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THE EFFECTS OF REINFORCEMENT ACTIVITIES  
ON READING COMPREHENSION IN A  
THIRD GRADE CLASSROOM

by  
Jessica A.C. Tobin

A Thesis

Submitted in partial fulfillment of the requirements of the  
Masters of Science in Teaching Degree  
of  
The Graduate School  
at  
Rowan University  
June 28, 2000

Approved by

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## ABSTRACT

Jessica A.C. Tobin  
The Effects of Reinforcement Activities  
On Reading Comprehension  
In A Third Grade Classroom  
2000  
Dr. Randall Robinson  
MST, Elementary Education

The purpose of this study was to investigate the effects of reinforcement activities on the reading comprehension of third grade students. It was hypothesized that students who completed a hands-on art activity after hearing a story would score significantly higher on a reading comprehension test than those who finished a worksheet activity. Both the students who completed a hands-on art activity and those who did a worksheet activity would score significantly higher on a reading comprehension test than those who received no reinforcement activity after hearing a story. All 23 students in the third grade classroom were given all three treatments, one per week. Three means of the reading comprehension tests were found to have significance among them by using an ANOVA test,  $F(2, 66) = 7.05, p = .05$ . The Scheffe multiply comparisons test revealed there was significance between the worksheet activity and the absence of a reinforcement activity,  $F(2, 66) = 3.41, p = .05$ . Also, there was significance between the hands-on art activity and the absence of a reinforcement activity,  $F(2, 66) = 6.63, p = .05$ . There was no significance between the means of the worksheet and hands-on art activity,  $F(2, 66) = .53, p = .05$ . These results imply the presence of a reinforcement activity is more significant than the type of reinforcement activity completed.

## MINI-ABSTRACT

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## Chapter I

### Scope of the Study

#### Introduction

Reading comprehension ability is a major factor that can determine student achievement. “Reading comprehension is, arguably, the most important academic skill learned in school” (Mastropieri & Scruggs, 1997). Understanding the context of what you read and not just decoding the words is the prime function of reading comprehension. “No longer do most reading specialists define reading as the simple mastery of isolated skills. Rather than just recognizing words, they say, readers must understand the meaning behind the words” (Braunger & Lewis, 1998).

“Pictures in your head ... That’s what comprehension is about”, says Nanci Bell (1999). She feels it is most important to develop one’s concept imagery in order to increase comprehension. Bell (1999) also believes that by creating an activity that uses the content of the story and the imagination of the reader, it makes the story more real to the reader. The story becomes part of the reader’s mental experiences. Fang (1996) cites Johnson (1993) as saying, “The relation of pictures to stories and the nature of the reader’s interaction with both are an important aspect of literacy...”.

#### Statement of the Problem

This study was designed to look at some problems facing teachers dealing with reading comprehension. How can teachers reinforce the reading done by students? How can teachers help their students improve their reading comprehension? What kind of reinforcement activities will increase retention of materials read? Is the type of

reinforcement activity used more important than just the presence of reinforcement for a student's reading comprehension?

### Statement of the Hypothesis

It was hypothesized that third grade students who completed a hands-on art reinforcement activity after hearing a story would score significantly higher on a reading comprehension test than third grade students who, after hearing a story, completed a worksheet reinforcement activity. Both the students who did a hands-on art activity and those who did a worksheet activity would score significantly higher on a reading comprehension test than those third grade students who received no reinforcement activity after hearing a story.

### Limitations of the Study

There were some limitations of this study that could have affected the data results. These limitations included:

The teaching style of the teacher could have caused an effect on the learning of the students and not the reinforcement variable. The teacher could have read each story in a different manner, sometimes using too much or too little emphasis on different parts of the story.

The level of the class interest in the books that were read to them could have affected the outcome. A student that was more interested in one story over another might have paid more attention to the story which would cause him or her to score high on the comprehension test.

The previous knowledge of the students on the content of the books could have affected the results of the study. The student that had already read or heard the story before would have more recall of events and characters from the story and therefore might score better on the comprehension tests regardless of reinforcement.

The number of participants was a limitation. The results would have greater impact if a larger subject pool was used.

The results can not be generalized to a larger population because the group of participants in the intact classroom was a population within itself.

