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## Study of reciprocal teaching and peer coaching at Central Middle School

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## Study of reciprocal teaching and peer coaching at Central Middle School

### Abstract

The purpose of Reciprocal Teaching is to improve reading comprehension through the use of cognitive strategies. The strategies teach students to think about what they are reading and learning. It also promotes collaboration between the student and teacher in the learning process.

This study was designed to evaluate the implementation of Reciprocal Teaching at Central Middle School. If the initiative is to be successful, implementation should result in higher test scores in reading comprehension. The data from this study will tell us what we are doing well and what we can prove regarding the implementation of Reciprocal Teaching. As other schools struggle with No Child Left Behind, they could benefit from looking at this study to see if Reciprocal Teaching would be good Professional Development for them.

STUDY OF RECIPROCAL TEACHING  
AND PEER COACHING AT CENTRAL MIDDLE SCHOOL

Submitted  
In Partial Fulfillment  
Of the Requirements for the Degree  
Masters of Arts in Education

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## Table of Contents

Section 1: Introduction	2
Purpose	2
Significance of the Study	3
Limitations	3
Section 2: Literature Review	4
Introduction: Reciprocal Teaching	4
Benefits	5
Peer Coaching	5
Definition	5
Limitations	6
Section 3: Methods	7
Introduction	7
Setting	7
Participants	8
Teachers	8
Students	9
Administrators	9
Parents	9
Section 4: Instruments	10
Adapted Flanders Interaction Analysis	10
Target Teach	11
Administrator Interviews	12
Parent Survey	12
Section 5: Procedures	13
Adapted Flanders Interaction Analysis	13
Target Teach Tests	13
Administrator Interviews	14
Parent Surveys	14
Section 6: Results	14
Introduction	14
Modified Flanders Interaction Analysis	15
Target Teach Tests	16
Administrator Interviews	16
Survey	17
Section 7:	18
Discussion	18
References:	22
Appendix A	25
Appendix B	26
Appendix C	27
Appendix D	28
Appendix E	29

## INTRODUCTION

### Purpose

The advent of No Child Left Behind (NCLB) has introduced a new era in education. Schools are held to new standards. A profession that has long been judged on the quality of the input (teaching practice) is now being judged solely on the output (student performance on standardized tests). Central Middle School has been identified as a School In Need of Improvement as a result of NCLB. The instructional practice that is implemented to increase student achievement must be scientifically based and research supported. The instructional practice of Reciprocal Teaching meets the criteria; it also works across curricular areas with students of all ability levels, is easy to replicate, and leads to increased student achievement. This study was designed to evaluate the implementation of Reciprocal Teaching at Central Middle School.

The purpose of Reciprocal Teaching is to improve reading comprehension through the use of cognitive strategies. The strategies teach students to think about what they are reading and learning. It also promotes collaboration between the student and teacher in the learning process.

Reciprocal teaching was introduced at a staff meeting by a group of teachers. The teachers were told they were expected to participate in the training and then implement the strategies in their classroom. The teachers were given two choices: One training would be a thirty-four hour program; the second was a two-day workshop in August. Teachers would be paid for the hours they attended the trainings. The goal was to have all teachers at Central trained in Reciprocal Teaching.

This study was intended to determine whether Central had full implementation of Reciprocal Teaching. The research question for this study was: How successful was Central at using Reciprocal teaching across grade levels and content areas?

### **Significance of the Study**

This study is the only evaluation of Reciprocal Teaching at Central. If the initiative is to be successful, implementation should result in higher test scores in reading comprehension. The data from this study will tell us what we are doing well and what we can prove regarding the implementation of Reciprocal Teaching. As other schools struggle with No Child Left Behind, they could benefit from looking at this study to see if Reciprocal Teaching would be good Professional Development for them.

### **Limitations**

Limitations of this initiative mainly included the change in administrators from the 2003-04 school year to the 2004-2005 school year. The new administrators were not trained in Reciprocal Teaching. Leadership of the principal is essential to any initiative implemented being successful. This study only looked at what five teachers were doing and this was not a sampling of the whole school. Not addressed in this study is that the district initiative Target Teach was a new curriculum being implemented at the same time as Reciprocal Teaching which may affect the results.

