JAR

EDITORS



Journal of Teacher Action Research - Volume 6, Issue 2, 2020 practicalteacherresearch.com, ISSN # 2332-2233 ©JTAR All Rights Reserved



Journal of Teacher Action Research Volume 6, Issue 2, 2020

Using Action Research to Develop Shannon Kennedy-Clark Vilma Galstaun	Data Literacy in Initial Teacher Education Peter Reimann Boris Handal	4
Coupling PhET Simulations and POGIL: High School Chemistry Students' Learning And Engagement in Argumentation on the Topic of Atomic Theory Fracey A. Bennett Garah B. Boesdorfer		26
Using Bibliotherapy and Personal I Christine M. Higgins Joseph M. Furner Tina Gerencser	Reflection as Tools for Reducing Math Anxiety	54
Finding Words: Students Taking P Francine Falk-Ross Mary Catherine Hillman Jeanette De Los Santos	art in their Vocabulary Development Rhonda Fernandez Von Charpentier Sandra Flank	70
Action Research in an Ethiopian Classroom: Instructional Methods that Improve Vocabulary Retention Sarah Bischoff Michelle Parker Margaret Mishra		
Supporting English Language Lear Sarah E. Bularzik Christopher Bogiages	ners Through Inclusion and Task-Based Instruction	104
Multiple Means of Engagement in Elementary Social Studies Amanda Carter Tanya Flushman		119



About the Journal

Founded in 2013, the Journal of Teacher Action Research (ISSN: 2332-2233) is a peer-reviewed online journal indexed with EBSCO that seeks practical research that can be implemented in Pre-Kindergarten through Post-Secondary classrooms. The primary function of this journal is to provide classroom teachers and researchers a means for sharing classroom practices.

The journal accepts articles for peer-review that describe classroom practice which positively impacts student learning. We define teacher action research as teachers (at all levels) studying their practice and/or their students' learning in a methodical way in order to inform classroom practice. Articles submitted to the journal should demonstrate an action research focus with intent to improve the author's practice.

Editorial Team

Co-Editors

Gilbert Naizer, Ph.D.
Texas A&M University-Commerce

April Sanders, Ph.D.
Spring Hill College

Laura Isbell, Ph.D.
Texas A&M University-Commerce

Associate Editors
Tami Morton, Ph.D.
Texas A&M University-Commerce

Susan Williams, Ed.D.
Texas A&M University-Commerce

Production Editor and Webmaster

Chase Young, Ph.D.
Sam Houston State University

www.practicalteacherresearch.com

FINDING WORDS: STUDENTS TAKING PART IN THEIR VOCABULARY DEVELOPMENT

Francine Falk-Ross Pace University

Mary Catherine Hillman Ossining UFSD

Jeanette De Los Santos Roosevelt School Rhonda Fernandez Roosevelt School

Von Charpentier Roosevelt School

Sandra Flank Pace University

Abstract In this article, teachers and a teacher educator share their experiences developing the responsibility for increasing vocabulary knowledge with struggling readers who are multilingual and/or have learning disabilities using a shared view of identifying students' needs in literacy development. The project included an innovative approach of self-selection of unknown words, giving the responsibility for learning back to a diverse population of students to stimulate a proactive approach to their learning. Their successes and challenges are described, and their progress is notable.

Keywords: teacher action research, vocabulary, literacy development

Introduction

Vocabulary development for a diverse population of students in schools now is becoming more important than ever for struggling students. Since comprehension is the ultimate goal for reading, if vocabulary words are not understood and used, it becomes extremely difficult for students to follow, discuss, and learn the content of text. It is estimated that vocabulary size increases by 9,000 words from first grade to third grade and by 20,000 words from third grade to fifth grade (Wang, 2014). As students get older, they become more exposed to informational, non-fiction texts with challenging vocabulary words. If the students do not understand these words, it will impact their comprehension abilities. If students have limited vocabulary knowledge and do not understand basic words, they are unlikely to figure out more challenging words. Therefore, vocabulary instruction in schools has been identified as an important element in early intervention and all classroom activities.

