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Abstract

The purpose of this study is to address the following research question: How effective are the Reciprocal Teaching Strategies in increasing reading comprehension? Peer observation and coaching were done to observe each other using the Reciprocal Teaching Strategies in the classroom. Two different observations were done, each time by a different peer coach. After each observation, the lesson which had been observed was briefly discussed. From this interaction, further suggestions for implementation could be made from our peers.

IMPLEMENTATION OF RECIPROCAL TEACHING STRATEGIES

Submitted

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts in Education

Michael Sauer

University of Northern Iowa

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INTRODUCTION

The focus of this research paper is to evaluate the implementation of Reciprocal Teaching Strategies at Central Middle School. Central Middle School had been identified as A School in Need of Assistance (SINA). Therefore, a SINA committee was created to identify problems and then recommend initiatives that would solve these problems.

During a staff meeting at Central Middle School, the SINA committee members gave an explanation for this initiative, explaining that the administration expects that all staff members will take part in an inservice on Reciprocal Teaching. Two options for training were offered. One began in the spring of 2004 and included thirty-four hours of training. The other choice was a two-day workshop in August. A goal was set to have all staff members implement Reciprocal Teaching Strategies in the 2004-2005 school year. Per diem pay was given to teachers for all hours which they attended. Although great amounts of both time and money were invested in this initiative, there was little accountability from the Central staff.

AEA 267 trainers required teachers to fill out and turn in weekly reflection logs. A record was kept which listed those teachers who turned them in, but no feedback was given on the logs. Therefore, this research paper was designed to serve as an accountability piece for Reciprocal Teaching and its implementation.

Significances

Reciprocal Teaching could be useful in raising student achievement. But if problems arise while using Reciprocal Teaching, they should be addressed immediately. Other schools in the Waterloo District have also been placed on the watch list. Perhaps they could also benefit from this research as their SINA committees seek out new professional development. It could also be beneficial for those outside the district.

Limitations

. There is a large number of teachers at Central, and there are many new staff members in the building this year. Therefore, not everyone was able to participate in the Reciprocal Teaching training. There were also changes in administration from the 2003-04 school year to the 2004-05 school year.

Literature Review

Introduction

The acquisition of good reading skills is at the heart of learning in the field of education. Students must know and apply many reading strategies and skills in any content area if they want to experience success. Two of those strategies and skills are the focus of this research study. There were two specific bodies of literature which provided the theoretical framework for this study. The first body of literature is comprised of research which has been done on Reciprocal Teaching. This is a set of strategies that students can use as they read material of any kind, both nonfiction and fiction. The literature found while doing research on this topic supports the use of these strategies in the teaching of reading. The other specific body of literature which provided a theoretical framework for this study is concerned with peer coaching. Peer coaching focuses on changing staff development which in turn drives school improvement (Showers, 1996).

Reciprocal Teaching

Reciprocal Teaching is defined as a teaching strategy that takes place in the form of a dialogue between teachers and students using segments of a text (Palincsar, 1986). Four activities are incorporated into this technique: summarizing, questioning, clarifying, and predicting. The role of teacher in leading the dialogue is assumed by both the students and the teacher at different times during instruction. The purpose of Reciprocal Teaching is to help students bring meaning to the written word, with or without a teacher present. Reciprocal Teaching encourages student self-directed

prediction, clarification of the information not completely understood as the text is read, generation of questions about the content, and summarization of material covered (Lysynchuck, Pressley, & Vye, 1990).

To improve student achievement, the technique of higher level questioning is very important. Embedded in this technique are questions which are of a high quality and varied responses given by students. To help a teacher recognize and analyze patterns which are given in response to students, a modified version of the Flanders' Interaction Analysis Matrix can be used (Kassner, 1998).

Several studies have demonstrated the effectiveness of Reciprocal Teaching. A study done by Lederer provides encouragement that Reciprocal Teaching is a practical strategy that can be used with success to teach students of various abilities and learning styles (2000). The instructional practice of Reciprocal Teaching demonstrates that it works across curricular areas with students of all ability levels. Reciprocal Teaching Strategies were used with low achieving seventh-graders in past studies done by Palincsar and Brown (1984). The premise that regular education students can benefit from Reciprocal Teaching was the basis of work done by Millers and Rosen (2001).

A study was done in which the focus was on summarizing or restating paragraph contents after an initial reading. A group of randomly selected elementary students who had been identified as learning disabled were trained in using summarizing strategy. Out of the 16 students, thirteen spontaneously used the summarizing procedure. The increase between the pre- and post-testing of the experimental group was two times as much as the control group (Stein, Jenkins,

Heliotis, & Haynes, 1987). A study was completed in which the following strategies were examined: comprehension monitoring, self-questioning and summarizing at the independent level, and reciprocal teaching. This study was similar to one about low-achieving junior high students. The effectiveness of these strategies on fifth- and sixth-grade regular education students was the focus of the present study. An improvement in summarizing was shown. There were no differences between control and experimental groups in regards to asking questions. The authors found that the strategies worked just as well with elementary students as they had with the junior high students (Taylor & Frye, 1992).