## **LITERATURE REVIEW**

### **Introduction**

Two bodies of literature were examined for the purpose of this study. The first was peer coaching and what affected teachers implementing new initiatives. Peer coaching is an important part of Reciprocal Teaching because teachers are more likely to try and be successful at an initiative if they have the support of their peers. Peer coaching is also a way for teachers to have reciprocal teaching modeled. The second was Reciprocal Teaching and what effects the implementation of Reciprocal Teaching has on student achievement. In the literature, Reciprocal Teaching is described as a way to improve reading comprehension and how effective it is when implemented.

### **Reciprocal Teaching**

Reciprocal teaching is a teaching technique based on teacher modeling, student participation, and comprehension strategies. It is a dialogue between teachers and students, which is structured by the use of the strategies of summarizing question generating, clarifying, predicting, and visualizing. The teacher and students take turns assuming the role of teacher in leading this dialogue. (Palincsar, 1986) Reciprocal Teaching encourages students to think about what they are reading by predicting what will happen, clarifying information they do not completely understand and generating questions about the content. (Lysynchuck, Pressley and Vye, 1990.)

## **Benefits**

Reciprocal teaching is a practical study that when used can be successful in teaching students of varying abilities and learning styles. Students of low ability as well as students who are high achievers can benefit from the teaching strategies of Reciprocal Teaching. (Ledener, 2000.) The studies here show how the cognitive strategies work for different students.

In a study done by Udong, Wong, Perry (1986) that looked at how the use of self questioning skills can improve retention of Social Studies, findings showed that an increase of cognitive interventions benefit students who are learning disabled. This happens because the focus shifts from ability to increasing cognitive skills. Fall, Webb and Chudowsky (2000) investigated the effect of small group discussion on students' cognitive processes and how well they perform on tests. The study analyzed test responses of tenth-grade English students from Connecticut public high schools. The researchers found that the students who had time to discuss did better on a Language Arts test than the students who were not given time to discuss.

## **Peer Coaching**

### **Definition**

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" and 4) the collaborative work goes beyond observations. The focus of peer coaching is to improve staff development and increase

the likelihood that teachers will implement a strategy in their classroom (Joyce and Showers, 1996). Peer coaching is a mutually-reciprocal process that helps teachers improve their teaching (Gary and Meyer, 1987).

### Benefits

Joyce and Showers believe that regularly scheduled coaching interactions greatly increase the likelihood that initiatives taught during workshops will actually be implemented in the classroom. They also believe that teachers must be committed and use this as collaborative feedback rather than an evaluative process. (Joyce and Showers, 1996) Peer coaching improves professionalism in school, improves implementation of new teaching practices, and teacher effectiveness in the classroom. (Sparks and Bruder 1987)

In order to meet students' changing needs, teachers need to be able to incorporate new practices into their teachings. Teachers who have peer support of a peer are more likely to try these new strategies and become successful with the initiative. The benefits of peer coaching include to support each other and to eliminate the isolation teachers feel. (Swafford, 1998) Good training in peer coaching could change the structure of a school and promote professionalism in its teachers. A good training program is key to making it work. (Hyman, 1990).

### Limitations

In order for peer coaching to work, it needs to have principal support, extensive training for the teachers, and time allotted for the coaching to take place. (Sparks and Bruder 1987). Many schools do not have the resources or time to make peer coaching

successful (Sparks and Bruder 1987). Peer coaching should be used as a way to implement an initiative not as a strategy by itself. Using peer coaching by itself will not affect the change in the learning of students (Joyce & Showers, 1996). If a principal uses peer coaching as a way to evaluate teachers then the benefits of peer coaching disappear and resistance to it will take place. (Hyman, 1990)

## **METHODS**

### **Introduction**

The question to be answered is: Has the implementation of the initiative, Reciprocal Teaching been successful at Central Middle School? In an attempt to answer the question data was collected from four sources. First, there was an adapted Flanders interaction done to see how well Reciprocal Teaching was implemented through peer coaching. A data analysis was done by using Target Teach tests. Parents were surveyed to see how familiar they were with the initiative Reciprocal Teaching and administrators were interviewed to determine their level of understanding. The information from these studies can be used by the building staff, to see if the components of Reciprocal Teaching are being implemented.

### **Setting**

Central Middle School is an urban school district located in Waterloo, Iowa. Central has 800 students in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade. Central is not a neighborhood school as the majority of the students are bused in. This affects participation in after-school events and communication with parents. Central has a low social economic population

and 30% of its' population are minority students. Central Middle School has been designated as A School in Need of Assistance based on NCLB.

