

Difference

2
63
57
34
44
40
53
42
34
66
55
41
82

613

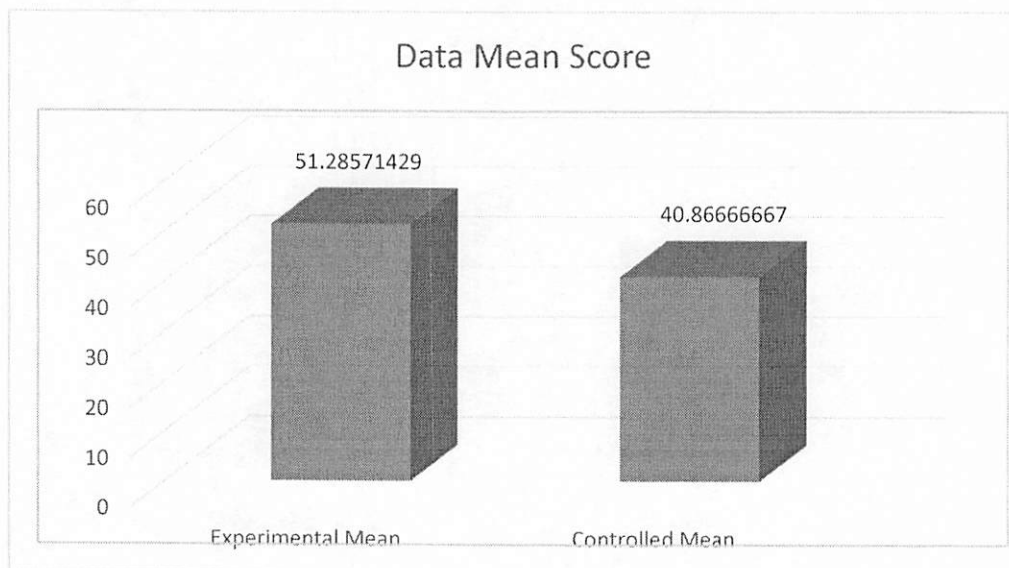
40.866667



My Data Spreadsheet: i-Ready Scores

Experimental	Pre	Post	Difference	Controlled Group	Pre	Post
student 1	317	380	63	student 1	382	384
student 2	319	357	38	student 2	342	405
student 3	351	416	65	student 3	332	389
student 4	349	415	66	student 4	329	363
student 5	414	419	5	student 5	341	385
student 6	385	426	41	student 6	381	421
student 7	351	382	31	student 7	350	403
student 8	349	427	78	student 8	382	424
student 9	374	395	21	student 9	393	427
student 10	347	417	70	student 10	366	432
student 11	341	411	70	student 11	390	445
student 12	385	438	53	student 12	358	399
student 13	350	419	69	student 13	376	458
student 14	394	442	48			
Totals All	5026	5744	718	Totals All	4722	5335
Mean All			51.285714	Mean All		

Experimental Mean Controlled Mean
 51.28571429 40.866667



t - TEST FOR INDEPENDENT SAMPLES

Statistic	Values	Group X	Group Y
No. of Scores in Group X	14	50	
Sum of Scores in Group X	718.00	41	
Mean of Group X	51.29	31	
Sum of Squared Scores in Group X	42860.00	78	
SS of Group X	6036.86	21	
No. of Scores in Group Y	13	70	
Sum of Scores in Group Y	613.00	70	
Mean of Group Y	47.15	53	
Sum of Squared Scores in Group Y	33429.00	69	
SS of Group Y	4523.69	48	
t - Value	0.52		34
Degrees of freedom	25		44
			40
			53
			42
			34
			66
			55
			41
			82

Enter Score

Calculate

Clear Scores

Print

Main Menu

Smit, Jantien (2013) A Conceptualization of Whole-Class Scaffolding. Vol:39
Iss:5 Pg:817-834

Star, Jon R., and Kari Kokka. 2013. Using Strategic Interruptions to Effectively Integrate Whole Class and Small Group Instruction in Mathematics. The Mathematics Educator 14, no. 1 & 2: 1-20.

Webb, Noreen (1984). Journal of educational psychology. Vol:76 Iss:2 Pg: 211-224

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<https://www.amle.org/BrowsebyTopic/WhatsNew/WNDet/TabId/270/ArtMID/888/ArticleID/286/Formative-and-Summative-Assessments-in-the-Classroom.aspx>

<http://web.b.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=9ae1d3a7-ed3c-4e42-98d1-950f537592da%40sessionmgr198&vid=1&hid=123>

<https://campustechnology.com/Articles/2011/02/23/Assessment-Beyond-The-Paper.aspx?Page=2>

http://www.mlive.com/news/grand-rapids/index.ssf/2015/03/how_online_iready_program_is_i.html

<https://www.nwea.org/assessments/map/>

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- Public Law 07-110 107th Congress an Act. (2002) pg. 15
<http://www2.ed.gov/policy/elsec/leg/esea02/107-110.pdf>

All 27 students took the i-Ready test three times, at the beginning, middle and end of the school year. The i-Ready test was used to show growth to determine if the hypothesis could be accepted or rejected.

