The Development of Number Sense in Second Grade Students:

A Comparison of Two Instructional Programs

A Special Project

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Daniel C. Corona

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FACULTY APPROVAL

The Development of Number Sense in Second Grade Students:

A Comparison of Two Instructional Programs

Approved for the Faculty

______________________________________, Faculty Advisor

______________________________________, Date

ABSTRACT

This project investigated the effectiveness of *Investigations; Today's Number* and *Mathematics Education Collaborative Number Talks* on mathematics computation skills of second grade students. Participants were second grade students who were taught by the same teacher. The non-experimental group was taught using *Investigations; Today's Number*. The students in the experimental group were taught using *Mathematics Education Collaborative Number Talks*. A *t*-test was conducted on the results to determine significance between both pre/post assessments. Data analysis concluded that *Mathematics Education Collaborative Number Talks* instruction had greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .02 level of specification. *Investigations; Today's Number's* also proved to have significance at a 0.05 level.

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TABLE OF CONTENTS

Page

LIST OF TABLES

CHAPTER 1

Introduction

Background for the Project

In 2003, the TERC mathematics program, *Investigations in Number, Data, and Space,* was adopted by the school district in which this project took place. Washington Assessment of Student Learning scores for mathematics had continually dropped below the state Washington Assessment of Student Learning mathematics scores since the introduction of *Investigations in Number, Data, and Space*.

Statement of the Problem

The Office of Superintendent of Public Instruction documented that the Washington Assessment of Student Learning mathematics scores for this elementary school were below 24.4 percent for the past four years. The school did not meet Annual Yearly Progress for the 2004 to 2008 school years.

Purpose of the Project

The purpose of this project was to investigate the effectiveness of *Investigations; Today's Number* and *Mathematics Education Collaborative Number Talks* on mathematics computation skills of second grade students.

Delimitations

The project took place from January to April in an elementary school in Washington in the year 2010. The elementary school was composed of 654 students and 40 classroom teachers. The students were composed of 0.2% American Indian/Alaskan Native, 3.2% Black, 92.8% Hispanic, 3.4% white, and 68.6% were transitional bilingual students. There were 95.5% of students receiving free or reduced-price meals (Office of Superintendent of Public Instruction, 2009).

Participants were taught using either *Investigations; Today's Number* or *Mathematics Education Collaborative Number Talks*. Participants in the study were second grade students who were taught by the same teacher. Twenty-one second grade students were divided into two groups at random and taught using one of the programs. The population of students were all of Hispanic descent. Materials used for teaching *Investigations; Today's Number* were paper, pencils, and a white board. Materials used for teaching *Mathematics Education Collaborative Number Talks* were a document camera, projector, and pen and paper for the teacher only.

Assumptions

The sample of students represented the population with 92.8% of Hispanic descent. The mathematics *Investigations in Number, Data, and Space* program was the adopted curriculum when the test participants began their education in the district. The instructor was trained in the teaching of mathematics *Investigations in Number, Data, and Space* for one year. The instructor received training in *Mathematics Education Collaborative Number Talks* for four years. The instructor was competent in the teaching of the programs having had six years of teaching experience.

Hypothesis

Second grade students receiving *Mathematics Education Collaborative Number Talks* instruction made greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .05 level of specification.

Null Hypothesis

Second grade students receiving *Mathematics Education Collaborative Number Talks* instruction did not make greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .05 level of specification.

Significance of the Project

In the elementary school where this project took place the Washington Assessment of Student Learning mathematics scores for the past three years had continually been under 24.4 percent. As a district the mathematics Washington Assessment of Student Learning scores had been under 45 percent in mathematics. Number sense was an area of low achievement at the elementary school. Determining the positive impact of *Mathematics Education Collaborative Number Talks* in number sense had the potential to increase the Washington Assessment of Student Learning mathematics scores. The determination of a negative impact of *Mathematics Education Collaborative Number Talks* in number sense could indicate that there was no significant advantage between *Number Talks* and *Investigations; Today's Number*, which had been used for the past five years. Negative results would indicate a need to research another form of mathematical intervention for the improvement of student mathematical number sense.