The committee that designed the SINA (School in Need of Assistance) plan recommended that all teachers be in-serviced in Reciprocal teaching. 66% of the teachers had 34 hours of Reciprocal teaching through AEA 267, from March to August 2004. Another 5% of the staff attended a two-day workshop on Reciprocal Teaching in August 2004. The remaining staff either chose not to participate, or are new to the building for the 2004-05 school year. The components of Reciprocal Teaching that were taught were: peer coaching, questioning techniques, and cooperative groups.

## **Participants**

### **Teachers:**

This group of participants consisted of five teachers at Central Middle School, Waterloo, Iowa. These five teachers are in a Leadership Masters Program and completed the 34 hours of Reciprocal Teaching Training. The five teachers have from six years of teaching experience to thirty years of experience. These five teachers all have different areas of expertise. The areas cover Social Studies, Reading, Technology, Talented and Gifted, and Special Needs. Two of the teachers are team leaders. Although all five teachers participated they did not observe each teacher. Each teacher did three observations. The data shown in this study are the results of observations done on one teacher.

**Students:**

Participants consisted of two hundred and fifty-five, 8<sup>th</sup>-grade students at Central Middle School during the 2004-2005 school year. These students took the ITBS test at Central as 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> graders.

**Administrators:**

The participants were three principals at Central Middle School in Waterloo, Iowa. The first interview was with Central's principal. This is her first year as head principal. Before that, she spent three years as an assistant principal at Central. The participant does walk-throughs of all classrooms and has one-legged interviews with teachers on a regular basis. The second interview was the 7<sup>th</sup>-grade administrator at Central. He is an assistant principal at Central Middle School. This is his first year in the capacity. Before that, he was a physical education teacher at Central. He does walk-throughs in some classrooms. The last interview was with the 6<sup>th</sup>-grade administrator. He has been an administrator in the district for ten years. He does walk-throughs in the 6<sup>th</sup> grade classrooms and talks to the sixth grade teachers about their classrooms procedures.

**Parents:**

Participants were randomly selected parents of Central Middle School students. One hundred surveys were sent out and forty were returned. The surveys were sent home with the students to give to their parents; 50 going home with male students and 50 with female students. 53 out of 100 surveys were returned. 60% of returned

surveys were from females, 40% were from males. There were 12 of the 30, 6<sup>th</sup>-grade surveys returned, 75% of those were from females. There were 22 of the 35, 7<sup>th</sup>-grade surveys returned, 63.6% were from female students. There were 19 of the 35, 8<sup>th</sup>-grade surveys returned, 63.2% were from female students. 58% of the 6<sup>th</sup>-graders indicated 2 parent homes; while 68% of the 7<sup>th</sup> graders and 52% of the 8<sup>th</sup>-graders indicated 2 parent homes. The parents that had college educations were: five of the 6<sup>th</sup> grader, 26 of the 7<sup>th</sup>-grade, and 18 of the 8<sup>th</sup>-grade parents. The 7<sup>th</sup>- and 8<sup>th</sup>-grade parents that returned the surveys were mainly 1<sup>st</sup> shift workers, the 6<sup>th</sup> grade parents were spread between all three shifts. This information was important to the researchers as it is not consistent with the general population statistics of Central.

## **Instruments**

### **Adapted Flanders Interaction Analysis:**

Each participant would be observed during a fifteen-minute lesson with his/her class, using a modified Flanders Interaction Analysis Data Table data collection tool (Flanders & Amidon). (See appendix A.) The premise of their analysis process is that by critiquing their teaching, teachers can become the student and the teacher at the same time thereby creating self-analysis and awareness of their teaching personality, techniques, and effectiveness. The purpose of this analysis is to increase awareness, teaching personality techniques, and effectiveness in order to improve instruction. Twelve behaviors were looked at during the observation. It included four indirect teacher talk 3 categories; teacher accepts student's feelings, gives praise to students, and responds to student query. There were four categories under direct teacher talk;

questions asked, lecture, giving directions, and criticize student behavior. For student talk, there were three categories analyzed; student responses to teacher, students initiates the talk, and silence of confusion. The analysis also included how often boys were called on in comparison to how often girls were called on. The limitation of this is the amount of time the peer coach had to spend in the classroom. Another limitation was that the participants were not trained in peer coaching.