Conclusions

After conducting the study, gathering data, and evaluating the implications, the data did not support my hypothesis. Both groups made gains on their i-Ready math test but neither class made significantly higher gains than the other. After giving a survey to 15 teachers, nine of them reported that they felt that students were more focused in small groups and 12 out of the 15 strongly agreed or agreed that they were more confident when teaching in small groups.

Recommendations

Recommendations for future studies with wanting to know if small group instruction is more beneficial than whole group instruction would be that the study needs more time. This study was done in one school year. To get a more accurate assessment I would follow those same students over the next couple of years to see if the students that received small group instruction made more growth. Also throughout the project students moved. If I were to do this study again I might use four classes. Two that taught in small groups and two that taught in whole group. This might give me a more accurate assessment.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

This chapter has been organized around the following topic: (a) introduction, (b) summary, (c) conclusions, (d) recommendations.

Summary

A representative from the Office of Superintendent of Public Instruction (OSPI) was assigned to Kent School District to facilitate changes that impacted positive student growth in both reading and math using the i-Ready. At Scenic Hill Elementary the first grade students were given the i-Ready test for math. This study helped determine if students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math.

The research was done with 27 first grade students. 14 of the students received small group instruction in math during core math time and 13 of the students received whole group instruction during core math time.

The hypothesis was that students who received small group instruction in math would have equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math.

study students in whole-class scored higher in mathematics computation than control group students taught within their class ability group.

Summary

This chapter was designed to analyze the data and identify the findings. From the data, the hypothesis was not supported and the null hypothesis was accepted.

Findings

Given the analysis of the data and the testing of the null hypothesis a limited number of findings become apparent. The mean score was 51.29 making it not significant. Reasons for this were student's short duration of project and student class composition was different. Therefore, students who received small group instruction in math did not have equal to significantly higher test scores on the i-Ready test than students who received whole group instruction in math. The null hypothesis was accepted, so hypothesis was not supported.

Discussion

The results showed that students who received small group instruction in math did not score significantly higher than students who received whole group instruction on the i-Ready test. In chapter 2 one of the articles that was cited said, Elementary teachers' understanding of mathematics was a huge contributor to students' success. Beginning in the early 1900s, the National Science Foundation funded several curriculum development projects that supported teachers in focusing on student thinking and teaching for understanding. (Cengiz, Kline, and Grant, 2011) According to the article, most of whole-group discussion time was devoted to sharing of solution methods and ideas. Extending student thinking was one of the most challenging aspects of whole-group discussion. According to that

To the statement “My student’s value having my attention during math instruction.” Eight teachers strongly agreed to the statement while six teachers agreed. There was one teacher who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.35.

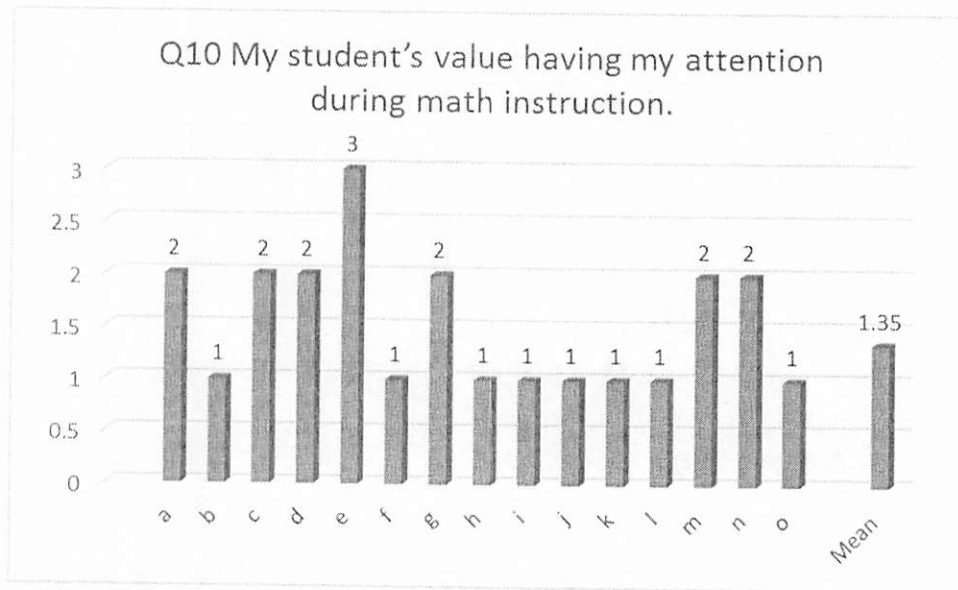


Figure 10

To the statement “Students are focused during small group instruction.” Four teachers strongly agreed to the statement while nine teachers agreed. There was two teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.65.

