Active Research on Active Learning Strategies

by

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Abstract

The purpose of this study was to discover how using the active learning strategies of think-pair-share and student summaries during reading, effected student performance among 3rd graders at Osseo-Fairchild Elementary. More specifically, it looked at whether using think-pair-share, student summaries, individually, had any effect on reading comprehension scores. It also investigated whether or not there was a combined effect of implementing both of the strategies simultaneously. The population for this study was 20, third grade students (11 boys and 9 girls) enrolled in Osseo-Fairchild Elementary School during the 2009-2010 school year.

Four similar style Houghton Mifflin generated, multiple choice, comprehension tests were used to gather data regarding the students' comprehension after a baseline week, a week of teaching either think-pair-share or student summaries, and a week of teaching both strategies was concluded. The data is presented in the form of a graph. After the study was concluded it was

found that using think-pair-share and student summaries in a classroom are beneficial because they do improve reading comprehension scores, and implementing any active learning strategy is beneficial because they improve reading comprehension as well. However, there was no combined effect discovered.

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Thanks to my family, for understanding.

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Chapter I: Introduction

Background

Students, young and old alike preparing for the real world, need to be educated in a way that will lead them to the path of life-long learning. In order to help students reach this path, educators are encouraged to give their students the skills necessary to become life-long learners. Teaching methodologies vary greatly from teacher to teacher, grade to grade, district to district, and even from classroom to classroom. There are countless strategies available for teachers to use in order to effectively teach a lesson. The choice is basically left in the hands of the educator as to which strategy is most appropriate to use and at what time to use it. In most school districts there is nothing written in stone that says, "How the teacher should teach."

One can barely pick up a journal or attend a workshop nowadays, without hearing the catch phrase, "active learning". There are a great number of strategies that are called "active learning strategies". Some of the more common active learning strategies are: cooperative learning, project-based learning, discovery learning, discussions, experiential learning, role-play, student generated questions, think-pair-share, Socratic dialoging, and student summaries. These, along with other examples, suggest a way of learning that allows the learner to become more proactive in the learning process. But is active learning really as effective as its proponents are making it out to be?

In order to discover the effectiveness of such strategies, sometimes it's best to first-handedly, implement a certain technique and then look at its performance outcomes. Only then, can one see plainly the benefits or shortcomings of implementing such a strategy. Moreover, without the use of such active research, it is difficult for an educator to make a confident evaluation on the effectiveness of the certain teaching strategy.

Any strategy can be the "right strategy" depending on the application and the circumstances surrounding the lesson. During reading many active learning strategies can be implemented into the lesson to make the learner more involved and to increase student performance. Specifically for this paper, the author will implement the think-pair-share strategy and the student summaries strategy in order to discover if student performance, in the area of reading, increases.

Statement of the Problem

A problem exists about how educators should best education their students, this study will be used to discover how using the active learning strategies of think-pair-share and student summaries during reading, will affect student performance among 3rd graders at Osseo-Fairchild Elementary. The phrase "active learning" has gotten much more popular over the past couple of years. Teachers need to gather information on the effectiveness of using active learning strategies in the classroom, with this data; they can then make a more informed decision about how to best educate their students.

Research Questions

In order to fully discover the effectiveness of think-pair-share and student summaries educators need to take the time to examine each technique and evaluate whether each is successful in improving student performance. To gather more data the study will address the following specific questions:

1. What effect does implementing think-pair-share have on reading comprehension scores?
2. What effect does implementing student summaries have on reading comprehension scores?

3. What is the combined effect of implementing think-pair-share and student summaries on reading comprehension scores?

Purpose of the Study

The purpose of this study will be to discover how using the active learning strategies of think-pair-share and student summaries during reading, will affect student performance among 3rd graders at Osseo-Fairchild Elementary. More specifically, the study will look at answering whether or not using think-pair-share, student summaries, individually, has any effect on reading comprehension scores. It will also investigate whether or not there is a combined effect of implementing both strategies on reading comprehension scores.

Assumptions of the Study

Before implementing this study, the assumption is that implementing the strategy of think-pair-share with has a positive effect on reading comprehension scores. It is also assumed that implementing the strategy of student summaries will also have a positive effect on reading comprehension scores. Moreover, it is also assumed that after implementing both strategies at the same time, it will have an even greater positive effect on reading comprehension scores.