Procedure

Participants in this study were second grade students who were taught by the same teacher. Twenty-one students were divided into two groups. During the school year, the non-experimental group of students were taught using *Investigations; Today's Number*. The students in the experimental group were taught using *Mathematics Education Collaborative Number Talks*.

The effectiveness of computation strategies was determined by comparing computation achievement of the two groups as measured by a pre and post assessment. Students were pre-tested in January and completed a post-test at the end of April. A *t*-test was conducted on the results to determine significance.

Definition of Terms

Annual Yearly Progress. Annual Yearly Progress was a required statewide accountability system which required each state to ensure that all schools and districts made annual yearly progress.

Investigations in Number, Data, and Space. *Investigations in Number, Data, and Space* was a K-5 mathematics curriculum, designed to teach fundamental ideas of number and operations, geometry, data, measurement and early algebra.

Mathematics Education Collaborative. Mathematical Education Collaborative was an educational group that worked in partnership with schools and communities providing mathematics workshops for implementation and the sustentation of mathematics improvement.

number sense. Number sense was a set of conceptual relationships between quantities and numerical symbols.

mental mathematics. Mental mathematics was mathematics that was done in the mind and did not include using pencil and paper.

Washington Assessment of Student Learning. The Washington Assessment of Student Learning was an assessment that measured how well students progressed in meeting state academic standards. Schools administered the assessment each spring in late April or May for fourth, seventh, and tenth graders.

Acronyms

AYP. Annual Yearly Progress.

OSPI. Office of Superintendent of Public Instruction.

WASL. Washington Assessment of Student Learning

CHAPTER 2

Review of Selected Literature

Introduction

Mathematical competence came from understanding mathematical relationships. Simply memorizing rules and procedures was not enough to have competency in mathematics (Parker, 2008). Children needed a deep understanding of mathematical relationships so that they could recognize those relationships and use them to make sense of information, situations, and problems encountered in everyday lives. When children were taught standard paper and pencil algorithms learning mathematics was about memorizing recipes that did not always make sense to them. Students who were solely taught in this manner did not learn to reason with numbers and became discouraged. Students who were taught to reason with numbers knew mathematics relationships. Once these relationships were understood, students could be confident in explaining known answers that were correct and made sense.

Number Talks encouraged the use of non-algorithmic strategies that promoted thinking among students and emphasized conceptual understanding (Yang, 2003). *Number Talks* provided students the ability to work with computation in a variety of ways. During *Number Talks,* the teacher presented various problems to groups of children and asked them to share the process they used to figure out the answer (Young, 2005). *Number Talks* were conducted with the whole class or in small groups. The students choose if they would like to share and the teacher, for later reference, recorded their strategies in writing. Mathematical problems were tailored for the specific needs of the group. The goal of *Number Talks* was for students to consistently use efficient strategies to achieve higher mathematical performance. There were a variety of ways to arrive at the same answer. In traditional algorithmic teaching there was only one method used to achieve the answer, but students needed to know that different ways of working a problem were meaningful and that all strategies to get the answer were correct (Kerka, 1995).

> Number sense refers to a person's general understanding of numbers and operations and the ability to handle daily life situations that include numbers. This includes the ability to develop useful, flexible, and efficient strategies (i.e., mental computation or estimation) for handling numerical problems. (Griffin, 2004, p. 40)

Number sense was an important factor in *Number Talks*. Students' reasoning of relationships that they encountered in mathematics fostered the development of number sense.

A review of literature was conducted to discover the research that had been conducted to support the use of *Number Talks* in the classroom. After extensive searching there proved to be no research at this time on the use of *Number Talks*.

Because one of the key components of *Number Talks* was mental mathematics, research on this topic was conducted.

Number Sense

Number sense was a set of conceptual relationships between quantities and numerical symbols. Students discovered and constructed relationships between quantities and numbers. Number sense required examining a variety of ways of describing and recording the relationships among numbers. Number sense did not solely include the memorization of rules and the application of those rules or algorithms.