Literature Review

Beck, McKeown, & Kucan (2013) have investigated this need, and addressed it with suggestions for work with students. They note that the vocabulary gap for many students

with language differences and disabilities exists by the age of three due to low socio-economic (SES) status, and this gap can be detrimental to learning since it usually continues throughout the school years. It is important for teachers to consider the nature of the vocabulary words that are taught in content area instruction. Beck et al., developed a model of tiers to describe writing samples: Tier One words are common or basic words which require little or no instruction (e.g., come, see); Tier Two words are more frequent along disciplinary lines (e.g. compare, contrast); Tier Three words are characterized by discipline-specific word use (e.g., atom, continent). Analysis of these tier levels in students' discourse and reading reveal vocabulary knowledge and provide insight for teachers into students' potential for reading comprehension, and provide data for comparison with students' perceptions of their competencies so they can realistically set goals.

One consideration is that teachers need to reach out to students to gain insight into their students' challenges so they may deliver individualized instruction. Therefore, the purpose of this study was to investigate the impact of developing students' participation, and therefore, ownership, of their own school-based vocabulary knowledge on their learning achievement. In order to accomplish this goal, we integrated the new use of an innovative vocabulary intervention program that included teachers who are learning specialists in the collection of data regarding language--specifically vocabulary knowledge--of young bilingual and special education students through the use of vocabulary strategies in the classroom activities. The specialists' worked in a parallel fashion, and they compared their results of the specific strategy as they work for different populations of students. The inquiry questions that drove this study were: How well can Dual Language students self-monitor their vocabulary development in and outside of the classroom? What is the impact on learning when students self-select vocabulary words for small group study? Theoretical Framework. Three areas of research development impacted this study aligned with the Common Core Standards Initiative (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010). These areas of research review included the role of language (i.e., discourse), aligned with CCLS Standard 1 within content area instruction; content area teachers' use of literacy strategies in classroom instruction, aligned with CCLS 4; and the impact of academic vocabulary knowledge, aligned with CCLS 6 on diverse students' school students' achievement.

A first frame of thinking study is that as the student population within schools becomes increasingly more diverse, literacy instruction requires student-focused approaches to teaching. Readings of government initiatives and assessments (e.g., U.S. Department of Education, 2002), national standards (e.g., CCLS, 2010; International Literacy Association, 2017) and educational statistics (Perie & Moran, 2005) mandate that we consider students' individual language, literacy, and learning needs that stem from cultural and linguistic diversity. More specifically, educators need to focus on the academic (i.e., word meaning) and social vocabulary (i.e., word use) that students develop, contributing to their reading comprehension and writing competencies (Falk-Ross & Evans, 2014). This is especially important for the increasing number of schools in which language difference is a factor in learning (Brown, 2007). Garcia, Jensen, and Cuellar (2006) discuss the impact of language

use on school content achievement. Hart and Risley's (1995) study is especially clear about the meaningful differences there are in vocabulary knowledge among diverse populations. A second major framework for conducting this study is that teachers are likely to use new knowledge and strategies that build on their everyday existing practices and through classroom observations (Danielson, 2012). This practice is one form of educational professional development, which is meant to support teachers at all levels "to improve the quality of classroom instruction; enable individuals to grow professionally; [and] introduce practitioners to the practical applications of research-validated strategies (NYC Department of Education, 2013). The use of professional development activities through modeling experiences are important to introduce and support new attention to literacy instruction in content area classrooms, as explained in the research of noted experts (e.g., Gillan & McFerrin, 2002; McKenna & Robinson, 1990; Sturtevant & Linek, 2007).

A third frame for our thinking as the study was developed is that content area learning is embedded in vocabulary-rich instruction, which may be an obstacle to students marginalized by cultural or linguistic difference (Ogle, 2010; Proctor, Dalton, & Grisham, 2007) or disabilities (Tam, Heward, & Heng, 2006). Instructional activities using language-based activities are effective for developing academic language for specific content area learning (Thier & Daviss, 2002). Teachers who receive professional development in classroom environments to understand the specific needs of struggling readers can be better equipped to provide effective content area instruction. It has been found that teachers who interacted with struggling readers in urban settings changed their perceptions about these students (Falk-Ross & Wolfe, 2004). Studies of teachers working with second language learners have shown that they learn to improve their instruction through reflective practice (Farrell, 2011) and classroom observations (Lewis, Maerten-Rivera, Adamson, & Lee, 2011).