Definition of Terms

The terms used in this study are defined here:

Active Learning. Active learning is anything that students do in a classroom other than merely passively listening to an instructor's lecture. They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. It also includes everything from listening practices which help the students to absorb what they hear, to short

writing exercises in which students react to lecture material, to complex group exercises in which students apply course material to "real life" situations and/or to new problems.

Student Summaries. Student summaries are when students take larger selections of text and reduce them to their bare essentials: the gist, the key ideas, the main points that are worth noting and remembering. Students are asked to take away the extras and focus on the main ideas. For this study, students are asked to write down their summaries.

Think-pair-share. Think-pair-share is an activity where learners take a minute to ponder the previous lesson, later they are given a specified time to discuss it with one or more of their peers, finally to they are asked to share it with the class as part of a discussion.

Chapter II: Review of Literature

Introduction

The purpose of this study will be to discover how using the active learning strategies of think-pair-share and student summaries during reading, will affect student performance among 3rd graders at Osseo-Fairchild Elementary. More specifically, the study will address the following questions: What effect does implementing think-pair-share have on reading comprehension scores? What effect does implementing student summaries have on reading comprehension scores? What is the combined effect of implementing think-pair-share and student summaries on reading comprehension scores? This paper will look at current teaching strategies, discuss active learning, and will conclude with a look into the active learning strategies of think-pair-share and student summaries.

Current Educational Trends

Today in education, there is an emphasis on teaching "student-centered" education. The student is seen as actively involved in the learning process, another name for this type of teaching strategy is active learning. Before active learning became an emphasis, the lecture method was the most widely used instructional strategy in upper level classrooms. According to an article written by the George Mason University (2009), nearly 80% of all U.S. college classrooms in the late 1970s reported using some form of the lecture method to teach students. Although the usefulness of other teaching strategies is being widely examined today, the lecture still remains an important way to communicate information, especially when paired with active learning strategies.

According to Schrager, (2005) we are seeing the following trends, directions and movements in many Wisconsin elementary schools, high schools and colleges. First, course time

is devoted to discovery-based (active) learning over the traditional lecture style of transmitting knowledge. An example of discovery-based learning would be a letting students discover how a level works by letting them construct one during a science lesson and experimenting with different objects to see how it works. Where as, an example of using the traditional lecture style would be the teacher describing what a lever is and how it works while the students listen.

Second, teaching emphasis has moved away from memorizing facts towards finding facts (Schrager, 2005). Students are now being asked to go beyond just memorizing facts to actually finding data on their own and then applying that found data into new complex scenarios. They are also asked to evaluate and use the information that they have gathered in order to construct a deeper understanding of the topic at hand. For example, during a science unit, students may be asked to search for ways that the school can improve their overall energy efficiency. They may then be asked to come up with their own ideas of how their school can become more efficient. Finally, they may be asked to gather data and analyze the projected before and after results as well.

Thirdly, is evaluating and using information, new teaching and learning styles, and incorporating collaborative work within diverse teams or groups (Schrager, 2005). The main concept here is students are no longer working individually with the information they have gathered, now they have to work with a team bringing all the data together and explaining it to each other in a way that all will understand. Having students work in teams is beneficial for a number of reasons. It has been shown to increase student empathy (Hettinger, 2004), it improves student interpersonal skills (Ulloa & Adams, 2004),it helps improve student mastery of course content, it enhances student writing skills, and it increases student appreciation of real-life situations (Johnston & Karageorgis, 2009). Working with a peer in a team may be difficult for

some individuals because they may feel team members are not pulling their weight or they may feel like they are wasting time explaining everything to slower teammates (Bennet & Farley, 1996). This can be avoided by the teacher having the students work toward a common purpose, by clarifying everyone's role and by setting clear goals for the team to reach by a specified amount of time (Ulloa & Adams, 2004).

These trends coincided directly with Bruner's 1990 constructivist theory. Bruner believed learning was an active process where students constructed their own concepts which were connected to their prior knowledge. By studying past theorists like Piaget, he found the learner selects and transforms information. They then construct hypotheses, and makes decisions, relying on a cognitive structure (i.e., schema, mental models) to do so.