### **Target Teach**

Target Teach is part of the district wide reading curriculum for the Waterloo Schools. It is a purchased curriculum that has been adapted by a curriculum coordinator and a committee of reading teachers. Their reading teacher administers the test to students in their reading class. The pretest for Target Teach is given every Fall during the first week of school, with four increment tests given throughout the school year. All tests are written in ITBS-format and scored electronically. The pre- and post-tests consist of 105 questions. The questions cover 26 district reading objectives. The posttest is administered in May. The pretest was used as a measure because the increment test had been reformatted for the 2004-2005 school year, while the pretest remains the same. Due to the time frame, the post-test that would be best suited for our purpose would not be available, as 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. Tests from fall 2002, 2003, and 2004 have been used in this analysis.

## **Administrator Interviews**

The interviews consisted of nine questions, starting with open-ended questions and ending with more specific questions. The purpose of the questions and the interviews were to see how much the administrators knew about reciprocal teaching and their role in implementing it would be (See appendix).

## **Parent Survey**

The parent survey was sent home with 130 students. Students are regular education students and picked at random, with 50 sent home with male students and 50 sent home with female students. 30 surveys sent with 6<sup>th</sup>-graders, 50 each to 7<sup>th</sup> and 8<sup>th</sup> graders. Fewer surveys were sent home with 6<sup>th</sup>-graders because they are new to the building this school year and one 6<sup>th</sup>-grade team in comprised of all new teachers who have received training in Reciprocal Teaching.

The survey questions were designed to determine if parents were familiar with the reading comprehension strategies that are part of Reciprocal teaching, questioning, predicting, visualizing, summarizing, small group collaboration, and teacher collaboration. Also asked were questions that would help determine parent involvement in homework. Demographic information would determine grade level, one or two parent home, and educations of parent(s). A survey was given to a teacher associate at Central who is also a parent of a Central student to check for question comprehension, clarity and gender bias. Questions 1, 5, and 6 related to homework and parent involvement. Questions 8, 9, 10, 11, and 12 were about strategies used in reciprocal teaching. Questions 2, 3, 4, 7, and 15 looked at the language of Reciprocal teaching

and communication between parents and students and parents and teachers. The last category of questions was related to teacher collaboration and this was addressed with questions 13 and 14.

## **Procedures**

### **Adapted Flanders Interaction Analysis**

There were two initial observations, with two different peer coaches, followed by debriefing with peer coaches. Individuals will reflect with coaches, identify strengths and weaknesses, and target an area to change. After reflection, a course of action will be decided upon, implemented in the classroom, and follow up observations by peer coaches will occur. There were three categories looked at; indirect teacher talk, direct teacher talk, and student talk. The peer coaches brought the chart in to the room that they were observing and made tally marks according to what was happening in the room during a 15 minute period.

### **Target Teach Tests**

Target Teach is a Waterloo district initiative adopted in the spring of 2001 for all four of the middle school in Waterloo. Tests from the fall of 2002, 2003, and 2004 were used for the purpose of this analysis. The tests were given in the students' reading class on the same day and were not timed. Tests were scored electronically and print outs are given to the teachers.

## **Administrators Interviews**

Three interviews were conducted before and after school. The researcher interviewed the head principal and two of the assistant principals. Each principal was asked nine interview questions about Reciprocal Teaching being implemented in the building, and how they were supporting and assessing the implementation in the building.

## **Parent Surveys**

Surveys were randomly sent home with students to have their parents fill out and return. The surveys were put together to determine how familiar parents were with the Reciprocal Teaching strategies being used in the classroom. There were fifteen questions on the survey. Surveys were handed out in sealed envelopes during class on Monday morning. A note explaining the purpose of the survey was attached to the survey. Parents were asked to return the survey to one of the teachers listed by Friday of the same week. The returned surveys were sorted and analyzed.

## **Results**

### **Introduction**

Peer coaching observations done at Central were used to identify what each teacher had for strengths and what they need to work on, however it did not indicate how successful Reciprocal Teaching was at Central. The interviews of the principals showed that most of them did not have a good idea of Reciprocal Teaching and what their part in it was. The parent survey showed that communication between the school

and parents was not sufficient. The Target Teach data showed an increase in reading comprehension. That the administrators and parents were not part of the implementation could be an indicator of how successful Reciprocal Teaching was.

### **Modified Flanders Interaction Analysis**

A modified version of Flanders' Interaction Analysis was used as a peer-coaching component to analysis a teacher's style of teaching. The categories looked at were: indirect teacher talk, direct teacher talk, and student talk.