Scientifically-based research conducted by Dehaene (1997) had shown that children in kindergarten who learned to link numbers and quantities had strong number sense as compared to those who had only learned the algorithmic rules. To achieve a higher level of number sense, children needed to create relationships among the actual quantities existing in space and time, the counting numbers in the spoken language, and formal symbols in written form. Number sense developed beginning at the infant stage and continued to progress as children aged. At age five or six, children began the conceptual understanding of number sense by being able to make connections between numbers and quantities without counting objects. At ages seven or eight, children began to understand distinct quantities of time, money, tens and ones in mathematics, place value, and to resolve double-digit mathematics problems mentally. By the age of nine or ten, students had an increased understanding of the number system and were able to perform double-digit mental computations involving borrowing and carrying, and solving arithmetic problems with triple-digit numbers. Students who did not acquire the core concepts of number sense by age five or six experienced delays and encountered difficulties achieving grade level expectations. To achieve high levels of number sense, students received rich mathematics activities for making connections, for exploring and discussing mathematics concepts, and for understanding appropriate sequences of mathematics concepts.

In a research study conducted by Der-Ching Yang (2003) on teaching and learning number sense, Yang concluded that there was significance among students that were taught number sense activities. Her study researched two classes in Taiwan, one taught using number sense activities and the control class taught using a standard mathematics curriculum. Results of a pre and post *t*-test indicated that there was significance at a 0.01 level. There was a forty-four percent increase in the experimental group as compared to the ten percent increase experienced by the control group.

Mental Mathematics

Adults and children continually were engaged in mental mathematics, be it at the grocery store, determining time or distance, and cooking. Mental computation was a valuable life skill. Mental mathematics was mathematics that was done in the mind and did not include using pencil and paper.

Marilyn Burns (2007) stated that mental mathematics could have a regular role in classroom instruction. Solving mental mathematics problems could be a class effort. Students shared their strategies while the teacher recorded them on the board. Even if students shared the same strategy, it provided students the opportunity to verbally explain their thinking. Recording by the teacher also provided the teacher the ability to model for the students the proper way to represent mathematical thinking. There were many benefits of having mathematical competence with mental mathematics. Mental mathematics was used on a daily basis; it facilitated the learning of other mathematical topics, and it provided students with quick and accurate strategies for real world mathematical situations, made students more flexible thinkers, and more able to use multiple approaches to problem solving (Rubenstein, 2001). Mental mathematics activities in the classroom provided a form of informal assessment for the teacher.

Students drew on a range of formal and informal strategies when doing mental mathematics. In a research study of mental mathematics conducted by Rosemary Callingham (2005), she concluded that there was significant growth when students were taught mathematical computation strategies. Callingham's study researched four classes in New England ranging from third to sixth grade during a four-month period. Results were determined using a pre and post exam. Instruction was given using the students' regular curriculum that had a strong emphasis on mental computation. Results from a t-test concluded that there was significance at a 0.001 level. Students at all grade levels had an increased variety of strategies at their dispose to arrive at a solution. Students clearly articulated their strategies and also gave alternate strategies as well.

Alternative Algorithmic Procedures and Mathematical Reasoning

Dr. Ruth Parker stated that students who reasoned with numbers in their own way had a tendency to gravitate towards the most efficient procedure that consistently worked over time (Akers-Mitchell, Heinenmann, & Parker, 2006). There were a variety of diverse algorithms, or procedures, for solving a particular type of computation problem. Two concerns that she stated with teaching standard paper and pencil algorithms were that they often obscured place value relationships, and they could interfere with the development of children's ability to reason with numbers. Students who had developed a diverse understanding for solving mathematical problems understood the relationships of numbers and did not have to memorize recipes to arrive at the correct answer. With a strong understanding of numbers and how algorithms work students were able to have accurate mathematical understanding on the reasonableness of a mathematical answer.

Ada Boufi and Frosso Skaftrourou conducted a study of fifth grade students to assess how easily they could go from using formal algorithms to semi-informal algorithms. Students had been taught using formal algorithms for multiplication and division in their previous schooling. Boufi and Skaftourou's research concluded that when a standard formal algorithm approach to mathematics was taught before students had an opportunity to explore semi-informal algorithms, students were less likely to develop multiplicative reasoning (Boufi & Skaftrourou, 2004). This research supported Dr. Ruth Parker's concerns of students not being able to quickly reason with numbers when formal algorithms were introduced too soon in their mathematical development.

