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THE EFFECTS OF SOCIAL AND TANGIBLE REINFORCEMENT
ON VOCABULARY ACQUISITION
IN WHOLE LANGUAGE

by
Carolyn M. Brida

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Science in Teaching Degree in the
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July 3, 1997

Approved by

Professor

Date Approved

July 3, 1997

ABSTRACT

Carolyn M. Brida
THE EFFECTS OF SOCIAL AND TANGIBLE REINFORCEMENT
ON VOCABULARY ACQUISITION
IN WHOLE LANGUAGE

1997

Dr. Randall Robinson, Thesis Advisor
Master of Science in Teaching Program, Elementary Education

In this study the effects of social and tangible reinforcement in whole language was measured. The purpose was to determine if there were any significant effects of the various treatment conditions on vocabulary acquisition.

Social reinforcement and tangible reinforcement are used to motivate students to perform (Neihoff & Mesch, 1991) and achieve (Hitz & Driscoll, 1989). The academic performance and achievement of students in the area of vocabulary acquisition is an important part of the academic process. Vocabulary remains a key focus in education (Nagy, 1988). Whole language programs include vocabulary acquisition (Blachowicz & Fisher, 1996).

The sample for this study included 24 second grade students in a suburban public elementary school. Of the 24 students, 45.8% were Caucasian, 37.5% were Hispanic, 8.3% were African-American, and 8.3% were Other. In regard to gender, 66.7% were male and 33.3% were female. The socioeconomic status of the sample was of the lower to middle range.

A repeated-measures design was used to present social, tangible, and social paired with tangible reinforcement during the presentation of vocabulary. A quiz consisting of a word bank and fill in the blank sentences was administered following the treatment conditions. Data were analyzed using the repeated-measures ANOVA. A significant difference in vocabulary acquisition between the various treatment conditions was realized.

MINI-ABSTRACT

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This study was conducted to determine if social and tangible reinforcement have an effect on vocabulary acquisition in a second grade whole language reading program. Data comprised of quiz scores for each treatment condition were analyzed using the repeated-measures ANOVA. Significant differences between the treatment conditions were realized.

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Chapter One
The Scope of the Study
Introduction

Although schools have various goals, the foremost is academic achievement (Parkway & Stanford, 1992). Since the primary purpose of schools is to educate students, educational professionals are constantly seeking methods to motivate students to learn. One method that has been used over the years is behavior modification. Rewards, also referred to as incentives or reinforcers, are used to encourage and promote academic achievement (Brown & Walberg, 1993; Cameron & Pierce, 1994; Seoane & Smink, 1991). As Lysakowski and Walberg (1981) point out, the use of rewards to initiate or stimulate learning is not a twentieth-century discovery, but one that dates back to Aristotle and Plato. Several learning theorists of the current century including John B. Watson, B. F. Skinner, and Edward Lee Thorndike have viewed reinforcement as an important component of the learning process (Parkway & Stanford, 1992). It logically follows that teachers should only reinforce those behaviors that are desirable.

In this study vocabulary acquisition in a whole language program was measured after implementing social and tangible reinforcement conditions. The purpose was to determine if there were any significant effects on vocabulary quiz scores as a result of the treatment conditions. The repeated-measures design was used.

Significance of the Study

Vocabulary acquisition is a very important part of the learning process. Knowledge of vocabulary meanings is an important part of reading performance

(Blachowicz, 1985; Dole, Sloan, & Trathen, 1995), reading comprehension (Klesius, & Searls, 1990; Mezynski, 1983; Nagy, 1988; Weiss, Mangrum, & Llabre, 1986), achievement in subjects, and speaking and writing (Hodges, 1984). Students who master vocabulary skills early in their education have the ability to realize greater academic success. Greater academic success may occur since vocabulary knowledge provides a strong background for comprehension of the written and spoken language (Kolich, 1988).

Statement of the Problem

Do social and tangible reinforcement have an effect on vocabulary acquisition in a second grade whole language reading program?

Hypothesis

It was hypothesized that there would be no significant difference in vocabulary acquisition of second grade students when students received social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement for accurately defining or identifying vocabulary words during whole language instruction.

Limitations of the Study

Several limitations were apparent in this study.

1. The ethnicity of the subjects within the sample was somewhat different in comparison to that of the population. Therefore, performance differences related to ethnicity as a result of bilingualism or English as a second language were not controlled.
2. Prior exposure to the vocabulary words in the literature used in the study was not established. Therefore, some students may have been more familiar with vocabulary words within one literature selection in comparison to the remaining three literature selections. If students were more familiar with words within one literature selection than in another, vocabulary quiz scores for that selection may be higher as a result of previous knowledge rather than as a result of the particular treatment condition.
3. The number of vocabulary terms for each of the four tests varied from nine to thirteen. Therefore, an incorrect answer on a quiz containing nine questions was weighted more heavily in comparison to an incorrect answer on a quiz consisting of thirteen questions. Therefore, the same number of incorrect answers on a quiz of nine questions would result in a lower score than the same number of incorrect answers on a quiz consisting of thirteen questions.

4. The number of days between the introduction, review, and testing of the vocabulary varied as a result of school closings. Therefore, poor performance on a quiz could be attributed to forgetting which was a result of the delay between introduction, review, and testing of the vocabulary and not as a result of the various treatment conditions.