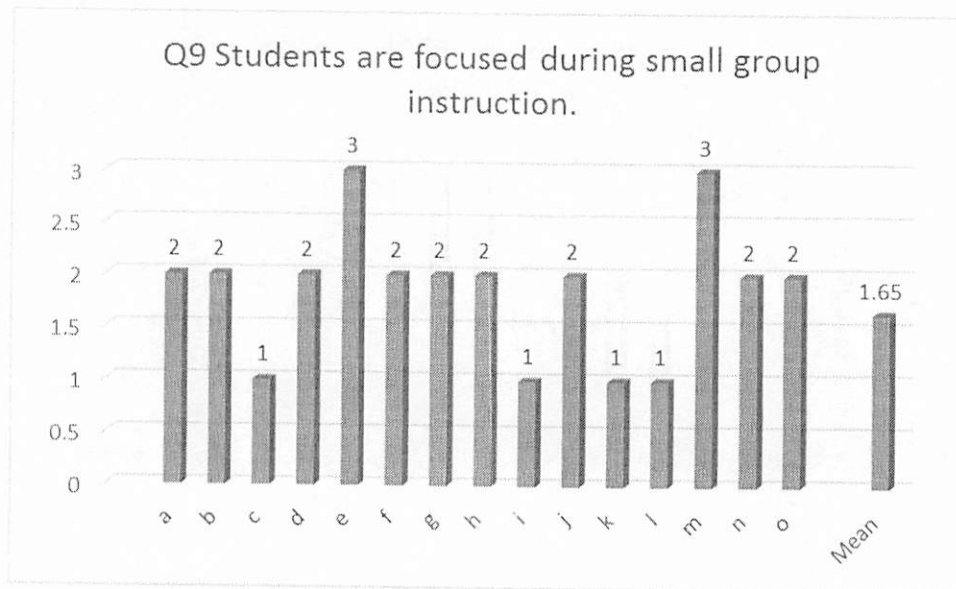


Figure 9

To the statement “Students are focused during whole group instruction.” No teachers strongly agreed to the statement while 6 teachers agreed. There was nine teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 2.29.

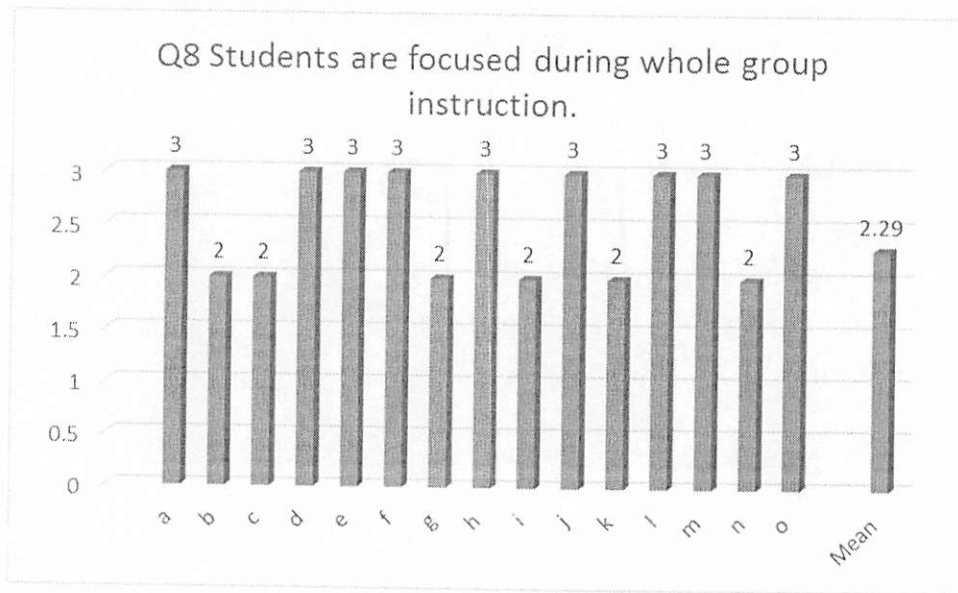


Figure 8

To the statement “I feel more confident in small group instruction.” Five teachers strongly agreed to the statement while seven teachers agreed. There was three teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.65.

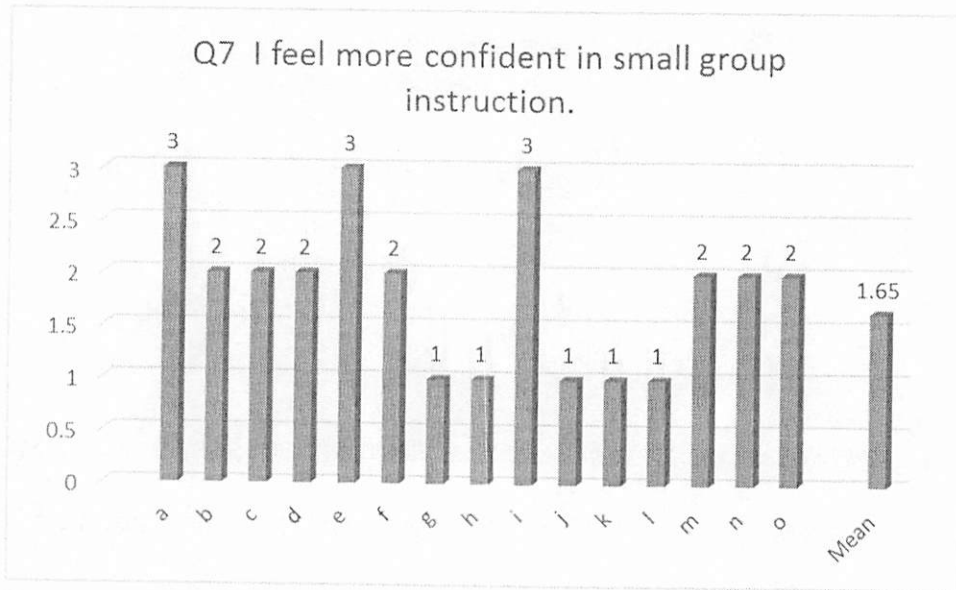


Figure 7

To the statement “I feel more confident in whole group instruction.” One teacher strongly agreed to the statement while seven teachers agreed. There was seven teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 2.12.

