparison group. The experimental group mean score increased by six points on the post-test, even though this group's pre-test mean score was four points lower than that of the comparison group. The comparison group showed a two-point mean score increase from pre- to post-test on the synonym test.

The effect of the synonym test between the experimental and comparison group was not statistically significant when controlling for the covariate, even though there was a medium effect size. Neither the experimental nor the comparison group had scores that showed enough improvement to have a significant effect. There

was, however, a statistically significant interaction effect of the synonym test between the experimental and comparison groups.

This indicated that no variance could be accounted for from the sentence test between the two groups. The VST pilot study and the VST-LS both showed statistically significant differences in the post-test scores for the synonym and sentence measures between the experimental and comparison groups. These results were encouraging and showed that explicit vocabulary instruction can be beneficial for all students who are acquiring new vocabulary. The major difference between these studies and the VST-ELP was that monolingual English speakers were the participants. Because this is the first time this instrument has been used with this population, we recommend that other researchers use it with similar populations to establish whether the sentence completion portion will demonstrate any statistically significant gain scores between pre-test and post-test.

Limitations and Recommendations for Future Research

Although the results of the study are promising, there were some limitations. In regard to the CELLA/language proficiency scores, some of the scores were not indicative of the participants' current English proficiency. The school system administers the CELLA annually to students until they are classified as being English proficient. With the exception of five students, all participants were last administered the CELLA in March of the previous school year. This study took place between March and April of the following year. Thus, participants who were not yet English proficient should have taken the CELLA again in March, but those scores were not available to the researcher. Therefore, there was no way of determining if participants had acquired English proficiency or if some were still functioning at lower levels of proficiency.

Another limitation was interpreting in Creole. Even though the students were paired in dyads with peers who had higher English proficiency scores, the interpreters sometimes indicated that they were unable to interpret certain words in Creole. For future research, it would be beneficial to have a professional interpreter who speaks Haitian Creole and could ensure that the students were comprehending what was being said to them. Also, having access to current English proficiency scores would help identify the proficiency level of participants and ensure that those who need an interpreter/peer tutor are assigned to one.

Summary

It is known that vocabulary acquisition plays a critical role for English Language Learners in school achievement and learning English (August et al., 2005). This study revealed that the VST-ELP could be a useful instructional tool for adolescent English Language Learners. Vocabulary plays a large role in reading comprehension for adolescents as they go through high school and into secondary placements or the workforce (Ott, 2001). The results of this study showed support for using explicit vocabulary instruction with adolescents. Being able to explicitly teach vocabulary to EL adolescents will add to their thinking, reading, writing, listening, and speaking skills. Sibold's (2011) recommendations on teaching vocabulary instruction with an emphasis on direct instruction. The direct, explicit instruction from this study can help students understand vocabulary before, during, and after their stages of reading instruction.

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