Mathematical reasoning occurred when students made public conjectures and reasoned with others about mathematical ideas and concepts. The creation and use of alternative algorithms must be accompanied by the students' reasoning of why a strategy worked. Students verbally explaining their reasoning led to increased student mathematical knowledge and understanding in two ways. First, teachers and other students listened to the students' reasoning to monitor student mathematical thinking. Second, the act of sharing helped students develop improved understanding by describing, explaining, and justifying one's thinking. Students were allowed to correct mathematical misconceptions (Franke, Webb, Chan, Battey, & Ing, 2007).

Summary

Number sense, mental mathematics, alternative algorithmic procedures, and mathematical reasoning were all mathematical concepts that embodied a well-rounded mathematical curriculum. Both strategies, *Investigations; Today's*

Number and *Mathematics Education Collaborative Number Talks,* provided students with the opportunity to use these concepts. The memorization of standard algorithms did not provide opportunities for mathematical reasoning. Due to the elementary school's low achievement scores, it was imperative to assess the effectiveness of these programs on the mathematical computation skills of second grade students.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The purpose of the research study was to assess the effectiveness of two second grade mathematical programs in the teaching of mathematical computation skills. The programs were *Mathematics Education Collaborative Number Talks* and *Investigations; Today's Number.* For three months two groups of students were taught using one of the before mentioned programs. Mathematical computational growth was assessed with teacher-created pre and post assessments. Data from the assessments was used to create a t-test to prove significance in the programs.

Methodology

The methodology used for this study was quantitative research. Quantitative research was defined in the text *Educational Research: Competencies for Analysis and Applications*, by Gay, Mills, and Airasian, as "the collection of numerical data in order to explain, predict and/or control phenomena of interest" (Gay, Mills, & Airasian, 2006, p. 600).

Participants

Participants in the study were twenty-one second grade students who were taught by the same teacher. Students ranged from seven to eight years of age. The students were all of Hispanic descent. Twenty-one students, thirteen girls and eleven boys, were divided into two groups at random.

Instruments

The instrument that was used was a teacher-created pre and post written assessment that assessed student computational strategies. The assessments were assessed using a four point rubric (4: Advanced, 3: Proficient, 2: Nearing proficient, and 1: Needs improvement). Rubrics were also created by the teacher. The effectiveness of computation strategies was determined by comparing computation achievement of the two groups as measured by a pre and post assessment. Students were pre-tested in January and completed a post-test at the end of April. A *t*-test was conducted on the results to determine significance.

There were no previously created standardized assessments for the programs. Although the research study had merit in the assessment of students' computational strategies, the reliability of the assessments and rubrics needed to have been measured over time.

Design

The design used in this study was a pre-test/post-test. The design was selected to determine significance of the programs with the use of a *t*-test.

Procedure

At the beginning of the study the students were given a pre-test. Students were randomly put into two groups, with special consideration to having an equal amount of boys and girls. Groups were kept throughout the study. One group was taught using *Mathematics Education Collaborative Number Talks* and the other using *Investigations; Today's Number.* Instruction was first given to students who received *Investigations; Today's Number*. While the *Today's Number* group worked independently, the teacher worked with the students who received *Mathematics Education Collaborative Number Talks* using a document camera. Students received instruction from the same teacher four days a week. Instructional time ranged from ten to fifteen minutes. At the end of the study students were given a post-test and a *t*-test was done on the results.

Treatment of the Data

The data was determined from the results of the pre/post assessments. The data was then used to produce a Statpak generated t-test for a nonindependent sample.

Summary

Twenty-one second grade students were divided into two groups using one of two mathematical programs, *Mathematics Education Collaborative Number Talks* or *Investigations; Today's Number*. Research was conducted from January through April, four days a week for ten to fifteen minutes. The quantitative research was collected with the use of a written pre and post assessment. A Statpak generated *t*-test was conducted on the results to determine significance.

CHAPTER 4

Analysis of the Data

Introduction

The Office of Superintendent of Public Instruction documented that the Washington Assessment of Student Learning mathematics scores for this elementary school were below 24.4 percent for the past four years. Due to the elementary school not meeting Annual Yearly Progress for the 2004 to 2008 school years, this study was conducted to assess which mathematics computation instruction was most effective.