Bruner (1990) suggested as far as instruction is concerned, the teacher should try and encourage students to discover important ideas/concepts by themselves. Both the teacher and the students should engage in an active dialog (i.e., Socratic learning). The main task of the instructor during Socratic learning is to present the information to be learned by the student in a way that is appropriate to the learner's current level of knowledge. In Socratic learning, the focus is on giving students questions, not answers. The chief benefits of this method are that it excites students' curiosity and arouses student thinking, and is more efficient for student learning then lecturing (Garlikov, n.d.). However, teachers hesitate to use this method of learning because it is much more time consuming than lecturing. A teacher can cover more ground in the same amount of time through a lecture than by using Socratic learning (Garlikov, n.d.).

Bruner came up with four core teaching themes (Smith, 2002). First, was the role of structure in learning and how it can be made central in teaching? Bruner believed in order for children to be able to master complex tasks, the earlier ones need to be presented as clearly as

possible (Smith, 2002). Therefore students will have a strong foundation at which to build off of. In order to achieve a clearly structured lesson, instructional plans must have the four key themes of readiness, structure, sequence, and motives (DiPrima & Rutgers, 2006).

Bruner believed each child is ready to learn concepts at differing times; this is what Bruner referred to as the readiness for learning. To address readiness, structure, sequence, and motives, Bruner introduced the spiral curriculum (DiPrima & Rutgers, 2006). Ideas are first taught to the child in a form and language, which are developmentally appropriate for the child so the information can be easily understood by the child. The ideas can then be revisited later with greater accuracy and power until, finally, the student has achieved full mastery of the concept presented (DiPrima & Rutgers, 2006). He felt schools wasted a great deal of time in a student's academic career because they waited too long to teach important ideas. The school philosophy behind waiting was it felt the students were not ready to learn the concepts yet (Smith, 2002). In order to avoid this, Bruner came up with the spiral curriculum. He felt a "curriculum as it develops should revisit it's this basic ideas repeatedly, building upon them until the student has grasped the full formal apparatus that goes with them" (Smith, 2002, p. 1). "In this design, students return to topics throughout their academic careers, continually building upon what they have already learned as they develop and mature" (DiPrima & Rutgers, 2006, p. 1).

Thirdly, was intuitive and analytical thinking. Bruner felt intuition was a much neglected, but key quality of productive thinking. He felt experts intuitively leapt into a decision or to a solution to a problem (Smith, 2002). They didn't really use common analytical steps to get to the solution. Bruner felt having this intuitive ability was necessary and valid for students to achieve. Thus, he then focused on how teachers and/or schools could teach, or create

conditions, so that this intuition style of thinking could be increased. Thus, Bruner came up with a discovery learning approach to education. Discovery learning has been found to have many benefits such as, increasing intellectual potency, giving students a feeling of intrinsic reward, and improving and conserving memory (DiPrima & Rutgers, 2006)

Discovery learning allows students to put things together for themselves, or for the student to be his own discoverer (DiPrima & Rutgers, 2006). Attributes that characterize discovery learning include the creation, integration and generalization of knowledge through exploration and problem solving and interest-based activities. When considering interest-based activities, the learner exercises some control over the sequence and frequency of the activities presented. Other attributes include, activities that strive to integrate new knowledge with the learner's existing knowledge base, emphasis on learning rather than content, recognition of the importance of "failure" as a tool for examination, reflection and refocused efforts, involvement of students in higher levels of cognitive processing, such as synthesis, evaluation, extrapolation, and analysis, and integration of feedback opportunities into instruction or activities (DiPrima & Rutgers, 2006).

There are different methods to use for incorporating discovery learning into the classroom. First, teachers can use case-based learning. This is a technique where students learn by reading through stories. Next, teachers can use incidental learning. Here students learn without really knowing it by using fun, game like activities like a game show or a crossword puzzle. Thirdly, educators can use exploring in their classrooms. When using exploring, students learn through an organized question and answer session with other students and the instructor (Socratic learning). Fourthly is reflection. In reflection, the teacher models how to ask better questions. (Reflection is another element to Socratic learning. It helps the learner come to

a deeper understanding.) Finally, teachers can use simulation. In simulation students learn by practicing skills in the classroom (DiPrima & Rutgers, 2006).

Finally, Bruner came up with the motive for learning. He believed that the best motivator for learning was a true internal interest in the subject, not grades or other external stimuli. He felt that teachers should teach in a way that kept motives for learning from going passive, their teaching techniques must be ones that were based upon the "arousal of interest" (Smith, 2002, p. 1). In order to motivate students to learn, teachers should encourage students to participate in the knowledge-getting process, test hypotheses, interact with the environment, solve problems, develop generalizations, engaging in dialogue and collaborate with the teacher and other students, create products such as new ideas, solutions, processes, presentations, blogs, or research papers (DiPrima & Rutgers, 2006).