Definition of Terms

Operational definitions for this study included:

Baseline: reinforcement delivered by the teacher on a normal basis consisting of traditionally used terms such as “good”, “very good”, “excellent”, and “outstanding” for supplying an accurate definition or vocabulary term during in-class oral group work.

Social Reinforcement: immediate verbal praise delivered by the teacher as one of the following terms including “fantastic”, “wonderful”, “terrific”, “sensational”, or “super” for supplying an accurate definition or vocabulary term during in-class oral group work.

Social Reinforcement paired with Tangible Reinforcement: the delivery of one term of verbal praise and one tangible reward by the teacher for supplying an accurate definition or vocabulary term during in-class oral group work.

Tangible Reinforcement: the immediate delivery of one of the following items by the teacher including stickers, pencils, erasers, or pens for supplying an accurate definition or vocabulary term during in-class oral group work.

Vocabulary Acquisition: the independent act of correctly completing sentences with vocabulary terms listed in a word bank on an end of the story vocabulary quiz.

Chapter Two

Review of Literature

Introduction

Knowledge of vocabulary meanings is an important part of reading performance (Blachowicz, 1985; Dole, Sloan, & Trathen, 1995), reading comprehension (Klesius, & Searls, 1990; Mezynski, 1983; Nagy, 1988; Weiss, Mangrum, & Llabre, 1986), achievement in subjects, and speaking and writing (Hodges, 1984). Therefore, vocabulary acquisition is a very important part of the learning process. Students who master vocabulary skills early in their education have the ability to realize greater academic success. Greater academic success may occur since vocabulary knowledge provides a strong background for comprehension of the written and spoken language (Kolich, 1988).

It was hypothesized that there would be no significant difference in vocabulary acquisition of second grade students when students received social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement for accurately defining or identifying vocabulary words during whole language instruction.

Behavior Modification

The use of behavior modification is a common practice in the classroom. Educators continue to apply behavioral interventions in educational settings (Justin & Howerton, 1993). Teachers employ behavior modification techniques to increase desired behaviors and to decrease undesirable ones. Reinforcement systems are used to increase motivation in students using positive consequences (Bacon, 1989). Myles, Moran, Ormsbee, and Downing (1992) believe that teachers should attempt to teach appropriate

behaviors rather than trying to prevent inappropriate ones. Reinforcement presented directly after a behavior has been emitted that strengthens or increases the occurrence of that behavior is referred to as positive reinforcement (Justen & Howerton, 1993). Troutman and Alberto (1990) define positive reinforcement as the contingent presentation of a stimulus immediately following a response that maintains or increases the future rate and probability of the response. Positive reinforcers include those of the social and tangible types. Many teachers use behavior modification techniques to encourage students to learn (Silvern, 1986). Primary reasons for using reward systems are to teach and enhance appropriate behaviors including basic school skills, academic mastery, and classroom procedures (Bacon, 1989). The classroom climate can be improved through the use of incentives and rewards. Incentives and rewards can add interest and excitement to a classroom routine when used appropriately (Evertson, Emmer, Clements, & Worsham 1994). A system of reinforcement can be a powerful tool in the classroom (Bacon, 1989; Myles, Moran, Ormsbee, & Downing, 1992). Justen and Howerton (1993) contend that positive reinforcement is an ethically neutral scientific principle which is applicable to all behaviors.

The decision to use a system of reinforcement should be based on what the teacher wants to achieve such as appropriate classroom behavior and completion and accuracy of school work. Specific objectives that teachers may strive to attain include teaching classroom rules and expectations, motivating students to complete academic assignments and tasks, and regaining control of an unruly class (Bacon, 1989). Teachers must identify the target behaviors to be reinforced. The identification of target behaviors must take place prior to designing the program according to Myles, Moran, Ormsbee, and Downing (1992). They identify three classes of behaviors including those that need to be decreased, increased, and maintained. According to Bacon (1989) it is important to choose behaviors that the students are capable of emitting to create a successful behavior modification

program. In addition, target behaviors must be observable measurable, and countable (Bacon, 1989; Myles, Moran, Ormsbee, & Downing, 1992). Target behaviors also must be important to the classroom environment of the students (Bacon, 1989).

It is very important for teachers to consider the feasibility of their behavior modification systems. Teachers should plan and use simple procedures to avoid unnecessary distraction of themselves and their students (Evertson, Emmer, Clements, & Worsham, 1994). It is for this reason that the number of behaviors to be reinforced should be limited (Bacon, 1989). Designing and implementing a behavior modification program with the use of positive reinforcement techniques to attain clear objectives is a fairly complex and time consuming process according to Bacon (1989). Reward systems that can be used with all members of a class take careful planning and thought on the part of the teacher (Bacon, 1989). The success of all students within the class should be a primary focus of the teacher. It is for this reason that the teacher should create a system in which all students can have the opportunity to earn the available reinforcers (Evertson, Emmer, Clements, & Worsham, 1994). Students should be given the opportunity to earn reinforcers for appropriate behaviors such as learning (Myles, Moran, Ormsbee, & Downing, 1992). According to Bacon (1989), reward systems make teachers more aware of all students in the class.

In the development of a behavior modification program which makes use of positive reinforcement certain factors should be used in the selection of reinforcers. The selection of appropriate reinforcers is critical to the success of the behavior modification program (Bacon, 1989). It is important that reinforcers be motivating to the students and delivered easily by the teacher. Students will be more motivated if the items used as reinforcers are desired. Students must perceive reinforcers as worth achieving through an expenditure of time and energy (Myles, Moran, Ormsbee, & Downing, 1992). Factors to consider are availability, deliverance, satiation, and consumption of the reinforcer (Martin

& Pear, 1992). Teachers may have a number of reinforcers available from which students can choose (Bacon, 1989). A variety of reinforcers from the categories of tangible, activity, and social should be available for the students (Myles, Moran, Ormsbee, & Downing, 1992).

