The Value of Integrating Science and Literacy for Struggling Students
Emily A. Holtz
Lynne Masel Walters

Using Literacy Strategies with Middle School ELL Students to Improve their Literacy Skills
Nichole L. Smith
Mariel Gomez de la Torre-Cerfontaine
Barbara M. Butler
Dawn Waegerle

Using a Concept of Definition Word Map to Teach Science Vocabulary
Kimberly Jones

Using Action Research in a Graduate Literacy Class to Connect Theory to Practice: A Replication Study
Juan Araujo
Joel Blaylock
Pearl Garden
Sandra Hogg
Liza Larue
Deborah Murillo
Bonnie Still
Angela Venters
Leslie Patterson

Gents Club Mentorship Program
Tye Parr
Becky Sinclair
Susan Szabo
THE VALUE OF INTEGRATING SCIENCE AND LITERACY FOR STRUGGLING STUDENTS

Emily A. Holtz
Texas A&M University
Lynne Masel Walters
Texas A&M University

Abstract

With the implementation of Common Core Standards in 2010 came the mandate that students would be reading 50% nonfiction by fourth grade, 55% nonfiction by middle school, and 75% nonfiction by high school (National Governors Association, 2010). As a result, Common Core aligned curricula now include many science-based nonfiction texts. With greater importance placed on informational text, students are facing more challenges in vocabulary and overall understanding of the texts. Many texts are science-based; however teachers have been forced to push the science aside to fill gaps in reading. Hands-on science lessons are being dropped in favor of teaching more reading strategies (Vick, 2016). This presents teachers with challenges in engaging their students in the lessons and students with challenges in learning science vocabulary and understanding the text. To address these challenges, a research project, implemented in a third grade inclusion classroom in New Mexico, combined applied science and reading. The purpose was to determine if student understanding, engagement and achievement are affected when hands-on science lessons are integrated into the existing ELA curriculum. Results of the study showed that students demonstrated increased understanding of academic vocabulary and text, increased interest in informational books, and increased scores when writing to an informational task.

Keywords: teacher action research, science education, content area literacy, hands-on learning, nonfiction units of study, student engagement, informational writing

Introduction

It is another busy day in a third grade classroom in New Mexico. Students are settling in after returning from recess and are ready to start the reading lesson about their newest informational text, Weather, by Seymour Simon. This is a Lexile Level of 1065, a text considered appropriate for seventh graders; therefore it is recommended that this text be read
with adult guidance. Although this level of text is inappropriate in a third grade classroom, it is part of the required curriculum for the district and included in the day-to-day lessons. Students are asked to use illustrations, graphics, and the text itself to ask and answer questions pertaining to cloud types, the water cycle, types of precipitation and how this precipitation is formed, as well as ocean currents and wind patterns across the world.

Needless to say, students immediately begin to struggle to make sense of this text. They are lacking in background knowledge and they are quickly losing interest in the task at hand. Students find it difficult to discuss this book and engage in their typical think-pair-share routine. The Common Core Standards pertaining to reading informational text discusses reading texts that are rigorous and include high academic vocabulary (Shared Responsibility, 2017). Comprehension strategies are used to teach this text, but the teacher believed that there must be a more engaging method to build understanding along with reading proficiency.

In thinking about Common Core, we can look to 2010. This is when New Mexico adopted the Common Core State Standards (CCSS), along with 44 other states and the District of Columbia (Shared Responsibility, 2017). Many districts in New Mexico found their students ill-prepared to meet the new, more rigorous standards in the Common Core. The district where this third grade classroom is located deemed it appropriate to adopt new curricula in English Language Arts (ELA) and mathematics to fill the gaps that the New Mexico State Standards created.

The newly adopted ELA curriculum meets the third grade CCSS requirement of a 50/50 split between informational texts and literary texts. With greater importance placed on informational text, students are facing more challenges in vocabulary and overall understanding of the texts. Many texts are science-based. However teachers have been forced to push science aside to fill gaps in reading. When science is neglected in favor of more reading instruction in K-3, students are behind in their science knowledge when they begin fourth grade. The focus of this research will be on the informational piece of the district-mandated curriculum. Because this curriculum has a heavy science component in regards to reading, the research considered whether student understanding and engagement are affected when hands-on science lessons are integrated into the existing ELA curriculum.

**Literature Review**

The scope of research pertaining to science and literacy integration is expansive, but much of it focuses on the importance of using literacy to support science concepts, rather than using science to enhance literacy. Previous research demonstrates the use of reading, writing, and oral language to support students’ ability to understand abstract science ideas (Sterling & Goor, 1998). While the current project looks at the science/literacy relationship from the reverse direction, evidence can be found in previous research that, when the curriculum integrates science and literacy, students show improvement in oral and written language, as well as in overall comprehension of the literature related to the particular science subject (Sterling & Goor, 1998).
Research shows that, by integrating science and ELA, students’ understanding, motivation and engagement increase (Fello, Raquette, & Jalongo, 2006; Guzzetti & Bang, 2010; Neuman, Kaefer, & Pinkham, 2016; Wheatley, Gerde, & Cabell, 2016). Neuman et al. (2016) explain that integration of high interest science concepts and vocabulary instruction enables students to compare and contrast across a variety of texts using common vocabulary to support their reasoning. With the utilization of vocabulary across content and context, student comprehension was enhanced.

Vocabulary is not the only recorded improvement when integration is involved; writing also is improved. Wheatley et al. (2016) contend that “incorporating writing opportunities into science creates a necessary symbiotic relationship that promotes both writing and science in ways that cannot be accomplished if these areas were taught independent of the other” (p. 84). Research in this area demonstrates that, when students are able to apply scientific practices to reading and writing, they find science more comprehensible and exciting.

This is especially true for students with special needs. Today, many schools, such as the one studied here, have inclusive environments, meaning that there are general education students, special education students and English Language Learners (ELL) in the same classroom. In these inclusive settings, it is difficult to engage all students. It is also difficult to help special education students and ELL students make sense of above-grade level texts. Sterling and Goor (1998) argued that hands-on science would help because it “provides endless opportunities for students to develop the language arts skills of reading, writing, speaking, and listening” (p.124). Lee and Buxton (2013) maintain, “literacy involves learning to think and reason. It also involves learning to view and visually represent ideas and information, as well as in text” (p.38) The research concludes that subgroups of students, created by language and ability, will only benefit from hands-on science activities.

Overall, the literature advocates for integrating science and literacy in any classroom for any age because this is advantageous for student understanding of complex scientific texts. The elementary school in which this research took place struggles from year to year to move its lowest scoring students forward. This research will help to determine if integrating hands-on science and literacy can help theses students’ progress.

**Research Questions**

- How will student understanding of key vocabulary be affected when vocabulary is taught across the contents of English Language Arts and Science?
- What is the impact of the integration of hands-on science lessons into the reading process on students’ level of interest in informational texts?
- How does hands-on science instruction impact students’ ability to write an informational piece over a prescribed topic?
Methodology

Participants. This study took place in a third grade classroom in a fast growing mid-sized city (100,000+) in New Mexico. Of the twenty-five students, 44% were non-Hispanic White, 40% Hispanic, 8% Black, and 8% were Native American. This matches the make-up of the school. Seventeen of the twenty-five students received free or reduced priced lunch. This class was also an inclusion setting, meaning that some students participated in an Individualized Educational Program (IEP). Seven students had an IEP due to a Specific Learning Disability (SLD). Of these seven, three also received Speech services in the areas of articulation and language development. One student, who has been diagnosed with autism, qualifies for special education in the areas of Speech and SLD.

The school is rated “D” by the New Mexico Public Education Department (PED). This rating is based on an A, B, C, D, F scale, with A being highest and F lowest. It is considered a D school because of its inability to demonstrate sufficient growth from year to year and to move the lowest students ahead on the state’s standardized exam. This test consists of a fifty-fifty split between informational and fictional texts and examines students’ ability to determine the meaning of words. It also measures a student’s writing skills, as assessments include the narrative, explanatory and opinion genres. Because the third graders will be tested over comprehension, vocabulary and writing, this research will examine achievement in all three areas.

Instructional Practice. As part of the district’s core curriculum, each teacher is required to teach English Language Arts (ELA) for 120 minutes daily. Each teacher also has science kits provided by the Smithsonian Institute. The ELA Module being implemented here is “Seeking Explanations.” This unit took approximately three weeks to complete. Students read two informational texts, Weather by Seymour Simon and Living Through a Natural Disaster by Eve Recht. Each of these texts is adult directed, meaning that the teacher reads the texts aloud. After reading, students answered questions that they first discussed with a partner and then shared with the whole group.

The questions were written by the curriculum developers to be part of the core of instruction. These questions challenged students to review the text in order to answer accurately. Students also had an opportunity to explore vocabulary and determine word meaning through discussions over the texts. The Smithsonian science kit, which provided the hands-on experience, was related to “Seeking Explanations” because students were asked to observe and explain the effects of water on land through the use of stream tables. It utilized stream tables made of plastic storage containers with sand, gravel, clay, and humus. Divided into groups of four, students had to mix these components and then would use various methods to pour water through the system.

In one lesson they determined that more water flowing led to more erosion and deposition. In another, students concluded that water moved around large objects within the stream table. At
the beginning of each lesson students were asked a focus question. Their experiments, observations and discussions should enable students to answer the question by the end of the lesson. Each focus question incorporated the key vocabulary from the two informational texts. The science portion of the unit was taught for one week in conjunction with the ELA unit and two weeks following the wrap up of the texts. Students participated in this active research for approximately five weeks.

Along with whole group reading instruction, students also had independent reading time built into each day. Each week students would book shop within the classroom library. They were able to choose from a variety of texts that interested them. They stored these books in their personal book boxes and read them throughout the week. The independent reading time was approximately 20-30 minutes each day. They could work with a partner or read online texts for an additional 20-30 minutes daily.

Data Tools, Application, and Analysis. Prior to beginning the science lesson, students were given a vocabulary pretest (Appendix A) based on their learning from the texts, Weather and Living Through a Natural Disaster. The teacher/researcher then incorporated these same words from the text throughout the science lessons and asked students to utilize the words during discussions with science groups and in the observations they wrote in their science notebooks. Following the science unit, students were given the same vocabulary test as a post science test. This allowed the teacher/researcher to compare data to answer the question: How will student understanding of key vocabulary be affected when vocabulary is taught across the contents of English Language Arts and Science?

• To measure student interest in informational texts, the teacher/researcher developed an observational tool (Appendix B). Each week for the last three weeks of the research project, the teacher/researcher monitored each student’s choice of self-selected texts. This allowed the teacher/researcher to determine the impact of the integration of hands-on science lessons into the reading process on students’ level of interest in informational texts.

For the final project of the unit, students wrote a newspaper article describing the effects of weather (water) on land and people. This was not a totally new type of assignment. Students had similar projects earlier in the term; for example one writing task was to create a magazine article after researching space. The rubric (Appendix C) for each of these tasks was the same; so the teacher/researcher was able to compare her students’ previous writing scores to the score from their newspaper article to determine How hands-on science instruction impacts students’ ability to write an informational piece over a prescribed topic.

Results and Discussion

Overall, the results of this research project were positive, if only slightly in some areas.
Question 1: How will student understanding of key vocabulary be affected when vocabulary is taught across the contents of English Language Arts and Science?

To measure student understanding of vocabulary, students were given a vocabulary test (Appendix A). This test consisted of six multiple-choice questions, two of which had two correct answer choices; therefore there was a possibility of eight total points. The teacher/researcher read each question and answer choice aloud to ensure understanding. The questions were written to correlate to Common Core State Standards.

This test was administered after the students read Weather and Living Through a Natural Disaster. Because the school traditionally struggles in moving the lowest performing students forward, the teacher/researcher provided separate results for Students with a Learning Disability (SLD) and General Education (GE) students. In this initial test, SLD students averaged 3.7 points out of 8 possible points, or an average of 46%. GE students averaged 5.7 points out of a possible 8 points (71%). The range of vocabulary test scores for the first administration was 25% to 100% with two students scoring a 100% and two students scoring 25%. These scores indicate that, for students with SLD, reading the text alone and simply discussing the key vocabulary (precipitation, absorbed, destroy, meander, erosion, monitor) did not lead to proficiency.

This test was given a second time after students had the opportunity to use these same vocabulary words (precipitation, absorbed, destroy, meander, erosion, monitor) during hand-on science activities. Along with incorporating these words within the context of the focus questions and discussions, students were also required to use words in context when writing about the effects of land and water after experimenting with stream tables.

The data from the second administration of the vocabulary test showed a slight increase for GE students to 6.0 points earned on average out of 8 points possible. This correlated to a 75% average score, an increase of 4%. Students with SLD showed a decrease in their average, only scoring 3.3 points out of 8 possible demonstrating a drop in percentage from 46% to 41%. The range in the second administration was 13% to 100%, this time with five students scoring 100%. The student with the lowest score in both tests was the student with autism, which brought down the SLD average. The next lowest score in the range was 38%, which was an improvement over next lowest the first test (25%).
Overall General Education students benefited from the cross content teaching of vocabulary. Students with a Specific Learning Disability also benefited from this type of teaching even though their test results did not show an increase. Observation by the teacher/researcher revealed that the students openly discussed the meanings of these words and used them in the context of writing and discussion during hands-on science lessons. In fact, it was only one student with SLD who showed a decrease in his score therefore lowering the overall results; the other SLD students’ scores stayed the same.

**Question 2: What is the impact of the integration of hands-on science lessons into the reading process on students’ level of interest in informational texts?**

The data are listed in the Appendix and labeled Item B: Observational Checklist. It is evident from this that student interest in informational text increased from week one to week two and three. Students were more interested in learning about weather, land and water and chose texts on these topics during self-selected time. The overall average of informational texts selected for the class in week one was 23.9%. This average increased to 38.8% in week two. In week three, the average percentage of informational texts chosen was 36%. This was not as
high as week two, but was still significantly higher than week one, which was prior to science instruction.

**Question 3: How does hands-on science instruction impact students’ ability to write an informational piece over a prescribed topic?**

**Figure 2: Pre and Post Informational Writing Scores**

Prior to this lesson, students had other opportunities to write informational texts over a given topic. The grading system is standards based; therefore students receive grades in the range of 1-4. One is significantly below proficiency, two is nearing proficiency, three is proficient, and four is exceeds expectations. Based on the Term 2 average for the writing standards, the class averaged a 2.9 standards based grade. The lowest student score was 2.0 and the highest writing score during Term 2 was 3.5. The median score was 3.0 and 13 students in the class scored 3.0 in Term 2.

After the initiation of the experimental conditions, with science integrated into the reading and writing process, students were asked to write a culminating news article that would capture the ideas behind their created dams and the effects of the water on the land. Many students deviated slightly and created a television report with dialogue and made themselves into newscasters. While this was not the original assignment, the students were extremely excited to take this route and even sought to record their “broadcasts.”
Student enthusiasm was reflected in the scores for the writing assignment. The class average rose to a 3.05 standards based grade. This means that while the class was not proficient during Term 2, with a 2.9 average, they rose to proficiency, with a 3.05 average grade. The scores showed an increase to 2.5 for the lowest student score and 3.5 for the highest student score. While in Term 2, only two students scored a 3.5 and four students scored a 2.5, with the second writing task two of the four students increased to 3.0, and five students scored a 3.5.

Another point to note was the engagement of the students and their willingness to participate and to expand the writing process into a published news report. In previous informative/explanatory writing assignments, students have been compliant, but not excited. Given the increase in proficiency as well as this level of excitement regarding the finished product, the hands-on science activities had a positive impact on student writing.

**Limitations**

There were a number of limitations with this research. The major concern was time. All teachers in the school are required to continue moving forward in instruction of the district-mandated curriculum. This was a difficult task, requiring that the day be rearranged in order to continue with the hands-on science lessons related to the informational texts.

Additionally, students may have been on information overload in regards to their age. According to DiCarlo (2009), this could discourage deep learning. To attempt to “cover the content” would limit students to simply learning facts without the ability to apply their knowledge to solve novel problems (DiCarlo, 2009). By attempting to cover content, the instructor may have been limiting student depth of knowledge, therefore negatively impacting their ability to use and retain the concepts presented.

Secondly, the results of student interest in informational texts were potentially skewed. The first week does provide an accurate baseline of student choice of text. However, in the second and third week, the school’s librarian was having a reading contest to raffle a bicycle to one boy and one girl. She asked students to read and report on informational texts. Each time a student completed a text and reported to her, she would enter his or her name into the raffle. This makes it difficult to determine if student interest was based on the contest, the subject being studied, or the overall interest in the genre. Note, however, that the contest did not require students to choose science-related informational texts. The fact that they selected books on the topics covered in the unit may have been influenced by the experimental intervention.