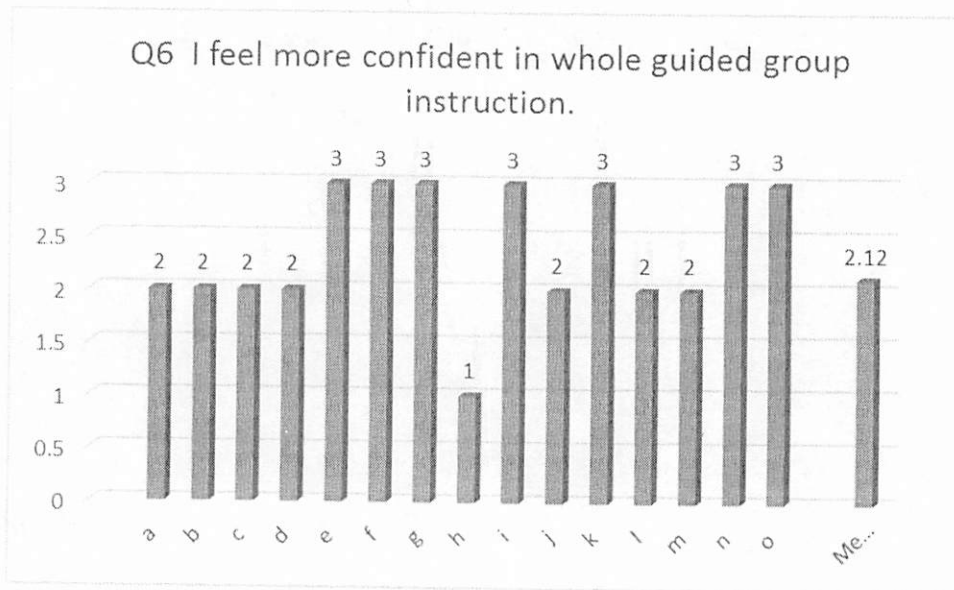


Figure 6

To the statement “A mix of whole group instruction and small group instruction is best to meet the individual math needs of my students.” Eight teachers strongly agreed to the statement while five teachers agreed. There was two teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.41.

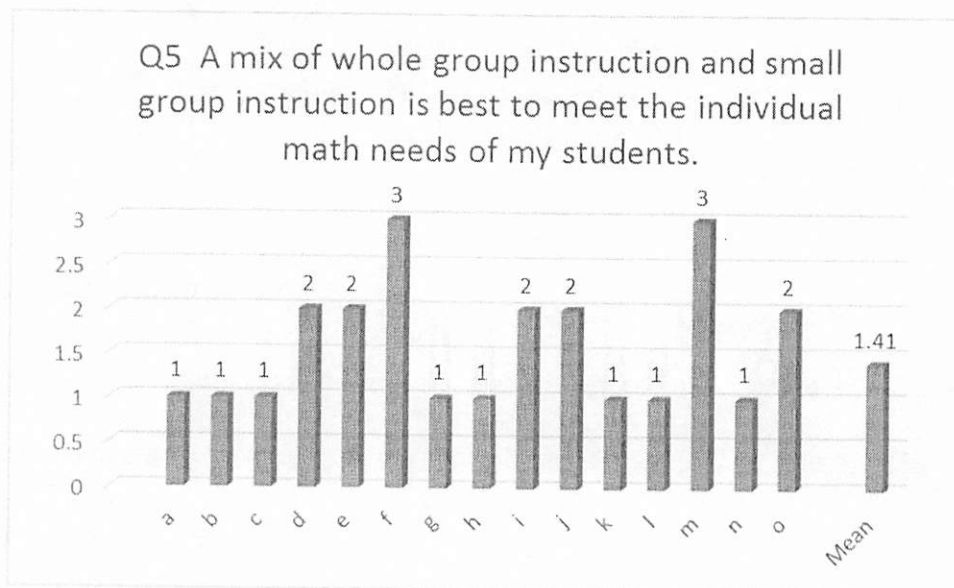


Figure 5

To the statement “A group size of five in small group instruction would be ideal.” Six teachers strongly agreed to the statement while five teachers agreed. There was four teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.65.