### Definition of Terms

The following terms were those used throughout this study and were defined according to their use within this study.

Reading comprehension is the ability to understand the context of the story.

Reinforcement is a way to supplement what has been read and increase memory/comprehension of the material.

Hands-on art activity is an activity that requires students to use the contents of the story, such as the characters, setting, and plot, and their imagination. In this study the hands-on art activity was the student's interpretation and creation of the setting, characters, and plot of the story in a mobile.

## Chapter II

### Review of Related Literature

#### Introduction

This study was developed to examine the effects of different sources of reinforcement on reading comprehension of third grade students. The types of reinforcement compared were a worksheet, a hands-on art activity, and the absences of any type of reinforcement activity. The literature that supports this study must examine reading comprehension, what has been shown to increase comprehension in the past, differences among types of reinforcement and how students develop skills by being active in their learning. The following chapter is a review of the research on these topics.

#### Reading Comprehension

Braunger and Lewis (1998) reveal that the definition of reading comprehension has changed. Reading specialists have taken the idea of simple word recognition as comprehension and expanded it to an understanding of the meaning behind the words. Knuth and Jones (1991) state, "Meaning is not the words on the page. The reader constructs meaning by making inferences and interpretations." Underwood (1998) says, "The purpose of reading is to understand, [however], public concern for teaching children to render print into speech [decoding] has not been equaled by concern for teaching children to make sense of print [content]." Underwood's research shows that more educational focus should be on "understanding how to help particular readers make sense of particular texts in particular situations for particular purposes." Fang (1996) cites Anderson and Pearson (1984) as saying, "Reading comprehension has been characterized as a

constructive process in which the reader uses what is already known to help interpret the new information in the text.”

Bell (1999) believes that “it serves little purpose to be able to read words (decode words) if you can’t comprehend what the text is saying.” Bell feels that reading comprehension comes from experiences and imagery. She says comprehension is about visualization and the “pictures in your head.” Knuth and Jones (1991) say, “Comprehension results from an interaction among the reader, the strategies the reader employs, the material being read, and the context in which reading takes place.”

### Reading Comprehension -- How To?

Teachers must recognize that there is “no one right way of teaching reading understanding that there can be no comprehension of text apart from context” (Underwood, 1998). Flippo (1999) also says, “There is no single method or single combination of methods that can successfully teach all children to read.”

Braunger and Lewis (1998) believe that, “Environments rich in literacy experiences, resources, and models facilitate reading development.” Their research found that the best way children learn is when, “teachers employ a variety of strategies to model and demonstrate reading knowledge, strategy, and skills.” Braunger and Lewis also found that there were many other methods employed by teachers that hindered a child’s learning. “The hindrances compiled by researchers are: ...focusing on skills rather than interpretation and comprehension; constant use of workbooks and worksheets...”

Fang (1996) also researched children’s learning. He focused on how illustrations influence children’s language and literacy development. Fang’s article states, “According to Bodmer (1992) illustrations serve to ‘expand, explain, interpret, or decode a written text’ (p. 72).” Fang, then feels that children learn to use their active imagination to interpret and create a mental representation or image of what they have read. He says, “Children often associate pictures with their life experiences or familiar images, construct

meaning based on their existing schemes or schemata. Children often come up with unique and creative interpretation of the plot, settings, and characters when they read picture books.”

Eisenwine (2000) supports this by saying, “While reading, an individual reconstructs the author’s meanings from graphic symbols.” Eisenwine found in her research of first graders, that the use of an integrated picture (a mural) produced superior learning, specifically recall of information in the text.

### Reinforcement

Students need reinforcement of their reading, but the reinforcement should engage the students’ minds and increase their thinking about the context of the reading. Gambrell (1986) and Hickman (1983) are cited in the article, “Responding to Literature” (www.eduplace.com, 1999) as saying, “When response activities are the natural things one does with texts that have been read or listened to they help students develop deeper understandings and help them relate what they have read to their own personal experiences.” Cullinan, Harwood, and Galda (1983) are cited as saying, “It is through this process that individuals learn to construct meaning or comprehend.” This article further states that, “it is not natural to answer ten questions about the book.” Braunger and Lewis (1998) also found that the continual use of workbooks and worksheet questions by teachers is seen by researchers as a hindrance to learning.