This leads to questions about the use of an observational checklist. When considering student interest in informational text, it seems necessary to provide more comprehensive ways of gathering data. In future research, other tools should be used to provide clearer data. This
might include asking students about their choices, rather than simply counting the number of fiction versus nonfiction texts. Likewise, it might be valuable to include a survey, with some open-ended questions to gauge student interest in a variety of texts. This survey would be useful as a beginning, middle and end of year task, rather than just at the beginning of a three-week unit and again at the end. Allowing more time for student perception to change would contribute to more credible results.

**Conclusion**

Even with the limitations of the study and the changes, the data point to the importance of integrating hands-on learning into the reading and writing process, especially in relation to science. DiCarlo (2009) stated that “active processing of information, not just passive reception of that information, leads to learning” (para. 11). In many classrooms, teachers read a text, discuss key vocabulary, and ask a variety of comprehension questions. This type of teaching leads to minimal engagement among students. When children are given opportunities to apply knowledge in hands-on ways and learn concepts across content, they are no longer passive receivers of information, but active and engaged learners of both science and language.

---

**About the Authors**

**Emily Holtz** is currently an Instructional Coach in Texas, and has previously taught third grade, kindergarten and pre-kindergarten in New Mexico. She graduated from Texas State University with a BS in Interdisciplinary Studies and earned a MEd in Curriculum and Instruction from Texas A&M University-College Station. Emily will begin the PhD program in Curriculum and Instruction at Texas A&M University in the Fall of 2018. Email: emilyholtz@tamu.edu

**Lynne Masel Walters, Ph.D.** is an Associate Professor in the Department of Teaching, Learning and Culture at Texas A&M University. She teaches the action research course and works with her graduate students to publish the results of their classroom-based projects. Dr. Walters's research interests are in multicultural education and the ways to increase reflective and critical thinking by pre-service teachers. She also teaches and studies the use of digital storytelling in K-16 classrooms. Dr. Walters received her doctoral degree from the University of Wisconsin-Madison. Email: lynne-walters@tamu.edu
References


Appendix A: Vocabulary Test

Directions: Read each question. Then circle the best answer.

1. Read this sentence from *Weather*.
   - Water that falls to the ground in liquid or solid form is called precipitation.

Circle two answers that are examples of precipitation.
A. Cloud
B. Rain
C. Snow
D. Groundwater

2. Read this sentence from *Weather*.
   - Some of the sun’s energy is reflected back into space. The rest is absorbed through the atmosphere.

What does absorbed mean in this sentence?
A. Made smaller
B. Moved in a circle
C. Soaked up

3. Which word means almost the same thing as damage?
A. Dangerous
B. Destroy
C. Make ready

4. Using the map and sentence below from *Living Through a Natural Disaster*:
   - The river then meanders eastward across the vast North China Plain before emptying into the Yellow Sea.

What does meanders mean?
A. Winds
B. Leaves
C. Watches

5. Which phrases describe erosion?
A. Wearing away
B. Moving from one place to another
C. Building up

6. Read this sentence from Living Through a Natural Disaster

- They use special equipment to monitor changes that could indicate that a disaster is about to occur.

What does monitor mean in the sentence?

A. Observe
B. Influence
C. Measure
## Appendix B: Observational Checklist

Each week, student choice of texts was calculated. The green indicates the week with the highest percentage of informational texts selected out of the three weeks.

<table>
<thead>
<tr>
<th>Student</th>
<th>Week of March 13, 2017</th>
<th>Week of March 27, 2013</th>
<th>Week of April 3, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># Books</td>
<td>Informational</td>
<td>Percent</td>
</tr>
<tr>
<td>DA</td>
<td>16</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>AA</td>
<td>6</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>KB</td>
<td>7</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>OB</td>
<td>8</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>SB</td>
<td>9</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>AC</td>
<td>9</td>
<td>6</td>
<td>67%</td>
</tr>
<tr>
<td>KC</td>
<td>3</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>MC</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>XD</td>
<td>3</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>JF</td>
<td>5</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>EG</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>SH</td>
<td>6</td>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td>MH</td>
<td>7</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>ML</td>
<td>8</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>EM</td>
<td>6</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>NM</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>TM</td>
<td>5</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>LM</td>
<td>5</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>SP</td>
<td>7</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td>TP</td>
<td>5</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>MS</td>
<td>7</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>RS</td>
<td>8</td>
<td>7</td>
<td>88%</td>
</tr>
<tr>
<td>BT</td>
<td>10</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>EW</td>
<td>11</td>
<td>4</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Averages</strong></td>
<td><strong>6.8</strong></td>
<td><strong>1.7</strong></td>
<td><strong>24%</strong></td>
</tr>
<tr>
<td>Score</td>
<td>Focus</td>
<td>Organization</td>
<td>Development</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>4</td>
<td>Informative topic is clearly conveyed, main idea is specific</td>
<td>Organization includes an effective introduction, body, and conclusion; includes an effective visual display to emphasize main idea (pictures of dams in stream tables)</td>
<td>Information is relevant and thorough; includes an abundance of facts and descriptive details</td>
</tr>
<tr>
<td>3</td>
<td>Informative topic is clear, main idea may need to be more specific</td>
<td>Organization includes adequate introduction, body, and conclusion; includes visual display to emphasize main idea (pictures of dams in stream tables)</td>
<td>Information is adequate and includes facts and details</td>
</tr>
<tr>
<td>2</td>
<td>Informative topic is not quite clear, main idea might be too broad or narrow</td>
<td>Organization includes some grouped ideas, but lacks one or more parts; visual display is somewhat connected to the main idea (pictures of dams in stream tables)</td>
<td>Information is uneven or incomplete; insufficient use of facts and details</td>
</tr>
<tr>
<td>1</td>
<td>Informative topic is vague, main idea is unclear</td>
<td>Organization is poor, may be missing main parts; visual display is not connected to the main idea</td>
<td>Information is poor or nonexistent; few relevant facts and details</td>
</tr>
<tr>
<td>0</td>
<td>Possible characteristics that would warrant a 0:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-no response is given</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-student does not demonstrate adequate command of informative writing traits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-response is unintelligible, illegible, or off-topic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
USING LITERACY STRATEGIES WITH MIDDLE SCHOOL ELL STUDENTS TO IMPROVE THEIR LITERACY SKILLS

Nichole L. Smith
North Carolina Agricultural and Technical State University

Mariel Gomez de la Torre-Cerfontaine
North Carolina Agricultural and Technical State University

Barbara M. Butler
North Carolina Agricultural and Technical State University

Dawn Waegerle
North Carolina Agricultural and Technical State University

Abstract
English Language Learners (ELLs) often struggle with literacy due to discrepancies in their social and academic language skills. Explicit instruction of research-based literacy strategies is often suggested to strengthen their literacy skills. The researchers in this study investigated the effectiveness of using research-based explicit literacy strategies during small group instruction to improve the vocabulary and comprehension skills of middle school ELLs. A case study approach was used to collect and analyze data, including a range of assessments and interviews (participant, parent and teachers). Findings showed that participants were successful when engaged in daily instruction, but that information did not always transfer to their broader assessments.

Keywords: teacher action research, diversity, differentiated instruction, literacy, English as a second language, English language arts

Introduction

Literacy can be defined as one’s ability to read (phonemic awareness, phonics, vocabulary, fluency and comprehension), understand (vocabulary and comprehension) and use/communicate (listen, speak and write) among various texts (print and non-print text,
spoken word, etc.) to connect and interact with others (Keefe & Copeland, 2011; National Institute of Child Health and Human Development, 2000). Students who are English Language Learners (ELLs) often struggle with literacy even if they are not first generation. The impact of the home language environment can affect academic achievement, particularly in comprehension, decoding and encoding (Uccelli & Phillips Galloway, 2016). To address this continuing problem, research-based explicit vocabulary and comprehension strategies are often suggested for remediation and achievement of student growth to strengthen the skills necessary to be successful on grade level and English as a Second Language (ESL) assessments (Uccelli & Phillips Galloway, 2016).

Using a case study approach with students, teachers and parents, this investigation viewed the effectiveness of using research-based explicit literacy strategies during small group instruction to improve middle school ELLs’ reading comprehension. The research question that propelled the study was “What is the effect of middle school ELLs’ comprehension development when small groups are used to deliver research-based explicit literacy instruction?” Through a combined cognitive and sociocultural approach to literacy, teachers trained in the research model sought to engage students in reading skills enhancement that was developmentally appropriate while also engaging them in a safe social space that allowed their academic needs to be met (Britto & Brooks-Gunn 2001; Compton-Lilly, 2003; Davidson, 2010).

**Literature Review**

The 2015 report from the Institute of Education Sciences found 31% of fourth grade students and 24% of eighth grade students were reading below basic levels while 33% of fourth graders and 42% of eighth graders were reading at a basic level (IES, 2015). Twenty-seven percent of fourth graders were reading at the proficient level, and 9% were at the advanced level; 31% of eighth graders were reading at the proficient level, and 3% were at the advanced level (IES, 2015). According to Hughes-Hassell and Rodge (2007) and Krashen (2004), the number of struggling readers in today’s classrooms has held steady with little improvement, and upwards of 70% of children considered to be low income have basic or below basic reading levels. Lanning (2009) and Tatum (2008) add that many eighth through twelfth grade students read below the proficient level which impacts matriculation through school because many who struggle academically drop out of high school and have difficulty participating as literate citizens in the workplace and communities. In middle and high school, non-proficient readers continue to struggle because reading, interacting with and comprehending content specific text increases (Harvey & Zemelman, 2004). Sizer and Meier (2006) believe it is imperative to create a supportive learning environment so that all students, especially those in middle school, can achieve their academic potential. An essential component to any supportive learning environment is building relationships with students and knowing the students one teaches personally and educationally (Sizer & Meier, 2006).

**ELLs Literacy Challenges.** ELLs come from many diverse backgrounds, and programming to support their learning must be as broad as the students and their individual learning needs
(Calderon & Minaya-Rowe, 2011). It is important to utilize small group instruction for students who struggle academically, including those who are learning English. Small group instruction allows teachers to target a specific area of need with explicit instruction and monitor the students’ progress regularly while also giving students the opportunity to actively participate in the educational environment with like peers (Center for Teaching and Learning, 2017; IES, 2007).

When engaging in literacy-related activities, ELLs often find content specific texts difficult to understand; not because they cannot read, but because they are not familiar with the specific content related terminology and writing format. Being literate in a content area requires learning vocabulary and knowing the meaning of words in the context of the subject and language structure. Content literacy also requires students to link what they read with key concepts to comprehend text (Gibbons, 2009). Often ELLs are not well prepared for the demands of middle and high school education because they lack necessary experience, background and vocabulary from native language speakers (Freeman & Freeman, 2009). Teachers must advocate for ELLs learning and acknowledge the difference between ELLs’ everyday social language and their use of academic language (National Middle School Association [NMSA], 2010; Optiz & Guccione, 2009). Robb (2008, 2010) emphasizes that vocabulary and background knowledge connects to reading comprehension, and these skills should be developed daily in all classrooms.

When identifying students who struggle and are not meeting grade-level expectations, it is imperative to provide instructional modifications to accelerate academic growth (Johnston, 2010). Lanning (2009) asserts that content teachers cannot assume that ELLs, or any students for that matter, can read and comprehend at grade level. Broad literacy must be addressed alongside content in course instruction (Lanning, 2009). Research demonstrates that teachers need to provide as many opportunities as possible for children to read (Allington, 2012). Students should have the opportunity to choose level appropriate independent reading to develop reading stamina and interest while improving accuracy and fluency (NMSA, 2010; Robb, 2008). Students should be engaged in independent reading, and access to high-interest materials is necessary for this to occur (Freeman & Freeman, 2009; Gallagher, 2003).

**Comprehension and Close Reading.** The goal of reading is to comprehend what is being read, and teachers are key to comprehension development for students (Beers, 2003). Teachers must use a variety of explicit literacy strategies to assist their students to understand text (Beers, 2003; Fisher & Frey, 2012). A purpose must be given to students in order to determine what is an important focus when reading any text (Baker & McEnery, 2017; Fisher & Frey, 2012; Tovani, 2000). Through research-based strategy instruction such as “comparing and contrasting, connecting to prior experiences, inferencing, predicting, questioning to the text, recognizing the author’s purpose…, and summarizing” a purpose for reading can be set which leads to improved comprehension (Baker & McEnery, 2017; Beers, 2003, p. 40-41; Fisher & Frey, 2012; Harvey & Goudvis, 2007; Tovani, 2000; Zimmerman & Hutchins, 2003).
Reading is an active process that requires students use metacognitive skills and be reflective about their own thinking while reading (Beers, 2003; Brown, 1987). By engaging in texts and actively constructing meaning while reading, students are able to pull from prior knowledge, reflect while reading, utilize text features and monitor their comprehension (Baker & McEnery, 2017; Brown, 1987; Fang & Schleppegrell, 2010; Fisher & Frey, 2012). Addressing students’ ability to think metacognitively about what they read and then apply various literacy strategies across content areas allows them to see the text/content relationships to transfer those concepts to various subject areas which in turn improves their overall academic ability (Gritter, 2010; NMSA, 2010). However, most students cannot learn this process automatically; teachers must model how to think and activate what is known to then process new information (Fisher & Frey, 2012; Harvey & Daniels, 2009; NMSA, 2010). It is important for readers to activate schema and make connections within the text as well as identify major elements of the text (Gallagher, 2009; Gallagher, 2004). Additionally, students must also have fix-up strategies to assist in scaffolding support to comprehend difficult content that they struggle with (NMSA, 2010; Zimmerman & Hutchins, 2003). Zimmerman and Hutchins (2003) state that students must know how to slow down, ask questions and re-read to problem solve and comprehend text.

To build students’ abilities to comprehend the texts they read and engage with that text, they must learn to close read (Baker & McEnery, 2017; Fisher & Frey, 2012). Close reading is defined as reading that causes students to engage purposefully with a text through multiple readings while focusing on specific aspects of the text including vocabulary, text structure, main ideas and supporting details to support comprehension (Boyles, 2013). Extended practice with close reading allows one to build positive reading habits and the stamina to utilize these reading habits independently (Fisher & Frey, 2012). These habits require that explicit instruction and practice be provided consistently for students to fully engage in pre-reading, multiple readings of a text, annotating text, using graphic organizers and summarizing what they read (Fisher & Frey, 2012). Baker and McEnery (2017) and Fisher and Frey (2012) add that it is imperative that students not be told to just do these things, but teachers must model the expectation, facilitate discussion and encourage questions.

**Theoretical Framework**

A combined cognitive and sociocultural approach to literacy is the foundation of this research as literacy skills can be developed systematically using the social and cultural constructs students interact with daily (Davidson, 2010). Cognitivists agree that literacy skills are developed through specific stages, which include decoding (6-7 years old), fluency (7-8 years old), reading to learn (8-14 years old), etc. However, if educators teach literacy skills only in the stages above, students, often from diverse backgrounds, who struggle to read and do not master each stage in succession are often seen to lack the skills necessary to move on academically (Davidson, 2010). Many times, students from diverse backgrounds do not move through school (elementary, middle, or high school) with developmentally appropriate literacy skills. By understanding the needs of students and the knowledge they do bring with them to the classroom, teachers can provide direct instruction while engaging students with print to
develop literacy skills while improving confidence and motivation to read (Britto & Brooks-Gunn 2001; Compton-Lilly, 2003; Davidson, 2010).

**Methodology**

The question researchers sought to answer in this study was: What is the effect of middle school ELLs’ comprehension development when small groups are used to deliver research-based explicit literacy instruction? A case study approach was used to collect and analyze data that was collected over the course of 15 weeks in one academic year. Participants’ pre- and post-assessment data were collected from Common Formative Assessments (CFA), benchmark assessments, literacy strategy assessments and the Scholastic Reading Inventory (SRI). Additionally, the participants’ sixth and seventh grade End of Grade (EOG) data and WIDA ACCESS Test (World-Class Instruction Design and Assessment) data were used. Data analysis of participant, parent and general education teacher interviews allowed the researchers to gauge the participants’ feelings, behaviors and progress in reading development. These interviews occurred prior to beginning strategies instruction. Researchers collected the aforementioned data to examine the effect small group and literacy strategy instruction had on the participants. The methodology explored the effectiveness of strategies implemented to improve participants’ comprehension.