Peer Coaching

For teachers to become better at the strategies of Reciprocal Teaching, there must be time allowed to observe colleagues using these strategies in their classrooms through the process of peer coaching. Peer coaching is a mutually reciprocal process that helps teachers to improve their teaching (Gray & Meyer, 2004). It promotes honest, helpful interactions between people with common interests. Peer coaching also gives teachers a chance for adult interaction as well as student interaction through small group cooperative learning (Hyman, 1990). The four basic principles of peer coaching are: 1) all teachers are members of teams 2) verbal feedback is omitted 3) the person doing the teaching is the "coach" and the one observing is the "coached" 4) the collaborative work goes beyond observations and conferences (Showers, 1996).

Training is required to effectively coach peers. Teachers should receive ten or more hours of training in research-based effective teaching practices. Good training

in peer coaching could change the traditional supervisory role in schools, change the structure of schools, and promote professionalism in teachers. By using feedback, teachers are allowed to compare their own views of themselves with the views that others have of them. If used correctly, this can be a very powerful tool. There must be trust between the observer and the teacher being observed. The feedback should not be evaluative, but it should be developmental. Following the feedback, there is an action plan. The peer coach will help the participant reflect about what has been found but at the same time not be judgmental (Dyer, 2001).

Instructional effectiveness in the classroom can be increased when teachers learn to self-analyze their teaching through videotaping and support group (Aanatos and Ancowitz, 1987). Peer coaching offers the potential for improvement in school life for both students and teachers alike. Teachers become self-reflective and gain more control of their future teaching successes when they use peer coaching. There is common goal-setting and teacher interaction is increased (Hyman, 1990). During interviews, teachers said that one of the main personal benefits of the peer coaching project was having a professional colleague as a partner (Sparks and Bruder, 1987). Showers and Joyce (1996) believe that regularly-scheduled coaching interactions greatly increase the likelihood that content being taught during staff development will actually be used in the classroom. Teachers need support when implementing new strategies in their classrooms. The results of the studies parallel the correlation between coaching support and the lasting implementation of the new strategy (Showers and Joyce).

Peer coaching is but one dimension in the realm of school improvement. Simply forming peer coaching or peer study teams will not affect the learning environments of students (Joyce and Showers, 1996). Hyman outlines areas of weakness with the peer coaching concept. Premise one is that teachers can learn skills needed for peer coaching. This assumes that time is available for training which often is not the case. In order to strengthen the use of peer coaching, adequate time must be offered. Premise two is that those in control of schools will permit change to take place (Hyman, 1990).

Observations during peer coaching can be enhanced with the Flanders Interaction Analysis, an instrument designed to record teacher and student interactions. The Flanders Interaction Analysis is a system of classroom interaction analysis. In its original and modified forms, this system has been used widely in classroom observation studies (Wragg, 1999). It has also been used at the University of Michigan Medical School to study the differences between expert and non-expert PBL tutors (Davis, 1992). The Flanders Interaction Analysis System is used to code spontaneous verbal communication. There are 10 categories of communication, which are intended to include all communication possibilities. Seven of these categories come under the heading of teacher talk, and the other three are coded as pupil talk (See Appendix A for Flanders' Interaction Analysis Categories Table).

METHODS

Introduction

The purpose of this study is to address the following research question: How effective are the Reciprocal Teaching Strategies in increasing reading comprehension? Peer observation and coaching were done to observe each other using the Reciprocal Teaching Strategies in the classroom. Two different observations were done, each time by a different peer coach. After each observation, the lesson which had been observed was briefly discussed. From this interaction, further suggestions for implementation could be made from our peers. Method two which will be addressed is interviewing three teachers at Central Middle School, all of whom teach in different subject areas. Interviews were utilized to determine the degree of use of Reciprocal Teaching Strategies and the amount of further support needed to make these teaching strategies effective. The third method chosen for this research paper is a comparison of the Target Teach Fall pre-test scores of the past three school years for ten reading classes at Central Middle School.

Setting

Central Middle School has 830 students which makes it as one of the largest middle schools in the state of Iowa. This middle school is not a neighborhood school, so the majority of students are bused. Within Central's population, four subgroups, African American, ELL, SES, and special education, make up the school. This contributes to a richer, fuller awareness of differences and a multi-cultural experience for all involved.