There are many statistics available that back up Bruner's theories and active learning as well. According to the NDT Resource Center, (n.d.) the average amount of information that is retained through a lesson taught in a traditional lecture style is 5%, while a lesson taught by using a more active learning strategy, like discussion group is 50%. And when the students are allowed to immediately use the new skill or teach others that percentage leaps up to 90%. According to an article on the National Education Association's website found at http://www.nea.org/tools/16708.htm, teachers should be teaching using a strategy that promotes active engagement. "Teaching that emphasizes active engagement helps students process and retain information. It leads to self-questioning, deeper thinking, and problem solving" (Lorain, 2009, p. 1). When the student is involved in the learning process itself, he/she seems to retain and understand the presented lesson in a meaningful and practical way.

Moreover, in a study completed at the North Seattle Community College, Mohamed (2008) found results that much agree with previously presented statistics and suggestions. He found that students taught using an active learning strategy did "significantly better" (Mohamed, 2008, p. 5) than students taught by traditional lecturing. Although it should be also noted that the data he gathered showed that student performance after a lecture lesson was not "significantly poor" (Mohamed, 2008, p. 5). Instead, students just performed better when taught via an active learning strategy. Mohamed found that lecture is not a "bad" technique to use. He found that if lecture is incorporated with active learning techniques then overall student performance increased (Mohamed, 2008). In addition, it is important to remember while implementing active learning strategies into one's classroom can lead to an increased motivation to learn, greater retention of knowledge, deeper understanding, and more positive attitudes toward the subject being taught, the positive learning improvements may not show up immediately and many children may show opposition to the strategies, which will be explained later on (Brent& Felder, 1996). So what exactly is active learning?

Active Learning

When considering active learning, it is difficult to come up with a single definition because it is viewed by many people in varying ways. Educators' use of the term "active learning" has relied more on instinctive understanding than a common definition (Gamson, 2010). Thus, many teachers say that all learning is naturally active and that students are therefore actively involved while listening to formal presentations in the classroom. However, according to Gamson, 2010,

> students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active

> learning be defined as instructional activities involving students in doing things and thinking about what they are doing. Use of these techniques in the classroom is vital because of their powerful impact upon students' learning. For example, several studies have shown that students prefer strategies promoting active learning to traditional lectures. (p. 1)

It is just as important for students to be actively engaged as it is for them to be physically active with the topic as well.

There are many strategies that one can use to incorporate active learning into the classroom. Instructors can modify traditional lectures so that they have active learning elements within: guided lecture, discussion in class (Socratic method), debriefing, visual-based instruction, in-class writing activities, cooperative learning, debates, drama, summarizing, role playing and simulation, and peer teaching are all different ways of modifying to incorporate active learning techniques. For example, teachers can give a lecture on a science topic and then add an experiment into the lecture so that students can actively get involved in the lecture topic. The teacher can add technology into the lesson, perhaps by using a PowerPoint presentation, which allows the students something more to do than sit and listen to information being presented. Teachers could also allow for time during the lecture for their students to collaborate with each other about the information that was presented.

Another important part of active learning is for the student to assist other students in the learning process. By doing this, the student that is teaching gains a deeper understanding of the knowledge by presenting the information in his own terms with his own ideas. The student that is learning the new information also benefits by hearing the presented material in a different way for a second or third time (Brent & Felder, 1996).

Students that are taught using active learning strategies are taking on more responsibility for their own learning. The sole responsibility of teaching shifts from the teacher as the primary

giver of information, to the student. Thus, the student now has some of their previous support removed. The student can no longer rely just on the instructor to hand out the information to him or her. He or she now needs to formulate many ideas on his or her own (Brent & Felder, 1996).

Cooperative Learning-Think-Pair-Share

Think-pair-share is a strategy that easily lends itself to be used during reading, but it can also be used in other academic areas too. Think-pair-share offers many skills to its users, which are described below. Students need many opportunities to talk in a linguistically rich environment. Researchers have found that students' learning is enhanced when they have many opportunities to elaborate on ideas through talk (Pressley, 1992). The think- pair-share strategy increases the kinds of personal communications that are necessary for students to internally process, organize, and retain ideas. When given time to share ideas, students take ownership of their learning and discuss meanings rather than rely solely on the given teacher's information (Cobb, Wood, & Yackel, 1991). Students can gain praises from each other's efforts, recognize that all group members share a common fate, know that one's performance is mutually caused by oneself and one's team members (they can't do it without them), and feel proud and jointly celebrate when a group member is recognized for achievement ("Cooperative Learning," n.d.).