CFAs and district benchmark assessments were used to review all students’ attainment of learning goals district wide. The CFAs followed intermittent instruction of common core standards and occurred every three weeks; the benchmarks occurred after each nine-week grading period and covered all grade level language arts standards. The district mandated SRI was used to measure the students’ Lexile levels; a Lexile score of 870-1010 was on grade level for seventh grade. EOG data were collected, and a score of 3 or higher is required to pass this assessment. The WIDA ACCESS Test data was also collected; data from this assessment is collected yearly by the ESL teacher to determine if students could be exited from the ESL program. To exit the ESL program in the state in which this study took place, students had to score at least a level 4 in reading and writing and a level 6 in listening and speaking.

This study took place in a middle school in a small city school district in the Southeastern United States. The middle school had 550 students comprised of 27.8% African Americans, 30.2% Hispanics, 27.8% Caucasians and .9% Asians; at this school, 4.5% of the students were in the ESL program and 10.9% received EC (Exceptional Children) services. The average class size in the general education classes was 20-24 students.

Two ELL students participated in this study, and both were in the same general education language arts classroom. Student A was a seventh grade, 12-year-old boy, and Student B was a seventh grade, 12-year-old girl. Both were first generation Americans whose parents were from Mexico; the participants were born in the same community in which the school is located. Both
participants struggled with word recognition and comprehension. This study took place in a co-teaching environment through a push-in model. The ESL teacher was available daily for 75 minutes in the participants’ language arts class to facilitate small group instruction, and the student participants received ESL services via a pull-out model every other day (A/B day) for 75 minutes. The classroom was equipped with an active board, ActivExpressions, computers and a large library of books, magazines and dictionaries.

**Literacy Interventions.** Over the course of 15 weeks, multiple research-based literacy strategies were utilized repeatedly to support the participants’ reading comprehension development. Strategy instruction was aligned to the specific Southeastern state’s seventh grade Common Core Standards and WIDA Standards language objectives. The comprehension related strategies focused on pre-reading, multiple readings of a text with a specific purpose, annotating the text, using graphic organizers and summarizing what they had read.

During the pre-reading process, pre-reading activities were used to introduce a topic and address possible vocabulary and comprehension issues via frontloading. The participants watched video segments to enhance their background knowledge of the pending text’s content. Multiple readings of individual texts were required as participants engaged in the 15-week intervention. Participants read each text at least twice, and during these multiple readings, the participants would interact with the text via a lens that directed by their teacher. The participants would annotate the text during these readings by highlighting important information or drawing and writing in the margins to identify concrete information and inferences they had drawn. Multiple readings also allowed the teacher to demonstrate reading fluency and proper enunciation via read-alouds of the text while modeling how to think about the text as one reads, asking questions and making connections to the text to determine the main idea and supporting details. The teacher also modeled how to annotate the text to highlight the passage’s important information, avoiding the urge to over annotate.

When annotating the text, explicit instruction was provided that supported the participants as they learned to highlight vocabulary, main ideas and supporting details, positive and negative aspects of their reading and point of view. The participants also utilized highlighters to notate where they felt confident in their knowledge and understanding of what they were reading and where they still had questions. Additionally, when annotating the text, the participants were taught interventions related to test-taking strategies where they were encouraged to read the questions prior to reading the passage and notate in a passage when it connected to the questions being asked.

The participants also engaged in explicit instruction related to the use of graphic organizers. Throughout the course of the 15-week intervention, the student participants learned to use a variety of graphic organizers based on their purpose. They were instructed on how to use and
develop graphic organizers that addressed the following: compare and contrast, timeline, cause and effect, sequencing and problem/solution.

Finally, several interventions addressed summarizing text. These interventions included explicit instruction and guided and independent practice using language supports such as sentence stems, chunking (key words, main idea and paraphrase) and outlines to familiarize the participants with proper syntax and discourse of the content. As students participated in these literacy strategy interventions, participants consistently engaged in conversation surrounding their reading and practice annotating, using graphic organizers and summarizing the text citing specific information from the text to support their answers.

**Results**

Throughout the course of the 15-week literacy intervention, there was evidence that both participants demonstrated some level of success with a majority of the literacy strategies which must be considered in addition to their performance on the CFAs, benchmarks and SRI assessments. The participants also demonstrated that they were able to annotate text, utilize graphic organizers and summarize what they read on new information, areas which they struggled with prior to the small group instruction. As mentioned in the participant profile, Student A took an extended amount of time to complete assessments. By working in small groups, Student A was able to demonstrate his progress in smaller assessments related to individual reading concepts. Additionally, the small group instruction allowed the ESL teacher to recognize Student B’s need for glasses, when this had gone unnoticed in a large group setting.

**Overview/Participant Profile.** **Student A:** During formal and informal assessments, Student A needed an hour or more over the allotted time to complete the assignment. During the sixth grade year, he scored a level 2 on the reading EOG and did not pass. He also took but did not pass the WIDA ACCES Test for ESL students; he scored 3.8 in reading and writing and scored a 6 on the speaking and listening sections of test (See Table 4). Students must pass all portions of the test during a single administration.

During an interview with Student A, he stated that he liked to read, especially “if it is new and interesting.” He stated that good readers should make inferences while reading, and “look for context clues and write good summaries.” He felt it was important to know how to read because he needs to understand the book to be successful in school and for the future. He expressed that he needed to work on writing better summaries, looking over the questions and chunking the words to understand them. He mentioned that he did not have a special place to read at home and read only when he felt like it. Finally, he stated if the book is interesting enough, he makes an effort to read.
Student B: Student B makes many spelling errors as she does not apply the rules of spelling. She did not pass the reading EOG in sixth grade year, scoring a level 2. She also took the WIDA ACCES Test where she scored 3.5 in reading, 3.9 in writing, and a 6 in speaking and listening; overall, she did not pass this test (See Table 4). During an interview, Student B stated that she sometimes likes to read because she is always bored. She felt “good readers underline keywords and talk to the text.” She believed that reading was important because it teaches her lessons about life and practicing reading will help her become a better reader and pass her tests. She acknowledged that both reading and writing are important skills to have, and she needs to work on revising and looking back over her work.

In the parent interviews for Student A and Student B, they shared similar thoughts. Both parents thought their children did not like to read; Student A’s father shared that he did not think his child was a strong reader or comprehended what he read. Both parents stated their children read three to four times a week for half an hour and expressed that they would like to know how to help their children read better at home. In her interview, the language arts teacher shared that both participants were reading below grade level. At the time of the interview, their classes were working on summarizing paragraphs and identifying elements of plot. Both student participants were also enrolled in an elective class called “Big Future” that provided them with additional support related to literacy instruction. The teacher expressed that she did not think either participant read very much at home. She would like for Student A to be able to figure out words, talk to the text and understand the questions; she believed Student B needed assistance revising her written responses.

CFA, Benchmarks and SRI Assessments. The participants were assessed on their attainment of learning goals through their CFA and benchmarks. The CFA is an assessment that follows intermittent instruction of common core standards and occurs every three weeks. The district benchmark tests occur after each nine-week grading period. SRI data was used to measure the participants’ Lexile levels (See Tables 1 and 2). The data assisted in determining specific literacy strategies to be implemented during instruction.

Table 1: CFA Data

<table>
<thead>
<tr>
<th></th>
<th>Pre-Assessment</th>
<th>Formative Assessment 1</th>
<th>Formative Assessment 2</th>
<th>Post-Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CFA 7ELA</td>
<td>CA-RE-1Q (270934)</td>
<td></td>
<td>CFA 7ELA CA-RE-1Q (270934)</td>
</tr>
<tr>
<td>Student A</td>
<td>4 Correct</td>
<td>Identify main idea 10/10</td>
<td>Elements of plot 8/10</td>
<td>9 Correct</td>
</tr>
<tr>
<td></td>
<td>8 Incorrect</td>
<td></td>
<td></td>
<td>3 Incorrect</td>
</tr>
<tr>
<td>Student B</td>
<td>5 Correct</td>
<td>Identify main idea</td>
<td>Elements of plot 9/10</td>
<td>11 Correct</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9/10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Benchmark and SRI Data

<table>
<thead>
<tr>
<th></th>
<th>Fall Benchmark</th>
<th>Spring Benchmark</th>
<th>SRI Fall</th>
<th>SRI Winter</th>
<th>SRI Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students A</td>
<td>50.0%: 24/48</td>
<td>41.7%: 20/48</td>
<td>534 points</td>
<td>736 points</td>
<td>833 points</td>
</tr>
<tr>
<td>Students B</td>
<td>35.4%: 17/48</td>
<td>35.4%: 17/48</td>
<td>437 points</td>
<td>387 points</td>
<td>429 points</td>
</tr>
</tbody>
</table>

Students A and B were pre-assessed via CFAs before beginning the strategy instruction in their language arts class. The test contained three reading passages with 12 multiple choice questions. The participants were tested on their use and knowledge of context clues, central idea, details, plot, conflict and author’s point of view. Student A obtained four correct answers out of 12, while Student B obtained five correct answers out of 12 on the pre-test. During the first semester CFAs, Student A received 10/10 in main idea and 8/10 on elements of plot; Student B had the same score for main idea, but she scored 9/10 on elements of plot. On the post test, the participants were given the same passages and questions from the pre-test. Student A got 9 of 12 correct, and Student B got 11 of 12 correct.

The benchmark tests from the fall and spring were compared. Student A performed better in the fall with 50%. He had 24 correct answers out of 48. During in the spring, Student A scored 41.7%. He had 20 correct out of 48 questions. Student B scored the same on the fall and spring benchmark with 35.4% correct. The researchers compared the participants’ SRI data from the fall, winter and spring. Student A obtained 534 points in the fall, and he increased his SRI score to 736 by the winter. In the spring he again improved with a score of 833. Student B scored 437 in the fall and 387 points in the winter. In the spring her score increased from the winter to 429 points. During the study, the teacher determined Student B had difficulty seeing; upon this finding, she was referred to a doctor and received glasses after the study was completed. It is possible that this was a factor in her reading ability and subsequent scores.

**Literacy Interventions Assessment.** Throughout the course of this study, a variety of research-based close reading strategies were used and constantly revisited to address the participants’ reading comprehension. As was stated in the Literacy Interventions section of the
Methodology, participants engaged in interventions that allowed them to complete multiple readings of a text with purpose, practice annotating the text, using graphic organizers and summarizing what they had read.

Assessment results of the 15-week literacy strategies instruction were determined on a Met/Not Met basis, which Met with Some Difficulty also being used. Student A received a Met on 10/15 (67%) of the assessments. He received a Met with Some Difficulty on 3/15 (20%) and Not Met on 2/15 (13%). Student B received a Met on 10/15 (67%) of the assessments and Not Met on 5/15 (33%) (See Table 3).

Table 3: Literacy Intervention Focus and Data

<table>
<thead>
<tr>
<th>Week</th>
<th>Common Core Standard</th>
<th>Strategy Focus</th>
<th>Student A</th>
<th>Student B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RL.7.2: Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.</td>
<td>Annotating Text, Vocabulary Development, Main Idea/Supporting Details</td>
<td>Met</td>
<td>Met</td>
</tr>
<tr>
<td>2</td>
<td>RL.7.1: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</td>
<td>Annotating Text, Vocabulary Development, Use of Graphic Organizers</td>
<td>Met</td>
<td>Met</td>
</tr>
<tr>
<td>3</td>
<td>RL.7.3: Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).</td>
<td>Vocabulary Development, Elements of Fiction/Nonfiction</td>
<td>Met</td>
<td>Met</td>
</tr>
<tr>
<td>4</td>
<td>RL.7.6: Determine an author’s point of view or purpose in a text and analyze how the author distinguishes his or her</td>
<td>Annotating Text, Vocabulary Development, Author’s Purpose, Use of Graphic Organizers</td>
<td>Met with some difficulty</td>
<td>Met</td>
</tr>
</tbody>
</table>
position from that of others.

<table>
<thead>
<tr>
<th>Position</th>
<th>RL 7.1</th>
<th>RL 7.2</th>
<th>RL 7.4: Determine the meaning of words and phrases as they are used in a text, including figurative, connective and technical meanings; analyze the impact of a specific word choice on meaning and tone.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Met</td>
<td>Not Met</td>
<td>Summarizing, Chunking, Vocabulary Development, Main Idea, Author’s Purpose</td>
</tr>
<tr>
<td>6</td>
<td>Not Met</td>
<td>Met</td>
<td>Summarizing, Chunking, Vocabulary Development, Main Idea, Use of Graphic Organizers</td>
</tr>
<tr>
<td>7</td>
<td>Met</td>
<td>Met</td>
<td>Summarizing, Chunking, Vocabulary Development, Main Idea, Use of Graphic Organizers</td>
</tr>
<tr>
<td>8</td>
<td>Met with some difficulty</td>
<td>Not Met</td>
<td>Summarizing, Chunking, Vocabulary Development, Main Idea, Author’s Purpose</td>
</tr>
<tr>
<td>9</td>
<td>Met</td>
<td>Not Met</td>
<td>Inferences, Chunking, Vocabulary Development, Test Taking Strategies, Use of Graphic Organizers</td>
</tr>
<tr>
<td>10</td>
<td>Met</td>
<td>Met</td>
<td>Annotating Text, Summarizing, Chunking, Author’s Purpose, Vocabulary Development, Use of</td>
</tr>
</tbody>
</table>
Graphic Organizers

<table>
<thead>
<tr>
<th>11</th>
<th>RL.7.4</th>
<th>Citing Evidence, Vocabulary Development, Main Idea, Author’s Purpose</th>
<th>Not Met</th>
<th>Met</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RL.7.1</td>
<td>Using Context Clues, Vocabulary Development, Main Idea, Author’s Purpose</td>
<td>Met</td>
<td>Not Met</td>
</tr>
<tr>
<td>12</td>
<td>RI.7.2</td>
<td>Summarizing Text, Vocabulary Development, Main Idea and Purpose</td>
<td>Met</td>
<td>Met</td>
</tr>
<tr>
<td></td>
<td>RI.7.1</td>
<td>Using Context Clues, Graphic Organizers, Vocabulary Development</td>
<td>Met with some difficulty</td>
<td>Not Met</td>
</tr>
</tbody>
</table>

RI.7.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

RI.7.5: Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.

**WIDA ACCES Test and EOG Assessments.** Both participants took the WIDA ACCES Test in seventh grade, and upon completion of the study, they took the seventh grade EOG tests. Student A did not pass the EOG reading test; he scored a level 1. He also took the WIDA ACCES Test where he scored 6 in reading, 3.7 in writing, 6 in speaking and 4.7 in listening. Student B did not pass the EOG reading test and scored a level 1. She also took but did not pass the WIDA
ACCES Test where she scored 2.9 in reading, 3.5 in writing, 2.9 in speaking and 4.3 in listening (See Table 4).

**Table 4: EOG and WIDA ACCESS Assessment Data**

<table>
<thead>
<tr>
<th>6th Grade EOG Scores</th>
<th>6th Grade WIDA ACCESS Scores</th>
<th>7th Grade EOG Scores</th>
<th>7th Grade WIDA ACCESS Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student A</td>
<td>Reading: 2</td>
<td>Reading: 3.8</td>
<td>Reading: 1</td>
</tr>
<tr>
<td></td>
<td>Writing: 3.8</td>
<td>Speaking: 6</td>
<td>Writing: 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Listening: 6</td>
<td>Speaking: 6</td>
</tr>
<tr>
<td></td>
<td>Reading: 3.5</td>
<td>Reading: 1</td>
<td>Writing: 3.5</td>
</tr>
<tr>
<td></td>
<td>Writing: 3.9</td>
<td>Speaking: 6</td>
<td>Speaking: 2.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Listening: 6</td>
<td>Listening: 4.3</td>
</tr>
<tr>
<td>Student B</td>
<td>Reading: 2</td>
<td>Reading: 1</td>
<td>Writing: 6</td>
</tr>
<tr>
<td></td>
<td>Writing: 3.9</td>
<td>Speaking: 6</td>
<td>Speaking: 2.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Listening: 6</td>
<td>Listening: 4.3</td>
</tr>
</tbody>
</table>

**Discussion**

When considering the research question for this study, it was determined that the answer was two-fold. As is referenced in the findings above, the participants were successful on the literacy strategies instruction assessments (See Table 3); both participants achieved the Met status at a rate of 67% (10/15). Students A and B showed growth in their pre and post CFAs. During the fall and spring benchmark assessments, Student A scored lower in the spring than in the fall, and Student B’s scores remained the same. Student A’s SRI data from the fall, winter and spring showed growth while Student B’s SRI data declined from the fall to winter and increased between the winter and spring. Both participants scored lower on their seventh grade EOG than the sixth grade EOG. On the WIDA ACCESS Test, Student A saw growth in his reading scores and a decline in his writing and listening scores. It is important to note that he scored a 6 on the reading portion of the WIDA ACCESS Test, which is the highest possible score. Additionally, although both participants had lower scores in seventh grade on the listening portion of the WIDA ACCESS Test than in sixth grade, both participants still passed this portion of the test. Student B declined in all areas on the WIDA ACCESS Test. This information allowed the researchers to draw the conclusion that when presenting information in daily instruction, the participants were successful, but that success did not necessarily transfer to their broader assessments. After observing Student B in class and reviewing her work, the teacher realized that she had difficulties seeing the board and the texts from which she was reading. The parents were informed of this issue and it was suggested the parents to take her for an eye exam. After a visit to the doctor, it was confirmed that Student B had vision trouble and needed glasses.