Stanfa and O’Shea (1998) believe, “Creative activities can be effective tools teachers have in their repertoire of reading comprehension strategies that will assist diverse readers across a variety of settings.” Their research also shows that these activities can “engage students directly in literature, giving students ownership of the lesson and allowing them to rely on their own linguistic intuition in making sense of print.”

Mastropieri, Scruggs, Bakken and Whedon (1996), cited in Mastropieri and

Scruggs (1997), conducted research on the effects of illustrations on reading comprehension. They reported a significant effect size of .74 for the effect of illustrations on reading comprehension with students with learning disabilities. These results are substantially similar to the mean effect size of .71 obtained by Levin, Anglin, and Carney (1987) in their research on the effects of pictures on prose comprehension with non-disabled learners.

Looking further into their research, Mastropieri and Scruggs (1997) define several different types of illustrations that are relevant in their review of research for facilitating reading comprehension for students with learning disabilities. The different types of illustrations are: a) representational illustrations, or pictures that show information presented with text; b) imagery, or instructions to generate mental pictures to represent what is happening in the text, and c) spatial organization or pictures that graphically display and organize text material.

Mastropieri and Scruggs (1997) state that, “Representational pictures are thought to have a facilitating effect on reading comprehension because they provide an additional sensory ‘code’ for input of text information.” They also discuss the strategy of imagery and its effects on reading comprehension. “Imagery is thought to improve reading comprehension in a manner similar to the ‘dual coding’ (visual and auditory) effect afforded by representational illustration.”

When discussing spatial organization and picture displays, Mastropieri and Scruggs (1997) cite Winn (1987) as saying, “Diagrams [models, like mobiles] are thought to provide an additional visual ‘code’ to the organization of information and to present information that can sometimes be explained more efficiently visually.” This is supported by the citation of another form of spatial organization research that was conducted by Mastropieri and Peters (1987). They found that, “spatially organized features related to a reading/listening passage facilitated oral retelling of the passage over presentation of a list of the same features presented vertically.” The researchers believed that these results

suggested that visual-spatial organization of a passage improved comprehension. They also feel that these findings support the use of visual-spatial organization in facilitation of comprehension.

Fang (1996) bases his research on the idea the illustrations reinforce children's language and literacy development. He says, "The relation of pictures to stories and the nature of the reader's interaction with both are important aspects of literacy... ." Fang cites that Tomlison and Lynch-Brown (1996) believe that by combining intriguing text, art, and picture book topics, children are provided with ideas, stimulation for their imagination, and curiosity. In addition, Fang states that through reading and responding with response activities such as drawing and writing, children really key in on their comprehension of literacy and language. Fang's article depicts how illustrations can be used in one or more of the following ways: establish setting, determine mood, define and develop characters, extend or develop plot, provide a different viewpoint, contribute to "textual coherence", and reinforce text. Fang also says, "Illustrations are important in that they provide mental scaffolds for the child reader, this facilitates their understanding of the written text." Fang specifically describes how illustrations help develop the characters and advance the plot by showing situations and emotions that immediately become familiar to the children through visualization. Bell (1999) reveals that the better a student's "visualizing capacities" are, the more developed their reading experience and comprehension are.

Fang's research further states that:

"As first order symbols, picture represent relatively concrete, familiar experiences, something young readers can easily identify with. As second order symbols, words are more abstract and detached from immediate experience. Thus by juxtaposing the more familiar and concrete with the more abstract semiotic symbols, picture books maximize text comprehensibility. Without pictures, the text is decontextualized."



Therefore, Fang believes that by responding to reading with picture books with writings and drawings, there will be further connections and children are even gaining further understanding of the story.

Fang supports his ideas by citing Schallert (1980) as saying, "Illustrations in picture books prompt an active elaboration of the printed text, thus facilitating learning by inducing the child reader to form mental images of the information." Also cited was Nodelnam (1996), "Young children need pictures in books because they find them easier to understand than words and need pictorial information to guide their responses to verbal information." In conclusion Fang says:

"Illustrations in picture books are meant to delight, to captivate attention, to amplify or tell a story, to teach a concept, and to develop appreciation and awareness in children. Given the important role illustrations play in children's picture books and in children's language and literacy development, it is imperative that teachers, textbook writers, and illustrators become more sensitive to the information conveyed through the delicate interplay of print, picture, and the child reader."