Cooperative learning is a teaching strategy in which small groups of students, all at differing levels of ability, use a variety of learning activities provided by the teacher to improve their understanding of a subject. The team, or group of students, must work together not only to learn the new content, but to also help each other learn. Students are to work through assignments until all group members successfully understand and complete it ("Cooperative Learning," n.d.).

Think-pair-share specifically is a class activity that uses the teaching technique of cooperative learning. Think-pair-share involves a three step structure that the students must follow. During the first step, which is think, individuals think silently about a question posed by the teacher ("Cooperative Learning," n.d.). For example, after previewing the pictures in picture book, an elementary teacher might ask students to take 30 seconds to come up with a prediction of what they think is going to happen in the story. Individuals are then asked either to choose a partner or are given one (pair) during the second step, and together they exchange thoughts ("Cooperative Learning", n.d.). Now the elementary teacher might ask the students to share with each other their predictions for 1 minute. In the third step, the pairs share (share) their responses with other pairs, other teams, or the entire group ("Cooperative Learning," n.d.). Here the teacher might ask the pair of students to get with another pair and they should all take 2 minute to share their predictions with one another.

In past research it has been found to have positive effects on student reading comprehension. According to Carss (2007), after implementing the think-pair-share strategy, it had positive effects reading achievement, especially for those students reading above their chronological age. Think-pair-share also seemed to have positive effects on aspects of oral language use, thinking, met cognitive awareness, and the development of reading comprehension strategies (Carss, 2007). Students need opportunities to practice appropriate social interactions and think-pair-share allows them to do that.

Additionally, the use of the think-pair-share strategy has been linked to positive changes in student's self-esteem ("Think, Pair, Share," 2010). During think-pair-share, students have to listen to one another and respect each others' comments, and they then have to report ideas to the whole class or other groups. Practicing these skills helps build self-esteem. Moreover, the "pair"

step of the strategy ensures that no student is left out of the discussion. Even a student who is uncomfortable discussing his or her ideas with the whole class still has an audience to present to in step ("Think, Pair, Share," 2010).

Student Summaries

Teaching students to summarize is an important skill for many reasons. In order to summarize, it requires the reader to determine what information is important and what information is less important. As students encounter text in different areas, they need a strategy that allows them to sort information, and they need to see how individuals with sufficient background knowledge identify important information and summarize ("Research Based Strategies," 2005).

Asking students to read and summarize reading selections without the teacher describing and routinely modeling how to use an appropriate summarization strategy, especially of varying text length, content area, and complexity, will not improve the ability of students to summarize ("Research Based Strategies," 2005). However, since almost all learning in school requires a student to condense and remember what has been read, summarization comprehension strategies are important to teach ("Research Based Strategies," 2005).

Usually before the strategy is taught to students, teachers will see their pupils make some of the same typical errors. Students may write down everything, they may write down complete sentences, they may write too much, they may not write enough, and they may copy word for word. Summarizing is a higher order thinking strategy and students need to be taught what and how to do it appropriately (Jones, 2009).

Effective summarizing leads to an increase in student learning. Teachers should try to aide students in recognizing how information is structured. This will help them to be able to

summarize what they read or hear. Students have to analyze information at a deep level in order to decide what information to delete, what to substitute, and what to keep when they are asked to give a summary ("Research Based Strategies," 2005). There are different tools, or graphic aides, available to help students visualize how to summarize.

For example, summarizing of a reading assignment can be more effective when done within summary frames, which typically include a series of questions the teacher provides to direct student attention to specific content (Marzano, Pickering, & Pollock, 2001). Studies have shown students who can effectively summarize learn to synthesize information, a higher-order thinking skill which includes analyzing information, identifying key concepts, and defining unrelated information ("Research Based Strategies," 2005). "Reading comprehension increases when students learn how to incorporate "summary frames" as a tool for summarizing. Summary frames are a series of questions created by the teacher and designed to highlight critical passages of text. When students use this strategy, they are better able to understand what they are reading, identify key information, and provide a summary that helps them retain the information" ("Research Based Strategies," 2005).