The participants felt supported in the learning environment developed in this case study (Sizer & Meier, 2006). The individualized instruction and interactions with the participants allowed
the teacher to truly build relationships with them, plan personalized instruction to meet their needs, and in the case of Student B, realize her need for vision care (Calderon & Minaya-Rowe, 2011; Sizer & Meier, 2006). This study aligned with Harvey and Daniels (2009), as new strategies were introduced through small group instruction, which helped the participants better comprehend the text being studied. The results of the post-assessments were similar in both cases. The researchers noticed that both participants missed similar questions on the language arts assessments and indicated that the participants needed continued instruction in the areas of vocabulary development, finding the main idea and identifying the purpose. Through continued teacher support and modeling of close reading strategies such as reading text multiple times and annotating text with a specific purpose, participants can continue to practice these skills and utilize these strategies as they read independently (Brown, 1987; Fang & Schleppegrell, 2010; Fisher & Frey, 2012).

In this study, a variety of close reading strategies related to annotating text, using graphic organizers and summarizing were explicitly taught to the participants, and the participants demonstrated success on 10 of the 15 assessments related to this instruction. Gibbons (2009) suggested that addressing subject specific literacy needs should be explicitly taught across content areas to support ELLs as they develop their literacy skills. As evidenced in Table 3, the participants struggled with several areas including citing textual evidence, determining point of view, vocabulary, drawing inferences and using context clues. In his interview, Student A indicated that good readers made inferences, used context clues and summarized what they read. Student B stated that good readers could locate key words and interact with the text. Although this study showed that the participants were still learning how to proficiently make inferences, use context clues, etc., they were aware that these were strategies they needed to utilize to be good readers. Beers (2003) acknowledged these issues and supports the need for teachers to utilize a variety of literacy strategies including clarifying, comparing and contrasting, connecting prior knowledge, inference, predicting, questioning, recognizing the author’s purpose, seeing casual relationships, summarizing and visualizing in order to help students understand texts.

In this study, research-based literacy strategies were modeled to the participants multiple times, and they were provided many opportunities to read and use the strategies to support literacy growth (Harvey & Zemelman, 2004; NMSA, 2010). Allington (2012) and Krashen (2004) emphasized the need to support older struggling readers by increasing students’ access to informational texts and interaction with the text. The participants also need a toolbox of comprehension strategies to use when reading informational texts and opportunities to use informational texts for authentic purposes. Although the focus of the interventions in this study focused on comprehension, consistent emphasis was placed on the participants’ vocabulary development as Optiz and Guccione (2008) suggest that ELLs struggle with the shift between social and academic language. Lanning (2009) and Gibbons (2009) supported this sentiment as ELL students often speak English with their peers, and teachers assume that they use English academically as well which often is not the case.
Conclusion

This study sought to demonstrate how two participants benefitted from explicit research-based literacy strategies instruction in addition to regular classroom instruction. The participants’ results on their CFAs, benchmarks and SRI assessments indicated that both participants’ CFA scores increased; however, Student A had a slight decrease in the spring benchmark, and Student B had a slight decrease on the spring SRI assessment. Moving forward, researchers will continue to examine how small group, explicit strategy instruction with ELLs impacts their overall literacy growth. Future research should extend to include the comparative results of the other students in the general education language arts course to determine if the strategies instruction were the main source of the participants’ development. Additionally, the researchers will expand this study to incorporate multiple subject areas such as science, social studies and math teachers to continue the literacy development of students across content areas.

This study focused specifically on the reading aspect of literacy as defined in the literature review; however, additional data was provided in this section in the areas of writing, speaking and listening as proficiency is needed in all areas for students to be exited from the ESL program in this particular state. Future research is needed in the acquisition of reading as well as writing, speaking and listening to gain a complete understanding of literacy, not only for ELLs, but for all students. Additionally, continued support for parents is needed. Interviews with the participants’ parents showed that the parents did not believe their children were strong readers, and both wanted to learn how to assist their children with reading while at home. Future research should consider ways to engage and support the parents of adolescent students, both ELL and English speaking students.

About the Authors

Nichole L. Smith, Ed.D. is an Associate Professor and MAED Reading Program Coordinator in the Department of Administration and Instructional Services at North Carolina Agricultural and Technical State University. She teaches a variety of courses including undergraduate education courses and graduate literacy courses. As an educator, she feels it is necessary to create a student-centered learning environment driven by assessment data, where literacy is at the core of all learning. Email: nsmith2@ncat.edu

Mariel Gomez de la Torre-Cerfontaine, MAED is an ESL teacher and graduate of the MAED Reading Program at North Carolina Agricultural and Technical State University. She has taught ESL for the past 25 years. She teaches English to language learners. As an educator, she believes in the importance of working in small groups to differentiate instruction, and that literacy is an essential component is each content area. Email: gomezdelatorrem@triad.rr.com
**Barbara M. Butler, Ph.D.** is an Assistant Professor and the Elementary Education Program Coordinator in the Department of Educator Preparation at North Carolina Agricultural and Technical State University. She teaches a variety of courses including undergraduate education courses and graduate courses in science education and research techniques. As an educator, she feels it is necessary to create a student-centered learning environment driven by inquiry-based learning. Email: bbutler1@ncat.edu

**Dawn Waegerle, Ph.D.** is Clinical Faculty in the Department of Educator Preparation at North Carolina Agricultural and Technical State University. She teaches undergraduate and graduate courses in the field of Special Education with a focus on instruction and intervention. As an educator, she sees the interrelationship of instruction for students of all abilities and the importance for teachers to understand critical components of effective teaching. Email: waegerle@ncat.edu
References


USING A CONCEPT OF DEFINITION WORD MAP TO TEACH SCIENCE VOCABULARY

Kimberly Jones

Gregory-Portland Independent School District

Abstract The purpose of this study was to examine the teaching of science vocabulary using a concept of definition word map on students’ vocabulary knowledge and comprehension of science texts and concepts. Thirty-seven fourth-grade students from a medium sized, southern, suburban elementary school participated in the study. This study was conducted using a mixed, quasi-experimental approach. Both quantitative and qualitative data were collected and analyzed through pre- and post surveys, pre- and posttests, a focus group interview, student work samples, and teacher observations. Results of the study indicated that students’ vocabulary knowledge and ability to independently generate vocabulary definitions significantly increased. The focus group themes showed that students felt more confident in their understanding of science vocabulary and concepts and were better able to visualize what a word meant during classroom lessons or while reading. The results of this study can be used to help educators improve their science vocabulary instruction and student success with content area texts and concepts.

Keywords: teacher action research, graphic organizer, vocabulary, learning strategies, linguistic, nonlinguistic, concept of definition, word maps

Introduction

Throughout the primary grades, classroom instruction focuses primarily on teaching students how to read. Chall (1983) explains that students in second and third-grade read to confirm what they already know. At this stage, students “gain courage and skill in using context and thus gain fluency and speed” (Chall, 1983, p. 19). Beginning in fourth-grade, students transition from learning to read to reading to learn new information (Chall, 1983). Students are expected to independently read content area texts to gain knowledge of the concepts taught. They must also understand a great number of vocabulary words to successfully participate in and comprehend academic discussions. However, some students lack the necessary vocabulary to successfully accomplish these tasks. Vocabulary knowledge has a significant impact on comprehension, fluency, and achievement (Bromley, 2007). This holds true for all content areas, including science - thus vocabulary must be explicitly taught. One approach to direct vocabulary instruction in science is the use of a concept of definition word map. A concept of definition word map is a graphic organizer developed by Schwartz and Raphael (1985) that
provides categorized words linked to a central concept, illustrates examples, describes the properties of a word or concept, and provides a springboard for in-depth discussion on the central concept. Concept of definition word maps help students to access prior knowledge, remain actively engaged in the learning process, and make connections between new and previous knowledge.

Literature Review

Theoretical Framework. Pritchard (2009) explained the importance of learning styles to student success and the significant role they play in instruction. Learning styles can be defined as the manner in which an individual thinks, learns, processes information, and demonstrates their learning (Pritchard, 2009). Visual learners prefer information be presented in written form such as text, graphs, and displays; auditory learners respond best to discussions, lectures, and hearing stories; and kinesthetic learners prefer activities that elicit feelings or physical experiences. Additionally, Dunn and Dunn (1979) explained that learning styles consist of combinations of environmental, emotional, sociological, and physical elements. These elements involve the following factors: sound, light, temperature, design, structure, persistence, responsibility, motivation, working alone, working with peers, working with adults, time of day, and need for mobility. Dunn and Dunn (1979) found through their research that teachers often teach in the way that they themselves learned best, considering it to be the most effective. However, what works best for teachers is not always what works best for the students in their classrooms. Student achievement is increased when students are taught in a manner that aligns with their individual learning style (Dunn & Dunn, 1979; Pritchard, 2009). A concept of definition word map provides teachers with the opportunity to meet the needs of students with various learning styles. Visual learners may be engaged by the organized written text, auditory learners through in-depth discussion of the concept, and kinesthetic learners by the feelings elicited from the personal connections and stories discussed about the concepts. Furthermore, the graphic organizer provides structure for those students that need it and can be completed alone, with peers, or with the teacher. This variety increases the chance of reaching every learner and aids in storing the information in long-term memory.

Vocabulary Instruction. Some students struggle with the vocabulary presented in science instruction and texts, limiting their scientific communication skills. Vocabulary development is important because it is directly related to a student’s ability to comprehend content area texts and concepts (Bromley, 2007; Cohen, 2012; Manzo, Manzo, & Thomas, 2006). According to Gillis (2015), Johnson and Pearson (1984), and Rupley, Nichols, Mraz, and Blair (2012), students learn new vocabulary by accessing prior knowledge and relating it to words and concepts already familiar to them. This enables them to “develop, expand, and refine the concepts that word represents” (Rupley et al., 2012, p. 302). Many scholars have asserted that once students have sufficient background knowledge, they must be actively involved in the explicit teaching of
techniques for discovering vocabulary meaning, pronunciations, and word parts (Johnson & Pearson, 1984; Roberts & Truxaw, 2013; Rupley et al., 2012).

Johnson and Pearson (1984) designed an activity-based framework for vocabulary instruction in reading, which includes the use of semantic maps. They suggested that teachers choose a key word from the unit, list it on the board, solicit related words from the students through brainstorming, organize the words into categories, write the categorized lists on the board around the unit word, and lead an in-depth discussion with students about the completed map. They wrote that semantic mapping is highly beneficial during group instruction because students are listening to one another’s ideas and are practicing using the words in meaningful communication.

Schwartz and Raphael (1985) refined Johnson and Pearson’s (1978) semantic map and developed the concept of definition word map as part of an undergraduate study skills class. Like semantic maps, a concept of definition word map is a graphic organizer that provides categorized words linked to a central concept - however, it also illustrates examples and describes the properties of a word or concept. They next applied the concept of definition word map in instructional research with students in eighth-grade science and fourth-grade reading. Schwartz and Raphael explained that the concept of definition word map stresses the importance of students being able to figure out the meaning of a word on their own, teaches them what information makes up a definition, how to use context clues, and how to use background knowledge to increase their understanding of words used in content areas other than reading. Students are explicitly taught to locate general concept words to categorize the vocabulary word, use details to describe the word, and refine their thinking to find examples. This process involves using context clues, generating and writing definitions, using resources such as dictionaries, and eventually internalizing the process.

Gillis (2015) described the importance of vocabulary instruction in not only reading, but math, science, and social studies as well. She suggested the use of the concept of definition word map to help students “deepen their understanding of the technical vocabulary associated with concepts in English, mathematics, science, and social studies” (p. 282). Gillis (2015) also noted that the concept of definition word map can be adapted to work for a variety of vocabulary terms and that they are effective when studying words that have multiple meanings.

Nonlinguistic Representations. To increase students’ ability to store and retrieve information in permanent memory, students need to process information in linguistic and nonlinguistic ways (Marzano, 2004). Cohen (2012) discussed the effectiveness of incorporating imagery, or nonlinguistic representations, with direct vocabulary instruction in science. Content areas, such as science, have copious amounts of unknown vocabulary that are essential to students comprehending the concepts being taught. The author suggests integrating imagery with direct vocabulary instruction as an effective strategy for increasing vocabulary knowledge. Cohen explained that illustrations provide students with visual clues to help connect words to their meaning and commit them to memory. The effectiveness of imagery can be increased if
students create the images themselves, with or without teacher assistance, and combine them with the use of semantic maps.

Dual Coding Theory suggests that both verbal processing and nonverbal representations are needed to develop knowledge and meaning, as well as to commit these to memory (Sadoski, 2005). Sadoski (2005) explained that the verbal code, or linguistic representation, consists of speech and written words, while the nonverbal code, or nonlinguistic representation, involves images of objects or events. The prime cognitive method of nonverbal representation is mental imagery and is linked to the development of specific word meaning (Sadoski, 2005). Concrete language elicits a web of related words to help readers make connections to prior knowledge, while simultaneously provoking mental images related to those words. The combination of verbal and nonverbal representations (linguistic and nonlinguistic) activate both the right and left hemispheres of the brain, therefore attending to individual differences in learning and increasing the chance that vocabulary knowledge is stored in long term memory (Sadoski, 2005).

**Methodology**

*Research Questions.* There is an abundance of research (e.g., Elleman, Lindo, Morphy, & Compton, 2009; NICHD, 2000; Stahl & Fairbanks, 1986) reflecting the importance of vocabulary development on comprehension in the reading classroom, as well as strategies to improve vocabulary knowledge. However, limited research is available on how vocabulary development and associated strategies can be extended to the science classroom to improve student success with concepts and comprehension of texts. The purpose of this study was to examine the efficacy of teaching science vocabulary using the concept of definition word map. The researcher sought to determine its effect on students’ vocabulary knowledge and how students used the concept of definition word map to support their understanding of content area texts and/or concepts.

*Context.* The study was conducted with a sample of convenience. Thirty-seven fourth-grade students from two of the researcher’s class periods participated in the study. One class period consisting of 19 students, three of which were ELLs, received intervention in line with this research. Another class period consisting of 18 students, three of which were ELLs, served as a control group. The students were given a pre-survey and pretest to determine a baseline. There were no statistically significant differences between the two groups based on the pre-survey and pretest measures, and Levene’s f statistic was not significant, therefore, pre-experimental equivalence was assumed. The researcher’s remaining class period, consisting solely of students in the Gifted and Talented program, was excluded from the research.

The participants were from a medium sized, southern, suburban elementary school, which serves 595 fourth and fifth-grade students. The student population was 1.4% African American, 63.9% Hispanic, 32.9% White, .5% American Indian, 1.4% Asian/Pacific Islander, 48.7% economically disadvantaged, and 4.7% ELL. The intervention group was 63.2% Hispanic, 31.6%
White, and 5.3% Asian, 36.8% economically disadvantaged, and 15.8% ELL. The control group was 73.7% Hispanic, 26.3% White, 52.6% economically disadvantaged, and 15.8% ELL.

Data Collection and Procedures. This study was conducted using a mixed, quasi-experimental approach. A pre- and post survey and pre- and posttest were utilized for quantitative data collection and analysis, as well as to inform future vocabulary instruction. Qualitative data was collected in the form of focus group transcriptions, student work samples, and teacher observations. Work samples were obtained and teacher observations were made after each of the ten student-completed concept of definition word map lessons.