The schedule of reinforcement is another factor that teachers must consider when developing a behavior modification program to implement in their classrooms. The schedule of reinforcement is when and how often a student will receive reinforcement for emitting the target behavior. Students receive a reinforcer each time the target behavior is emitted in a continuous reinforcement schedule. In a fixed ratio schedule of reinforcement students receive reinforcement for a set number of behaviors. In a variable ratio reinforcement schedule reinforcement is delivered for a differing number of behaviors based on a mean. Teachers should choose a reinforcement schedule based on their needs and the objectives they are trying to attain in the classroom.

Some researchers have recommended caution with the use of reinforcers with the idea that motivation levels may be negatively affected by the use of extrinsic rewards. Evertson, Emmer, Clements, and Worsham (1994) note that since the majority of such research has been conducted in laboratory settings, findings are not representative of real classrooms. Salend, Blackhurst, and Kifer (1982) conducted a classroom experiment and obtained results that support the reinforcement effect on academic performance measured by test scores.

Social Reinforcement

Social reinforcement is a form of positive reinforcement that includes a variety of gestures. Educators in the United States have used social reinforcement for generations (Marshall, 1995). Teachers continue to use social reinforcement to motivate students to achieve (Hitz & Driscoll, 1989). According to Martin and Pear (1992), social reinforcement includes affectionate pats, hugs, praise, nods, smiles, attention, and simple

glances. Evertson, Emmer, Clements, and Worsham (1994) define social reinforcement as recognition in the form of attention, certificates, awards, displays of student work, and verbal citations. Early childhood educators use social reinforcement to enhance student progress towards goals (Hitz & Driscoll, 1989). Praise in the written and spoken forms is also a form of social reinforcement. According to Silvern (1986), praise contingently delivered based on performance will enhance academic achievement. Silvern (1986) further explains that the use of praise in a performance contingent manner can maintain and enhance interest and intrinsic motivation for learning. Most students succeed and progress academically in positive classroom environments (Hitz & Driscoll, 1989). Social reinforcement can be used as part of a positive classroom environment.

An important aspect of any behavior modification program is practicality. The successful implementation of a behavior modification program depends on the total feasibility of the program. Simple procedures should be developed to avoid unnecessary distraction of the teacher and the students during program implementation (Evertson, Emmer, Clements, & Worsham, 1994). In addition, the number of behaviors to be reinforced should be limited (Bacon, 1989). Designing and implementing a behavior modification program with the use of positive reinforcement techniques to attain clear objectives is a fairly complex and time consuming process according to Bacon (1989).

The success of all students within the class should be a primary focus of the teacher. It is for this reason that the teacher should create a system in which all students can have the opportunity to earn the available reinforcers (Evertson, Emmer, Clements, & Worsham, 1994). Careful planning and thought on the part of the teacher are required to develop reward systems that are effective with all members of a class (Bacon, 1989). Verbal feedback as a form of social reinforcement requires little effort and preparation on the part of the teacher (Evertson, Emmer, Clements, & Worsham, 1994). Feedback in the form of social praise is essential to durable and deep learning (Blachowicz, 1996).

Tripathi and Agarwal (1985) conducted a study involving three treatment conditions including verbal reward, tangible reward and no reward for completing a series of tasks. The measurement phase which required students to complete puzzles showed that those students in the verbal reward condition spent more time on the puzzles. In addition, the students in the verbal reward condition performed better than those students in the tangible reward and no reward conditions.

Tangible Reinforcement

Tangible reinforcement involves the delivery of reinforcers that are concrete. Martin and Pear (1992) define tangible reinforcement as manipulative or possessional reinforcers. Evertson, Emmer, Clements, and Worsham (1994) define tangible reinforcers as material incentives including items such as games, toys, books, pencils, and erasers. The amount of time and effort required of the teacher for implementation of a behavior modification system utilizing tangible reinforcers is modest (Evertson, Emmer, Clements, & Worsham, 1994).

The deliverance of the tangible reinforcer is an important factor to consider (Martin & Pear, 1992). Tangible reinforcers may be distributed in a variety of ways. Teachers may have the responsibility of choosing the item to be delivered. In addition, teachers may have a number of reinforcers available from which students can choose. Motivation and interest increase when several reinforcers are made available (Bacon, 1989).

Educational researchers have focused on the effects of tangible rewards on performance in a variety of settings (Neihoff & Mesch, 1991). Handicapped and non-handicapped subjects ranging from preschool children to adults have participated in studies focusing on positive reinforcement. In recent studies (Reid & Bailey-Dempsey, 1995; Reid, Bailey-Dempsey, Cain, & Cook, 1994) monetary rewards were shown to have a positive effect on the grades of girls ages 11-17 who were at the risk of academic failure.