When a student is asked to complete a student summary a teacher is looking for students to be able to pull out main ideas, focus on key details, use key words and phrases, break down the larger ideas, and write only enough to convey the main idea(s). Summarizing one of the hardest strategies for students to grasp, and therefore, needs to be repeatedly modeled. Students also need to be given adequate time and opportunities to practice it (Jones, 2009).

Being able to effectively summarize will help students later on in their academic careers when they are asked to take notes on important subject matter, not only in college, but in real life situations as well. Note taking is a strategy that teachers use to support student learning in their

classrooms. However, without explicit instruction in note taking, many students simply write down words or phrases word for word, without analyzing what they are doing (Jones, 2009). Successful note-takers summarize to arrive at a condensed bit of meaning. Students can also go back and look at or summarize their notes as a way to prepare for an exam ("Research Based Strategies," 2005).

Summary

Current educational trends are pushing to a more active approach in regards to educating students. Past research indicates there are advantages to having students become active in the learning process. There are multiple strategies that are listed as active learning techniques and are being implemented in many of today's classrooms. Think-pair-share and student summaries are two popular active learning strategies that are being used by elementary educators today. Past research has shown both of them to have a positive effect on student learning, student social skills, and classroom success.

Chapter III: Methodology

Introduction

The purpose of this study was to discover how using the active learning strategies of think-pair-share and student summaries during reading, would affect student performance among 3rd graders at Osseo-Fairchild Elementary, a small school located in Trempealeau County in east-central Wisconsin. More specifically, the study addressed the following questions: What effect does implementing think-pair-share have on reading comprehension scores? What effect does implementing student summaries have on reading comprehension scores? What is the combined effect of implementing think-pair-share and student summaries on reading comprehension scores?

Subject Selection and Description

The population for this study was 20, third grade students enrolled in Osseo-Fairchild Elementary for the 2009-2010 school year. The classroom consisted of 11 boys and 9 girls. They were between the ages of seven and nine years old. In this classroom, all of the students are Caucasian. When considering the school as a whole, the school has a free and reduced lunch rate of between 16-18% and is 98% Caucasian. The 20 students attended the same third grade classroom since school began in September, 2009.

Instrumentation

Four similar style Houghton Mifflin generated comprehension tests were used to gather data regarding the students' comprehension. Each test required students to independently answer 20 given multiple choice questions that related directed to a story that was read in class during the week. Questions included ideas about the main idea, inference questions, questions about the

plot, summary questions, factual questions, evaluative questions, and vocabulary questions. The tests were un-timed and taken individually, with the teacher reading only the directions.

Data Collection and Procedures

A Houghton Mifflin generated comprehension test, which was untimed and asked 20 specific multiple choice questions about the week's in-class story, was administered by the researcher after teaching a unit without using think-pair-share or student summaries to gather baseline data. A similar style, 20 question test, was then administered by the researcher after implementing the strategy of think-pair-share for one week. A third similar style, 20 question test, was then administered after implementing the strategy of student summaries for one week. A fourth and final similar style, 20 question tests, was administered after implementing both strategies together for one week. All of the tests were administered during the regular school day, during the regular scheduled reading block. The regular scheduled reading block was from 8:20-10:00 in the morning each day of the week. This assessment was conducted in late February into early March, 2010. The researcher scored all the tests for accuracy giving each student a percentage score.

Data Analysis

The data was gathered and analyzed by using a graph. The results are presented in the form of a researcher generated graph. All information is presented on one graph. The graph shows each student's comprehension scores before specifically implementing any type of active learning technique, comprehension scores after think-pair-share was implemented, comprehension scores after student summaries was implemented, and comprehension scores after both student summaries and think-pair-share were implemented jointly.

Limitations

Students were taught many different reading strategies throughout the school year during reading class. Think-pair-share and students summaries were not the first two techniques that the students were taught, so it is difficult to say which specific strategy students were drawing from for sure when they took the comprehension tests. Also, student attendance, while strong, was not perfect over the three week assessment period. Some students were absent during the assessment period, therefore missing some instructional time.

Chapter IV: Results

Introduction

The purpose of this study was to discover how using the active learning strategies of think-pair-share and student summaries during reading, would affect student performance among 3rd grade students at Osseo-Fairchild Elementary. The research design was experimental as Houghton-Mifflin generated comprehension testing worksheets were used to gather student comprehension scores.