In the book, Art and Creative Development for Young Children, Robert Schirrmacher states, "Art and literacy go hand in hand." Schirrmacher (1998) says, "Drawing is viewed as a literacy activity, because both drawing and language provide children with the opportunity to reflect upon, organize and share their experiences." Schirrrmacher believes that art is a reflection of the information children have gained or acquired from a stimulus. He says, "One must know about something before one can recreate it through art... Translating ideas, concepts, and experiences into art involves many thinking skills."

In the book, Growing Artists: Teaching Art to Young Children, Joan Koster (1997) states that, "Some educators feel that creating art in response to a stimuli not only records learning but enriches it multifold." She continues by saying, "Visual art needs to

be taken much more seriously as a way for children to express what they have learned.” Koster feels that art is a tool that children use to express information and analyze what they have learned. “Art as a learning and symbolic tool is particularly valued because it embraces intelligence often overlooked in the traditional educational system.” Koster cited Gardner (1990), London (1991), and McWinnie (1992) as believing that:

“It is important for children’s cognitive growth to have many opportunities to explore graphic symbol creation through art production. In the arts, being able to produce symbols precedes being able to comprehend them and children must be allowed many hands-on experiences.”

These hands-on experiences would allow the child to expand and extend their interaction with literacy.

### Active Learning

Bredenkamp (1997) is cited in Robert Schirrmacher’s book, Art and Creative Development for Young Children (1997), as saying “Children are active learners, drawing on direct physical and social experiences as well as culturally transmitted knowledge to construct their own understanding of the world around them.” While children are described as active learners, Braunger and Lewis (1998) describe reading as a “construction of meaning from written text. It is an active, cognitive, and affective process.”

Stanfa and O’Shea (1998) reference Englert, Tarrant and Mariage’s (1992) explanation that, “Teachers must establish classroom communication in which students collaboratively and cooperatively participate in inquiry-related activities.” Stanfa and O’Shea believe that, “Reading instruction that encourages readers’ and teachers’ active involvement is crucial to diverse readers’ success.” Underwood (1998) also shares a viewpoint on active learning. “As active participants in the drama of learning, students

also need the opportunities to immerse themselves in complex, interesting learning events that invite them to compose and comprehend their own variations on text and genre.”

## Chapter III

### Methods

#### Introduction

This research examines how different forms of reinforcement can affect a third grade student's reading comprehension. Testing was done to find if there was a significant increase in students' reading comprehension when there was a reinforcement activity completed after hearing a story. The significance of the type of reinforcement activity, a worksheet activity versus a hands-on art activity, was also evaluated. The following chapter includes a description of the subjects, procedures, and instruments used for the research.

#### Subjects

The subjects for this study were students in a third grade classroom located in southern New Jersey. The school can be described as a suburban school in a lower middle class area. The school has a population of 380 Caucasian students, 67 African-American students, 20 Hispanic students, and 12 Asian students. There were 23 students in the third grade classroom population that was used as a subject pool for the study. There were 9 males and 14 females. There were 17 nine year olds and 6 eight year olds. The classroom contained 18 Caucasian students, four African-American students and one Asian student. Two students, one male and one female, attended resource classes for math and reading. The students were selected as an intact classroom and assigned each treatment.

## Procedure

A third grade intact classroom was chosen for the study. The twenty-three students in the third grade intact classroom were given each of the three possible treatments, one per week for three weeks. (see figure 1) During Week A of the research, on Day 1A, the teacher read How Leo learned To Be King by Marcus Pfister to the students. After hearing the story, the students completed a ten question multiple choice, teacher-made worksheet. (see appendix A) The students completed the worksheet on their own and then it was corrected as a class. On Day 2A the teacher gave the students a teacher-made reading comprehension test.

During Week B of the research, the teacher read Rainbow Fish to the Rescue by Marcus Pfister on Day 1B. After hearing the story, the students completed a hands-on art reinforcement activity. This project consisted of creating a mobile that was to include the setting, characters, and plot from the story. Students could have used an array of craft materials such as yarn, hangers, construction paper, glue and glitter. The students created scenes from the story and the main characters with the construction paper and glitter and attached them to the hanger with yarn. They also wrote on the back of the pictures a description or recap of what they felt was important from the story. The students worked on the activity on their own with teacher-given directions. Then on Day 2B the students were given a teacher-made reading comprehension test.