Participants

There were three groups of participants in this study. The first group of five

middle school teachers was comprised of four females and one male. These teachers, who

have an average of seventeen years teaching experience, make up the leadership team at

Central Middle School. Their areas of expertise include talented and gifted, special

needs, reading, socials studies, and technology. The five teachers first observed each

other, and then had a debriefing which was followed by another observation. The second

set of participants is a group of three teachers who were interviewed by the researcher.

Teacher F is an eighth-grade math teacher, Teacher G a seventh-grade reading teacher,

and Teacher H a special needs teacher at Central Middle School.

The purpose of the interviews was to discover the level of implementation of

Reciprocal Teaching strategies and also to discover further need for more assistance in

using the strategies. The third set of participants is a set of 10 reading classes from

Central Middle School from three separate school years: 2002, 2003, 2004. This group of

students was sixth graders in 2002, then seventh graders the following years, and in 2004

were eighth graders. The approximate number of students which participated was 240.

Their role in this research was to take the pre-test each Fall for the Target Teach

curriculum.

INSTRUMENTS

Modified Flanders Interaction Analysis Data Collection Table

The purpose of the modified Flanders Data Table is to measure or describe the

number of interactions between teachers and students. This data table is divided into

twelve specific behaviors which can be marked for the person observed. These twelve

can be divided into four main topics. The premise of this analysis process is that by

critiquing one's teaching, a teacher can become both the student and the teacher at the

same time thereby creating self-analysis and awareness of teaching personality,

techniques, and effectiveness. Reciprocal Teaching Strategies rely heavily on giving the

students time to talk among themselves, and by having peer coaching, teachers can get

feedback as to how they are doing in areas such as this.

Teacher Interviews

The purpose of this measure is to see whether the use of Reciprocal Teaching

Strategies has had a positive impact on the learning goals of the classrooms of several

teachers at Central Middle School. In addition, each faculty member was interviewed to

determine whether they needed additional help to more effectively implement Reciprocal

Teaching strategies. A variety of questions were used in the interviews. Some were very

structured and specific and talked about exactly what was happening in each teacher's

classroom with Reciprocal Teaching Strategies. There were other questions which were

more open-ended and asked the three participants to discuss their future goals in relation

to Reciprocal Teaching.

Target Teach

The purpose of this measure is to compare the scores of the 2004 fall Target

Teach pretest scores to the Fall 2002 and the Fall 2003 pretest scores to see if strategies

to improve reading comprehension implemented during Reciprocal Teaching teacher training have made a difference in reading comprehension test scores. Reciprocal Teaching strategies were first implemented in the spring of 2004 by 65% of Central's teachers. The pretest for Target Teach is given every Fall during the first week of school, with four increment tests given throughout the school year (See Appendix B for a sample page). All tests are written in ITBS format and scored electronically. The pretest consists of 105 questions. The questions cover 26 district reading objectives. The pretest was used as the measure because the increment tests had been reformatted for the 2004-05 school year, while the pretest remains the same. The post-test results were not available for this study because it is not administered until May. Target Teach was adopted in the spring of 2001 for middle schools with the first pretest given in the Fall of 2001. The pretest was revised from the fall of 2001. The data shown is from the revised pretest that remains in use.

Procedures

Data Collection for Teacher Observations

A teacher was observed during a fifteen-minute lesson with his/her class, using a modified Flanders Interaction Analysis Data Table collection tool (See Appendix C). There were two initial observations, with two different peer coaches, followed by debriefing with peer coaches. Peer coaches recorded tally marks in the different areas as they observed another teacher. Individuals reflected with coaches, identified strengths and weaknesses, and targeted an area to change. The reflection log provided as part of Reciprocal Teaching was used as documentation of the process (See Appendix D for a

sample reflection log). After reflection, a course of action was decided upon, implemented in the classroom, and followed up with observations by peer coaches occurred.

Data Collection for Interviews

The interviews conducted on the three Central teachers were all done during the course of the normal school day. The first interview with Teacher F, an eighth-grade Math teacher, was done after school on a Friday. No interruptions occurred during the interview. The second interview with the seventh-grade reading teacher, Teacher G, was done during a time before school, and again there were no interruptions during this interview. The third interview with Teacher H, the seventh-grade resource teacher, was conducted during her planning period, with no interruptions occurring. After each of the ten questions was asked, the participant's answer was recorded on paper.

Data Collection for Target Teach

The Target Teach test was administered to students in their reading class by their reading teacher. Target Teach is part of a district wide reading curriculum for the Waterloo School System. It is a purchased curriculum that has been adapted by a curriculum coordinator and a committee of reading teachers. Fall pretests from 2002, 2003, and 2004 have been used in this analysis.

RESULTS

Introduction

The observations done by peer coaches were very helpful in identifying strengths and weaknesses in interactions with students. Through the observations and reflection of the lesson taught, it was found that the teacher's questioning skills had improved. The teacher being observed had noted that more thought and preparation were now being put into the lessons. In the interview process with the three classroom teachers, their successes with Reciprocal Teaching Strategies as well as their needs for further implementation came out very clearly. The Target Teach data, which was collected over a period of three consecutive school years with ten reading classes, shows that the median score increased for these classes.

