The Effects of Graphic Organizers on the Post-Reading Comprehension of Students in a Collaborative Team Teaching Setting

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Abstract

This study examined the effectiveness of a graphic organizer on reading comprehension upon the completion of a text. The graphic organizer selected for this study focused primarily on the “5 W’s”. This required the students to answer who the story was about, what happened, where did the story take place, when did the story take place, and why did certain events occur. Twenty-four students from a first grade collaborative team teaching class were separated into two equivalent groups (Group A and Group B) based on their pretest scores. Group A received instruction on how to use the graphic organizer and completed one each day after their independent reading session for three weeks. Group B served as the control, received no instruction, and was not required to complete the graphic organizer. Data were analyzed using ANCOVA. Results did not denote any significant difference between Groups A and B.
Today, the typical classroom is a place of extreme diversity. This fact is exemplified in a Collaborative Team Teaching (CTT) class. A CTT model is traditionally composed of 40% special education students and 60% general education students and is a crucial effort to mainstream children with disabilities. In New York City, about 10% of all special education students (approximately 12,500 children) participate in the CTT model (Winerip, 2005). The variety of students in a CTT classroom furthers the necessity to accommodate the diversity of learning.

Literacy, especially reading comprehension, is an essential part of a school’s curriculum. An occurrence that has become prevalent in the primary grades is the placement of emphasis on beginning reading which leads to a severe lack of focus on sustaining reading comprehension (Gajra, Jitendra, Sood, & Sacks, 2007). In addition, struggling readers often direct all of their effort into decoding a text without truly understanding what they just read. However, reading problems are not limited to struggling readers. Many students, even high achieving readers who excel in decoding and comprehension, are challenged with prioritizing the information from a given text (McCoy & Ketterlin-Geller, 2004). Selecting the important parts of a text can facilitate reading and thus improve scores for a student by limiting the distraction of unnecessary details. Hence, a need has arisen for teachers to accommodate their students with a variety of reading levels and capabilities without compromising the content of the text.
Since their introduction into the classroom, graphic organizers have had a huge impact on the learning community. Gill (2007) defines graphic organizers as “visual displays that show relationships among concepts.” They are an extremely versatile tool, their usefulness spanning the subject areas. Originally used as a pre-reading tool, graphic organizers were the result of research conducted by Ausubel in the 1960’s. Initially termed “advance organizers”, graphic organizers evolved to an outline model called a “structured overview” due to the studies of researchers Barron (1969), Earle (1969), and Baker (1977). It was during this time that the organizers encompassed not only pre-reading activities but they were also used throughout reading and in post-reading capacities (Merkley & Jeffries, 2000).

A graphic organizer allows for an educator to emphasize the important parts of a text and effectively communicate that information to their students which in turn could potentially improve comprehension. Dunston (1992) justified the efficiency of graphic organizers claiming that they “organize information to be learned, connect it to what is known, and allow the reader to interact with the text”. Graphic organizers also satisfy the necessity for an educator to address the needs of a struggling learner in a manner that is well thought-out, precise, and contains structure (Arthaud & Goracke, 2006).

Graphic organizers have been applied to many subject areas as well as a variety of grade levels. Bean, Singer, Sorter, & Frazee (1986) found significant improvement in the history scores of tenth grade students when using a graphic organizer in the class as opposed to an outline. Griffin, Malone, and Kameenui (1995) also reported significant improvement in the scores of fifth grade students while receiving detailed instruction on using graphic organizers.
The present study determined the effectiveness of the use of a graphic organizer on the reading comprehension of first grade CTT students. The students received instruction on how to use a graphic organizer and then implemented that knowledge over a three week period. Based on the above research, I predict that the application of the graphic organizer will significantly improve the sample’s reading comprehension as compared to the students who will not receive graphic organizers.

Methods

Participants

The participants were 24 first grade students from a CTT classroom in a New York City public school. The sample’s origins were comprised of 40% Hispanic, 30% Caucasian, 20% African American, and 10% Other. The class was split into two groups of equal skill levels based on their pretest scores. Of the 24 students, 12 received the graphic organizer intervention. The remaining 12 students served as a control group. Group A contained six males and six females including five special education students. Group B contained eight males and four females including six special education students.

Materials

Materials for Intervention: The graphic organizer chosen for this study depicted a hand as shown in Figure 1. In each finger was one of the following questions: Who, What, Where, When, and Why. The rest of the materials included books on each student’s individual reading level.

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Figure 1

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Pretest: The sample received a teacher made reading comprehension pretest in order to
determine their capability as depicted in Table 1. The test was comprised of ten
questions adapted from the Qualitative Reading Inventory-4 and the California
Achievement Test Level 11 (Form A).

Posttest: The posttest was also teacher made with a similar format to the pretest as shown
in Table 2.

Procedure

Pretest: A reading comprehension pretest was administered not only for the
purpose of group formation, but also to take prior knowledge and skill level into account.
After completing the pretest, each student obtained a score from 0 to 10. The groups
were formed using the match-pair system, that is the scores were listed highest to lowest
and groups were assigned ensuring that each group consisted of students with a vast
range of scores.