Methodology

The research participants (teachers and students) were recruited this spring 2018 semester from school classrooms. Three teachers participated in the collection of data with their 20 students who were multilingual and/or had learning disabilities; one program director guided and served as outside evaluator; and one teacher educator guided the research. Class 1 was composed of 41 fifth-graders, 70% of whom were native Spanish speakers, and their language was composed of code-switching behaviors (i.e., using two languages to form word constructions). Class 2 was composed on 5 fifth-graders, all of whom qualified for special education services, and whole vocabulary scores were 1-2 grade levels below their own. Class 3 was composed of 39 fifth-graders, 66% of whom were native Spanish speakers, and all were of mixed reading levels from on-grade level to two years below grade level. Following collection of consent forms and meetings to align instruction and assessment in all classes for reliability, teachers and educators conducted the self-selection strategy in their classrooms using almost identical delivery. Teachers introduced, modeled, and then guided students through a self-monitoring protocol (the approach was presented either on the front board or on paper, depending on the teacher) to identify vocabulary words taken from grade level readings to identify those words that for them are: -tough words, -

confusing passages, -those needing pauses to recall and reflect while reading ('think aloud strategy"), and those for which they needed support. The students chose words that each felt was necessary for him or her to learn, and added them to a list, consistent with a Vocabulary Self-Collection (VSS) approach Ruddell & Shearer (2002). This approach is a fundamental way of opening students' minds to the wealth of words they encounter in print and the oral language that surrounds them each day: raising word consciousness. As described by Ruddell and Shearer (2002), the method is explained at this link (http://www.cengage.com/resource_uploads/downloads/0534508294_22092.pdf) and implemented as follows:

<u>Step 1:</u> Students are asked to search their viewing, reading, and home environments for a word to nominate for the weekly class vocabulary list. The nomination process involves telling:

- a) where they found the word;
- b) what they think it means; and
- c) why they think it should be on the class list. The teacher also nominates a word each week, giving the same information.

<u>Step 2:</u> In discussing each word, definitions are refined, and dictionaries or other sources are consulted as needed.

<u>Step 3:</u> When the final list of words has been selected, students record the words and definitions in their vocabulary journals.

<u>Step 4:</u> The words are further studied through the week, using discussion, semantic mapping, semantic feature analysis, and other interactive activities.

<u>Step 5:</u> At the end of each week, students are tested on their ability to spell each word, explain its meaning, and use it in a sentence.

<u>Step 6:</u> Every three weeks, past word lists are reviewed, and students are tested on five randomly selected words from past weekly lists.

In all classes, students brought in self-selected word to be added to a weekly list on Mondays. All students' words were identified for their source and listed on a chart or Vocabulary Log using a Vocabulary Rating Scale (Young, 2005). New vocabulary words were selected by vote, pronounced, explained, and then written in journals with dictionary-assisted descriptions. Throughout the week, words were discussed in dedicated time (See Appendix A.).

A mixed method of qualitative and qualitative approaches was used to determine outcomes of the study. For the quantitative data, formal assessment of vocabulary development occurred with the oral reading fluency scores on the school-wide oral fluency subtest of the using the AIMS- web System Oral Reading Fluency (ORF) assessment developed by Pearson Education (AIMS-web.com, 2009) which is a progress monitoring system during which educators gather data focused on reading elements one-on-one with students, and transfer this information to the online system for a quantitative analysis. Informal classroom assessments were in the form of three vocabulary mini-quizzes (i.e., for formative and then summative quantitative assessment) to be counted for progress reports. Students' absences

did not allow this to be the reliable data; however, they were then used to provide feedback and practice for students to view their efforts.