To determine a baseline, the first piece of quantitative data was collected by giving the students a pre-survey (see Appendix B) to determine their background knowledge and assess their ability to independently generate correct definitions for each vocabulary word. Students were asked to mark whether they did not know the word at all, had heard of it but did not know what it meant, or knew it and could write a brief definition. For example, one word on the vocabulary survey is ‘species’. Students completed one of the following actions: placed a check mark in the column labeled “I do not know this word at all”, placed a check mark in the column labeled “I have seen this word, but I cannot define it”, or they indicated that they knew the word by writing a definition. The survey was adapted from Bruun, Diaz, and Dykes (2015).

A second piece of quantitative data was collected by giving the students a pretest (see Appendix C) to assess their vocabulary knowledge when given definition choices. The test was formatted as a matching activity. The students were given a list of vocabulary words and definitions and asked to match each definition to the correct vocabulary word. For example, for the word ‘species’, students read a list of definitions and identified “A group of organisms with similar characteristics that allow them to reproduce” as the correct definition. Students repeated this process for each word on the vocabulary list.

The study was conducted during the second semester of the school year. Although many related concepts are taught in previous grade levels, the researcher could not attest to whether students received instruction on the specific vocabulary words in the study or to what extent they may have been taught. The words were not taught or discussed by the researcher prior to the intervention. During week one of the study, the students were introduced to two vocabulary words through the context of classroom science lessons. Words were not directly taught; rather, as the teacher presented lessons and activities, the students had to draw conclusions about each word’s meaning. As each lesson progressed, the teacher stopped periodically to allow students to reflect on what they had discussed and guided them through completing the concept of definition word map (see Appendix A) for each vocabulary word through teacher demonstration. Teacher demonstration for the first two vocabulary words consisted of briefly brainstorming ideas with the students of what could be written in each box of the word map and allowing them to individually choose which ideas they would like to write.
on their paper. Students recorded information on the concept of definition word map in their own words and using their own graphic representations (see Figure 1). After each concept of definition word map was completed, work samples and teacher observations were collected to provide qualitative information on the students’ understanding of each vocabulary word. The control group received vocabulary instruction in line with the school’s curriculum. This instruction entailed students looking each vocabulary word up in their textbook’s glossary, making a notecard for each word, a corresponding notecard for each definition, mixing the cards up, and working with a partner to match each word to its definition.
The students learned three vocabulary words each week during weeks two and three of the study. The amount of teacher support provided during the lessons to complete the concept of definition word maps was gradually released, allowing students to work more independently. Students learned two vocabulary words during the fourth week of the study and completed the graphic organizers independently. Students could jot down their thoughts on the graphic organizer at any point during the lessons. After each concept of definition word map was completed, work samples and informal teacher observations were collected to provide qualitative information on the students’ understanding of each vocabulary word. Informal teacher observation focused on student engagement. To determine vocabulary growth, the students also completed the post survey and posttest at the end of the fourth week.

On the last day of the study, a focus group was held and transcribed. Member checking was employed to establish trustworthiness of focus group transcriptions. After transcription, students’ responses were analyzed to identify emerging categories, determining if there were any common themes. Data was coded for the following categories: allowing students the ability to see or visualize what a word means, increasing vocabulary knowledge, how students use that knowledge, and student excitement. Student concept of definition word map samples and teacher observations were also used to collect qualitative data.
Results and Discussion

Each This quasi-experimental study examined the effects of teaching science vocabulary utilizing the concept of definition word map on the vocabulary knowledge of fourth-grade students as compared to the strategies usually used to teach vocabulary in this setting. Using a sample of convenience, 37 fourth-graders from two of the researcher’s class periods participated in the study. One class period, consisting of 19 students, served as the intervention group. Another class period, consisting of 18 students, served as a control group. The participants were administered a pre- and post survey and pre- and posttest to determine vocabulary knowledge growth.

The researcher created the vocabulary survey and vocabulary test. To establish validity, both assessments were peer reviewed by two colleagues to determine if they were effective measures of the vocabulary words contained within the study. Peer review was also used if the researcher had any doubts as to the correctness of student created definitions on the vocabulary survey.

Pre- and Post survey: Independently Generate Definitions. Students were given a vocabulary survey at the beginning and end of the study to determine their ability to independently define science vocabulary words. Students were asked to mark whether they did not know the word at all, had heard of it but did not know what it meant, or knew it and could write a brief definition. A paired sample $t$-test was conducted to evaluate the impact of the intervention on students’ vocabulary knowledge. There was a statistically significant difference in vocabulary scores from pre-survey [$M=26.84, SD=16.00$] to postsurvey [$M=66.31, SD=19.78$, $t(18)=-9.06$, $p<0.001$] for the intervention group, thus the null hypothesis was rejected. There was also a statistically significant difference in vocabulary scores from pre-survey [$M=31.11, SD=22.20$] to postsurvey [$M=54.44, SD=19.77$, $t(17)=-6.02$, $p<0.001$] for the control group. The effect size, measured using Cohen’s $d$, was large ($d=2.19$). The control group’s eta squared statistic ($d=1.11$) indicated a large effect size as well. These results are summarized in Table 1.
Table 1: Paired Samples T-Tests for Pre and Post Survey: Independently Generate Definitions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Presurvey M (SD)</th>
<th>Post survey M (SD)</th>
<th>T</th>
<th>p</th>
<th>ES^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (n=19)</td>
<td>26.84 (16.00)</td>
<td>66.31 (19.78)</td>
<td>-9.06</td>
<td>&lt;0.001</td>
<td>2.19</td>
</tr>
<tr>
<td>Control (n=18)</td>
<td>31.11 (22.20)</td>
<td>54.44 (19.77)</td>
<td>-6.02</td>
<td>&lt;0.001</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Note. ES, effect size as measured by Cohen’s d., .2 = small, .5 = medium, .8 = large

The pre- and post survey results are also shown in Figure 2. Students in the treatment group made higher scores than the control group by the end of the study. The treatment group also made greater gains than the control group, 39 points and 23 points respectively.

Figure 2: Pre- and Post survey: Independently Generate Definitions Results

The results of the vocabulary surveys indicate that the students’ ability to independently define vocabulary words was significantly increased by utilizing a concept of definition word map during science instruction. These results support the researcher’s hypothesis that the concept of definition word map was effective in developing science vocabulary knowledge. The findings also suggest that the students had a deeper understanding of the vocabulary words’ meanings and may be more successful in classroom science discussions, thus positively impacting student learning.
Pre- and Posttest: Matching. Students were given a vocabulary test at the beginning and end of the study to determine their ability to match words to the correct definitions. The students were given a list of vocabulary words and definitions and asked to match each definition to the correct vocabulary word. There was a statistically significant difference in vocabulary scores from pretest \([M=53.68, SD=25.21]\) to posttest \([M=72.63, SD=20.77, t(18)= -4.32, p<0.001]\) for the intervention group, thus the null hypothesis was rejected. There was also a statistically significant difference in vocabulary scores from pretest \([M=56.67, SD=19.70]\) to posttest \([M=78.89, SD=25.87, t(17)= -2.99, p<0.01]\) for the control group. The effect size, measured using Cohen’s \(d\), was large \((d=.82)\). The control group’s eta squared statistic \((d=.97)\) indicated a large effect size as well. These results are shown in Table 2.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pretest M (SD)</th>
<th>Posttest M (SD)</th>
<th>(T)</th>
<th>(p)</th>
<th>ES^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (n=19)</td>
<td>53.68 (25.21)</td>
<td>72.63 (20.77)</td>
<td>-4.32</td>
<td>&lt;0.001</td>
<td>0.82</td>
</tr>
<tr>
<td>Control (n=18)</td>
<td>56.67 (19.70)</td>
<td>78.89 (25.87)</td>
<td>-2.99</td>
<td>&lt;0.01</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Note. ES, effect size as measured by Cohen’s \(d\), .2 = small, .5 = medium, .8 = large

The pre- and posttest results are also shown in Figure 3. The control group earned higher scores than the intervention group by the end of the study. Students in the intervention and control groups made similar gains from the beginning of the study to the end, 19 points and 22 points respectively.
The results of the vocabulary tests indicate that students’ vocabulary knowledge through matching words to definitions increased as well, although at a lower rate than the control group. These results did not support the researcher’s hypothesis in all aspects. Although the students’ scores increased significantly, they did not surpass the scores of the control group. Although the vocabulary matching test was an effective measure of the vocabulary words and was written at a level appropriate for fourth-grade students, not all students read on grade level. This may have limited students’ performance on the test and may be better administered in the future if read aloud to students.

**Qualitative Analysis.** This study also sought to determine the ways in which students can use the concept of definition word map to support their understanding of content area texts and/or concepts. At the completion of the study, a focus group was conducted to determine common themes about how the students use the concept of definition word map to aid in their comprehension of science discussions and concepts and their feelings towards using it. The focus group was guided by the following questions:

1. We have been working on this new graphic organizer. Can you tell me how it’s helped you or how it might help you in the future?
2. Where might you see the words?

Student responses were transcribed and member checking was employed to establish validity. Analysis of student responses to identify emerging categories revealed the following themes: allowing students the ability to see or visualize what a word means, increasing vocabulary knowledge, how students use that knowledge, and student excitement. The researcher also analyzed work samples completed by students during the time of the intervention and recorded observational notes.
The students in the focus group indicated that using the concept of definition word map to learn vocabulary meanings helped them to visualize the word to better understand it. One student responded, "It shows me examples and pictures of it and it makes me understand the word more." Another student said, "It helps me imagine what the word means." Figure 4 shows a student-completed concept of definition word map.

**Figure 4: Student Completed Concept of Definition Word Map**

![Concept of Definition Word Map](image)

The responses provided in the focus group indicated that the students felt their vocabulary knowledge had increased from the beginning of the study to the end and that their knowledge of vocabulary words can help them when reading. One student declared, "I started knowing what all the words meant and it'll help me if one of the words is in a book." The students also specified that their knowledge will help them know what a word means if they see the word on a sign, poster, or on the Internet. Another student stated, "In the future we might run into the words and then we know what it is."

While completing the post survey, the researcher observed that students in the intervention group were much more confident in independently composing and writing vocabulary meanings than the control group (see Figure 5). Students in the intervention group wrote the definitions independently, while students in the control group were hesitant to write their thoughts and raised their hands to ask for assistance on a regular basis. The results from the post survey support this observation.
The researcher observed that students in the intervention group became more excited to learn new vocabulary words as the study progressed. During the first week, students gave short descriptions out loud during classroom discussions and on the graphic organizer, with only a few students raising their hand to share their ideas. By the end of the study, most students were excited to share their independently generated definitions with the class. Students also showed increased eagerness to create sentences with each word at the bottom of the graphic organizer. During the first week, students needed assistance to create a sentence using the day’s vocabulary word. However, after the intervention, several students asked if they could write more than one sentence using the vocabulary word.

**Implications and Conclusion**

The purpose of this study was to examine the teaching of science vocabulary using the concept of definition word map on students’ knowledge and comprehension of science texts and concepts. This research study provides evidence of positive outcomes in the use of the concept of definition word map for vocabulary instruction in science classrooms. Utilizing the concept of definition word map increased vocabulary knowledge by allowing students to access background knowledge, make connections between new and prior knowledge, construct
definitions independently, explore examples and non-examples, and visualize a word’s meaning in an engaging manner, thus increasing comprehension of content area texts and concepts.

The results of the survey, test, and researcher observations support the findings of Schwartz and Raphael (1985) and Gillis (2015). They demonstrate how the concept of definition word map helped students use details to describe the words, refine their thinking to find examples, and generate their own definitions. The results of the focus group support the findings of Cohen (2012) and indicate that integrating imagery, or nonlinguistic communication, with vocabulary instruction was an effective strategy for increasing the students’ vocabulary knowledge.

As vocabulary development is directly related to a student’s ability to comprehend content area texts and concepts (Bromley, 2007; Cohen, 2012; Manzo, Manzo, & Thomas, 2006), developing vocabulary knowledge is crucial to student success. Utilizing the concept of definition word map offers teachers the opportunity to directly teach vocabulary in a meaningful and engaging manner and allows students to utilize both linguistic and nonlinguistic representations to commit vocabulary to long-term memory.

Taking all data into consideration, the results suggest that students in the intervention group may be more successful in comprehending classroom lessons and content area texts and have an increased ability to apply this knowledge in daily life situations than the control group. The research-based knowledge provided by this study will enable both the researcher and the teachers on the researcher’s campus to redesign their science vocabulary instruction to ensure future student success. The concept of definition word map will be utilized as the primary source of vocabulary instruction within each teaching unit, providing students with the opportunity to brainstorm ideas, use details to describe words, utilize background knowledge, use both linguistic and nonlinguistic representations, and participate in in-depth discussions to increase their understanding of science vocabulary. Students will be slowly guided through creating the concept of definition word map on their own in a vocabulary journal, reducing their reliance on a pre-printed graphic organizer, therefore helping them to internalize the process.

This study can be expanded upon by researching student comprehension of science texts before and after the study through running records and teacher-student conferences. Lengthening the study to a full semester or entire year to gather more data and including more participants in the fourth-grade or other grade levels would be beneficial as well. To further research the effectiveness of the concept of definition word map, researchers could also apply the strategy in other content areas such as social studies and math.
About the Author

Kimberly Jones is a Mathematics Gap Intervention Specialist in Gregory-Portland ISD, she has twenty years of elementary classroom teaching experience, and is currently working on her Ph.D. in Curriculum & Instruction at Texas A&M University – Corpus Christi. Her dissertation research is focused on utilizing the Concrete-Representational-Abstract sequence of instruction with Tier 3 students in a Response to Intervention model. Her free time is spent reading and going on outdoor adventures with her dog Berkley. Email: KimberlyJones8246@yahoo.com
References


Dunn, R.S., & Dunn, K.J. (1979). Learning styles/teaching styles: Can they... should they... be matched? *Educational Leadership, 36*(4), 238-244.


Appendix A: Concept of Definition Word Map

What is it?

What is it like?

What are some examples?

Sentence: ____________________________
### Appendix B: Vocabulary Survey

<table>
<thead>
<tr>
<th>Vocabulary Word</th>
<th>I do not know this word at all.</th>
<th>I have seen this word, but I cannot define it.</th>
<th>I know this word! The definition is…</th>
</tr>
</thead>
<tbody>
<tr>
<td>species</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reproduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>niche</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>habitat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>adaptation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>camouflage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mimicry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix C: Vocabulary Test

Student Name __________________________  Date __________________________

### Adaptations Vocabulary Test

Directions: Write the letter for each definition on the blank next to the corresponding word.

| ___ species | a. The living and nonliving things around an organism. |
| ___ reproduction | b. A role an organism plays in its environment. |
| ___ niche | c. A group of organisms with similar characteristics that allow them to reproduce. |
| ___ habitat | d. The act of making something new. |
| ___ environment | e. A place or environment where an organism naturally lives. |
Adaptations Vocabulary Test Continued

Directions: Write the letter for each definition on the blank next to the corresponding word.

___ adaptation
   a. Characteristics that blend in with the surrounding environment that increase chances of survival.

___ structure
   b. The resemblance of an organism to another organism that gives it a better chance of survival.

___ function
   c. An inherited trait or learned behavior that helps an organism survive in its surroundings.

___ camouflage
   d. The way something works or what it can do.

___ mimicry
   e. A body part on an organism.
USING ACTION RESEARCH IN A GRADUATE LITERACY CLASS TO CONNECT THEORY TO PRACTICE: A REPLICATION STUDY

Juan Araujo
Texas A&M University—Commerce

Joel Blaylock
Bonham ISD

Pearl Garden
Dallas ISD

Sandra Hogg
A Plus Elementary

Liza Larue
Dallas ISD

Deborah Murillo
Dallas ISD

Bonnie Still
Boles Middle School

Angela Venters
Region 7 ESC

Leslie Patterson
Human Systems Dynamics

Abstract Herein, we use action research as a means for graduate students to develop and grow in their professional expertise as literacy teachers/coaches/specialists. In short, this manuscript aims to document Ernie Stringer’s Look, Think, Act routines of seven students as they inquire about one particular situation in their own settings, to improve their own practices, and the outcomes of their students. This process allowed students and the faculty leading this effort to become active participants and thoughtful as they considered the educational theories they were learning in class.