During Week C of the research, on Day 1C, the teacher read Dazzle the Dinosaur by Marcus Pfister to the students. After hearing the story, no treatment was given. Then on Day 2C the students were given a teacher-made reading comprehension test.

figure 1

Schedule of Treatment

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WEEK	DAY 1	DAY 2
Week A -- <u>How Leo Learned To Be King</u>	Treatment - Worksheet Activity	Reading Comprehension Test
Week B -- <u>Rainbow Fish To The Rescue</u>	Treatment - Hands-On Art Activity	Reading Comprehension Test
Week C -- <u>Dazzle The Dinosaur</u>	Treatment - No Reinforcement Activity	Reading Comprehension Test

---

Design of the Study

The design of this study was one intact classroom, which received three treatments. This design was selected because of the availability of participants and the nature of the research.

Description of Instruments

The instruments used in this experiment were three reading comprehension tests. Each test was a teacher-made ten question fill-in-the-blank reading comprehension test. (see appendix B) There was one reading comprehension test for each story -- Rainbow Fish to the Rescue, Dazzle the Dinosaur, and How Leo Learned to Be King.

The content validity of the three teacher-made tests was checked by receiving expert approval from two third grade teachers. They were asked to review the test

questions and reaffirm that they would assess reading comprehension at a third grade level. The internal reliability of the three teacher-made tests was checked by performing the Kuder-Richardson Internal Consistency (KR-21) test with the scores from the reading comprehension tests. The results showed high internal reliability (see table 1).

table 1  
Tabulation of KR-21

Treatment	No. of Items	Mean	Standard Deviation	r
Worksheet Activity (Group X)	10	77.39	15.67	3.47
Hands-on Art Activity (Group Y)	10	83.91	20.56	2.74
No Reinforcement Activity (Group Z)	10	60.87	5.22	13.74

## Chapter IV

### Analysis of Findings

#### Introduction

This study was developed to find if reinforcement activities improved reading comprehension and how the type of reinforcement activity completed affect reading comprehension. This data was analyzed by tabulating an ANOVA test followed by a Scheffe's multiple comparison test. The conclusions of these tabulations and the analysis of interpretation of these results are included in the following chapter.

#### Tabulation of Raw Scores

After the students completed each of the reading comprehension tests, they were scored using a 100 point scale, ten points for every correct answer. With the raw scores assigned to each reading comprehension test, a mean was calculated for each reinforcement activity (See Table 2). The mean showed that the highest average score, 83.91, was from the reading comprehension tests taken after completion of a hands-on art activity. The second highest average score, 77.39, was from the reading comprehension tests taken after completing the worksheet activity. The lowest average score, 60.87, was from the reading comprehension tests taken after no reinforcement activity was completed.



table 2

## Tabulation of Raw Data

TEST SCORES			
How Leo Learned To Be King Worksheet Activity (Group X)	Rainbow Fish To The Rescue Hands-on Art Activity (Group Y)	Dazzle The Dinosaur No Activity (Group Z)	
100	100	80	
100	100	100	
100	100	50	
80	100	100	
100	100	100	
80	100	20	
80	80	80	
80	80	70	
60	80	50	
80	80	10	
80	100	100	
80	80	50	
50	100	40	
80	80	80	
70	100	30	
80	30	70	
50	80	50	
100	60	40	
60	60	50	
70	80	60	
70	100	80	
30	80	30	
100	60	60	
Mean	77.39	83.91	60.87

## Tabulation of ANOVA Test

After the means of the three reading comprehension tests were determined a simply analysis of variance (ANOVA) was calculated in order to determine if there was a

significant difference between the means. (see table 3) Examination of the means and an ANOVA test indicated that there was a significance,  $F(2, 66) = 7.05, p = .05$ .

table 3  
Tabulation of ANOVA

Treatment	No.	Mean	Sum of Squares	
Worksheet Activity (Group X)	23	77.39	5400.00	
Hands-On Art Activity (Group Y)	23	83.91	9300.00	
No Reinforcement Activity (Group Z)	23	60.87	0600.00	