Item Analysis-Effect of Think-Pair-Share

The first research question of this study dealt with the effect that implementing think-pair-share had on student reading comprehension scores. To answer this question, after implementing the strategy of think-pair-share for a period of one week, the researcher gave the class a comprehension test. The test sheets had a series of 20 multiple choice questions that pertained to an assigned weekly reading. The students independently read, the questions and circled the correct answer. The test was then graded by the researcher, giving one point a piece to each question and then generating a percentage score.

Effect of Student Summaries

The second research question of this study dealt with the effect that implementing student summaries had on student reading comprehension scores. To answer this question, after implementing the strategy of student summaries for a period of one week, the researcher gave the class a comprehension test. The test sheet had a series of 20 multiple choice questions that pertained to a second assigned reading. The students independently read the questions and circled the correct answer. The test was then graded by the researcher, giving one point a piece to each question and then generating a percentage score.

Overall Effect

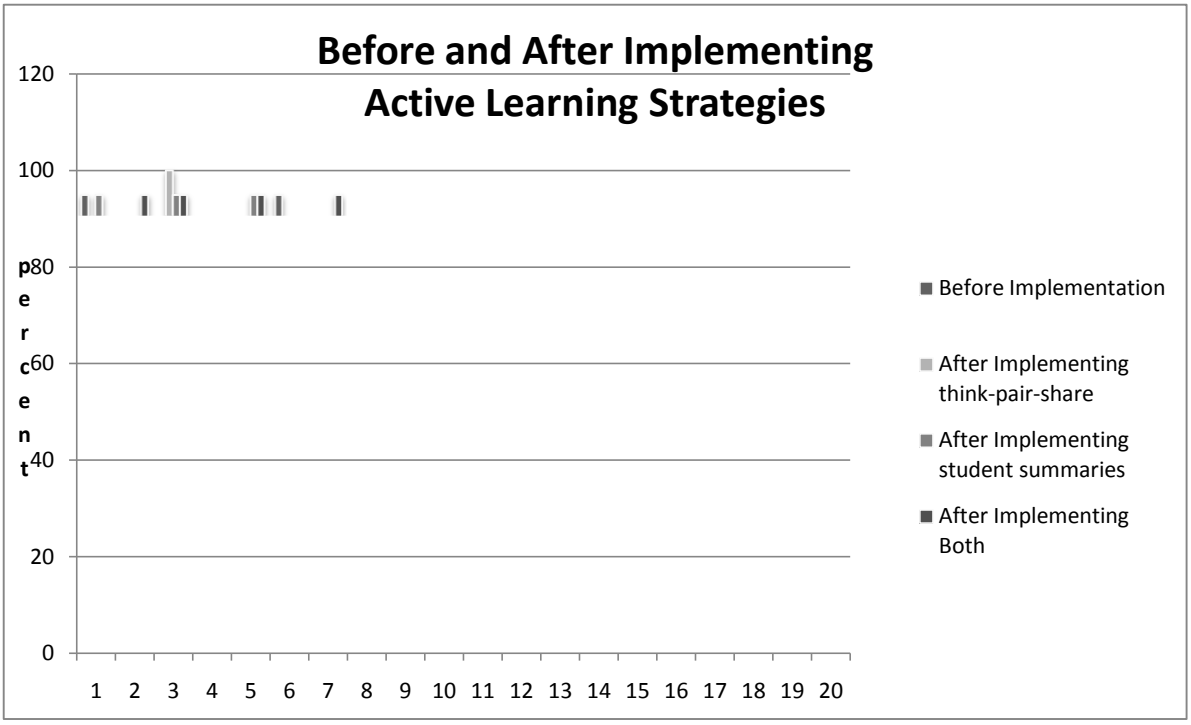
The third research question of this study dealt with the combined effect of implementing both think-pair-share and student summaries on reading comprehension scores. To answer this question, after implementing both the strategies of student summaries and think-pair-share for a period of one week, the researcher gave the class a comprehension test. The test sheet had a series of 20 multiple choice questions that pertained to a third assigned reading. The students independently read the questions and circled the correct answer. The test was then graded by the researcher, giving one point a piece to each question and then generating a percentage score.

Presenting Findings

What follows is a presentation of the data collected over a three week implementation period in the form of a chart graph. Scores are presented on a percentage basis for each student. Each student is listed at the bottom and his/her score is graphed. Each student has a series of four bars. The first one represents the baseline data (before implementation), the second represents scores after implementing think-pair-share, the third after implementing student summaries, and the fourth after implementing both strategies together.