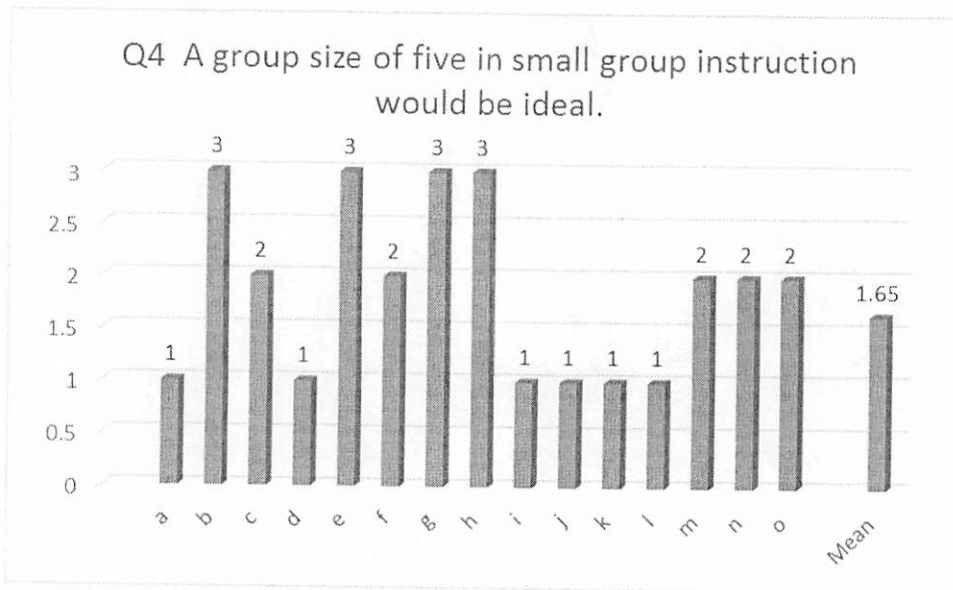


Figure 4

To the statement “Whole group instruction is best to meet the individual needs of my students.” No teachers strongly agreed to the statement while no teachers agreed. There was seven teachers who disagreed and eight teachers who strongly disagreed to the statement. The mean score was 3.12.

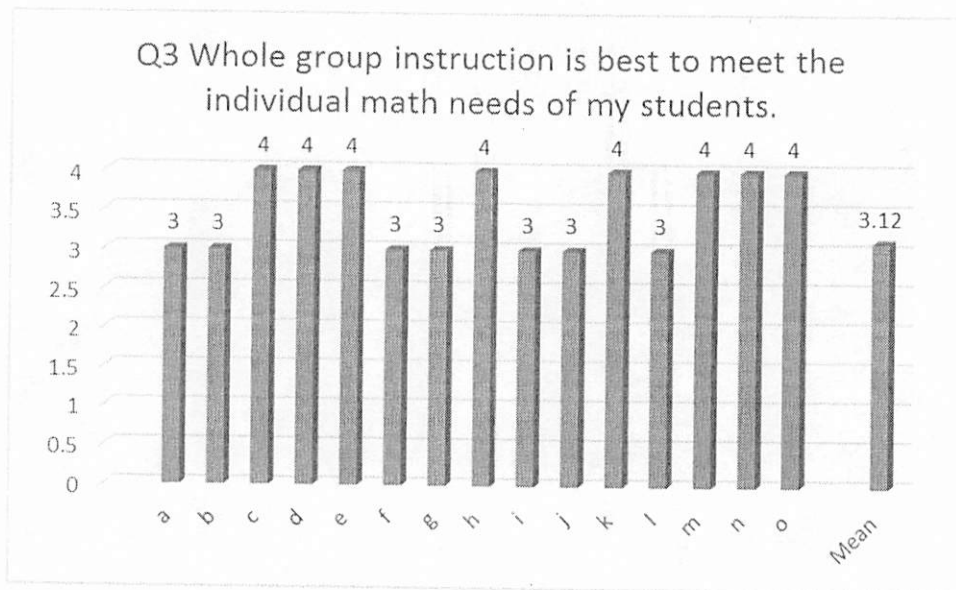


Figure 3

To the statement “I primarily use small group instruction for math interventions.” Two teachers strongly agreed to the statement while eight teachers agreed. There was five teachers who disagreed and no teachers who strongly disagreed to the statement. The mean score was 1.94.

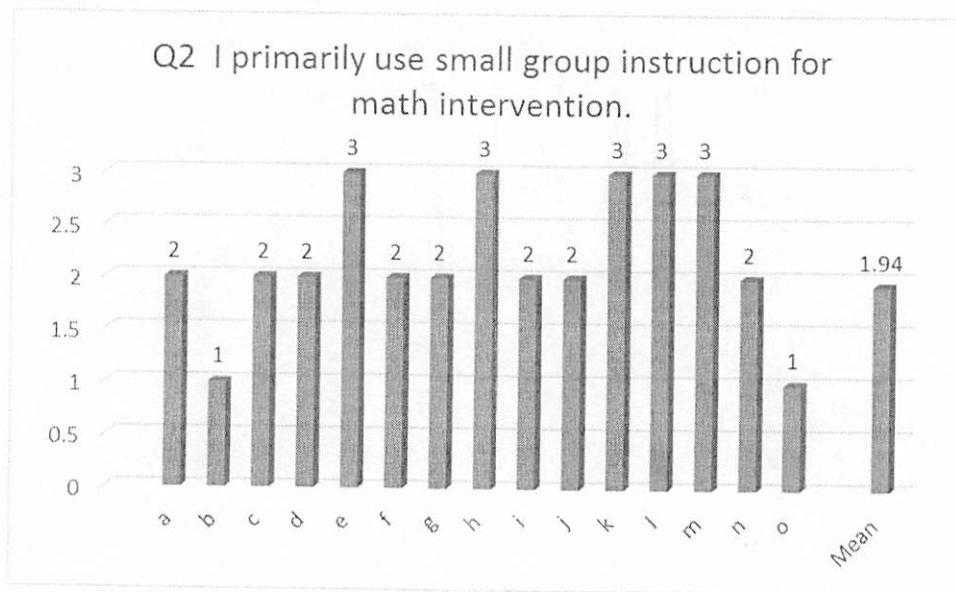


Figure 2

A survey to answer the hypothesis “Teacher will report their preference in whole group and small group instruction in math” was conducted. Graphs were developed to visually display the data.