Observations

The tally marks in the modified Flanders' Interaction Analysis Data Table were helpful in that they helped open dialogue between colleagues. The area of weakness, which was also the area to be targeted as needing work, was student initiated talk with a combined percentage of 4%. A post-observation was done at a later time by another peer coach. The same data table was used with the same four sections on it. The area which had been targeted, student initiated talk, now had 15% of the tally marks. This is a very important component because Reciprocal Teaching is an instructional activity that takes place in the form of a dialogue between teachers and students regarding segments of text.

Table One – Tally Marks for Modified Flanders' Interaction Analysis

Observer	# Tallies	% Indirect	% Direct	% Participant
1	45	29	27	44
2	47	24	20	56
3	45	27	22	51

As stated in the introduction, the intended outcome was to become "consciously competent" teachers, thereby having an effect on student achievement. Results from the interaction analysis data table indicated areas of strengths and weaknesses in interactions with students in the post observation as the area of weakness, student initiated talk, had more than tripled in percentage points. A higher level of self-awareness of questioning skills, presentation, student responses, and direct teacher talk came about with the help of feedback during a debriefing with a peer coach. Student achievement will hopefully be impacted by this self-analysis and awareness.

Interviews

A complete account of the interview questions can be found Appendix E. Ten questions were asked used in each interview. Questions four and nine addressed the awareness of Reciprocal Teaching Strategies by parents and the administration at Central Middle School. Two of the teachers interviewed felt that parents were aware of these, while the other teacher felt that parents had not been made aware of the Reciprocal Teaching Strategies. However, all three answered that they were unsure of the knowledge base of the administration at Central Middle School. Several of the interview

questions, numbers one, five, seven, eight, and ten, referred to the actual classroom teaching using the Reciprocal Teaching Strategies. All three of those interviewed had some of these strategies in place in the classroom, but to varying degrees. This might be related to the fact that two of the three teachers felt that their content area was a good match for Reciprocal Teaching Strategies, while one person felt that they could not make an informed response to this type of a question. The last type of question in the interview dealt with support and resources which were available to teachers using the Reciprocal Teaching Strategies. These were questions two, three, and six. All three of those interviewed felt that there were areas of need, whether it be more time available to do the planning or materials that would aid them in their teaching of these strategies.

Target Teach

In the ten reading classes at Central Middle School that were given the Fall pre-test for Target Teach in three different school years, improvement was shown in the scores of the students. These were not huge, but small steps of improvement are shown for each year.

Table 2-Median and Range Scores, Target Teach Data

	2002	2003	2004
Median	52	55	56
Range	52	33	20

In the ten reading classes, the reading comprehension scores went from 23% all the way up to 75% in 2002 (See Appendix F for complete list of scores). The median score for this year was 52, and the range was also 52. In the ten reading classes, the reading comprehension scores began with 45% and went up to 78% in 2003 (See Appendix F for complete list of the scores). For this year, the median was 55, and the range was 33. Again for ten reading classes, the reading comprehension scores began with 52% and went up to 72% in 2004 (See appendix F for complete list of the scores). This time the median was 56, and the range was 20. The median score increased by 3% from 2002-2003. The median score increased by 1% from 2003-2004. The total gain in reading comprehension median scores over two years was 4%. The range score decreased by 19% from 2002-2003. The range score decreased by 13% from 2003-2004. The total decrease was 32%.

DISCUSSION

Introduction

The research question which is addressed in this paper is: How effective are the Reciprocal Teaching Strategies in increasing reading comprehension? The findings indicated different levels of implementation within the building. This varies from no implementation to a partial degree of implementation to that of a higher level of implementation for those with a better understanding of the Reciprocal Teaching Strategies. The peer coaching data showed that student initiated talk was the area needing the most work. As the post observation data indicated, student initiated talk

increased after an awareness was made that this was a low area. Through the observations

and reflection of the lesson taught, it was found that the teacher's questioning skills had

improved. The observed teacher had noted that more thought and preparation were now

being put into the lessons. The interviews of three different Central Middle School

teachers, showed that the faculty are at different stages of use with the Reciprocal

Teaching Strategies. All three are using the Reciprocal Teaching Strategies in their

classrooms, but two of them feel more comfortable in their use of them. Another

commonality among these three teachers is that there are still some needs not being met

in the areas of support and resources. A considerable difference among these three staff

members as shown by the interview data is that not all the teachers agree about parental

awareness in the use of the Reciprocal Teaching Strategies. The Target Teach pre-tests

over a three year period showed a small growth on the median scores and a decrease in

the range of the scores. In this section, there will follow a discussion pertaining to each of

these measures.