Results of studies involving tokens, which are items exchanged for back-up reinforcers, have shown increases in intelligence test scores. In a study conducted by Lloyd and Zylla (1988), preschool children who received tokens for correct responses had higher test scores than those children who did not receive tokens. A study by Devers, Bradley-Johnson, and Johnson (1994) involving American Indians who were in the fifth through ninth grades showed similar results. Grades, motivation, enthusiasm, and attention to detail in school work for learning disabled students increased with the use of tokens in a study by Ross and Braden (1991). Tangible reinforcers may be slightly more effective than intangible ones according to Lysakowski and Walberg (1981). Terrell, Terrell, and Taylor (1981) obtained results in which children who received tangible reinforcement for correct responses, in contrast to students who received social reinforcement or no reinforcement, scored significantly higher on IQ tests.

Optimal results have been attained in studies involving the combination of tangible reinforcement and social reinforcement. The effects of social and tangible reinforcers may be strengthened when used simultaneously according to Sloane, Buckholdt, Jenson, and Crandall (1979). Results showed that combining the two types of reinforcers results in a more powerful reinforcement effect. In addition, Novak and Hammond (1983) conducted an experiment using tangible reinforcement paired with social reinforcement in which results showed an increase in the completion of academic tasks. Social and tangible reinforcement techniques have become an important part of the elementary classroom environment (Silvern, 1986).

Vocabulary

The development of vocabulary is a dynamic and important aspect of the academic careers of all learners. Hodges (1984) defines vocabulary as words which are merely labels for concepts that are at the disposal of a speaker or writer. Vocabulary development is a basic educational aim of all schools (Nagy, 1988) and must be

incorporated in a systematic and planned program (Dale, O'Rourke, & Bamman, 1971). According to Hodges (1984), schools are a significant influence of the lifelong endeavor of vocabulary development of all learners. Knowledge of vocabulary meanings is an important part of reading performance (Blachowicz, 1985; Dole, Sloan, & Trathen, 1995), reading comprehension (Klesius, & Searls, 1990; Mezynski, 1983; Nagy, 1988; Weiss, Mangrum, & Llabre, 1986), achievement in subjects, and speaking and writing (Hodges, 1984). According to Stahl (1986), comprehension improves when definitions and contexts of vocabulary are given in a variety of activities and examples. However, comprehension is not improved by superficial understandings of word meanings (Dole, Sloan, & Trathen, 1995). Since vocabulary growth is a central part of daily life, it can lead the students to broader experiences, which in turn generate additional experiences (Dale, O'Rourke, & Bamman, 1971). These experiences allow children to acquire new word meanings that extend partial understandings of their existing store of vocabulary knowledge (Bear, Invernizzi, Templeton, & Johnston, 1996). The lack of an adequate knowledge of vocabulary is an obstacle that can hinder academic progress in all subjects.

Learning to recognize words and definitions occurs across grade levels and subject areas within the curriculum. Barchers (1990) explains that vocabulary development continues to receive attention because of its importance in standardized testing. Vocabulary instruction beginning in the primary grades includes both the teaching of word meanings (Nagy, 1988) and the teaching of sight vocabulary (Blachowicz & Fisher 1996). According to Hodges (1984), vocabulary development is most importantly a matter of concept development which is a part of all subjects of the curriculum.

The effectiveness of the varying methods of vocabulary instruction has not been established (Brett, Rothlein, & Hurley, 1996; Blachowicz, 1985). Methods of vocabulary instruction that are used most often include contextual definitions prior to reading a literary selection and discrete study such as specific pronunciations, definitions, or

synonyms (Blachowicz, 1987). According to Blachowicz (1987), instructional decisions related to vocabulary are highly influenced by educational manuals, materials, and time. Preteaching vocabulary as a prereading step, providing related experiences, and introducing a conceptual framework increases learning from text materials (Christen & Murphy, 1991). According to Blachowicz (1985), valuable principles of vocabulary instruction include building a conceptual base, encouraging active learner involvement, focusing on usable vocabulary, and creating opportunities for new word use. Beck and McKeown (1991) believe effective vocabulary instruction includes extensive practice, definitional and contextual knowledge, and active student engagement. Hodges (1984) supports the use of personal experiences and prior knowledge of the students to support vocabulary development in the classroom. He adds that the success of vocabulary instruction is dependent upon the attitude the teacher exhibits towards vocabulary.

It is imperative that students learn vocabulary. Vocabulary is a vital part of cognition, communication, and the acquisition of information. Vocabulary contributes to overall comprehension and academic achievement (Gauthier & Hall, 1991). According to Blachowicz (1996), vocabulary learning in general language development involves the growth of receptive and expressive vocabulary. The acquisition of vocabulary can occur as a result of varied learner experiences. The learning of words occurs through many modalities such as speaking, listening, reading, and writing (Blachowicz & Fisher, 1996; Gauthier & Hall, 1991; Hodges, 1984). Reading proficiency is dependent upon the acquisition of many new vocabulary words (Gauthier & Hall, 1991). Gray and Holmes (1938) stress that vocabularies not only provide the means of written and oral communication, but also serve to extend and enrich experiences through reading. They add that unless children attach clear, accurate meaning to words, their oral and written language will be inaccurate and ineffective.

Whole Language

Whole language has been described by its advocates as an approach, orientation, and attitude, as well as a belief, method, program, and curriculum (Bergeron, 1990). The foundations of whole language are based on the theories of earlier philosophers of education. According to Wagner (1989), the beginnings of whole language date back to works of John Dewey, Lev Vygotsky, Jean Piaget, James Moffett, James Britton, Michael Halliday, Donald Graves, Margaret Donaldson, Gordon Wells, Glenda Bissex, Kenneth Goodman, Ann Haas Dyson, and Shirley Brice Heath. Their theories show that competence in the written and spoken language grows as language is used for interacting with the world and others for real purposes. According to Goodman (1989), language is central to human communication and thought.