Keywords: teacher action research, connecting theory to practice, reading education, look-think-act cycle
Introduction

There I always felt like a trapeze artist performing without a net when I first stepped in front of an audience... Luckily, I managed to mask my trepidation in front of an audience as a classroom teacher... (Gruwell, 2007, p. 248)

In spring 2017, a doctoral class embarked on a project to put into action what they were learning about literacy and its instruction. Together we decided to put all fear and trepidation aside and instead teach with our hearts (Gruwell, 2007). As doctoral students engaged with the anchor text *Theoretical Models and Processes of Reading, Sixth Edition* (Alvermann, Unrau, & Ruddell, 2013) one of their charges was to put these ideas in practice in their professional settings as elementary classroom teachers, instructional specialists, instructional supervisors, campus English language arts coordinators, and school counselors using Ernie Stringer’s Look, Think, Act model (Patterson et al, 2010; Stringer, 1996; Stringer, 2007; Stringer et al, 2009) linking theory and practice. Together, the students and faculty read, spoke about, and documented what they were learning from the text. The conversations led the students and faculty to come to an agreement to document and report their individual experiences using action research as their primary methodological approach.

Literature Review

*Action Research.* Action Research (Lewin, 1946) is a methodological approach used by teachers and other practitioners to look within, collect data about a particular inquiry, organize and analyze the data, develop a plan to address a particular question, implement a particular plan, evaluate the results of the inquiry, and continue to repeat the process until satisfactory results are met. As teachers and school administrators seek for answers to their inquiry questions they often find that more questions emerge that lead to subsequent research cycles similar to Ernie Stringer’s look, think, act cycles as seen in Figure 1 (Mertler, 2009, p. 13).

*Figure 1: Stringer’s Look Think Act Cycle*
In Stringer’s model, teachers/action researchers continuously “Look, Think, and Act” on a particular area on interest in search of the improvement of their own teaching, or finding solutions to a question they are facing, or trying to address their students’ needs. Mertler (2009) suggests that one action leads to other “Look, Think, Act” cycles as seen in Figure 1 (p. 13). This “simple, yet powerful framework (Stringer, 2007, p. 8)” invites teachers to see, think, and do something to address a particular inquiry. In this study, the faculty and the students chose to use this approach because it allowed for students to monitor a current practice they were concerned about, collect and analyze the appropriate data, and then consider/put in practice a plan of action to address their inquiry.

**Professional Development.** Diane Ravitch (2010) suggests that what makes some districts and independent school districts successful is a:

> “...relentless focus on instruction and professional development; its cultivation of teacher and principal support; its experimentation with new approaches; and the conscious of “collegiality, caring and respect” among all staff members. Improvement relied on professionals who were willing to take the initiative to take risks, and to take responsibility for themselves, for their students, and for each other (p. 43).”

The above quote precisely articulates our aim for engaging in this professional development activity—to form a community of practice (Lave & Wenger, 1991), to take risks, and to be there for one another as we attempt to implement these practices to our classroom routines.

**Methodology**

**Purpose.** This research is the product of those experiences as students and their professor engaged in a semester long action research project to address the question: What happens when seven doctoral students take an action research stance to put into practice what they are learning in a graduate literacy class?

In sum, the seven doctoral students: 1) studied and thought about their classroom practices, 2) developed a burning question connected to a literacy topic they were studying, 3) conducted research pertaining to their inquiry, 4) planned and implemented possible solutions, and 5) reported those inquiries in a case study format.

This study focused on the ways seven graduate students followed through Stringer’s entire action research cycle as they put into practice what they were learning in a graduate literacy class to solve a pressing issue they were encountering in their particular settings.
Case Study. We use case studies to synthesize and report the “Look, Think, Act” cycles of the participants because this methodology helps to answer the question that are targeted to a limited number of events, ten or less, and how they relate to each other. Yin (1994) says “case study design is effective when it is used to investigate a contemporary phenomenon within its real-life context, when the boundary between the phenomenon being studied and the context are not clearly defined, and when multiples sources of evidence are used to study the phenomenon at hand (p. 84).”

Setting. The university is located in the rural southwest of the United States. It enrolls 13,000 undergraduate and graduate students, and is considered a higher research activity doctoral granting university by the Carnegie Classification of Institutions of Higher Education (2013).

The purpose of the course was for graduate students pursuing a doctoral degree in curriculum and instruction with a concentration in reading to engage in an in-depth analysis of varied definitions and theories of reading including the examination of implications for reading instruction. During the semester the graduate students identified and analyzed historical changes in the conception of reading and literacy; they identified, analyzed, and compared various processes of reading; they identified, analyzed, and compared various theoretical models of reading; and finally, they became independent researchers as they put into action, the “Look, Think, Act” research cycle for one of the topics they learned about in the course in their professional settings (i.e., classroom, teacher professional development, training sessions, or reading specialist). This “simple” yet complex framework seemed methodologically appropriate given the purpose of the assignment, the desired outcomes, and time constraints.

Participants. There were seven students and one faculty member in this study. Two students were at the beginning of their doctoral coursework, one student was at the end of her coursework, and four students were in the middle of their program. All seven students intended to earn a doctor of education with a concentration in reading education. The faculty member was in his tenth year of university teaching. Six students taught or worked for urban schools, and one student taught in a small-town rural school.

Data Collection. As these students transacted with the text (Rosenblatt, 1978) they spoke about the different challenges they were facing with their students, teachers, and colleagues. Multiple sources of data were collected to study the “Look, Think, Act” cycle. The sources collected included class notes, class lectures, class discussion, informal conversations, lesson plans, and other instructional artifacts. They looked within to identify a literacy topic that needed immediate attention.

Data Analysis. Halfway through the semester the students began to develop and implement a plan of action using the multiple sources of data with input from their critical friends (Pine,
2009) including other students and faculty in addition to the multiple sources of data they had collected along the way. From that point forward, the group spent some time at the beginning of each class discussing the challenges they faced as they implemented their plan paying close attention and making connections to the literature they were reading.

The seven students then used journaling to document their actions as they plan, and delivered instruction. Sharing and communicating the results was a challenge at first because for many of the students this was the first time they were tasked to look within, report their findings to other students, and write it up their experience for publication. Individually, we coded the emerging notes, then we set aside time in class to discuss our codes as a class because our cohort was small, after coding we divided our findings into three groups (i.e., look, think, act). Each author then crafted a draft of their narrative and brought it with them the next class. Luckily, the possibility of dissemination to a larger audience through a national presentation, or a possible publication made the task appealing. Toward the end of the semester, the group presented their data to each other in an open forum, they discussed their findings, and then worked together using a writing workshop approach to provide constructive feedback as they wrote their “Look, Think, Act” cycles which follow.

Results

Seven Cases. The following seven cases aim to demonstrate how teachers/literacy leaders/literacy administrators use the look, think, act cycle in their particular situations to put in practice what they are learning in graduate reading class.

Bonnie

As a fifth grade ELAR teacher, I found it important to understand the most productive ways to approach vocabulary instruction. I knew my students were lacking in rich vocabulary and felt that putting into practice the “Look, Think, Act” cycle would be the perfect opportunity to work toward building those skills. Nagy and Scott (2013) say, “Vocabulary knowledge strongly influences reading comprehension” (p. 458), so as a reading teacher this idea is very important to me. My guiding question was, “What can I change or add to my vocabulary instruction to create an atmosphere rich in vocabulary where students are engaged in the process of enhancing vocabulary knowledge and skills?”

Look. After reading about vocabulary processes in our text, I began to understand the importance of teaching vocabulary in different ways, offering multiple opportunities, and involving students in the process. Nagy and Scott (2013) say, “there should be an emphasis on instruction that is authentic, meaningful, and integrated” (p. 458). With this in mind, I made the decision to involve students more by having them search out and identify unfamiliar words to discuss and research in class as well as offer choices of different games and activities to help them become more acquainted and comfortable with the words they had chosen.
Think. Giving students multiple opportunities to make instructional decisions gave them ownership of the new vocabulary words and activities because they felt a deep sense of ownership. Fostering their involvement in the planning, lesson delivery, and instruction enhanced the students’ interests, so when the activities took place they felt more eager to engage with them. Students showed more excitement during class discussions, group activities, and games.

Act. Nagy and Scott (2013) say that vocabulary instruction should provide multiple and varied encounters, lead to the ability to explain meaning, and promote the use of the word (p. 462-463). Once students had each chosen a word to contribute to the list, they discussed their words and possible meanings with one another after reading aloud the portion of the text in which they had found them. Next, students were given choices of how to explain and present their word and its true meaning to the class such as different formats of Frayer models, flipcharts, or posters. For example, one student chose to create a poster board displaying her word, definition, examples, and illustrations. This student was so excited to share her project with the class she finished it early. The poster was informative, descriptive, and visually appealing. After the presentation, I observed other students changing and adding improvements to their work before sharing. Students were also given choices of games to give them further practice with the words. Some examples from their choice list were concentration cards, board games, and dice games. However, their favorite was vocabulary musical chairs.

Throughout this process, what I found most encouraging for me was that students found this work enjoyable and it showed during the learning process and in the comments they made to me and to each other as they were engaging with the words. Students began making their own flashcards to become more familiar with the words, finding them in different settings outside of the classroom and reporting it to the class, and many did extra activities rather than just picking one of the choices provided. The atmosphere is so much more inviting and exciting when students actively take part in the instruction. I feel confident the class will excel on their upcoming vocabulary assessment due to involvement, engagement, and elevated interest levels. These lessons and activities have changed my practice and overall outlook on instruction. My future practices will involve students in planning, instruction, and offer students choices.

Angela
I am an Elementary English Language Arts Specialist and Dyslexia expert at a regional service center in north Texas. I am charged with supporting teachers in grades kindergarten through fifth grades in 106 schools.

Look. A campus administrator contacted me at the middle of the year about helping classroom teachers utilize running records as a means of determining literacy levels (i.e., frustration,
independent, instructional levels) and then helping them identify and develop strategies to target those needs during small group instruction. The administrator reported that the teachers met with students in small-guided reading groups, but they were not making significant progress in the reading abilities of the students and wondered if there was anything I could do to help. The administrator wanted to make sure that they knew how to take running records, but most importantly, analyze running records so that they could plan targeted instruction. After speaking with the campus administrator, we decided to schedule a campus staff development about running records and their use for planning literacy instruction.

Think. In thinking about this challenge and the planning of this professional development, I wanted to address the needs that had been expressed to me by the campus administrator. I thought back to when I was in the classroom, and what made the difference for me as a primary teacher. My campus emphasized guided reading as the foundation for reading instruction, and the use of running records to guide my decisions about when to modify the guided reading groups. The impact of these two instructional components made a world of difference for me as a teacher so I knew it would be an asset for those teachers as well. Fountas and Pinnell (2012) state that there is an important difference between implementing parts of a guided reading lesson and using guided reading to bring readers from where they are, to as far as the teaching can take them in a given school year. If teachers are only going through the motions of guided reading, they are truly missing out on the intended purpose. Grounded in foundational research from Marie Clay (1982), guided reading is only effective when the teacher knows how to direct students’ in their reading development. During guided reading, the teacher’s role is to know when and how to teach, prompt, and reinforce the processing strategies for their students in increasingly challenging texts. Fountas and Pinnell (2012) state that teachers are learning that accurate word reading is not the only goal; efficient, independent self-monitoring behavior and the ability to search for and use a variety of sources of information in the text is key to proficiency. This proficiency can only become a reality when teachers utilize guided reading the way that it was truly meant to be used in the classroom, as a supportive framework as students become more proficient with continuous text.

I also chose running records because they complement guided reading. I asked myself, if teachers do not take running records on their students, how will they know what their students need? This campus was only taking running records three times a year, so therefore they did not know what their students needed on a more consistent basis. Ken and Yetta Goodman used the term miscue analysis in place of error: this was because of the negativity associated with the word error. According to Goodman & Goodman (2013), miscue refers to the unexpected responses that readers make during oral reading. These miscues can assist teachers as they are analyzing running records. Teachers must have an in depth understanding of the meaning (M), structure (S), and visual (V) cueing systems when they analyze the running records. Goodman & Goodman (2013) also state that miscue analysis provides evidence that readers integrate cueing systems from the earliest initial attempts at reading. A teacher can learn a lot from taking a running record, but only if he or she has been trained in how to search
and identify patterns within their students’ reading because only then can action be applied to help direct the student as they progress in their reading development.

Act. When I went back to the campus, a few days later I was met by a teacher who said, “I have taken a running record on a few of my students.” She analyzed the record, and was able to see the strengths and needs of the students. She noticed that one student was solely relying on visual information, namely the beginning sound of words. He was not attending to meaning; therefore, just calling a word that had the same beginning sound. As a result of the teacher noticing the pattern, she was able to target this weakness in her guided reading group. She provided a mini teach point at the beginning of the lesson that modeled for students how to look across a word to confirm what it is, while asking oneself, “Does it look right?” and “Does it make sense?” The students then went into the text and as the teacher listened in on them reading, she provided prompting and reinforcement. At the conclusion of the lesson, she questioned the students in the group about particular notes that she had taken in reference to them using the strategy and how it helped them. The students seemed to be more aware, but the teacher will continue to reinforce as they become more independent with this strategy.

The campus administrator is now performing walk through based on the training and holding all teachers to the same standards. Follow up is key in professional development. The next step for this campus is for me to provide similar trainings to new teachers.

Liza

I teach second graders in a rural community in North Texas. Many of the students in my classroom are transitional readers. To help them move to fluent readers I try to find creative ways to incorporate fluency activities throughout the day in my classroom. So, when one of the topics in the course addressed fluency, I was eager to research the topic. As I began to research my topic, I found that Rasinski (2010) conducted a lot of research on the topic. Teaching children to read is a complex undertaking. Reading involves various processes to become fluent readers (Rosenblatt, 1978; Alvermann, Unrau, & Rudell, 2013; Rummelhart, 1994) Fluency is when a reader has mastered the text with automaticity with word recognition and decoding skills, as well as reading with prosody (Rasinski, 2010). In order for a student to become fluent, they have to practice.

Look. I use music in my classroom to transition students from one activity to another. As the students were transitioning one day, I realized that the videos I was using on YouTube were closed-captioned. I decided to post the videos during transitions and encourage the students to read the lyrics to improve fluency. It was a simple activity that could be easily integrated throughout the day. I observed their reactions to the lyrics and how they interacted with the texts. It was interesting for me to see their engagement in reading. To understand more about this practice, I read articles and books written by Rasinski (2010; 2012). I also began to listen to several of Rasinski’s podcasts and video clips on YouTube to learn more about his research.
While listening to one of his presentations on YouTube, he discussed the ways musical lyrics help students with fluency.

Think. I decided to introduce five songs during the first week. The songs were from the Kidz Bop collection. I knew I had to ‘hook’ the students with songs that they would enjoy. As students got more familiar with the lyrics, I would add a new song. It was interesting to see the students actively engaged when I would post the lyrics on the board. Many students would correct themselves when looking at the words. An administrator had observed the interaction the students had with the text. She stated, “I was surprised how the students would check to see if they had gotten the lyrics right when they weren’t necessarily looking at the text.” As the year progressed, I added more songs. I included songs that had lyrics and pertained to different content areas. Now, that the school year is almost over, I have noticed an increase in student’s fluency than I have in previous years. For example, I have a student in my class that was working slightly below grade level. She struggled with fluency and comprehension. During our end of year assessments, the students showed gains in fluency and comprehension skills. She is now reading above grade.

Act. Providing students an opportunity to practice fluency with the use of musical lyrics can be engaging to students. Observing students trying to get the words accurately while singing allowed them to take ownership of their learning. They wanted to get the words right. By including songs with lyrics was a simple way to get students to practice their fluency with little planning on my part. I did not have to create special activities everyday to practice fluency. I used technology, students’ interest, and an opportune time in my day to provide a fun way to practice their fluency. All it took was a little creativity!

Moving forward, I will incorporate videos with musical lyrics in other content areas more often, especially with math content. I did use lyrical music in science and social students, but I think more use in math will hopefully develop students’ vocabulary skills. There are a variety of reasons this strategy can help students in the classroom.

Sandra

The desire to reach students with reading difficulties has been my goal since I started teaching 17 years ago. I have worked with under privileged students from all walks of life and stress to them the importance of reading and the knowledge it reveals when they open the pages of opportunity.

Look. For my action research project, I decided to work with students who were reading well below the national average for 4th graders. These students were unable to decode words, sound out words, or connect corresponding letter symbols to sounds. After reading the
**Theoretical Models** (Alvermann, Unrau, & Rudell, 2013) text I was interested in initiating a literacy framework that will allow them to analytically approach a word and make a letter-sound connection. According to Clay’s (1982) literacy processing theory, she found “That the beginning, proficient reader uses language and visual and motor information so what on the surface looks like simple word-by-word reading, but involves children linking many things they know from different sources (visual, auditory, phonological, movement, speaking/articulating, and knowledge of the language (p. 28).”