To the statement “I primarily use whole group instruction to meet the math needs of my students.” One teacher strongly agreed to the statement while three teachers agreed. There was ten teachers who disagreed and one teacher who strongly disagreed to the statement. The mean score was 2.41.

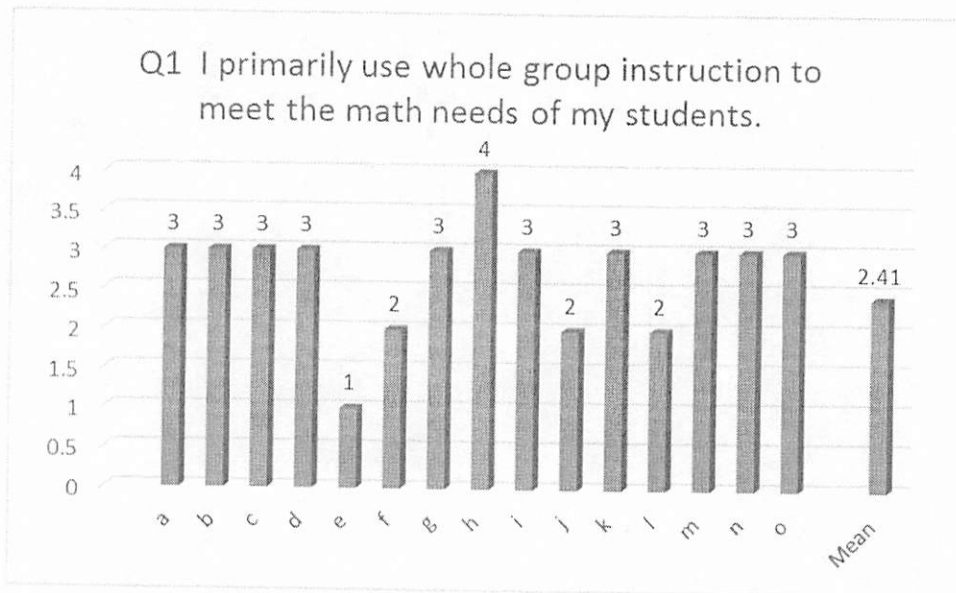


Figure 1

The mean scores for the t-Test showed (no) growth between the pre and post scores. This was consistent with the t-Test results. The mean score of the Experimental group was 51.3 and the mean score of the Controlled group was 40.9.

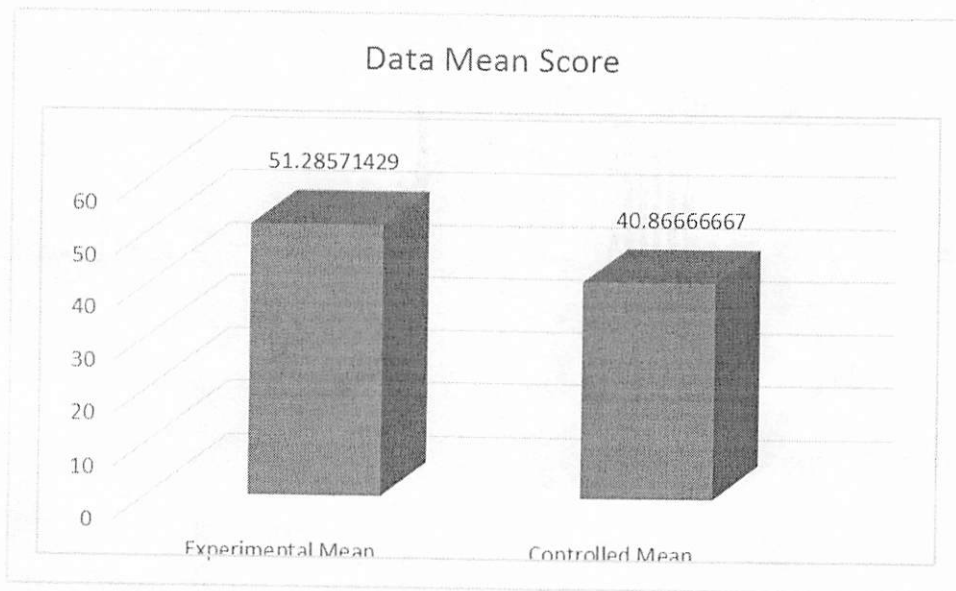


Figure A

Null Hypothesis

Students who receive small group instruction in math will not have equal to significantly higher scores on the i-Ready test than students who receive whole group instruction in math. Teacher will not report their preference in whole group and small group instruction in math.

Results of the Study

Using the statistical calculator program StatPak, a statistical t-Test, was performed to determine whether there was significance at the $p=.05$ confidence level. To determine significance of the hypothesis students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math, the researcher used an independent t-Test.