Those who support the whole language approach believe that reading is part of language development which includes listening, speaking and writing (Eldredge, 1991; Goodman, 1989; Gunning, 1996; Parkway & Stanford, 1992) in authentic experiences that increase comprehension (Goodman, 1989; Wagner, 1985; Wagner 1989). Whole language is based on the theory that children learn to read and write similarly to how they learn to speak and listen (Gunning, 1996; McKenna, Robinson, & Miller, 1990; Moorman, Blanton, & McLaughlin, 1994). The connection between oral and written language is an important concept of whole language (Bergeron, 1990). Reading and writing thus serve as tools for learning across the curriculum (Moorman, Blanton, & McLaughlin, 1994). The whole language approach has been referred to as a philosophical perspective in which reading, writing, and phonic skills are taught in the context of a need and not as isolated skills (Barchers, 1990). Vocabulary words are taught without the guidance of methods found in traditional manuals (Blachowicz & Fisher, 1996). Methods utilized in whole language programs are based on the idea that the whole is more than the sum of its parts (Goodman, 1989).

The whole language experience includes fiction and nonfiction selections of age appropriate literature organized around themes or units of study instead of the traditional basal readers (Eldredge, 1991; Gunning, 1996). Eldredge (1991) adds that other interdisciplinary activities including music, social studies, and art may be integrated into whole language themes of study. Therefore, as Bergeron (1990) states, "Whole language is a concept that embodies both a philosophy of language development as well as the instructional approaches embedded within, and supportive of, that philosophy. This concept includes the use of real literature and writing in the context of meaningful, functional, and cooperative experiences in order to develop in students motivation and interest in the process of learning" (p. 319).

Advocates of whole language support literature-based or integrated instruction (Bergeron (1990). It is believed that since skills are integrated, whole language or literature based programs help to develop thinking skills and support a variety of learning styles (Barchers, 1990). Learners can build to personal levels of literacy since reading and writing skills are begun where the learners are in whole language classrooms (Goodman, 1989). Therefore, whole language programs are student-centered (Eldredge, 1991; Moorman, Blanton, & McLaughlin, 1994). Teachers need to create a safe and structured environment enriched with resources that encourage learners to make language connections (Wagner, 1985). Background knowledge and knowledge of language provide a basis on which students can build predictions and inferences while they read (Gunning, 1996).

Shapiro and Gunderson (1988) conducted an experiment which compared the number of vocabulary terms generated by students during a one-hour writing activity in first grade classrooms using whole language and basal reader approaches. Their results showed that students in whole language classrooms generated more vocabulary terms overall. They concluded that children involved in whole language programs have more

varied literature experiences than students in basal reader programs. According to Shapiro and Gunderson (1988), performance levels of students are enhanced as a results of varied experiences with literature.

Summary

Behavior modification is a widely used technique to transform behavior into a more acceptable form and to increase academic performance. Social and tangible reinforcement are types of positive reinforcement techniques within behavior modification that can be used to attain desired outcomes. Social reinforcement includes pats, hugs, praise, nods, smiles, attention, (Martin and Pear 1992) and recognition (Evertson, Emmer, Clements, and Worsham 1994). Social reinforcement is easy for teachers to incorporate into daily routines. Verbal feedback as a form of social reinforcement requires little effort and preparation on the part of the teacher (Evertson, Emmer, Clements, & Worsham, 1994). Tangible reinforcement includes items such as pens, pencils, books, toys, and games. Teachers must put forth only a minimal amount of effort to incorporate tangible reinforcement into daily routines (Evertson, Emmer, Clements, & Worsham, 1994). Social and tangible reinforcement have been used in a variety of settings to attain various outcomes with positive effects. Research results have shown optimal results when social and tangible reinforcement have been paired in the treatment condition. Using reinforcement techniques including social and tangible reinforcement add interest into the classroom routine (Evertson, Emmer, Clements, & Worsham, 1994). Part of the classroom routine is vocabulary acquisition. Vocabulary acquisition is a skill that is necessary for speaking, writing, reading, and thinking. In the whole language approach vocabulary is learned within a context and not as a separate skill (Barchers, 1990).

Chapter Three

Procedure and Design of the Study

Introduction

Behavior modification including social and tangible reinforcement techniques is used in educational settings to increase desired behaviors (Justin & Howerton, 1993). Desirable behaviors in the classroom include learning and achievement (Silvern, 1986; Bacon, 1989). Vocabulary acquisition is a skill that enhances performance in all subject areas (Hodges, 1984) since comprehension is increased with vocabulary knowledge (Klesius, & Searls, 1990; Mezynski, 1983; Nagy, 1988; Weiss, Mangrum, & Llabre, 1986). Since vocabulary knowledge is essential in written and spoken language (Kolic, 1988), it is central to human communication and thought (Goodman, 1989). Therefore, the acquisition of vocabulary is an important part of the learning process.

It was hypothesized that there would be no significant difference in vocabulary acquisition of second grade students when students received social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement for accurately defining or identifying vocabulary words during whole language instruction.