Teacher Observations

This part of the research supports the fact that changes need to be made in having

classrooms move from being teacher directed to more student directed. There is a direct

tie between this and how Reciprocal Teaching Strategies are used. As teachers are more

willing to open their doors to their peers who are willing to come in, observe, and also

help them to create a self-analysis and awareness of their teaching styles, strengths, and

weaknesses, these teachers will find new avenues in their interactions with students. The

reflection piece is also a tool whereby teachers can organize their thoughts in the process

of peer coaching.

Teacher Interviews

Since there is a large staff at Central Middle School, the three teachers

interviewed represent only a very small sampling of that staff. Based on their comments,

it can be said that Reciprocal Teaching Strategies are being used in varying degrees at

Central Middle School. Therefore, any broad conclusions concerning Reciprocal

Teaching would be hard to draw. From these teacher interviews, the data indicates that

teachers would benefit from more training in Reciprocal Teaching Strategies, more peer

observations, and more debriefing with peer coaches and self-reflection of teaching

styles. To find out where the needs really are for each individual teacher, it would be

beneficial to survey the staff on this matter. Another aspect of the teacher interview data

is that the administration at Central Middle School needs to become more familiar with

these strategies. With more knowledge, they can be more effective when conducting

walk-through observations, perhaps giving better feedback and encouragement.

Student Achievement Data

The data from the Target Teach pre-test scores show a consistent growth in the

median scores from year to year for the three years indicated. There were no classes in

the last two years that did not meet the 41% proficiency. It seems promising that the

range scores went from 52 in 2002 to 20 in 2004, which is a decrease of 32%. The gap

between the low end and the high end seems to be closing. It is hoped that all students

would continue to move up while at the same time decreasing the range scores. However, it is a small growth. There is not enough evidence, therefore, to show if the gain was the result of Reciprocal Teaching or the Target Teach curriculum, or a combination of both. The Target Teach curriculum is used by all reading teachers. Fifty percent of reading teachers at Central took the 34 hour Reciprocal Teaching training while the Target Teach curriculum was implemented school wide in the spring of 2001. The gain is small enough that either one of the innovations alone could have caused the gain. Also, without the benefit of testing for validity or reliability, it is not known if the gain is significantly different or could occur naturally, or without the implementation of either innovation. Reciprocal Teaching was introduced in middle school in the spring of 2004. Another variable that should be looked at is the length of time students had with Target Teach in elementary schools. Target Teach was introduced and used in the elementary schools before being introduced and implemented in middle school. Some of Central's feeder elementary schools piloted the Target Teach curriculum. It is possible that some of the target groups had prior experience with the curriculum.

Practical Implications

Increasing student achievement in the area of reading comprehension has become a priority for a very specific reason. Central Middle School was placed on the "watch list" for low reading comprehension scores as dictated by the No Child Left Behind Legislation. The ultimate goal was to raise reading scores to get off of the list. The data from the teacher observation section shows that when peer coaching is put in place, teaching strategies used in a classroom can be improved upon. These strategies can

directly relate to Reciprocal Teaching. Data from the interviews of the three Central staff members also supports the improvement of classroom teaching strategies with the use of Reciprocal Teaching. It was evident through the teacher interviews that some teachers are using Reciprocal Teaching more frequently in their classrooms. Their skills could be enhanced through groups meeting within the building, discussing the use of Reciprocal Teaching in their classrooms. This would be both important and necessary in the use of peer coaching groups. A principle of peer coaching is that peer coaching teams are made up of faculty members who have agreed to be on these teams (Showers, 1996). The third aspect of data, the pre-tests from Target Teach, suggest that there should be continued use of Reciprocal Teaching Strategies. There has been a slight rise in the median scores of these pre-tests, and it is the hope of all involved that this increase will continue.

Administration at Central Middle School should receive the full training of the strategies of Reciprocal Teaching. They will then be able to see and identify the strategies being used in the classroom both during evaluations and classroom walk-throughs.

The data which I received from each of the measures has some important future implications. This data is also able to give us a complete picture of where Central Middle School is at with the use of Reciprocal Teaching Strategies. After peer coaching groups are set up, more staff members would become comfortable with this process. Teachers would not have a problem with opening their doors to a colleague(s) who would help them find a weak area and then focus on this area in the classroom.