  

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between	6,489.86	2	3,244.93	7.05
Within	30,373.91	66	460.21	
Total	36,863.77	68		

#### Tabulation of Scheffe's Multiple Comparisons Test

After the ANOVA was calculated and a significance between the means of the reading comprehension tests was found, a Scheffe multiple comparisons test was performed in order to determine specifically which means the significance exists. (see table 4) The results of the Scheffe multiple comparisons test revealed that there was a

significant difference between the worksheet activity and the absence of a reinforcement activity,  $F(2, 66) = 3.41, p = .05$ . Also, there was a significance between the hands-on art activity and the absence of a reinforcement activity,  $F(2, 66) = 6.63, p = .05$ . There was no significance between the means of the worksheet activity and the hands-on art activity,  $F(2, 66) = .53, p = .05$ .

table 4

Tabulation of Scheffe Multiple Comparisons Test

Test Comparison	F-score (2,66), p=.05	
Worksheet vs. Hands-on Art Activity (Group X vs. Group Y)	0.53	Fail to reject null hypothesis
Worksheet vs. No Reinforcement Activity (Group X vs. Group Z)	3.41	Reject null hypothesis
Hands-on Art Activity vs. No Reinforcement Activity (Group Y vs. Group Z)	6.63	Reject null hypothesis

#### Analysis Related to Particular Purpose of Hypothesis

The results of this study support part of the original hypotheses. Third grade students who completed a hands-on art reinforcement activity after hearing a story and those who did a worksheet activity did score significantly higher on a reading comprehension test than those third grade students who received no reinforcement activity after hearing a story. However, the data did not show a significant difference in the other aspect of the original hypothesis. Third grade students who completed a hands-on art reinforcement activity after hearing a story did not score significantly higher on a reading

comprehension test than those who completed a worksheet reinforcement activity. The completion of a reinforcement activity, after hearing a story allowed for higher reading comprehension test scores, than no form of reinforcement activity being completed. However, whether the students completed a hands-on art activity or a worksheet did not significantly affect the reading comprehension scores. This analysis implies that the presence of a reinforcement activity is more significant than the type of reinforcement activity completed.

## Chapter V

### Summary, Conclusions, and Recommendations

#### Introduction

This research study was done in order to examine the results of using different sources of response activities to reinforce the context of a children's book in a third grade classroom. This data was measured by comparing the mean scores the class received after each treatment, a worksheet activity, a hands-on art activity, or the absence of any type of reinforcement activity. The results of an ANOVA test and a Scheffe's multiple comparisons test yielded that there was a significance between the absence or presence of an activity, but not the type of activity.

#### Summary of Problems

The study was developed in order to evaluate ways to help deal with improving reading comprehension. This research looked at ways teachers could possibly reinforce their students' reading and how to increase comprehension for the students. There was an opportunity to evaluate reinforcement activities and the importance of their presence, after reading, on a child's comprehension.

#### Summary of Hypothesis

It was hypothesized that the hands-on art reinforcement activity completed by third grade students after hearing a story, would result in significant higher scores on a reading comprehension test than the completion of a worksheet reinforcement activity, after hearing a story. The presence of either reinforcement activity, the hand-on art activity or the worksheet activity, would result in a significant higher scores on a reading

comprehension test completed by the third grade students than those scores of reading comprehension tests completed after receiving no reinforcement activity after hearing a story.

### Summary of the Procedures

All 23 children in the third grade intact classroom were given each of the three possible treatments, one per week for three weeks. During Week A, on Day 1A, the teacher read How Leo Learned To Be King by Marcus Pfister to the students. The students then completed a ten question multiple choice teacher-made worksheet. On Day 2A, the teacher gave the students a ten question fill-in-the-blank teacher-made reading comprehension test. During Week B, on Day 1B, the teacher read Rainbow Fish To The Rescue by Marcus Pfister to the students. After hearing the story, the students completed a hands-on art reinforcement activity. This activity was the creation of a mobile which was to include the main characters, setting, and plot of the story. Then, on Day 2B, the teacher gave the students a ten question fill-in-the-blank teacher-made reading comprehension test. During Week C, on Day 1C, the teacher read Dazzle The Dinosaur by Marcus Pfister to the students. There was no reinforcement activity completed following the story. On Day 2C, the teacher gave the students a ten question fill-in-the-blank teacher-made reading comprehension test.