Observer	# tallies	%indirect	% direct	%participation
1	60	39	33	26
2	57	40.5	32	27.5
3	69	35.5	31.5	33

After the peer coaches' observation, there was a discussion between colleagues to discuss the tally marks. Peer coaching is an important component of Reciprocal Teaching. Through these observations and discussion I found that I was spending too much time lecturing to my students. The students' talk, which was happening in my classroom, was a direct result of my asking questions. Students were not initiating very much of the talking. By the time I had my third observation, student-directed talk in my classroom increased. There were more student-led group discussions, with the students generating the discussion questions.

## **Target Teach Tests**

The district considers a score of 41% on the Target Teach tests to be proficient in Reading comprehension. The 41% matches with the 41% needed on ITBS for NCLB. In 2002, there were 10 reading classes where the median score was 52 and the range was 52. In 2003, there were 10 reading classes where the median score was 55 and the range was 33. In 2004, there were 10 reading classes where the median score was 56 and the range was 20. The median score increased by 3% from 2002-03. The median score increased by 1% from 2003-04. The total gain in reading comprehension median scores over the two-year period was 4%. This is a small gain but it is in the right direction. The range score decreased by 19% from 2002-03. The range score decreased by 13% from 2003-04. The total decreased by 32%.

## **Administrator Interviews**

When asked about training in Reciprocal Teaching, all three administrator participants responded that they had no training. They also said that at this time there was no plan to train them or new teachers to the building. One of the principals had no knowledge of Reciprocal Teaching. The participants were asked how comfortable they would be in evaluating teachers' implementation of Reciprocal Teaching. The responses ranged from "I wouldn't be able to evaluate them" to "I could evaluate them – no problem."

Two of the three principals knew the terminology of Reciprocal Teaching, and said they looked for it in a teacher's classroom.

Two of the three administrators thought that Reciprocal Teaching (RT) was the sole responsibility of the teachers. They believe because the teachers are in the classroom with the students that they must initiate RT and are responsible for students' reading comprehension to increase. Only one principal thought that everyone must implement an initiative like RT and that the principals are part of implementing RT. She said that the principals' and the reading coaches' jobs are to provide support to the teachers and evaluate how well RT teaching is being used in the classroom. She also said that because the principals have not been trained that the support is not there.

The question about the cognitive strategies of RT or the terminology of RT was only known by two of the three principals. One of the principals said she looked for the use of this terminology when she was in a classroom. She found that very few teachers are using this terminology in their classrooms when she is in the classrooms. None of the three spoke of peer coaching as a component of Reciprocal Teaching. There is no district plan for long-term support of professional development of Reciprocal Teaching. Central does not have a plan for the initiative of Reciprocal Teaching so none of the three participants know what the implementation would look like in 3 to 6 years.

## **Survey**

Questions about homework showed that parents are monitoring their students' homework. It also showed that students were using the reading strategies they learned. These reading strategies were directly linked to RT. The survey also showed that parents were familiar with RT teaching but they just do not realize that they are a part of RT. Regarding the questions about teachers planning together and coaching each other the

parents felt it was important but did not see evidence of it. The survey indicated that communication between the home and school needs to be improved. Teachers need to communicate to the students and the parent what RT is. The results of the survey showed they knew some of the terms used for Reciprocal Teaching but did not know that they were an integral part of R.T. The result that stood out the most was that reciprocal teaching strategies were being used at Central however, the terminology "Reciprocal Teaching" is not being used in conjunction with the strategies.

### **Discussion**

The purpose of this research was to see if Reciprocal Teaching was being implemented at Central Middle School. RT is an initiative to improve reading comprehension at Central. The peer coaching part of RT was to have teachers reflect on their teaching. This study looked at what part the administrators played in reciprocal teaching, how well parents were informed or involved in RT. The study looked at whether reading comprehension scores on the district target teach assessments went up. In general, it appears that RT is not being fully implemented at Central.

One part of the study was to use a modified Flanders Interaction Analysis the purpose of this was to initiate peer coaching. Peer coaching is an important part of reciprocal teaching. Teachers need to be able to reflect on their teaching in order to become more effective in the classroom. Through the use of the analysis, we could look at our teaching and see what we need to improve. I was spending too much time lecturing and I was able to change to more indirect teaching in the classroom. In order to really see how this changed teaching from a direct style to an indirect style with fewer

lectures the observations would need to happen over an extended period of time. I would not have looked at my style of teaching or made the changes I did without having someone observe me and use the analysis chart

In looking at the Target Teach test scores reading comprehension is improving at Central. The median score has increased each of the last three years. Is this a result of Reciprocal Teaching or is it a result of the other initiatives, such as Target Teach, set in place by the district? Target Teach has been in place since the 2002/2003 school year and reciprocal teaching was started in the 2003/2004 school year. There is no way to tell what the increase in reading comprehension is the result of.