For the qualitative data, student interviews in class (i.e., qualitative assessment) were coded for recurring themes. Teachers met twice per month throughout March-May 2018 to check progress and collect data, and to conduct periodic reviews of the word knowledge as students studied on their own to build vocabulary. The trustworthiness, or transparency, of the research study was developed through careful observation of multiple forms of data to make clear the credibility (i.e., truthfulness) and consistency (i.e., dependability) of observations (Silverman, 2013).

The systematic approach to gathering data was considered through the evaluative process of open coding of data following a constant comparative method of analysis (Corbin & Strauss, 2014). This process was used to reveal the most obvious categories of responses. Lists of all students' comments during the were used to determine the themes. The data and early coding categories were shared and checked with two independent readers knowledgeable in literacy practices and qualitative research methodology. Both agreed with the schemes with minor suggestions for revision of wording, indicating approximately 95% agreement. The areas of disagreement were in the terms used to describe the axial codes, or larger 'themes' of findings and were adjusted through consensus.

Results and Discussion

There were three themes that were revealed as we considered the results of a semester's use of this new approach in which students chose words they needed to learn and gained empowerment and self-esteem, not to mention motivation, for being involved in their own learning.

The most promising change was in the nature of classroom discourse. The students' initiation of questions regarding self-selected vocabulary meaning in classes in and outside the focal class increased. As the three teachers asked students for their choices of new vocabulary words for their learning and that of the class, the nature of classroom discourse balanced out to more sharing of the questions and comments that are usually dominated by teacher talk (Cazden, 2001; Nystrand, 2006). There was teachers' transference of shared responsibility for students' learning of unknown or new vocabulary. In order for students to 'own' their new knowledge, in general, and their vocabulary specifically, teachers need to encourage student-initiated questions in all content area classrooms and to encourage risktaking. They asked the teacher, "Can I take this with me to math class?" and asked their classmates, "You don't know that word either?" commented that "I can use these words in my writing." Students' awareness of their strengths and challenges through their own questions and comments may reveal important information for teachers. Students often elicit more information than would normally be shared in teacher-directed class discussions, since these students were often marginalized in the quick pace of the question-answer formats.

A second theme reflected students changed perception of learning vocabulary in content area classroom experiences. Besides being a powerful outcome, the students found the vocabulary self-selection activities motivating and challenging, opening up classroom conversations and personal interactions. Students who at first commented to the teacher and the class, "These words are too long [complicated] to learn" later commented, "This is fun....learning new words like this" and "Vocabulary isn't so bad anymore, it used to be boring." Students learned ways to break down and understand/use words; they were more confident; they helped one another learn new words. For example, one student offered to another, "You should pick [learn] my word because you can use it in your narrative." In general, in their attempts at reading aloud, all students, were strongest in their decoding (or 'calling') of Tier 1 (basic) and Tier 2 (high frequency) level words than for Tier 3 (low frequency/subject related) taken from grade-level vocabulary. Teacher's notes that students were confident, helping one another learn new words.

A third result was the change in students' oral reading fluency scores on a school-wide oral fluency subtest of a standardized test. The percentage of improvement based on this new strategy ranged from about 5% to about 30%, disregarding a few outliers. (See Figures 1, 2 and 3 for charts of Changes in Students' Oral Reading Fluency Scores). This is impressive; however, with the outliers, the results are not statistically significant. The original score does not seem to have influenced the percentage improvement. We used the mode (i.e., the most commonly occurring increase on a percentage basis) rather than the mean (i.e., the average of the sum of the scores because it reflects the most commonly occurring increase on a percentage basis.

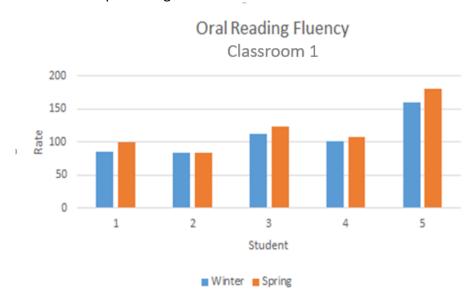


Figure 1: Class 1: Changes in Students' Oral Reading Fluency Scores on a School-Wide Standardized Test