Population

The population of this study was 73 second grade students at a public elementary school in a suburban area of southern New Jersey. The 73 students were heterogeneously grouped into three classes. Two classes consisted of 24 students. One class consisted of 25 students. All classes utilized the whole language reading approach using the Harcourt Brace Jovanovich, *Treasury of Literature* (1993). The population was comprised of 42

(57.5%) males and 31 (42.5%) females. Socioeconomic status was based upon the need for free or reduced lunch and/or breakfast. Of the 73 second grade students, 36 (49.3%) received free or reduced lunch and/or breakfast. Students in this study were therefore of the lower to middle socioeconomic status. The population consisted of 39 (53.4%) Caucasian, 22 (30.2%) Hispanic, 10 (13.7%) African-American, and 2 (2.7%) Other.

The sample used in this study was one of three intact classrooms. The sample consisted of a total of 24 students. Of the 24 students, 16 (66.7%) were male and 8 (33.3%) were female. Twelve (50%) of the students received free or reduced lunch and/or breakfast. The sample consisted of 11 (45.8%) Caucasian, 9 (37.5%) Hispanic, 2 (8.3%) African-American, and 2 (8.3%) Other. Two students, one male and one female, were eliminated from the study as a result of being placed in a resource class for reading.

Description of the Instrument

The instrument used in this study was a teacher-made fill in the blank vocabulary quiz (see appendix). Each quiz was based on the vocabulary terms identified for each literature selection in the instructional version of the anthology. A vocabulary quiz was developed for each of the four treatment conditions. Each quiz contained a word bank of the vocabulary terms. Each quiz was printed on a single page of white paper. There was a one to one correspondence between the questions and the vocabulary terms. For this reason, the instrument in this study was a selected-response test.

Research and Design Procedure

A repeated-measures design was used to conduct the experiment. As Gravetter and Wallnau (1992) point out, repeated-measures designs are used to examine performance under different conditions. This study was a variation of the study conducted by Salend, Blackhurst, and Kifer (1982) in which test scores were measured in no reinforcement, immediate tangible reinforcement, and immediate social reinforcement conditions. Although few researchers have used the within-subject design, an advantage is

it allows the researcher to determine whether behavior actually increased as a result of the reinforcement conditions (Cameron & Pierce, 1994). In repeated-measures experiments, individual differences are eliminated since the same subjects are tested in each treatment condition and, therefore, differences between treatments cannot be attributed to differences between groups (Gravetter & Wallnau, 1992).

The study began with a five day baseline data period in which no reinforcement was given. Treatment conditions included social reinforcement, tangible reinforcement, and social reinforcement paired with tangible reinforcement. A return to baseline was implemented after each of the treatment conditions to prevent interaction effects. The duration of each treatment condition was five school days. The study took place during a morning whole language program.

The new vocabulary words were introduced from a chart located at the front board on day one of each story. The teacher recited each word aloud while pointing to it. The class repeated the terms aloud as a group. The meaning of each word was then reviewed one by one. Students supplied personal definitions. If definitions were accurate, reinforcement was immediately delivered. If an accurate definition was not supplied, no reinforcement was delivered. Then another student was given a chance to respond. This cycle continued until a correct response was given. Once a correct definition was supplied, reinforcement was immediately delivered. The teacher then used the vocabulary term in a sentence. The same sentence was repeated by the teacher by replacing the vocabulary term with the definition supplied by the student. After all the terms were reviewed in this fashion, the teacher generated a sentence containing an alternate term or definition. Students were required to identify the corresponding vocabulary term. All correct answers were immediately reinforced. If an incorrect response was given, another student was given the chance to respond. This procedure was used for each of the treatment conditions.

The vocabulary words were reviewed on day three of each story. The teacher generated a sentence with an alternate definition or word for each of the vocabulary terms. Students who supplied the correct vocabulary term immediately received reinforcement. If an incorrect response was given, no reinforcement was delivered. Another student was given a chance to respond. This cycle continued until a correct response was given.

The vocabulary quiz was administered on day four of each of the treatment conditions. The dependent variable, vocabulary acquisition, was measured by a fill in the blank vocabulary quiz (see appendix) which contained a word bank of the vocabulary terms contained within the literature selection for the week. Students independently completed each vocabulary quiz in a fifteen minute time period.

In the social reinforcement phase students were exposed to immediate verbal praise for correct responses during in-class oral group work. Since students were previously exposed to traditionally used terms such as "good", "very good", "excellent", and "outstanding", less frequently used terms were substituted including "fantastic", "wonderful", "terrific", "sensational", and "super".

In the tangible reinforcement phase students were given the choice of one tangible reward immediately following each correct response during in-class oral group work. Tangible incentives included a variety of stickers, pencils, erasers, and pens. Only one tangible reward was delivered for each correct response.

In the social reinforcement paired with tangible reinforcement condition students received immediate verbal praise in addition to the choice of a tangible reward for each correct response during in-class oral group work. The terms "fantastic", "wonderful", "terrific", "sensational", and "super" were said as the students were given the choice of a sticker, pencil, eraser, or pen. Only one tangible reward, and one social reinforcement term were delivered for each correct response.

At the completion of the six week study, data from each condition was analyzed. The repeated-measures ANOVA was used to examine the differences of the means ($p=.05$) across the treatment conditions.

Chapter Four

Analysis of Findings

Introduction

Throughout the history of education educators have used behavior modification techniques including those of the social and tangible types to motivate and encourage students to exhibit desirable behaviors in the classroom (Justin & Howerton, 1993). Motivation and encouragement have been initiated through the use of reward systems (Bacon, 1989). Reward systems are a form of positive reinforcement in which students have the opportunity to earn available reinforcers (Evertson, Emmer, Clements, & Worsham, 1994). Learning and academic achievement is a major concern of teachers and educators. The acquisition of vocabulary is key to learning and academic achievement since it increases comprehension (Kulich, 1988).