Instruction/Intervention: Group A was given instruction on the 5 W’s and how to
use a graphic organizer. The first three sessions of the instruction consisted of a read
aloud and filling out the graphic organizer together as a group. The students watched as the instructor demonstrated how to fill in the graphic organizer and then replicated what they saw onto their individual organizers. From the fourth session on, the students used the graphic organizer daily on an individual basis. They were required to take ten minutes at the end of every independent reading period to fill out their graphic organizer about what they read (see Figure 2). If they required assistance, the instructor was there to provide it, however this was primarily an independent activity. Group B served as the control. They did not receive instruction of any kind and continued with their normal independent reading routine.

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Figure 2
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Posttest: At the end of the three week period, the students took the posttest to determine the effectiveness of the intervention. The test was comprised of ten questions on two different texts. Each text had five questions on the “5 W’s”. The posttest was administered the day after the end of the intervention.

Results

Quantitative Analysis

As demonstrated in Table 3, Group A (Intervention: $M=8.0$, $SD=3.54$) received higher scores on the posttest in comparison to Group B (Control: $M=7.17$, $SD=3.51$). An ANCOVA on the students’ pretest and posttest scores produced no significant difference between the two groups, $F=.455$, $p<.507$. 
The purpose of this study was to investigate if the use of a graphic organizer would have an effect on reading comprehension. The results have shown that while the graphic organizer had a positive effect on the sample, difference was found between the groups. There are several factors that may have affected the outcome of this study. The length of time that the research was conducted was extremely limited, as was the sample size. Another limitation was the test used for the pretest and posttest. Although they were both based on grade level texts and questioning, they lacked validity and reliability due to their teacher-made construction. In addition, the age of the students also needs to be taken into consideration. Had this study been repeated and taken into account an array of ages and grade levels, the outcome may have been different.

In conclusion, the graphic organizer is a useful tool in the classroom. Although this study failed to produce any significant results, the fact that the graphic organizer is a versatile asset to the education field is undeniable. This is demonstrated through the significant findings of Bean, Singer, Sorter, & Frazee (1986) as well as Griffin, Malone, and Kameenui (1995). One recommendation for future studies would be to have a larger sample with many different grade levels. This study does not have to be limited to a CTT class, as it can be applied in a general education or self contained setting. Also, if this

Table 3

Discussion
study was to ever be repeated, one might consider extending the time period. The
graphic organizer has proven to be an effective and valuable tool in past research and
may continue to do so in the future.
References


Figure 1 Graphic Organizer on the 5 W’s
Figure 2 Example of Student Work

The Effects of Graphic Organizers on Reading Comprehension
Table 1 Reading Pretest

The Picture
Jen wanted to draw a picture of Sam.
But Jen couldn’t make the nose look real.
Jen tried feeling her own nose as she worked.
A little later, Sam came over to Jen’s desk.
“Oh, that picture looks like me!” said Sam.
Then he added, “But it has your nose!”

Circle the best answer.
1. Who did Jen want to draw a picture of?
   o her teacher
   o Sam
   o herself

2. Where was Jen drawing the picture?
   o at her desk
   o in her room
   o in the park

3. Why did Jen feel her nose?
   o so she would feel better
   o so she would look better
   o so she could draw better

4. What did Sam think the nose in the picture looked like?
   o his nose
   o Jen’s nose
   o a clown’s nose

5. What is this story mostly about?
   o feeling a nose
   o drawing a picture
   o talking to a friend
Who Lives Near Lakes?
Many animals live near lakes.
Turtles sit on rocks when it is sunny.
You can see ducks near a lake.
There may be baby ducks.
The babies walk behind the mother duck.
There are fish in lakes.
You can see them when they jump out of the water.
People live near lakes too because they like to see the animals.

Circle the best answer.

6. What is one animal that lives near a lake?
   o a cow
   o a turtle
   o a lion

7. Who sits on rocks when it is sunny?
   o turtles
   o ducks
   o fish

8. Where do baby ducks walk?
   o to the flowers
   o behind their mother
   o down the hill

9. When can you see fish?
   o when they are deep in the water
   o when they are sleeping
   o when they jump out of the water

10. Why do people live near lakes?
    o they like to see animals
    o they like to swim
    o they like to draw
Table 2 Reading Posttest

Bob the Cat
I have a pet cat named Bob.
Bob likes to play.
He runs all around my house.
He runs so much that he needs to sleep.
I give Bob food in the morning and at night.
Bob sleeps in his bed.
Bob is my best friend.
We have so much fun together.

1. What does Bob like to do?
   - Play
   - Purr
   - Drink milk

2. Who is this story about?
   - Me
   - Bob
   - A dog

3. When do I give Bob food?
   - At lunch
   - At 3:00PM
   - In the morning and at night

4. Why does Bob need sleep?
   - He is lazy
   - He runs so much
   - He is hungry

5. Where does Bob sleep?
   - In his bed
   - On my lap
   - Outside
The Park

Jan and Matt go to the park on Mondays.
   Jan likes to slide.
   Matt likes to swing.
They bring food so they can feed the ducks.
   Sometimes, the fish jump out of the water.
Jan and Matt also race their bikes along the path.
   The park is fun.

1. Who goes to the park?
   o Sam and Mark
   o Mom and Dad
   o Jan and Matt

2. Why do they bring food?
   o To eat lunch
   o To have a snack
   o To feed the ducks

3. When do Jan and Matt go to the park?
   o Everyday
   o On Mondays
   o On Fridays

4. Where do Jan and Matt race their bikes?
   o Along the path
   o In the street
   o Up the hill

5. What does Matt like to do at the park?
   o Slide
   o Swing
   o Swim
Table 3 Report of Descriptive Statistics

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