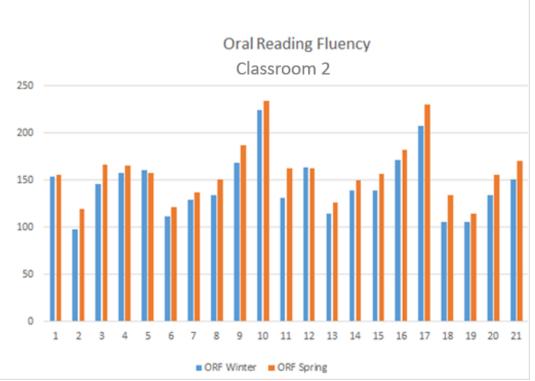


Figure 2: Class 2: Changes in Students' Oral Reading Fluency Scores on a School-Wide Standardized Test

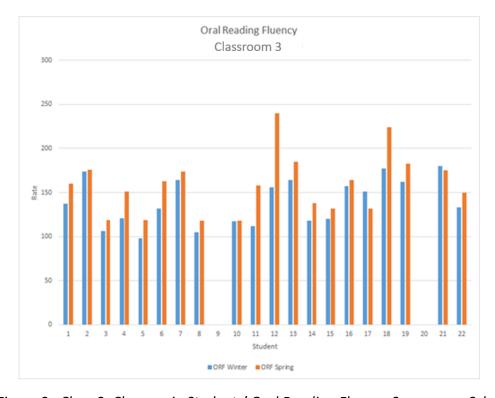


Figure 3: Class 3: Changes in Students' Oral Reading Fluency Scores on a School-Wide Standardized Test

Implications

The significance of this study is based on our opening observation, that vocabulary development for a growing diverse population of students in schools now is becoming more important for struggling students. Based on the results of this study and the teachers' continued observations, we offer the following implications and suggestions for educational applications in classrooms.

Discourse Practices in Classroom. This may include changing the classroom discourse patterns to more expanded forms. Expanded forms of instructional interaction and routines in the form of collaboration between teachers, students, & peers are key to learning and conceptual change (Almasi, 2003; Falk-Ross, 2002). All students, including those who are marginalized by language difficulties and /or by language differences (Heath, 2013), can benefit from language expansions. To more specifically understand the nature of questioning and to develop knowledge of these, a package of questioning strategies that supports students' understanding of questioning is use of Question-Answer Relationship (QAR) (Raphael & Au, 2005).

Attitudes Toward Risk-Taking. In order for students to 'own' their new knowledge, in general, and their vocabulary specifically, teachers need to encourage student-initiated questions in all content area classrooms and to encourage risk-taking. Students' awareness of their strengths and challenges through their questions may reveal important information for teachers. Students often elicit more information than would normally be shared in teacher-directed class discussions, since these students are often marginalized in the quick pace of the question-answer formats (e.g., Initation-Response-Evaluation IRE patterns, Cazden 2001) of classroom discourse. Due to individual factors such as primary language differences or learning difficulties, students may struggle in classroom conversations; however, their communicative competence, as interpreted for individual development, is optimized if they initiate questions more easily. For example, through the use of self-initiated questions, teachers may learn about the students' self-expressed understanding of their competencies and their perceived challenges (Pitcher et al. 2007).

Use of Successful Vocabulary Strategies: A Suggestion for Classroom Application. Based on the results of this study and the teachers' continued observations, we suggest that teachers model and encourage student-initiated questions in all content area classrooms. This will involve encouraging risk-taking on the part of students, for whom initiating questions may not be the norm in classroom content-area literacy activities, and for teachers who need to allow more wait time at regular intervals for students to enter conversations with their comments and questions. We suggest that use of self-selected vocabulary learning become a system-wide protocol so students can transfer the activism for their learning in each consecutive class they attend all day, year after year.

Conclusion

In light of the diversity of students' background and each individual's academic competencies, vocabulary development is at the heart of classroom literacy instruction

across the curriculum. Teachers provide careful attention to modeling and instruction, and these are important for input, enrichment, and expansion of students' lexical repertoire; however, meaningful and authentic vocabulary development needs to be a shared activity between educators and students. Students can help us to help them learn, and this collaboration empowers each member of the team.