In looking at the administrators who were interviewed about Reciprocal Teaching none of them had any training in it. The administrators need to decide what they are going to do to evaluate and support Reciprocal Teaching when they do not have the necessary training. I think that it is necessary for the administrators to be trained in the initiative reciprocal teaching in order for it to be fully implemented and successful at Central. Two of the administrators felt that the teachers were responsible for RT and the research shows that the whole school must be involved and take responsibility. The cognitive strategies that are an integral part of RT are not being used on a regular basis in all the classrooms. The support that the teachers should be getting to feel more comfortable at implementing RT in their classroom is not available because the administrators have not been trained.

The surveys showed that the communication between parents and staff about Reciprocal Teaching is lacking. Parents who answered the survey did not know what reciprocal teaching was. Although they knew some of the terms, they did not know

that they were part of RT. The teacher and administrators need to find a way to communicate with parents about RT. They also need to involve the parents because they are a big part of the school community. One way to do this would be to have a short workshop about the cognitive strategies that would be open to the parents. The survey also showed low parent involvement at Central. Only forty out of one-hundred surveys were returned. What can be done in the future to communicate to the parents about the implementation of Reciprocal Teaching? In a future study, it might be more beneficial to send out more surveys or to do them at conferences so that we have responses from more parents. It would be important to get a sample which is more consistent with Central's population. What commitments must we make as a school to fully implement RT? What future does RT have at Central if there is not a plan for how it will look in three to six years?

Based on the findings of this study, I would make the following recommendations. First, I would recommend that the principals at Central take some training in Reciprocal Teaching. This would enable them to lead the initiative in a more informed manner, and help them to evaluate its' success. The training for the administrators should include a component that would help them evaluate if a teacher is using Reciprocal Teaching strategies correctly when they come into the classroom. The other component would teach them the RT strategies. Second, we need to increase our communication with parents about Reciprocal Teaching. This can be done through the Central newsletters as well as at open house and conferences. The types of questions used in the questioning strategies as well as their value could be in the newsletters. Mini sessions could be given at conferences to show the parents how to use the

summarizing strategies so they could help their child with this when they are doing homework. Next we need to continue to have staff development to support teachers use of Reciprocal Teaching. Ongoing training sessions and sharing sessions would be helpful in keeping teachers pumped up about the Reciprocal Teaching strategies. If peer coaching is going to be an important part of reciprocal teaching training needs to take place so the teachers will know what this is to look like. Teachers need to know what coaching looks like in order to be a successful coach. It should not be a judging session but a way to get support you're your colleagues. Last, all teachers need to use the cognitive strategies in their classroom. If all teachers are implementing the Reciprocal Teaching strategies, Target Teach scores as well as ITBS scores could be raised. Further research should be done to see if peer coaching is being implemented and to see if RT has long-term effects at Central.

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## Appendix A

Interaction Analysis Data Table

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

## Appendix B

### PEPBL: Methodology working paper 6: Flanders Interaction Analysis

#### 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. They 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 in one or more categories.

Table 1: Flanders' Interactions Analysis Categories (FIAC)

Teacher-talk		<b>1. Accepts Feeling.</b> Accepts and clarifies an attitude or the feeling tone of a pupil in a non threatening manner
	Response	<b>2. Praises or encourages.</b> Praises or encourages pupil action or behavior. Jokes that release tension, but not at the expense of another individual; nodding head, saying um, hmm or go on are included.
		<b>3. Accepts or uses ideas of pupils.</b> Clarifying, building or developing ideas suggested by a pupil. Teachers' extensions or pupil ideas are included but as teacher brings more of his own ideas into play, shift to category five.
		<b>4. Asks questions.</b> Asking a question about content or procedures; based on teacher ideas, with the intent that the pupil will answer.
	Initiation	<b>5. Lecturing.</b> Giving facts or opinions about content or procedures; expressing his own ideas, giving his own explanation or citing an authority other than a pupil <b>6. Giving directions.</b> Directions, commands or orders to which a student is expected to comply.
		<b>7. Criticizing or justifying authority.</b> Statements intended to change pupil behavior 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	<b>8. Pupil-talk - response.</b> 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	<b>9. Pupil-talk – initiation.</b> Talk by pupils that they structure
Silence		<b>10. Silence or confusion.</b> Pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

## Appendix C

Do the administrators know what reciprocal teaching is?