In this study 24 second grade students in a suburban elementary school were exposed to social and tangible reinforcement conditions during whole language instruction. The intent was to determine if social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement would have a significant effect on vocabulary acquisition. It was hypothesized that there would be no significant difference in vocabulary acquisition as a result of the treatment conditions. The treatment conditions were presented using the repeated-measures design.

Tabulation of Raw Scores

The means and standard deviations obtained from the vocabulary quiz scores are presented in table 1. The vocabulary quiz scores for the tangible reinforcement condition yielded the highest values ($M = 97.48$; $SD = 8.35$). The vocabulary quiz scores for the social paired with tangible reinforcement condition yielded the second highest values ($M = 90.91$; $SD = 13.09$). The vocabulary quiz scores for the baseline condition yielded the third highest values ($M = 88.02$; $SD = 19.91$). The vocabulary quiz scores for the social reinforcement condition yielded the lowest values ($M = 69.93$; $SD = 25.67$).

table 1

Means and Standard Deviations of Vocabulary Quiz Scores

Reinforcement Condition	Quiz Scores	
	M	SD
Baseline	88.02	19.91
Social	69.93	25.67
Tangible	97.48	8.35
Social with Tangible	90.91	13.09

Tabulation of Repeated-Measures ANOVA

The statistical calculation used to analyze the data was the repeated-measures ANOVA. Significant differences were found between treatment conditions, $F(3, 63) = 16.58$, $p = .05$. Therefore, the means of each of the treatment conditions were compared using the Tukey HSD. Significant differences were found in three of the comparisons (see table 2). Calculations showed that there were significant differences between the means of the baseline and social reinforcement conditions, the means of the social and tangible

reinforcement conditions, and the means of the social and social paired with tangible reinforcement conditions.

table 2

Comparison of the Means for the Treatment Conditions

Comparison of the Treatment Conditions	Difference of the Means	> Tukey HSD (10.82)
baseline and social	18.09	yes
baseline and tangible	9.46	no
baseline and social with tangible	2.89	no
social and tangible	27.55	yes
social and social with tangible	20.98	yes
tangible and social with tangible	6.57	no

Analysis Related to Particular Purpose of Hypothesis

The data supported that there were significant differences between the means of the vocabulary quiz scores for the treatment conditions. Specifically the differences were found between the baseline and social reinforcement conditions, the social and tangible reinforcement conditions, and the social and social paired with tangible reinforcement conditions. Therefore, the findings do not support the hypothesis. The results of this study suggested that there was a significant difference in vocabulary acquisition of second grade students when students receive social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement for accurately defining or identifying vocabulary words during whole language instruction.

Chapter Five

Summary, Conclusions, and Recommendations

Introduction

Reinforcement using positive consequences is a method used to motivate students in the classroom (Bacon, 1989). Motivation towards learning can be stimulated with the use of positive reinforcement techniques (Silvern, 1986). Vocabulary acquisition is a very important aspect of learning since it plays a key role in performance (Blachowicz, 1985; Dole, Sloan, & Trathen, 1995), comprehension (Klesius & Searls, 1990; Mezynski, 1983; Nagy, 1988; Weiss, Mangrum, & Llabre, 1986), and achievement (Hodges, 1984).

In this repeated-measures study 24 second grade students were exposed to tangible and social reinforcement conditions during whole language instruction for accurately identifying or defining vocabulary words. It was hypothesized that there would be no significant differences between the means of the treatment conditions.

Quiz scores for each treatment condition were compared using the repeated-measures ANOVA. Significant differences were realized. The Tukey HSD was used to identify the differences. Differences between the means of the baseline and social reinforcement conditions, the means of the social and tangible reinforcement conditions, and the means of the social and social paired with tangible reinforcement conditions were found.

Summary of the Problem

The purpose of this study was to determine if social and tangible reinforcement conditions significantly affect vocabulary acquisition of second grade students in a whole language reading program.

Summary of the Hypothesis

It was hypothesized that there would be no significant difference in vocabulary acquisition measured by quiz scores when second grade students were exposed to social reinforcement, tangible reinforcement, or social reinforcement paired with tangible reinforcement for accurately defining or identifying vocabulary words during whole language instruction.

Summary of the Procedure

The study began with a five day baseline data period followed by the social reinforcement, tangible reinforcement, and social paired with tangible reinforcement conditions. Each treatment condition lasted for five school days and was followed by a return to baseline period of five school days. Reinforcement was delivered immediately to the students for accurately identifying or defining vocabulary words during a morning whole language program. Students were exposed to traditionally used terms including "good", "very good", "excellent", and "outstanding" during the baseline period. Terms including "fantastic", "wonderful", "terrific", "sensational", and "super" were delivered during the social reinforcement condition. Stickers, pencils, erasers, and pens were delivered in the tangible reinforcement condition. Stickers, pencils, erasers, and pens in addition to the terms "fantastic", "wonderful", "terrific", "sensational", and "super" were delivered in the social paired with tangible reinforcement condition. The words were introduced to the class as a group from a chart at the front board on day one of each story which marked the beginning of each condition. Vocabulary words were reviewed on day three of each story. The vocabulary quiz was administered on day four for each condition.