About the Authors

Francine Falk-Ross, Ph.D. is a Professor and Coordinator of the Literacy Specialist graduate program at Pace University in Pleasantville, New York, where she teaches courses on literacy topics to preservice and practicing teachers. She has been teaching for 30 years. Her research publications and presentations are focused on new literacies, language differences, and students with special needs. Email: ffalkross@pace.edu

Mary Catherine Hillman has been an educator for 18 years. She received her Master of Arts in Elementary Education and Special Education certificate from Manhattanville College. Mary Catherine has taught a variety of grades at the early childhood level and is currently a 3rd and 4th grade reading teacher in the Ossining UFSD. She is passionate about helping students learn to read, write and become lifelong, joyful learners as well as helping to create strong home/school partnerships. Email: mhillman@ossiningufsd.org

Jeanette De Los Santos has been an educator for 22 years. She received her Master's degree in Bilingual Education from The City College of New York. Jeanette has taught all grades from Pre-K-5th mostly bilingual. She is currently teaching 5th grade Dual Language Spanish Zone. Email: jdelossantos@ossiningufsd.org

Rhonda Fernandez is a Special Education teacher at Roosevelt School in Ossining, New York. She has been teaching for 15 years. Her interests are in second language learners, and she is pursuing certification in that area of expertise. Email: rfernandez@ossiningufsd.org

Von Charpentier is a fifth-grade teacher at Roosevelt School in Ossining, New York. She has been teaching for 14 years. She works closely with struggling readers and dual language students. Email: vcharpentier@ossiningufsd.org

Sandra Flank, Ph.D., is Professor Emerita at Pace University, New York. She taught at Pace University for 48 years and was responsible for courses primarily in the STEM area. Her research and publications are primarily in the area of educational technology. Email: sflank@pace.edu

References

- Almasi, J. F. (2003). Teaching strategic processes in reading. New York, NY: Guilford Press.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). New York: Guilford Press.
- Blachowitz, C. L. (1986). Making connections: Alternatives to the vocabulary notebook. *Journal of Reading*, 29(7), 643-49.
- Brown, C. L. (2007). Supporting English language learners in content reading. *Reading Improvement, 44*(1), 32-39.
- Cazden, C. B. (2001). *Classroom discourse: The language of teaching and learning* (2nd ed.). Portsmouth, NH: Heinemann.
- Common Core Learning Standards Initiative. (2010). *Common Core Learning Standards*. Washington, DC: National Governors Association Center for Best Practices and Council of Chief State School Officers.
- Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Grounded theory procedures and techniques,* (3rd ed.). Newbury Park, CA: Sage.
- Danielson, C. (2012). Observing classroom practice, Educational Leadership, 70(3), 32-37.
- Falk-Ross, F. C. (2002). *Classroom-based language and literacy intervention: A programs and case studies approach.* Boston: Allyn & Bacon / Longman Publishers.
- Falk-Ross, F. C., & Evans, B. (2014). Word games: Content area teachers' use of vocabulary strategies to build diverse students' reading competencies. *Language and Literacy Spectrum, 24,* 84-100. http://www.nysreading.org/sites/default/files/Word%20Games.pdf
- Falk-Ross, F. C., & Wolfe, R. (2004). Preparing teachers for working in diverse settings: Effects of early immersion in clinical experiences. In S. Lenski & W. L. Black (Eds.), *Transforming teacher education through partnerships: Vol. 8, Mellen Studies in Education* (pp. 342-354). NY: Edward Mellen Press.
- Farrell, T. S.C. (2011). "Keeping SCORE": Reflective practice through classroom observations. *RELC Journal: A Journal of Language Teaching and Research*, 42(3), 265-272.
- Garcia, E. E., Jensen, B., & Cuellar, D. (2006). Early academic achievement of Hispanics in the United States: Implications for teacher preparation. *New Educator*, *2*(2), 123-147.
- Gillan, B., & McFerrin, K. (2002). *Faculty development*. Norfolk, VA: Association for the Advancement of Computing in Education.
- Hart, B. & Risley, T.R. (1995). *Meaningful differences in the everyday experiences of young American children*. Baltimore, MD: Brooks Publishing.
- Heath, S.B. (2013). Ways with words: Language, life, and work in communities and classrooms. Cambridge, UK: Cambridge University Press.
- Lewis, S., Maerten-Rivera, J., Adamson, K, & Lee, O. (2011). Urban third-grade teachers' practices and perceptions in science instruction with English language learners. *School Science and Mathematics*, 111(4), 156-163.