Future Research

The Interaction Analysis Data Table was the tool which was referred to with the set of data in this research paper. Perhaps, when examining the Reciprocal Teaching Model, there may be another tool(s) that could also be used to gather data besides the Interaction Table. The interview process which was done on a small sample of Central Middle School teachers could be done at a later time with the same group of three teachers and also with a different small group of staff members. This data would communicate whether Central Middle School staff is moving forward with Reciprocal Teaching Strategies. By looking again at the pre-test data for the Target Teach and comparing it to the post-test data in the same school year, the effectiveness of the Reciprocal Teaching Strategies can be determined. Additionally, the effects of Reciprocal Teaching on reading comprehension could be isolated by following a randomly selected group of students in a teacher's class who is trained in Reciprocal Teaching, collecting the data, and comparing it to the data collected on a class taught by a reading teacher who is not trained in Reciprocal Teaching. Both teachers, however, would still be using the Target Teach curriculum. In order to measure the effectiveness of an innovation such as Reciprocal Teaching, it needs to be in place from three to five years. Fuller implementation of the Reciprocal Teaching Strategies will not necessarily guarantee higher student achievement in the pre-test scores of the Target Teach curriculum.

APPENDIX

APPENDIX A

Flanders Interaction Analysis Table

Introduction

Flanders Interaction Analysis is a system of classroom interaction analysis. The system in its original and modified forms have been used extensively in classroom observation studies (Wragg, 1999). It has also been used in the study of differences between expert and non-expert PBL tutors at University of Michigan Medical School (Davis et al 1992). It is a system for coding spontaneous verbal communication. The system has two primary uses, Firstly to provide evidence of difference in teaching patterns that distinguish one curriculum from another and secondly it can also provide data which may help to explain why differences in learning outcomes appeared or failed to appear. The system will be used for both purposes in the PEPBL study.

The Flanders Interaction Categories (FIAC) consist of 10 categories of communication which are said to be inclusive of all communication possibilities. There are seven categories used when the teacher is talking and two when the pupil is talking (see table 1 for details of each category). Because the system is totally inclusive coding at a constant rate allows calculation of the proportion of time spent in one or more categories.

Teacher – talk	Response	**1.Accepts Feeling**. Accepts and clarifies an attitude or the feeling tone of a pupil in a non threatening manner
		2. Praises or encourages. Praises or encourages pupil action or behaviour. Jokes that release tension, but not at the expense of another individual; nodding head, saying um, hmm or go on are included
		3. Accepts or uses ideas of pupils. Clarifying, building or developing ideas suggested by a pupil. Teachers' extensions of pupil ideas are included but as teacher brings more of his own ideas into play, shift to category five.
	Initiation	**4. Asks questions**. Asking a question about content or procedures; based on teacher ideas , with the intent that the pupil will answer
		5. Lecturing. Giving facts or opinions about content or procedures; expressing his own ideas , giving his own explanation or citing an authority other than a pupil
		6. Giving directions. Directions, commands or orders to which a student is expected to comply
		7. Criticizing or justifying authority. Statements intended to change pupil behaviour from non acceptable to acceptable pattern ; bawling someone out; stating why the teacher is doing what he is doing ; extreme self-reference
Pupil Talk	Response	**8. Pupil-talk – response**. Talk by pupils in response to teacher. Teacher initiates the contact or solicits pupil statement or structures the situation. Freedom to express own ideas is limited
	Initiation	**9. Pupil-talk – initiation**. Talk by pupils that they initiate. Expressing own ideas; initiating a new topic; freedom to develop opinions and a line of thought, like asking thoughtful questions; going beyond the existing structure.
Silence		**10. Silence or confusion**. Pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

APPENDIX B

Sample page: Target Teach Test

32. **What makes a camel capable of retaining water?**

    A. the large hump on its back in which it stores water
    B. the special water pockets in its stomach
    C. the unusual oval shape of its blood cells
    D. the fat in its hump

33. **The reason a camel needs sweat glands to survive in the desert is because**

    A. they help the camel evaporate the condensed water on its skin.
    B. they help the camel store water in its hump.
    C. they help the camel keep cool in the desert.
    D. they help the camel stay warm in the desert.

Read the following poem and then answer the questions.

> From "The Barefoot Boy"
> *by John Greenleaf Whittier*
>
> Blessings on thee, little man
> Barefoot boy, with cheek of tan!
> With thy turned-up pantaloons,[1]
> And thy merry whistled tunes;
> With thy red lip, redder still,
> Kissed by strawberries on the hill;
> With the sunshine on thy face,
> Through thy torn brim's jaunty grace,
> From my heart I give thee joy,
> I was once a barefoot boy.
>
> [1] pants

34. **How does the poet feel about the barefoot boy?**

    A. The poet feels affection for him.
    B. The poet feels jealous of him.
    C. The poet feels annoyed by him.
    D. The poet feels blessed by him.