**Think.** It was my initial assessment that these students had inadequate decoding skills and had missed the foundational skills needed to read texts. After looking at their cumulative folders I found that two of the students had been diagnosed with dyslexia, and one had been identified with a learning disability. All three students had good verbal communication skills. Initially, I had each student take a pre-assessment performed on the school adopted reading monitoring program (ISIP). This monitoring tool diagnosed the reading skills the students had mastered and those that needed further development. The findings from the assessment allowed me to adjust the phonics instruction I implemented with these students. I decided to go over sounds patterns, word patterns, and other phonemic awareness skills for 20 minutes daily. After direct explicit phonics instruction, students completed an independent assignment that focuses on a guided interactive lesson. When students mastered those skills, an advanced lesson provided additional instructions or other skills the student lack.

**Act.** Even though literacy encompasses many areas of development, mastering the foundational skills, allows the reader to gain the ability to cognitively process a word with little effort in a working system that connects the reader and the text (Clay, 2001). According to Singer (1994), “Readers who have acquired the necessary working systems are able to mobilize rapidly and flexibly a hierarchical organization of subsystems in which a minimum of mental energy and attention are devoted to the input systems.” I plan to continue working with these students using the literacy processing theory in which visuals, phonological teaching, and word attack skills are the focus. Reading moving forward has become an achievable goal for them and print is more than an object on paper. I am sure that with continued explicit support and practice, reading will be a life-long skill that will open up many doors of opportunities for them.

Joel

I am an intermediate school counselor in rural district in the Southwest. As a teacher, I help students make sense of challenging word problems as they prepare to take standardized tests. Some of my coworkers say that my job includes helping students learn effective test taking strategies.

**Look.** For this project, I look at the work of Tanbe, a student who has difficulty applying background math knowledge to the passages she reads and therefore oftentimes has difficulty answering comprehension questions. In my experience, this difficulty causes students like
Tanbe to do not do well on state standardized tests because they rush causing misunderstandings between the text and the reader. Below in Figure 2, find an interaction between Tanbe and myself where she confuses a mathematical figure.

**Figure 2: A Conversation with Tanbe**

**READING:** In 1999 people in the United States held about 1,755,000, $5,000 bills.

**Me**
Okay as you read the different parts I’m going to stop you and ask you what you know about them.

**Tanbe**
In 1999 people in the United States held one hundred 755 thousand, $5,000 bills.

Okay, mark that first number

You mean the one hundred seventy five thousand dollars in $5,000 bills?

Okay what do you know about that first number?

It’s one million, seven hundred and fifty-five thousand.

That is correct write millions above that number.

**Think.** As a counselor, I believe that strategy instruction proposed by Palinesar and Brown (1984), and, will give students increased text comprehension and better performance on standardized tests by allowing them time to reread and build self-monitoring skills. So, in the case of Tanbe I suggested a strategy to address the miscues she encountered when she faced multiple syllable words. First, I told her to stop whenever she encounters difficult vocabulary. Second, I told her to write what she thinks the word means directly above the word. Third, I told her to see if the background word fit into the existing pattern. Paribakht and Wesche (1997) say that this strategy helps students determine possible word meaning from the context that can be applied to the text.

**Act.** This method allows students to use decoding skills and increase comprehension by examining and explaining the words using what they already know about the word as a scaffolding tool. Moving forward, I plan to ask students to write what they know about unfamiliar words directly above the difficult words they encounter then use their background knowledge as a temporary scaffolding tool.
Deborah

I am an instructional specialist manager (PK-2) for an urban district. My role is to help prepare specialists to support teachers' literacy practices. To do so, the specialists attend weekly trainings to stay abreast of best practices. During this semester, I have come to the realization that reading and its instruction is complex and requires a systematic approach to the way I prepare my reading specialists. In short, the question becomes, how do I create a structured support system to prepare literacy specialists to deliver high quality professional development to the teachers in their particular schools?

Look. This spring, I have reflected about the coaching cycle we use to train specialists and the support these specialists give to teachers. From my point of view, our specialists have to wear many hats and service an array of needs. Because of this, I conclude that my specialists need an extra layer of support and a narrower target of measurable objectives. It is my belief that making this change will enhance the preparedness of the specialists that will in turn aid in the delivery of professional development for teachers.

Think. So, this spring I began to add a layer of support with the creation of a document to aid in the tracking and monitoring of individual specialists training and the professional development they delivered based on this training. During the analysis, I realized that the learning happening for the literacy specialists was wide instead of deep. That is to say, they knew a little about many topics but only a few were experts in the particular topics they taught. In sum, after reading (Alvermann, Unrau, & Rudell, 2013) and consulting with my team members and specialists I decided to focus our trainings moving forward on the balanced literacy approach and assigned lead specialists to write the curriculum and design trainings for the specialists to meet those purposes.

Act. A common goal in our district is to have all students reading on grade level by third grade. Part of that can be accomplished by having highly trained instructional specialists who are knowledgeable of based balanced literacy approaches that incorporate whole language and phonics (Goodman & Goodman, 2013). In my view, specialists need a strong foundation of balanced literacy approaches along with a command of the coaching cycle. My role moving forward is to create a managed approach for leads and specialists so that they can better prepare teachers to improve the literacy skills of their students from grades K-12. For now, however I will charge my literacy specialists to focus their instruction of grades kindergarten through second grades as a way to remain small.

The layered support system along with targeted professional development will help specialists have a clear understanding of their role and responsibilities. The work moving forward will
equip the district with support systems that are structured around common literacy practices. In the future, other considerations will need to be made to ensure program fidelity.

Pearl

I am a kindergarten – second grade Instructional Specialist for a large urban district and work for Debbie. I work with teachers at 3 low performing elementary schools. My role as a specialist is to coach, mentor, and train the k-2 teachers at those campuses. I am a certified reading specialist but I also work with core subjects. I have been in education for 19 years and have taught special education and EC-5. I have been in my current role as an instructional specialist for 2 years.

Look. As an instructional specialist, I trained under professionals who were a part of the Reading First movement. As result of that training my love for the use of the read-aloud was revived. In my work with teachers, I have noticed that they seldom use the read-aloud, even for the simple enjoyment of reading. During this semester, I was reminded about the power of read aloud and its implications for future literacy success. I want to reintroduce the use of the read-aloud to teachers. As a classroom teacher, I used the read-aloud because it is a widely accepted as a means of developing vocabulary (Newton, Padak, & Rasinski, 2008). In this class, I have been reading and studying the work of Nagy and Scott (2013) and have also read Kindle’s (2009) study on children’s vocabulary growth to inform me on ways I can advocate for read aloud. In sum, I want to train teachers on vocabulary processes using read-aloud as a tool to introduce and model this very critical comprehension skill.

Think. I have created some mini lessons that I use to model ways that teachers can teach vocabulary skills to their students. I have also gathered resources like graphic organizers, anchor charts, and reading strategies guides that teachers can use to plan their own mini lesson using a book of their choice. I want to show them that there are various ways they can help students increase their word knowledge. I am doing practitioner research on the topic of using read-aloud to teach vocabulary acquisition. I understand that the processes that students need to recognize the complexity of word knowledge are important in their vocabulary acquisition so, what I want to do is work with my teachers to model and train them on ways they can maximize their use of the read-aloud as a best practice in reading instruction and vocabulary acquisition. I want to do a study that answers the question: “Does using the read-aloud to introduce, model, and teacher vocabulary help students increase word knowledge?” I would like to use teachers that are willing and who are already using this practice and compare them to teachers who are not (for whatever reason). I believe that using the read-aloud will help students increase their word knowledge at a rate that is faster than the student whose teachers are not already using this practice.

Act. A part of my role of Instructional Specialist, I am responsible for creating and presenting professional development. I have already created a professional development session that
details ways that teachers can use the read-aloud to teach basic reading skills. I will create a professional development that trains teachers on explicit vocabulary instruction, which is so critical for the students we serve. “Students who need help most in the area of vocabulary — those whose home experience has not given them a substantial foundation in the vocabulary of literate and academic English — need to acquire words at a pace even faster than that of their peers” (Nagy & Scott 2013). I will also continue to coach, mentor, and plan with the teachers that I serve to implement the strategies and skills in vocabulary acquisition that I have trained them on throughout the next school year. The ultimate goal is reading comprehension which research demonstrates (Nagy & Scott, 2013) is strongly influenced by vocabulary knowledge.

Discussion

Bonnie, a fifth-grade teacher, reported that her students had limited vocabulary. Angela, a reading specialist, said that the teachers she was working with in her center needed help with informal reading inventories and guided reading. Liza, a second-grade teacher, reported that she wondered about increasing the fluency levels of her second graders. Sandra, an ELA coordinator, found that some of her fourth-grade students were unfamiliar with phonics and still struggled to make connections between letters and sounds. Joel, an elementary counselor, noticed that his students had trouble passing standardized tests. Debbie, an instructional supervisor, said that she wanted the reading specialists to be experts. Pearl, a kindergarten through second grade instructional specialist, found that her teachers needed more instruction about the benefits of read aloud. Altogether, these cycles suggest that we developed because we were able to put into practice what we learned about reading and its instruction and also to find ways to put what we are learning in the larger context of the literacy profession.

Moreover, this opportunity to develop as a community of scholars provided us with a better way to connect what we are learning in the graduate class to our personal, professional aspirations and work commitments with respect to literacy. That is to say, learning literacy theory during our course of study was an important aspect to what we did, but adapting the “Look, Think, Act” research cycle to our own individual situations allowed us to bring these abstract ideas into our real situations. Boyer (1990, pp. 77-78) aptly states, “The aim of education is not to only prepare students for productive (higher education) careers, but also to enable them to live lives of dignity and purpose; not only to generate new knowledge, but to channel that knowledge to humane ends.” Taking on a practitioner-scholar (2007) role was the difference that made the difference to how we saw our situation, the ways we thought about them, and what we did about it.

Conclusion

Our iteration of the “Look, Think, Act” cycle in our graduate class reminded us that teacher decisions are informed by a multitude of factors including: curricular mandates in their local
situations, political climate and affiliations of the time, students’ and teachers’ needs, and the professional development experiences of those who are engaged in the decisions (Araujo, 2011). That is to say, that the decisions teachers make about what we teach and how we teach it is a complex undertaking and require us to make it a habit to always look, think, and act to ensure that we are providing adequate instruction to our students that is sensitive to their immediate needs. Ultimately, the students reported that taking part in this action research cycle reinvigorated their beliefs about the ability to connect theory to practice and their pursuit of a doctorate in reading education.

William Bowen, said, scholarly research “reflects our pressing, irrepressible need as human beings to confront the unknown and to seek understanding for its own sake. It is tied inextricably to the freedom to think freshly, to see propositions of every kind in every changing light. And it celebrates the special exhilaration that comes from every new idea (Boyer, 1990, p. 17).” It was the intent to do just that with our “Look, Think, Act” cycles—we know our findings with these initial attempts will lead us to future work and discoveries.

As action researchers, we experienced first-hand that it is possible to innovate on the run—to parallel professional development & curriculum development as we tried to meet the needs of the students.

About the Authors

Juan Araujo is an Associate Professor and Assistant Department Head with Curriculum and Instruction at Texas A&M University Commerce. He teaches courses at the undergraduate and graduate level pertaining to language and literacy. His research interests delve into preservice teacher preparation, inservice professional development, and writing and its instruction. Email: juan.araujo@tamuc.edu.

Joel Blaylock is an upper elementary counselor at Bonham ISD. He is quickly approaching the end of his doctoral coursework. His research interests include the study of struggling readers with learning challenges. Email: Jblaylock@leomail.tamuc.edu.
Pearl Garden is a K-2 Instructional Specialist in Dallas ISD. She has been an educator for 20 years. Pearl is a 3rd year doctoral student at Texas A&M University Commerce. Email: pgarden@leomail.tamuc.edu.

Sandra Hogg is a native of Texas with 18 years of educational experience. She is the Dean of Instruction for a charter school located in southeast Dallas. She has been a teacher, literacy interventionist and coach. She is currently a doctoral student at Texas A&M—Commerce where she is pursuing a degree in Curriculum and Instruction. She is married and a mother of 3 wonderful young adults. Her 3-year-old grandson is the light of her life and enjoys spending time with family and friends. Email: shogg@leomail.tamuc.edu.

Liza Larue is a K-2 Instructional Specialist for Dallas ISD. She was a classroom elementary teacher for 12 years. Liza is currently a doctoral student at Texas A&M Commerce. Her research interests include the implementation of literacy practices and the study of multi-literacies in elementary classrooms. Email: klkjr2321@gmail.com.

Deborah Murillo is an Instructional Specialist Manager (PK-2) for Dallas Independent School District. She is a 3rd year doctoral student at Texas A&M University Commerce. Email: dmurillo1@leomail.tamuc.edu.

Bonnie Still is currently a 5th and 6th grade ELA and Social Studies teacher at Boles Middle School. This is her 13th year in education. Ms. Still has taught 2nd, 5th, and 6th grade over the years. Bonnie's philosophy of education includes the importance in growing through research and experience as well as building relationships with students and families. Email: bstill@leomail.tamuc.edu.

Angela Venters is a K-5 Elementary ELA and Dyslexia Specialist in East Texas. Angela is a 4th-year doctoral student at Texas A&M—Commerce. Her research interest is struggling readers, particularly those that are identified as dyslexic. Angela has been in education for 18 years, serving in multiple capacities. Email: mresventers@gmail.com.

Leslie Patterson taught English and language arts in Texas middle and high schools for ten years before becoming a teacher educator. Now retired from university work, she is a Co-Director of the North Star of Texas Writing Project, a National Writing Project site, and a consultant with Human Systems Dynamics Institute, which focuses on generative work in complex systems. Email: leslie.patterson@unt.edu.
References


GENTS CLUB MENTORSHIP PROGRAM

Tye Parr  
Cobb County School District 

Becky Sinclair  
Texas A&M Commerce

Susan Szabo  
Texas A&M Commerce

Abstract  It is important that educators examine existing school programs to make sure they are fulfilling their established goals. Thus, this summative action research study evaluated the Gents Club to determine its impact on three at-risk students. This study revealed that the lessons taught as well as the mentoring provided by the teachers do help at-risk students to make positive behavioral changes.

Keywords: teacher leadership, teacher action research, mentorship, gents club

Introduction

We, the second and third authors, are university liaisons and professors working with classroom teachers. This assignment gives us time to spend time in various classrooms talking with many teachers. One teacher, the first author, was excited about some data collection that was being completed and was hoping we would help him share the results through an article. So, even though we were not involved with data collection, we found the story about the Gents Club to be interesting and agreed to step in as mentors and researchers to guide this classroom teacher through the writing process of this action research.
Literature Review

With the No Child Left Behind Act (2002), there are more and more students being labeled at-risk, as they are not passing the mandated state achievement tests and are in danger of dropping out of school and not completing their education (Worley, 2013). Each year, school districts are teaching more students who are labeled at-risk students for a variety of reasons: low achievement, retention in grade level, behavior problems, poor attendance, and poor attitudes. Therefore it is imperative that schools develop programs to better connect with and support those students who are at-risk (Dappen & Isernhagen, 2005). You must show them you care before they will learn (Johnson, 2007; Nodding, 2005).

Theoretical Perspective. This summative action research was posited within the caring theory. The caring theory (Nodding, 2005) states that natural caring takes place when one wants to do something positive toward another individual. The Gents Club was created on the premise that caring adults can help students to build better relationships and build a more positive self-image. The faculty advisors and mentors of the Gents Club cared about helping students and hoped that through scaffolding and modeling caring that they could not only build a caring relationship with these students but also encourage them to build more positive relationships with their peers.

Mentoring. Throughout the past several years, various interventions have been implemented to help at-risk students (Becker, 2004; Bernard, 2005; Dalaz, 2004; Gordon, Iwanmoto, Ward, Potts, & Boyd, 2009; Powel, 2002). One of these interventions has been some type of mentoring program.

Mentoring is defined as the structured and trusting relationship that brings two different types of people together. One is a caring individual (the tutor) who offer guidance, support, and encouragement to another individual (the mentee). This pairing of a less experienced person with one who has had life experiences inevitably leads to the willingness to teach, coach, counsel, sponsor, and energize the mentee (Laughlin & Yopp, 2006).