- McKenna, M. C., & Robinson, R. D. (1990). Content literacy: A definition and implication. *Journal of Reading,* 34, 184-186.
- National Governors Association Center for Best Practices and Council of Chief State School Officers. (2010). Common Core Learning Standards. Washington, DC: Author.
- New York City Department of Education. (2013). *Professional development*. Retrieved from http://schools.nyc.gov/Offices/DHR/TeacherPrincipalSchoolProfessionals/ProfessionalDevelopment/d efault.htm
- Nystrand, M. (2006). Research on the role of classroom discourse as it affects reading comprehension. *Research in the Teaching of English*, 40(4), 392-412.
- Ogle, D., & Correa-Kovtun, A. (2010). Supporting English-language learners and struggling readers in content literacy with the "Partner Reading and Content, Too Routine." *The Reading Teacher*, 63(7), 532-542.
- Perie, M., & Moran, R. (2005). NAEP 2004 *Trends in academic progress: Three decades of student performance in reading and mathematics* (NCES 2005-464).
- Pitcher, S. M., Albright, L. K., DeLaney, C. J., Walker, N. T., Krishna, S., Mogge, S., Headley, K. N., Ridgeway, V. G., Peck, S., Hunt, R., & Dunston, P. J. (2007). Assessing adolescents' motivation to read. *Journal of Adolescent and Adult Literacy*, *50*(5), 378-396.
- Proctor, C. P., Dalton, B., & Grisham, D. (2007). Scaffolding English language learners and struggling readers in a universal literacy environment with embedded strategy instruction and vocabulary support. *Journal of Literacy Research*, 39(1), 71-93.
- Raphael, T.E., & Au, K.H. (2005). QAR: Enhancing comprehension and test taking across grades and content areas. *The Reading Teacher*, 59, 206-221.
- Ruddell, & Shearer, (2002). "Extraordinary," "tremendous," "exhilarating," "magnificent": Middle school at risk students become avid word learners with the Vocabulary Self-Collection Strategy (VSS). *Journal of Adolescent & Adult Literacy, 45*(5), 352-363.
- Silverman, D. (2013). *Doing qualitative research: A practical handbook* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Sturtevant, E. G., & Linek, W. M. (2007). Secondary literacy coaching: A Macedonian perspective. *Journal of Adolescent and Adult Literacy*, *51*(3), 240-250.
- Tam, K. Y., Heward, W. L., & Heng, M. A. (2006). A reading instruction intervention program for English-language learners who are struggling readers. *Journal of Special Education*, 40(2), 79-93.
- Thier, M., & Daviss, B. (2002). *The new science of literacy: Using language skills to develop students learning science*. Portsmouth, NH: Heinemann.
- U.S. Department of Education, Institute of Education Sciences, *National Center for Education Statistics*. Washington, D.C.: Government Printing Office.
- Wang, X. L. (2014). *Understanding language and literacy development: Diverse learners in the classroom*. UK: John Wiley & Sons.
- Young, E. (2005). The language of science, the language of students: Bridging the gap with engaged learning vocabulary strategies. *Science Activities*, 42(2), 12-17, DOI: 10.3200/SATS.42.2.12-17

Appendix A: Vocabulary Pre/Post Assessment

Name	Date
Knowing a Word is Not an All or Nothing Situation!	

Vocabulary Rating Scale (Blachowicz, 1986; Young et al. 2002)

- Stage 1: Never saw/heard it before
- + Stage 2: Heard/seen it, but don't know what it means
- ! Stage 3: Recognize it in context as having something to do with
- # Stage 4: Know it well

On my own	Read by an adult	Word
		abandon
		amputate
		compassion
		devotion
		ecstatically
		eventually
		evidence
		instinct
		loyalty
		malignant
		passive
		rambunctious