35. **How does the barefoot boy feel in this poem?**

    A. blessed
    B. happy
    C. adventurous
    D. foolish

36. **Which words does the speaker use to express the boy's feelings?**

    A. barefoot, tunes, sunshine
    B. pantaloons, strawberries, hill
    C. merry, jaunty, joy
    D. cheek, lip, heart

37. **The barefoot boy can best be described as**

    A. carefree and lonely.
    B. lighthearted and content.
    C. sneaky and deceitful.
    D. old and foolish.

Interaction Analysis Data Table

Category	Tally Marks	No. of Tallies	% of Tallies
1. Accepts Students Feelings			
2. Gives Praise to Students			
3. Responds to Student Query			
4. Question is asked			
5. Lecture			
6. Giving Directions			
7. Criticize Student Behavior			
8. Student Responds to Teacher			
9. Student Initiates the Talk			
10. Silence or Confusion			
11. Calls on boy			
12. Calls on girl			

Indirect Teacher Talk

Direct Teacher Talk

Student Talk

Other

Reciprocal Teaching
Implementation Log

Implementation Information:

□ I am using this log to plan or record notes for my lesson.
□ I am using this log as I observe my peer coaching partner: _____
□ I am using this log as I observe a live or videotaped demonstration during staff development: _____

Date: _____   School: _____

Name: _____   Grade Level/Role: _____

Reciprocal Teaching Strategy (circle one):

Questioning   Summarizing   Clarifying   Predicting   Visualizing

Title of Book Used: _____ Fiction / Non-fiction

Author(s): _____ Pages: _____

Implementation Data:

In the last week:

...I have worked with my peer coaching partner to **plan and rehearse** a Reciprocal Teaching strategy_____ times?

...I have **demonstrated** a Reciprocal Teaching strategy (with students)_____times for my peer-coaching partner?

...I have **used** Reciprocal Teaching with students_____ times.

...I have used Reciprocal Teaching in the following **subjects:**

	Complete a log on the following Tuesdays	
3 / 9	4 / 6	5 / 4
3 / 23	4 / 13	5 / 11
3 / 30	4 / 20	5 / 18
	4 / 27	5 / 25

1. Concepts addressed from content area:

2. Planning: Organization of the lesson:

   Steps I'll take/I observed:

3. Reflections on attributes of Reciprocal Teaching (about my own lesson)

   + *This worked well....*   *Strengths of the lesson*

   Δ *I'd like to do over...*   *Areas for refinement*

   ! *I noticed...*   *Observations*

4. I need:

APPENDIX E

Interview Questions

1. How would you describe your current classroom practice in Reciprocal Teaching?

2. What additional Professional Development/Support do you need to effectively implement Reciprocal Teaching?

3. What roadblocks have you faced in implementing Reciprocal Teaching?

4. How have you communicated to parents that you are using Reciprocal Teaching Strategies in your classroom?

5. How would you describe your students' use of Reciprocal Teaching?

6. What resources are available to you for Reciprocal Teaching?

7. How do you assess/evaluate your success in implementing Reciprocal Teaching?

8. What kind of assistance do you need in preparing students for independent practice?

9. How informed is the building administration with regards to Reciprocal Teaching?

10. How does it fit with your content area?

APPENDIX F

List of Pre-Test Scores for Target Teach for 10 Reading Classes

2002: 23, 48, 50, 52, 52, 52, 52, 58, 72, 75

Median Score: 52

Range: 52

2003: 45, 46, 51, 53, 54, 56, 61, 61, 61, 78

Median Score: 55

Range: 33

2004: 52, 53, 53, 54, 56, 56, 57, 59, 63, 72

Median Score: 56

Range: 20

REFERENCES

Alfassi. A., (1998). Reading for meaning: the efficiency of reciprocal teaching in fostering reading comprehension in high school students in remedial reading class. *American Educational Journal,* 35(2), 309-332.

Alvermann, D. (1981). The compensatory effect of graphic organizers on descriptive text. *Journal of Educational Research, 75,* 44-48.

Anastos, J. & Ancowitz, R. (1987). A teacher-directed peer coaching project. Educational Leadership, 45(3), 40-42.

Berkowitz, S. (1986). Effects of instruction in text organization on sixth-grade students' memory for expository reading. *Reading Research Quarterly, 20,* 161-178.

Bowman, B. L. & McCormick S. (2000). Comparisons of peer coaching versus traditional supervision effects. *Journal of Educational Leadership, 93,* 256-261.

Brett, A., & Rothlein, L. (1996). Vocabulary acquisition from listening to stories and explanations of target words. *The Elementary School Journal,* 96(4), 416-422.

Carnie, D., Darch, C., & Kameenui, E. (1986). Effects of using graphic organizer. *Journal of Reading Behavior,* XVIII, 275-295.

Dole, J. A., Brown, W., & Trathen, W. (1996). The effects of strategy instruction on the comprehension performance of at-risk students. *Reading Research Quarterly,* 31(1), 62-88.

Dole, J. A., Valencia, S. W., Greer, E. A., & Wardrop, J. L. (1991). Effect of two types of prereading instruction on the comprehension of narrative and expository text. *Reading* Research Quarterly, 26, 142-159.