### Summary of Findings

The means of the three reading comprehension tests were compared for significance using an ANOVA test. The results showed a significant F ratio,  $F(2, 66) = 7.05, p = .05$ . Then the Scheffé multiple comparisons test was done. This test revealed that there was significance between the worksheet activity and the absence of a reinforcement activity,  $F(2, 66) = 3.41, p = .05$ . Also, there was significance between the hands-on art activity and the absence of a reinforcement activity,  $F(2, 66) = 6.63, p = .05$ .

There was no significance between the means of the worksheet and hands-on art activity,  $F(2, 66) = .53, p = .05$ . These results imply the presence of a reinforcement activity is more significant than the type of reinforcement activity completed.

### Conclusion

It can be concluded from this research that reinforcement activities as a response to reading do have an effect on a child's reading comprehension. It appears that by doing some type of activity, after a child hears a story, allows them to reinforce information from the story mentally. This, in turn, allows for greater comprehension and higher achievement on reading comprehension tests. However, based on the findings from this study, there was not a statistical significance when comparing a worksheet reinforcement activity and a hands-on art reinforcement activity and their effects on increasing a child's reading comprehension. This research was not conclusive enough to show a different effect among the types of reinforcement used. That does not mean that a difference does not exist. In conclusion, this study found that reinforcement is a useful tool in increasing reading comprehension.

### Implications and Recommendations

The implications of this research are plausibly far reaching for teachers and students. The fact that this research shows a significance in higher achievement on reading comprehension tests after the completion of a reinforcement activity, leads to the idea that teachers need to reinforce their students' reading. Reading comprehension can increase when a child has done an activity that supports the information they were exposed to in their reading. And, even though no statistical significance was found among types of reinforcement activities does not mean that teachers should rely on one type of reinforcement activity. Teachers should continue to employ various methods of reinforcing their students reading and increasing their reading comprehension.

Recommendations that can be made are in reference to furthering this research. It is recommended that this study be duplicated, using a larger, more representative subject pool. Possibly more significant results will occur in a duplicate study that will show a statistical difference in the type of reinforcement used to increase reading comprehension. Also, instead of using children's books to test comprehension, academic content area books (textbooks) could be used. Overall recommendations include furthering ways to research the relationship between reinforcement activities and an increase in reading comprehension.



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APPENDIX A

Worksheet Activity

## Multiple Choice - Rainbow Fish

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Each sentence has one word missing. Please circle the correct word.**

1. The silver-scaled fish were playing \_\_\_\_\_ .
  - A. ashamed
  - B. away
  - C. flash-tag
  - D. striped fish
2. Rainbow Fish felt \_\_\_\_\_ for not letting the little fish play tag.
  - A. away
  - B. ashamed
  - C. striped fish
  - D. flash-tag
3. The \_\_\_\_\_ led the rescue of the striped fish.
  - A. away
  - B. Rainbow fish
  - C. flash-tag
  - D. fin-tag
4. The school of fish escaped by swimming \_\_\_\_\_ from the shark into a crack in the rocks.
  - A. toward
  - B. away
  - C. striped fish
  - D. fin-tag
5. The \_\_\_\_\_ told the little fish that he could not play tag with the other fish.
  - A. Rainbow fish
  - B. striped fish
  - C. away
  - D. jagged-finned fish
6. As all the fish swam \_\_\_\_\_ the shark, he got dizzy and gave up.
  - A. toward
  - B. fin-tag
  - C. Rainbow fish
  - D. away

7. The little striped fish was \_\_\_\_\_ as he watched the other fish play tag.
- A. toward
  - B. jagged-finned fish
  - C. sad
  - D. ashamed
8. The reef became dangerous when the \_\_\_\_\_ entered.
- A. fin-tag
  - B. shark
  - C. striped fish
  - D. sad
9. At the end, the striped fish and the others played \_\_\_\_\_ .
- A. Rainbow fish
  - B. striped fish
  - C. jagged-finned fish
  - D. fin-tag
10. The little \_\_\_\_\_ was not allowed to play with the other fish.
- A. away
  - B. shark
  - C. jagged-finned fish
  - D. striped fish