Summary of the Findings

The repeated-measures ANOVA yielded a significant difference in the treatment conditions, $F(3, 63) = 16.58, p = .05$. A Tukey HSD was used to determine the specific differences between the means of the treatment conditions. Significant differences were found in three of the comparisons. Statistically significant differences between the means of the baseline and social reinforcement conditions, the social and tangible reinforcement conditions, and the social and social paired with tangible reinforcement conditions were realized.

Conclusions

The results of this study should be viewed critically. The quiz scores in the social reinforcement condition were low in comparison to the other conditions ($M = 69.93$). This low level of performance in the social reinforcement condition may have been due to one of three factors including the difficulty of words, the total number of words, or the time elapsed between the treatment and the quiz. The words for the story in the social reinforcement condition may have been more difficult for the students. In addition, this condition contained 13 vocabulary terms, the most of any of the conditions. Furthermore, there was a longer interval of time between the introduction and review of the words on days one and three, and the quiz on day four due to school closings for the observance of a holiday. The interval of time between the introduction and review of the words, and the vocabulary quiz was seven days. Therefore, the low scores achieved by the students on the quiz for the social reinforcement condition may be attributed to forgetting. If low scores in the social reinforcement condition are attributed to the longer time interval, the significant differences found would be invalid.

It is important to note that in comparison to the baseline condition, tangible reinforcement and social paired with tangible reinforcement did not yield significant differences. The significant difference realized between the baseline period and the social

reinforcement condition was due to higher performance on quiz scores in the baseline period. These findings suggest that traditionally used terms of verbal praise such as those in the baseline condition are effective in the reinforcement of vocabulary acquisition for second grade students in a whole language reading program.

Implications and Recommendations

Due to the extended time interval of seven days between the introduction and review of the vocabulary words, and the quiz in the social reinforcement condition, a replication of this study will help to determine the accuracy of the findings. If the use of nontraditionally used terms such as those in the reinforcement condition result in a negative effect on quiz scores measuring vocabulary acquisition, then this method of reinforcement should be abandoned. Keeping the time interval in mind, it seems that all reinforcement methods in this study have similar effects on vocabulary acquisition. Therefore, the methods of reinforcement chosen should be based upon the personalities of the students and the teacher. However, the implementation of a selection of available reinforcement techniques is encouraged to create variety and interest in the classroom.

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APPENDIX

Name _____ Date _____

Vocabulary Quiz
Miss Eva and the Red Balloon

Fill in the blanks.

1. The _____ popped and scared the baby.
2. My _____ food is pizza.
3. All the actors _____ well in the play.
4. We _____ to the bus stop so we wouldn't miss the bus.
5. The sun is yellow and has a large, _____ shape.
6. She _____ soda and candy to the party.
7. We heard a _____ noise coming from the house.
8. Our class is going to see the _____ in May.
9. The witch cast a _____ spell that changed the mouse into a horse.
10. Billy invited all of his friends to his birthday _____.
11. She _____ on her new shoes to see if they would fit.

performed	round	tried	mysterious
favorite	circus	brought	party
hurried	magical	balloon	

Name _____ Date _____

Vocabulary Quiz
Awful Aardvark

Fill in the blanks.

1. The baby slept _____ in his crib.
2. The dog's fur _____ when he saw the cat.
3. We _____ down the side of the hill on all fours.
4. Mom was _____ at me when I didn't listen.
5. Susan was _____ her arms above her head.
6. The _____ ate the snake for lunch.
7. What is that _____ sound I hear?
8. Our tires _____ when we stopped the car.
9. We _____ the class by our loud talking.
10. Dad _____ that we tell him the truth.
11. Her body _____ because she was so cold.
12. A helmet can _____ your head if you fall.
13. That loud noise will _____ me while I am working.

stretching	demanded	awful	annoy
protect	Mongoose	clambered	screeched
bristled	trembled	peacefully	disturbed
angry			

Name _____ Date _____

Vocabulary Quiz
The Day Jimmy's Boa Ate the Wash

Fill in the blanks.

1. I _____ you want me to help you move your things.
2. I was so _____ when I was picked as the winner.
3. A _____ is not a poisonous snake.
4. We need to keep the _____ warm so the eggs can hatch.
5. Rainy days can be _____ when there's nothing to do.
6. A farmer uses a _____ to plow his fields.
7. It doesn't make any _____ to wear mittens in the summer.
8. The handle of the pitchfork was sticking out of the _____.
9. Jim was _____ the ball as hard as he could.

henhouse
tractor
haystack

sense
boring

suppose
excited

boa constrictor
throwing

Name _____ Date _____

Vocabulary Quiz
Tyrone the Horrible

Fill in the blanks.

1. I loved the _____ that my grandmother gave me.
2. Our neighbor was _____ at us for stepping on his flowers.
3. Tyrone was a _____ who liked to pick on Boland.
4. The candy was _____ off my desk when I left the room.
5. You must _____ talking to strangers when you are alone.
6. The Rockets played _____ the Tigers in the baseball game.
7. In a war, we fight against the _____.
8. Billy was _____ about his new haircut by the other children.
9. Tyrone _____ hard on Boland's tail.
10. The children got into _____ for fighting on the playground.
11. Please give me one more _____ to do it right.
12. "Give me your sandwich!" said Tyrone in a _____ voice.

avoid	trouble	present	furious
against	chance	bully	teased
stomped	enemy	swiped	nasty

VITA

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