The results of the independent t-Test showed the number of scores for group X was 14, the mean score was 51.29 while the number of scores for group Y was 13 with mean score of 13. The t-value was .52 with a degree of freedom of 25. To show significance of $P=.05$ a t-value of 2.060 was required. The results of this study showed a t-value of .52 with a degrees of freedom of 25. Therefore the independent t-Test showed that the null hypothesis could be rejected and the hypothesis could not be supported.

CHAPTER 4

Analysis of the Data

Introduction

Chapter 4 has been organized around the following topics: (a) description of environment, (b) hypothesis, (c) results of the study, (d) findings, and (e) summary.

Description of the Environment

This project was delimited to two first grade classes at Scenic Hill Elementary School in the Kent School District, located in Kent. The project was conducted during the 2015-2016 school year. At the end of the study there were 14 students in the experimental group, 9 were male and 5 were female. In the controlled group there were 13 students at the end, nine were male and four were female. The test that was administrated was the i-Ready test.

Hypothesis

Students who receive small group instruction in math will have equal to significantly higher scores on the i-Ready test than students who receive whole group instruction in math. Teachers will report their preference in whole group and small group instruction in math.

Summary

This chapter was designed to review the methodology and treatment of data related to the study to determine if students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math. The analysis of data and findings from this study are reported in Chapter 4.

The data from the pre and post assessments and the survey were entered into an Excel program. Results were calculated and graphs were created. The difference between the pre and post assessments were entered into the statistical calculator. The answers from the 10 question survey were tallied and entered into an Excel spreadsheet. The survey was then analyzed. Results from the study were evaluated and the findings were shared with the teachers and administrators at Scenic Hill Elementary.

Treatment of Data

The researcher gathered the data from the survey and examined the results using the Microsoft Excel program. The responses from the survey were on a scale of Strongly Agree, Agree, Disagree, and Strongly Disagree. All information from the survey was represented in an Excel spreadsheet where the information was tabulated and graphs were made.

The pre and post-test from the i-Ready were gathered, tabulated, and examined using Microsoft Excel Program. Statpak was used to perform a statistical analysis of the results. Excel was used to find the mean of the pre and post-tests and develop graphs.

Procedure

The researcher wanted to determine if students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math.

The researcher first received permission from the principal at Scenic Hill Elementary. A review of selected literature was conducted at Kent School District, Heritage University, and various search engines. The researcher gathered data on both groups of students in September 2015 by giving the i-Ready pre-test on first grade math standards. Based on the results of the i-Ready test the researcher divided the students into small groups for core math instruction. The students received small group instruction, the researcher worked on first grade math standards. The other group received whole group core math instruction on first grade math standards. All first grade students were given the same i-Ready test again in January 2016. Based on those results the researcher divided the students into different small groups for core math instruction. The students in the other class continued to receive whole group instruction during core math time. All first graders were then given the same i-Ready standards based test as a post-test in June 2016.

was Strongly Agree, Agree, Disagree, and Strongly Disagree. This 10 question was given to teachers at Scenic Hill Elementary at the end of the study.

The i-Ready test was a standardized instrument therefore it should have had limited validity and reliability issues. The researcher utilized spreadsheet data collection to insure accuracy. Statpak was recognized as a statistical calculator limiting the validity and reliability issues. The researcher tried to control the setting of the survey to control validity issues.

Design

Within each method in the research studied, there were a variety of designs. In an experimental study the researcher used a pre-test and a post-test. The designed used data from the i-Ready pre-test and post-test in math. The purpose of this was to determine if students who received small group instruction in math had equal to significantly higher scores on the i-ready test than students who received whole group instruction in math.

The researcher prepared a survey that 15 teachers from Scenic Hill Elementary took at the end of the study. The scale used was Strongly Agree, Agree, Disagree, and Strongly Disagree. This survey showed the teachers preferred small group vs. whole group instruction for math. The group of 27 first graders who participated in the study were not chosen at random.

students there were nine students that were ELL. In the controlled group there were 13 students at the end of the study, nine were male and four were female. In that group there were five students that were ELL. 53% of students had passed the math i-ready. Scenic Hill had an enrollment of 625 students in the fall count of 2015. The ethnicity of Scenic Hill Elementary was White: 20.5%, Hispanic: 42.1%, American Indians/Alaskan Native: 0.3%, African American: 17.3%, Asian: 6.4%, Native Hawaiian/Other Pacific Islander: 2.1%, and Multi-racial: 11.3%. Free and reduced lunch was 84.5% Special Education 11.2%, Bilingual ELL 43.8%. There were 42 classroom teacher, of which 64.3% had their master's degree. However 100% of the teachers were highly qualified. (Office of Superintendent of Public Instruction 2014)

Instruments

The data gathering devices that were used were a survey and the i-Ready pre and post math assessment. Once the data was collected, the researcher recorded the data into a spreadsheet program, Excel. Excel was used to create graphs and charts to illustrate the data. Statpak was the statistical calculator used to determine significance of the data results. A survey was designed to determine the teacher's preference on small group vs. whole group instruction for math. The scale used

educational setting. Quasi-Experimental is research that is conducted with an assignment of an entire classroom instead of assigned individual students and has less control of variables.

In a True Experimental Design the research involved participants who were randomly selected and randomly assigned to a treatment and controlled group. The external and internal variable was also controlled. The researcher chose to use the Quasi-Experimental design because it best meets the research.