## Answers

1. C. flash-tag
2. B. ashamed
3. B. Rainbow fish
4. B. away
5. D. jagged-finned fish
6. A. toward
7. C. sad
8. B. shark
9. D. fin-tag
10. D. striped fish

APPENDIX B

Reading Comprehension Tests

## Fill in the Blank

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Fill in the blanks in these sentences with the word that fits.**

1. Leo helped the \_\_\_\_\_ cross the river.
2. Leo thought he deserved to be King because he was \_\_\_\_\_.
3. Leo helped the \_\_\_\_\_ rebuild his home.
4. The first animal to talk back to Leo was the \_\_\_\_\_.
5. The animals decided that Leo would be a good King because he became \_\_\_\_\_.
6. The \_\_\_\_\_ took Leo's crown.
7. The animal met at the \_\_\_\_\_ to decide that Leo would be a good King after all.
8. The \_\_\_\_\_ asked Leo to be King again.
9. The animals wanted Leo to give up his crown because he was \_\_\_\_\_.
10. Leo helped the \_\_\_\_\_ with the bump on his head.

**Select your answers from the following words:**

helpful  
lazy  
rhinoceros  
mouse

warthog  
porcupine  
vulture

King of Beasts  
watering hole  
water buffalo



## **Answers**

1. mouse
2. King of Beasts
3. porcupine
4. warthog
5. helpful
6. vulture
7. watering hole
8. water buffalo
9. lazy
10. rhinoceros

## Fill in the Blank - Rainbow Fish

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Fill in the blanks in these sentences with the word that fits.**

1. The silver-scaled fish were playing \_\_\_\_\_.
2. The little \_\_\_\_\_ was not allowed to play with the other fish.
3. At the end, the striped fish and the others played \_\_\_\_\_.
4. The school of fish escaped by swimming \_\_\_\_\_ from the shark into a crack in the rocks.
5. The \_\_\_\_\_ told the little fish that he could not play tag with the other fish.
6. The \_\_\_\_\_ led the rescue of the striped fish.
7. The reef became dangerous when the \_\_\_\_\_ entered.
8. As all the fish swam \_\_\_\_\_ the shark, he got dizzy and gave up.
9. The little striped fish was \_\_\_\_\_ as he watched the other fish play tag.
10. Rainbow Fish felt \_\_\_\_\_ for not letting the little fish play tag.

**Select your answers from the following words:**

jagged-finned fish  
away  
flash-tag  
sad

toward  
Rainbow fish  
fin-tag

ashamed  
shark  
striped fish

## Answers

1. flash-tag
2. striped fish
3. fin-tag
4. away
5. jagged-finned fish
6. Rainbow fish
7. shark
8. toward
9. sad
10. ashamed

## Fill in the Blank - Dazzle the Dinosaur

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

### Fill in the blanks in these sentences with the word that fits.

1. The Dragonsaurus is terrified of \_\_\_\_\_.
2. Maia and Dazzle thought the Apatosaurus was a \_\_\_\_\_ when they laid down to take a nap, before he helped them find their family's cave.
3. Maia and Dazzle could not go off to explore alone because the \_\_\_\_\_ was dangerous.
4. The \_\_\_\_\_ raids the Maiasauruses' nests.
5. The \_\_\_\_\_ always kept Maia and Dazzle safe.
6. The Tyrannosaurus Rex chased the Maiasauruses away from \_\_\_\_\_.
7. Dazzle saved Maia by using his \_\_\_\_\_ to scare the Dragonsaurus out of the cave.
8. Dazzle's spines allowed the \_\_\_\_\_ to spot him easily while he was trying to hide.
9. The \_\_\_\_\_ took over the cave while the Maiasauruses were out eating one day.
10. The Maiasauruses used to live in a \_\_\_\_\_.

### Select your answers from the following words:

water

tree

Deinonychus

spines

forest

Maiasauruses

cave

Dragonsaurus

light

Tyrannosaurus Rex

## Answers

1. light
2. tree
3. forest
4. Deinonychus
5. Maiasauruses
6. water
7. spines
8. Tyrannosaurus Rex
9. Dragonsaurus
10. cave

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