Figure 1

Before and After Implementing Active Learning Strategies



Each child is represented individually on the chart. The first bar shows base line data (before the two strategies were implemented), the second bar depicts student percentages after just think-pair-share was implemented for one week, the third bar shows student percentages after the focus was on implementing student summaries for one week, and finally the fourth bar shows student percentages after both strategies were implemented for a week. When looking at the chart as a whole, 85% of the students' comprehension scores increased after either one or both strategies were implemented. In addition, when comparing each strategy individually, the comprehension scores for student summaries proved to have either a larger increase, or the same score, on comprehension scores, than the percentages recorded for the think-pair-share strategy for three-quarters of the students tested.

Chapter V: Discussion

Introduction

The purpose of this study was to discover how using the active learning strategies of think-pair-share and student summaries during reading, affected the student performance of 3rd graders at Osseo-Fairchild Elementary. More specifically, the study sought to seek the answers to the following questions: What effect does implementing think-pair-share have on reading comprehension scores? What effect does implementing student summaries have on reading comprehension scores? What is the combined effect of implementing think-pair-share and student summaries on reading comprehension scores?

The research design for this was experimental. The experimental design gathered data on different variables. The subjects for this study were 20 (11 boys and 9 girls), third grade students enrolled in Osseo-Fairchild Elementary for the 2009-2010 school year. They were between the ages of eight and nine years old. They had all been attending the third grade classroom since school began in September, 2009.

Before any strategy was employed, participants were asked to complete a comprehension test that had a series of 20 multiple choice questions pertaining to an assigned weekly reading. The students independently read the questions and circled the correct answer. The test was then graded by the researcher, giving one point a piece to each question and then generating a percentage score. Then, after implementing the think-pair-share strategy for a period of one week, the researcher gave the class a second comprehension test, following the same format as the first. The researcher then implemented the student summaries strategy for a period of one week and gave the class a third comprehension test, following the same format as previously

described. Finally, the researcher implemented both strategies at the same time for a period of one week and gave the same type of comprehension test and generated results.

The results were used to discover how using the active learning strategies of think-pair-share and student summaries affected student performance and therefore, helped the researcher make a more informed decision about how to best educate students.

Limitations

Students were taught many different reading strategies throughout the school year during reading class. Think-pair-share and students summaries were not the first two techniques that the students were taught, so it is difficult to say which specific strategy students were drawing from for sure when they took the comprehension tests. Also, student attendance, while strong, was not perfect over the three week assessment period. Some students were absent during the assessment period, thus missing some instructional time.

Discussion (of the findings)

When comparing baseline data to scores after just think-pair-share was implemented, 16/20 3rd grade students either maintained or improved their comprehension scores. This finding is consistent with previous research that suggests that using a strategy like think-pair-share does improved comprehension scores. When comparing baseline data to scores after just student summaries was implemented in the classroom, 19/20 3rd grade students either maintained or improved their comprehension scores. Once again this finding is consisted with previous research that states that using an active learning strategy like students summaries does improve comprehension scores.

When comparing the baseline data to the data gathered after implementing both think-pair-share and student summaries, 17/20 3rd grade students either maintained or improved their

comprehension scores. This again, is consistent with previously stated information on active learning that suggests that implementing these strategies into one's classroom will have a positive effect on student comprehension.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

- Implementing an active learning strategy like, think-pair-share is beneficial because it does improve student reading comprehension.
- Implementing an active learning strategy like, student summaries is beneficial because it does improve reading comprehension.
- Implementing active learning strategies in one's classroom is beneficial because it does improve comprehension. However, based on the data gathered from this study, implementing multiple strategies at the same time does not seem to have more of a positive effect than implementing just one at a time.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were drawn:

- The collaborative strategy of think-pair-share should continue to be implemented into the classroom because of its positive effect on student comprehension. Students made gains by using this strategy and seemed to enjoy using it as well.
- The debriefing strategy of student summaries should continue to be implemented into the classroom because of its positive effect on student comprehension. Once students

learned how to correctly use this strategy they were able to apply it into other subject areas as well, and carry over some of the benefits.

- More attention needs to be made to implementing more active learning strategies into the curriculum. The students enjoy becoming part of the learning process and trying some of the new techniques.
- Teachers should implement at least one active learning strategy into his/her classroom because of the positive effect it may have on student comprehension. Although they may be more time consuming, they are worth the investment. Students seem to both enjoy and learn from the different techniques.

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