Do you know what the cognitive strategies are that make up reciprocal teaching?

What would you look for on a walk through for evidence of reciprocal teaching?

Are you familiar with the research that supports reciprocal teaching?

How would you describe your level of comfort providing support for teachers in implementing R.T.?

Who is responsible for R.T.?

What is the long-range goal of R.T.?

What is the Reading Coach's role in R.T.?

Describe the districts goal for long-term support of R.T.s professional development.

What is the I.C. map for reciprocal teaching?

What kind of R.T. training have you had?

## Appendix D

## Central Middle School Reciprocal Teaching Questionnaire – Parents

1. I spend time discussing homework with my child.  
daily \_\_\_ 2 to 3 days per week \_\_\_ once a week \_\_\_ never \_\_\_
2. I have heard about Reciprocal Teaching  
\_\_\_ from my child \_\_\_ from the school newsletter \_\_\_ from school posters \_\_\_ other (write on back)
3. My understanding of Reciprocal Teaching is  
\_\_\_ very clear \_\_\_ somewhat clear \_\_\_ a little fuzzy \_\_\_ I don't understand Reciprocal Teaching  
\_\_\_ I haven't heard about Reciprocal Teaching
4. How many teachers have discussed Reciprocal Teaching with you?  
\_\_\_ 1 \_\_\_ 2 \_\_\_ 3 or more
5. My child asks me about his/her homework.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
6. I talk to my child about the books she/he is reading.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
7. My child has discussed Reciprocal Teaching strategies with me.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
8. My child has talked about working in small groups within the classroom.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
9. My child talks about making mental pictures when he/she reads.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
10. My child predicts what will happen to the characters in her/his novels.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
11. I have seen evidence of summarizing either verbalizing or writing.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
12. I have seen evidence that if my child is having difficulty understanding what he/she is reading, my child will continue to try to make sense of what he/she is reading.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
13. I believe teachers should work together to provide the best education for my child.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
14. I have seen evidence of teachers planning and working together.  
A lot \_\_\_ A little \_\_\_ Not at All \_\_\_
15. Reciprocal Teaching can enhance my child's learning.  
\_\_\_ Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree

In the last year I have attended: a conference \_\_\_ and Open House \_\_\_

My student is in grade 6 \_\_\_ 7 \_\_\_ 8 \_\_\_

My student is: Male or Female

Father works: 1<sup>st</sup> shift \_\_\_ 2<sup>nd</sup> shift \_\_\_ 3<sup>rd</sup> shift \_\_\_

Mother works: 1<sup>st</sup> shift \_\_\_ 2<sup>nd</sup> shift \_\_\_ 3<sup>rd</sup> shift \_\_\_

Father's education: GED/HS \_\_\_ Year of College \_\_\_ Other \_\_\_

Mother's education: GED/HS \_\_\_ Year of College \_\_\_ Other \_\_\_

Appendix E  
Sample page: Target Teach Test

32. What makes a camel capable of retaining water?
- The large hump on its back in which it stores water
  - The special water pockets in its stomach.
  - The unusual oval shape of its blood cells.
  - The fat in its hump

33. The reason a camel needs sweat glands to survive in the desert is because
- they help the camel evaporate the condensed water on its skin.
  - they help the camel store water in its hump
  - they help the camel keep cool in the desert.
  - 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 the turned-up pantaloons,<sup>1</sup>  
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 hear I give thee joy,  
I was once a barefoot boy.

<sup>1</sup> pants

34. How does the poet feel about the barefoot boy?
- The poet feels affection for him
  - The poet feels jealous of him.
  - The poet feels annoyed by him.
  - The poet feels blessed by him.
35. How does the barefoot boy feel in this poem?
- blessed
  - happy
  - adventurous
  - foolish

36. Which words does the speaker use to express the boy's feelings?
- barefoot, tunes, sunshine
  - pantaloons, strawberries, hill
  - merry, jauntily, joy
  - cheek, lip, heart
37. The barefoot boy can best be described as
- carefree and lonely.
  - lighthearted and content.
  - sneaky and deceitful.
  - old and foolish.