Description of the Environment

Participants were taught using either *Investigations; Today's Number* or *Mathematics Education Collaborative Number Talks*. Participants in the study were second grade students who were taught by the same teacher. Twenty-one second grade students were divided into two groups at random and taught using one of the programs. The populations of students were all of Hispanic descent. Materials used for teaching *Investigations; Today's Number* were paper, pencils, and a white board. Materials used for teaching *Mathematics Education Collaborative Number Talks* were a document camera, projector, and pen and paper for the teacher only.

Hypothesis

Second grade students receiving *Mathematics Education Collaborative Number Talks* instruction made greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .05 level of specification.

Null Hypothesis

Second grade students receiving *Mathematics Education Collaborative Number Talks* instruction did not make greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .05 level of specification.

Results of the Study

The analysis of the data concluded that *Mathematics Education Collaborative Number Talks* instruction made greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .02 level of specification.

Table 1.

Mathematics Education Collaborative Number Talks Assessment Results

	N	M	SD
Pre Assessment	11	2.36	0.98
Post Assessment	11	3.55	0.89

df= 10 t= 2.95 p < .02

The results indicated that *Mathematics Education Collaborative Number Talks* instruction was significant in the mathematical computational skills of second grade students.

The analysis of the data for *Investigations; Today's Number* instruction concluded that there was significance at a .05 specification as measured by a pre/post *t*-test.

Table 2.

Investigations; Today's Number Assessment Results

	N	M	SD
Pre Assessment	10	2.50	1.12
Post Assessment	10	3.30	0.90

df= 9 t= 2.45 $p < .05$

The results indicated that *Investigations; Today's Number* instruction was also significant in the mathematical computational skills of second grade students.

Findings

Mathematics Education Collaborative Number Talks made a higher than expected growth above the .05 level of specification as first theorized in the hypothesis. This proved that there was significance in the use of this method for the teaching and learning of mathematical computation skills in second grade students. *Mathematics Education Collaborative Number Talks* proved to have greater significance (df= 10, t= 2.95, p < .02) than *Investigations; Today's Number (*df= 9, t= 2.45, p < .05).

<u>Discussion</u>

Research studies conducted by Der-Ching Yang (2003) and Callingham (2005) concluded that teaching and learning number sense and mathematical computation strategies would have significance at a 0.01 level as results of a pre and post *t*-test. As a result of the pre and post *t*-test of this study it was proven that there was significance in the use of *Mathematics Education Collaborative Number Talks at a 0.02 level.* This demonstrated that it was a better program for teaching mathematical computation and number sense strategies compared to *Investigations; Today's Number*, which although a significant program, demonstrated significance at a lower 0.05 level.

<u>Summary</u>

Due to the elementary school not meeting Annual Yearly Progress for the 2004 to 2008 school years, this study was conducted to assess which mathematics computation instruction was most effective, *Mathematics Education Collaborative Number Talks* or *Investigations; Today's Number.* Participants in the study were second grade students who were taught by the same teacher. Twenty-one second grade students were divided into two groups at random and taught using one of the programs. The analysis of the data concluded that *Mathematics Education Collaborative Number Talks* instruction made greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .02 level of specification, which supported the author's hypotheses.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

The purpose of this project was to investigate the effectiveness of *Investigations; Today's Number* and *Mathematics Education Collaborative Number Talks* on mathematics computation skills of second grade students.

Summary

Investigations; Today's Number and *Mathematics Education Collaborative Number Talks* provided students with the opportunity to use number sense, mental mathematics, and mathematical reasoning. The memorization of standard algorithms did not provide opportunities for mathematical reasoning. Due to the elementary school's low achievement scores, it was imperative to assess the effectiveness of these programs on the mathematical computation skills of second grade students.

Twenty-one second grade students were divided into two groups using one of two mathematical programs, *Mathematics Education Collaborative Number Talks* or *Investigations; Today's Number.* Research was conducted from January through April, four days a week for ten to fifteen minutes. The quantitative research was collected with the use of a written pre and post assessment. A Statpak generated *t*-test was conducted on the results to determine significance.

The analysis of the data concluded that *Mathematics Education Collaborative Number Talks* instruction made greater than expected growth in mathematics computation as measured by a pre/post *t*-test at a .02 level of specification, which supported the author's hypotheses.