Studies have shown that mentoring programs do help students increase their academic learning (Converse & Lingnugaris-Kraft, 2009; Gordon et al, 2009), increase positive behavior (Mitchell et al, 2002; Jekielek et al, 2002) and build their self-esteem (Mitchell et al, 2002). However the success of these programs depends on the effectiveness and the quality of mentoring that is received (Goldner & Mayseless, 2008). In addition, research suggests increasing interactions between mentors and mentees, increases mentee self-esteem and confidence in their abilities to be successful (Converse & Lingnugaris-Kraft, 2009; Goldner & Mayseless, 2008; Wood & Mayo-Wilson, 2012). Thus, mentoring programs have the potential for making a real difference in students’ lives (Dappen & Isernhagen, 2005). In addition to helping at-risk students remain on the right track, “it also provided a way for successful adults to give something back to their communities” (Jekielek et al, 2002, p. 1).
Methodology

Purpose of the Study. The purpose of this formative action research study was to determine if the implementation of the Gents Program led to increased student achievement, decreased discipline referrals and decreased unexcused absences. Three research questions led the study:

1. What impact does the Gents Mentorship Program have on at-risk 8th grade boys’ academics?
2. What impact does the Gents Mentorship Program have on the amount of disciplinary actions given to at-risk 8th grade boys?
3. What impact does the Gents Mentorship Program have on the self-esteem of at-risk 8th grade boys?

Design. This formative action research study examined a mentoring program called The Gents Club to determine how the Gents Club’s happenings impacted the three at-risk boys that were members of the club. The faculty advisor’s wanted to discover how the Gents Club activities influenced these at-risk boys in choosing the correct behaviors, as they had a history of disruptive behavior in their classes, failing grades, alternative placements, general apathy towards education, and multiple records of disciplinary actions which caused them to miss valuable instructional time.

“Action research helps educators be more effective at what they care most about – their teaching and the development of their students” (Sagor, 2000, pp. 1). In this case, the action research study allowed the Gents Club faculty advisors to take a reflective stance and examine how the club was impacting three at-risk student’s academic, social, and emotional well-being. The study used a pre/post design and used the seven-step action research process (Sagor, 2000).

Context and Setting. The school district is comprised of approximately 45 campuses including 6 high schools, 8 middle schools, and over 30 elementary schools that contribute to the total of approximately 37,700 students. It is a Texas Education Agency (TEA) recognized district. The ethnic distribution of the school district can be found in Table 1 below.

Table 1: Ethnicity of the Students

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>District Count and Percentage</th>
<th>Middle School Count and Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>9,207 (25%)</td>
<td>242 (30%)</td>
</tr>
<tr>
<td>American Indian</td>
<td>279 (.07%)</td>
<td>3 (.4%)</td>
</tr>
</tbody>
</table>
Asian    831 (2%)   21 (3%) 
Hispanic    18,078 (48%)   334 (41%) 
Pacific Islander    55 (.01%)   1 (1%) 
White    8,398 (22%)   190 (23%) 
Two or More Races    805 (2%)   18 (2%) 

The middle school where the study took place had over 800 students. There were 395 students in 7th grade and 414 students in 8th grade. Five hundred and two students were considered economically disadvantaged and 319 students were labeled as being at-risk. There were 40 general education teachers and 8 special education teachers. This middle school was the only school to meet the district’s Adequate Yearly Progress (AYP) goal. The ethnic distribution of the students is very similar to the district distribution.

Participants. At the time of this study, there were three at-risk 8th grade male students who were the participants. The three students had behavioral problems and had been referred numerous times and had received in-school suspension and/or individual time-out. These placements for students that have demonstrated inappropriate behavior in their classes or during transitional times in the hallways or cafeteria do not allow the students to follow their normal schedule of classes, as they have to stay in one confined space for the entire school day, thus causing them to miss valuable instruction time as well as socializing with their peers.

Student A was an African American male who started attending this middle school in his 7th grade year. He was involved in a crime that ended in the murder of another person. He was not found guilty of the actual crime, but faced consequences due to the fact that he was associated with the incident and convicted felons. Upon starting middle school, he struggled with making passing grades, sought counseling for dealing with the murder he witnessed, and was constantly in the office or alternative placements for misbehavior. He was very impulsive but aware of his actions.

Student B was a Caucasian male that struggled during his 7th grade year. He lived with his father in a low socio-economic neighborhood, and he rarely saw his mother as she was incarcerated. Due to his father’s work schedule, he was often left home alone. The student has essentially had to raise himself from a young age. He also qualified for special education services and his behavior fluctuated on a daily basis. In addition, he had a strong dislike towards education and having to attend school.

Student C was a Hispanic male that had an aggressive nature towards his peers and teachers which greatly affected his involvement in extracurricular activities. He continuously received office referrals for talking back to teachers, engaging in arguments with others, and/or fighting.
He spent a lot of time in the hallway for disruptive behavior in the classroom, so he has had to attend credit recovery and failed his state mandated assessments.

**Gents Club.** The Gents Club was designed to provide additional support outside the regular classroom setting. The name Gents originated from shortening the word gentlemen, as the organizer wanted to create interest but at the same time use a student-friendly descriptor. The Gents Club was created to mentor 8th grade boys and to help them increase their self-esteem while providing them with information that would help them make positive social, emotional, and academic choices.

**Becoming a Member.** Each academic team leader consulted with their team of teachers to determine five students to recommend for membership into the Gents Club. The academic team was charged with three responsibilities: 1) make sure the list of students had a diversity of students which mirror the ethnic population of the school; 2) select three students that have no disciplinary problems, make good grades and are seen as leaders; and 3) select two at-risk students that may be more challenging cases but are chosen for their potential to benefit from what the organization has to offer. Once the boys agreed to be an active participate in the Gents Club program, each were assigned a male mentor who were also teachers at the middle school.

**The Meetings.** The participants of the Gents Club met once a week for planned activities, help with homework, and one-on-one time with their tutor/mentor. The planned activities, which were designed to help members build basic skills, included a weekly book talk on a building character chapter and a monthly community project. During these meetings, a book study using *The 6 Most Important Decisions You'll Ever Make: A Guide for Teens* written by Sean Covey was completed. Each week, different chapters were assigned to read and the boys and teachers would come together to talk about the chapter ideas. The topics included making good decisions, succeeding in school, making good friends, dealing with peer pressure and bullying, getting along with parents, dating and sex, addictions, and building self-esteem and self-worth. Each topic lesson contained interactive portions where the students could share their own experiences as well as learn from their peers' experiences. They also filled out a graphic organizer to help develop their thoughts with the topics and reference throughout the duration of the school year. The meetings followed a specific format and sequence: 1) an engaging short video clip or song (with printed lyrics), 2) an introduction of topic, 3) the completion of the graphic organizer, 4) an open discussion of experiences (with set norms of respecting other member’s thoughts and opinions and freedom to share them with no judgment), 5) review/conclusion of topic, & 6) the reading of a quote related to the topic for the members to keep in mind as they encounter such situations both inside and outside of school.

In addition, to the book study, the Gents took part in community involvement activities, which included various leadership opportunities, meet and greet with local businessman and/or community leaders, an etiquette dinner, and a campus tour to a local college. These activities
allowed the gents to meet a variety of positive male role models who tried to help them see the value of a good education and to let them know that they were the future of the community.

**Results and Discussion**

The purpose of this pre/post formative action research study was to determine if the implementation of the Gents Program led to increased student academic achievement, decreased discipline referrals and increased self-esteem. The study lasted only 6-weeks but various data was collected to answer the research questions. To examine the academic achievement of the participants (RQ#1), student’s grades were collected. To examine the behavior incidents of these participants (RQ#2), student’s released discipline data reports from the assistant principal were collected. Finally, to examine participant’s self-esteem (RQ#3), a self-esteem survey was given. The research questions drove the sequence of data collected, examined and reported.

*Research Question #1 - Academic Achievement.* The progress reports were used for the pretest and the final six-week grades were used for the posttest scores to answer question #1, What impact does the Gents Mentorship Program have on at-risk 8th grade boys’ academics? As seen in Table 2, Student C content grades showed he had the most growth and he had knowledge growth in all four content area subjects with the most growth in English. This is not surprising, as he had the lowest pretest scores of the three students. His English grade changed from an F to a C, his math scores changed from an F to a C, his science scores changed from a D to a C and his social studies remained the same earning a B.

*Table 2: Academic Performance*

<table>
<thead>
<tr>
<th></th>
<th>Student A</th>
<th></th>
<th>Student B</th>
<th></th>
<th>Student C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post (-8)</td>
<td>Pre</td>
<td>Post (+14)</td>
<td>Pre</td>
<td>Post (+60)</td>
</tr>
<tr>
<td>English</td>
<td>64</td>
<td>72</td>
<td>40</td>
<td>54</td>
<td>16</td>
<td>76</td>
</tr>
<tr>
<td>Math</td>
<td>49</td>
<td>60 (+11)</td>
<td>70</td>
<td>73 (+3)</td>
<td>35</td>
<td>70 (+35)</td>
</tr>
<tr>
<td>Science</td>
<td>63</td>
<td>55 (-8)</td>
<td>75</td>
<td>70 (-5)</td>
<td>61</td>
<td>70 (+9)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>54</td>
<td>61 (+7)</td>
<td>82</td>
<td>85 (+3)</td>
<td>77</td>
<td>78 (+1)</td>
</tr>
<tr>
<td>Total Growth</td>
<td>230</td>
<td>248 (+18)</td>
<td>267</td>
<td>282 (+15)</td>
<td>189</td>
<td>294 (+105)</td>
</tr>
</tbody>
</table>
Student A had growth in his scores from his pretest to his posttest scores for three out of the four content area subjects but lost ground in science. He brought up his English grade from a D to a C, his math grade from an F to a D and his social studies grades from an F to a D. However, his science grades went down, as it moved from a D to and F.

Student B had growth in his scores from his pretest to his posttest for three out of the four content area subjects but he also lost ground in science. In addition, even though he had growth, his growth was the least of the three students. His math grade remained a C and his social studies grade, even though it went up a little, remained a B.

Research Question #2 – Behavior. The released discipline data reports from the assistant principal were used to answer question #2, What effect does the Gents Mentorship Program have on 8th grade at-risk boys disciplinary action. A simple tally was used to show the number of times the students received disciplinary actions. In addition to the disciplinary infractions received, the number of days students lost instruction due to being given in-school suspension (ISS) are noted (see Table 3).

Table 3: Discipline Action Data

<table>
<thead>
<tr>
<th></th>
<th>Student A</th>
<th>Student B</th>
<th>Student C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dress Code Violations</strong></td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td><strong>Disrespect/Verbal Abuse</strong></td>
<td>0 2</td>
<td>0 0</td>
<td>1 0</td>
</tr>
<tr>
<td>Lost 1+5 Days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disruptive Activity</strong></td>
<td>0 0</td>
<td>1 1</td>
<td>0 0</td>
</tr>
<tr>
<td>Lost 3+12 Days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inappropriate Behavior</strong></td>
<td>1 0</td>
<td>1 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Lost 1 Day</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As seen in Table 3, there were five items that were tracked for disciplinary action infractions by the assistant principal. They included 1) violation of the dress code, which was not a problem for the boys; 2) showing disrespect which had various infractions by Student A and Student C; 3) having disruptive activity was only given to Student B; 4) having inappropriate behavior (i.e. profanity, using personal devices during instruction, vandalizing school property) was received by Student A and Student B; and 5) insubordination was received by Student B and Student C.

Over all, Student A and Student B increased their misbehavior from pre to post, as student A had one pre-infraction but had two post-infractions while Student B had two pre-infractions and had three post-infractions. Student C had the best results as he moved from three pre-infractions before joining the Gents Club to zero infractions at the end of the six-week study.

Due to the infractions that occurred, the students lost various instructional days. Student A lost the least learning time as he had only 7 days of ISS. However, Student C lost learning as he was in ISS for 11 days while Student B lost 21 instructional days.

Research Question #3 - Self-Esteem. The researcher created a 4-statement Likert-scale self-esteem survey which was used to answer question #3, What effect does the Gents Mentorship Program have on 8th grade at-risk boys self-esteem. The survey was given to all 30 Gents Club members, as it was important to know how the Gents Club impacted all its members. This also allowed for comparison of the whole group scores to the three at-risk students in the study. As seen in Table 4, Student B had growth on all 4 questions while Student A and Student B had growth on 3 self-esteem survey questions. This was an improvement, as the majority of their scores for the pretest were below the whole group scores but by the posttest, the at-risk students scored above the average of the whole group scores.

<table>
<thead>
<tr>
<th>Insubordination</th>
<th>All Gents Club Members N=30</th>
<th>At-risk Student A</th>
<th>At-risk Student B</th>
<th>At-risk Student C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Q1</td>
<td>3</td>
<td>3.6</td>
<td>2(b)</td>
<td>4(A)</td>
</tr>
</tbody>
</table>

Table 4: Pre/Post Self-Esteem Results
Limitations

Even though the results were encouraging we must first acknowledge the limitations. One, the sample size, which consisted of only three at-risk students, is small. Second, the study only lasted six weeks. Third, we are assuming that the changes were due to becoming members of the Gents Club and the students attending all the tutoring sessions that were offered, as this was the only factor that changed consistently for all three gents. And because Gents Club members were both academically achieving students as well as at-risk students, the at-risk students extended their “outer circle” of friends to ones they mostly likely would not have associated with without being in the Gents Club. This was evident at the final meeting when the members were asked how many new people they met from being a part of the group. Some members shared the direct correlation to new friendships being formed because of their participation in the Gents Club altogether. Four, the action research study took place in one school within an urban setting. These limitations do not allow for generalizability across campuses or other school settings or to other mentoring programs.

Conclusion

This study reinforced the importance of creating mentoring programs (Mitchell et al, 2002; Gordon et al, 2009), as the activities within the Gents Club program did have positive impact on these three at-risk adolescents academics and self-esteem. Student C passed all four core courses and Student A and Student B were able to demonstrate an increase from their progress report scores even though their names appeared on the failure list at the end of the six weeks grading period. This was encouraging as the data was only collected for a six-week period.

Behavior on the other hand, did not prove to have the same correlation. Student C was the only one that decreased the amount of disciplinary actions, as he moved from 3 infractions to 0, which is ironic as he was the one with the most infractions at the beginning of the study. For him, the Gents Club Mentorship Program helped address the appropriate ways he needed to treat adults and peers in the school setting. However, Student B and Student C did not improve, as they received more infraction on the post data scores than they had on the pre data scores.
It is believed that the boy’s interactions with academically successful students as well as adult mentors made this program unique. This helped the boys extend their circle of friends, which is an important aspect that we don’t often think about but expanding ones’ social networking helps one to learn new information and hear different perspectives (Ellison, Steinfield, & Lampe, 2006); helps adolescents to learn more about themselves as they learn how to navigate through this wider circle of unfamiliar friends (Giordano, 1995); and helps one to create more original ideas to help make a difference in people’s lives (Sturt, 2014).

Plan-of-Action. In just a few short weeks, these students all expressed that they were glad to be members of the Gents Club and that they had met some good people, both other students and adults who pushed them to be better. Thus, at this stage, student’s behaviors and actions will continue to be monitored and lessons will be more focused on helping the boys get their behavior under control, as it was felt that it would take longer than six-weeks to help students break habits that they had formed over numerous years.

About the Authors

Tye Parr is an Intellectual Disabilities Program Specialist in the Cobb County School District. He received a Master of Arts in Curriculum & Instruction from Texas A&M University-Commerce prior to continuing his special education teaching career in Georgia. While his focus has mainly been at the middle school level, he has taught abroad in Mexico and currently supports students at both the primary and secondary setting. His email is Tye.Parr@cobbk12.org

Becky Sinclair, Ph.D. is associate professor in the Department of Curriculum and Instruction, Texas A&M University-Commerce. She teaches master level students who are current teachers in the K-12 classroom. Additionally, she teaches one of the sections of the research course for all master level students working on a degree in curriculum and instruction. Email is Becky.Sinclair@tamuc.edu

Susan Szabo, Ed.D. is professor in the Department of Curriculum & Instruction, Texas A&M University-Commerce. She teaches master level online students who are current teachers in the k-12 classroom who are working on either their reading degree or curriculum and instruction degree. Email is Susan.Szabo@tamuc.edu
References


Portland, OR: Western Regional Center for Drug-Free Schools and Communities.