Dyer, K. (2001). The power of 360-degree feedback. *Association for Supervision and Curriculum Development,* 35-38.

Duffy, G. (1987). Effects of explaining the reasoning associated with using reading strategies. *Reading Research Quarterly,* 22, 347-368.

Fall, R. & Webb, N. & Chundowsky, N. (2000). Group discussion and large-scale language arts assessment: effects on students' comprehension. *American Educational Research Journal,* 37(4), 911-941.

Gambrell, L. & Bales, R. (1986). Mental imagery and the comprehension-monitoring performance of fourth-and fifth- grade poor readers. *Reading Research Quarterly,* 21(4), 454-464.

Gipe, J. (1978). Investigating techniques for teaching word meaning. *Reading Research Quarterly*, 14(4), 624-644.

Gray, T. & Meyer, J. (2004) Peer coaching: An innovation in teaching. Retrieved March, 18, 2004, from http://leahi.kcc.hawaii.edu/org/tcc_conf96/meyer/html.

Hyman, R. T. (1990). Peer coaching: premises, problems, potential. *Educational Digest*, 56(1), 2-55.

Judy, J. & Alexander, P. & Kalikowich, J. & Wilson, V. (1988). Effects of two instructional approaches and peer tutoring on gifted and non-gifted sixth-grade students' analogy performance. *Reading Research Quarterly*, XXIII (2), 236-256.

Kameenui, E. & Carnin, D. & Freschi, R. (1982). Effects of text construction and instructional procedures for teaching word meaning on comprehension and recall. *Reading Research Quarterly*, XVII(3), 367-388.

Kassner, K. (1998). Improving your IQ—intelligent questioning. *Music Educators Journal*, 84, 33-38.

Klingner, J. K., & Vaughn, S. (1996). Reciprocal teaching of reading comprehension strategies for students with learning disabilities who use English as a second language. *The Elementary School Journal*, 96(3), 275-293.

Kolich, E. (1991). Effects of computer-assisted vocabulary training on word knowledge. *Journal of Educational Research*, 83, 177-182.

Kulhavy, R., & Bretzing, B. (1979). Notetaking and depth processing. *Contemporary Educational Psychology*, 4, 145-153.

Lederer, J. (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities*, 33(1), 91-107.

Lysynchuk, L. M., Pressley, M., & Vye, N. J. (1990). Reciprocal teaching improves standardized reading comprehension performance in poor comprehenders. *The Elementary School Journal*, 90, 469-484.

Marks, M., Pressley, M., Coley, J., Craig, S., Gardner, R., DePinto, T., & Rose, W. (1993). Three teachers' adaptations of reciprocal teaching in comparison to traditional reciprocal teaching. *The Elementary School Journal*, 94(2), 267-283.

Munson, R. (1998). Peer observing peers: the better way to observe teachers. *Contemporary Education*, 69, 108.

Palincsar, A. S., & Brown, A. L. (1986). Interactive teaching to promote independent learning from text. *The Reading Teacher*, 39(8), 771-77.

Peters, E., & Levin, J (1986). Effects of mnemonic imagery strategy on good and poor readers' prose recall. *Reading Research Quarterly*, 21(2), 179-192.

Ralphael, E. & Pearson, D. (1985). Increasing student's awareness of source of information for answering questions. *American Educational Research Journal*, 22(2), 217-235.

Reutzel, R. (1986). Investigation a synthesized comprehension instructional strategy: the close story map. *Journal of Educational Research*, 79, 343-349.

Robbins, P. (1991) *How to Plan and Implement a Peer Coaching Program.* Alexandria, VA: ASCD.

Rosen, L., Miller, L., & Miller, C. Modified reciprocal teaching in a regular classroom. *Journal of Experimental Education*, 183-186.

Showers, B. & Joyce, B. (1996). The evolution of peer coaching. *Educational Leadership*, 52(6), 12-16.

Sparks, G. M. & Bruder, S. (1987). Before and after peer coaching. *Educational Leadership*, 45(3), 54-57.

Stein, M., Jenkins, J., Heiliotis, J., & Haynes, M., (1987). Improving reading comprehension by using paragraph restatements. *Exceptional Children*, 54(1), 54-59.

Swafford, J. (1998). Teachers supporting teachers through peer coaching. *Support for Learning*, 13(2), 54-58.

Taylor, B., & Frye, B. (1982). Comprehension strategy instruction in the intermediate grades. *Reading Research and Instruction*, 32(1), 39-48.

Welch, F. & Skinner, M. Peer coaching for better teaching. *College Teaching*, 44, 153-157.

Wong. B. & Wong, R. & Perry, N. (1986). The efficiency of a self-questioning summarization strategy for use by underachievers and learning disabled adolescents in social studies. Learning Disabilities Focus, 2(2), 20-35.