Conclusions

Based on the reviews of selected literature in chapter 2, number sense, mental mathematics, alternative algorithmic procedures, and mathematical reasoning were all mathematical concepts that embodied a well-rounded mathematical curriculum. Both strategies, *Investigations; Today's Number* and *Mathematics Education Collaborative Number Talks,* provided students with the opportunity to use these concepts. The results of pre/post *t*-tests on the assessments for both teaching strategies concluded that both strategies were significant, but the *Mathematics Education Collaborative Number Talks* had more significance at a 0.02 level compared to *Investigations; Today's Number's* 0.05 level of significance. Therefore, *Mathematics Education Collaborative Number Talks* was better at teaching mathematical computation skills and proved the author's hypotheses to be accurate.

Recommendations

Mathematics Education Collaborative Number Talks is a strategy that can be used with established mathematical programs to create a well-rounded mathematical curriculum. The author recommends that this study be duplicated to assure accuracy and consistency of the data. In addition, two different teachers who are using the strategy could provide a more detailed assessment of how significant that strategy is at teaching mathematical computation.

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APPENDICES

Investigations; Today's Number Assessment

Name: ______________________ Date:______________________

Objective: Know addition and subtraction number combinations	Assessment Master 1: Today's Number

1. Write at least 8 number sentences that equal 27.

Assessment Master 1: Today's Number

Investigations; Today's Number Rubric

Name: ______________________ Date:______________________

Task 1 – Assessment Master 1: Today's Number

Objective: Know addition and subtraction number combinations

4: Advanced	None of the equations are incorrect. At least four of the number sentences generated use 1 or more of the following: More than two addends Variety of operations (2X5=10, 15-5=10) Multiple operations within a number sentence (10+5-5=10)
3: Proficient	Generates at least 8 different and correct number sentences.
2: Nearing Proficient	Generates 6-7 different and correct number sentences.
1: Needs Improvement	Generates 5 or less different and correct number sentences.

Assessment Master 1: Today's Number

Mathematics Education Collaborative Number Talks Assessment

Name: ____________________Date:_____________________

Objective: Refine strategies for solving addition/subtraction and comparing problems. Communicate mathematical thinking through written and spoken language using numbers, words, and pictures.	Assessment Master 2: Number Talks

1. Solve this number-string problem in at least 3 ways and show your thinking:

$$6+7+5+6+3$$

Assessment Master 2: Number Talks

Mathematics Education Collaborative Number Talks Rubric

Name: ______________________ Date:______________________

Task 2 – Assessment Master 2: Number Talks

Objective: Refine strategies for solving addition/subtraction and comparing problems. Communicate mathematical thinking through written and spoken language using numbers, words, and pictures.

4: Advanced	None of the equations and work is incorrect. Students' thinking is clear and work demonstrates the order of their thinking using numbers, words, or pictures. Student flexibly combines numbers to solve the task. Student uses more than one strategy for all of the problems to arrive at the answer. (Combinations of 10, doubles, or near doubles)
3: Proficient	Student flexibly combines numbers to solve the task. Student uses more than one strategy that leads to a correct solution on the problem for 2 of the problems. (Combinations of 10, doubles, or near doubles, showing movement on the hundreds chart, counting up)
2: Nearing Proficient	Student's answers are incorrect for two of the problems, but reasonable. (Computational error) Student uses only counting strategies to solve the task.
1: Needs Improvement	All answers are incorrect and unreasonable No evidence of a strategy for solving the problem.

Assessment Master 2: Number Talks

Mathematics Education Collaborative Number Talks Scores

Student	Pre	Post
1	3	4
2	3	4
3	4	4
4	3	4
5	3	4
6	1	4
7	1	4
8	2	3
9	2	1
10	3	3
11	1	4

Investigations; Today's Number Scores

Student	Pre	Post
1	3	3
2	1	3
3	3	4
4	3	4
5	1	1
6	4	4
7	4	3
8	3	4
9	2	4
10	1	3

Table 1. *Mathematics Education Collaborative Number Talks* Results

	N	M	SD
Number Talks Pre Assessment	11	2.36	0.98
Number Talks Post Assessment	11	3.55	0.89

df= 10 t= 2.95 p < .02

Table 2. *Investigations; Today's Number* Results

	N	M	SD
Today's Number Pre Assessment	10	2.50	1.12
Today's Number Post Assessment	10	3.30	0.90

df= 9 t= 2.45 p < .05