The collected data was entered into a statistical calculator (StatPak) and a t-test. The results of the t-test were then compared to distribution of t table to ascertain if the treatment did provide a significant change in lesson delivery.

Participants

This project was delimited to two first grade classes at Scenic Hill Elementary School in the Kent School District, located in Kent. The project was conducted during the 2015-2016 school year. At the start of the study there were 16 students in the experimental group, nine were male and seven were female. In that group of students there were ten students that were ELL. In the start of the study in the controlled group there were 16 students, ten were male and six were female. In that group six students were ELL. At the end of the study there were 14 students in the experimental group, nine were male and five were female. In that group of

CHAPTER 3

Methodology and Treatment of the Data

Introduction

This chapter has been organized around the following topics: (a) Methodology, (b) Participants, (c) Instruments, (d) Design, (e) Procedure, (f) Treatment of the Data, (g) Summary.

Methodology

The researcher determined that the best method for this study was the Quasi-Experimental design. The purpose of this study was to determine if students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math.

Teachers will reported their preference in whole group and small group instruction in math. The i-Ready pre-test was given in September 2015, mid-year in January 2016, and the post-test in June 2016. Permission to conduct this experiment was given by Harjeet Sandhu-Fuller the principal at Scenic Hill Elementary. Based on action research, the study was conducted in Kent at Scenic Hill Elementary. Quasi-Experimental design according to Gay (2003) in *Educational Research:*

Competencies for Analysis and Applications consists of the specific components.

Action research was where the researcher was involved in this study and was in an

see what the students struggled with and what they did well on.

<http://www.mlive.com/news/grand->

[rapids/index.ssf/2015/03/how_online_iready_program_is_i.html](http://www.mlive.com/news/grand-rapids/index.ssf/2015/03/how_online_iready_program_is_i.html). Another online assessment used was Measures of Academic Progress (MAP). MAP created a personalized assessment experience by adapting to each student's learning level. It measured students' progress and growth for each individual.

<https://www.nwea.org/assessments/map/>

Summary

The focus of this chapter was to address the available evidence of the following topics: (a) Educational Laws, (b) Best Practices, (c) Response to Intervention, (d) Math Instruction, (e) Assessment. The methodology and treatment of the data are reported in Chapter 3.

State assessments have had some criticisms. Teachers often didn't receive test results soon enough to allow them to adapt their instruction to meet the needs of the students. According to the Kathy Christie a number of states were working to correct these problems. A few states were beginning to improve their capacity to assess students via computers (Christie).

<http://web.b.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=9ae1d3a7-ed3c-4e42-98d1-950f537592da%40sessionmgr198&vid=1&hid=123>

In a world that relied so much on technology it was no surprise that teachers were now using technology to assess students. In the article Evidence of Learning Online: Assessment Beyond, Boettcher says "using technology can be more stimulating and gives learners more choices to enable them to tap into their creativity and their enjoyment in learning and sharing."

<https://campustechnology.com/Articles/2011/02/23/Assessment-Beyond-The-Paper.aspx?Page=2>

There were different online assessments. One of the assessments was i-Ready, it, was created from the Common Core. It wasn't re-purposed or re-imagined like a lot of the other programs. Principal Michelle Downs said "Kids are actually working on problems that have real-world application and word problems." Since the i-Ready is online, teachers are able to see the results immediately. You could

Assessment

There were different types of assessments that teachers have used such as formative, informal, and summative. In the article “Formative Assessment: Simply, No Additives”, it defined formative assessment as the appraisal of students performance, forming a judgement about students work frequently in the flow of instruction. Summative assessment focuses on evaluating the work some point after instruction. Formative assessment was a gap-minder because it helped the teacher to see which individuals need more help or if adjustments to instruction needed to happen.

<http://web.b.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=311da0fa-2ec3-4c83-a80c-e2cff1d1d0d%40sessionmgr102&vid=1&hid=123>

Some examples of summative assessments were: State assessments, District benchmark or interim assessments, End-of-unit or chapter tests, End-of-term or semester exams, and scores that are used for accountability for schools (AYP) and students (report card grades). Although the information that teachers get from summative assessment is important, it only helped to evaluate certain aspects of the learning process.

<https://www.amle.org/BrowsebyTopic/WhatsNew/WNDet/TabId/270/ArtMID/888/ArticleID/286/Formative-and-Summative-Assessments-in-the-Classroom.aspx>

<http://web.b.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=a90c65cd-ed16-4e9c-b00e-4cf23779bc88%40sessionmgr113&vid=1&hid=106>

Interest in the use of small-group instruction in American classrooms was increasing. Educators were advocating for small-group instruction. Literature suggests that it was important to observe and describe the different forms of small-group teaching and to understand their strengths and limitations.

http://www.jstor.org/libdb.heritage.edu/stable/1163108?seq=5#page_scan_tab_contents

“School psychologists understand that certain instructional procedures work because they consist of components associated with effective instruction. For instance, instructional procedures that include increasing active student responding are likely to increase student learning (Berliner, 1984; Greenwood, Delquadri, & Hall, 1984, p. 153).” According to the article “simple engagement is insufficient” (p. 153).

<http://web.a.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=da237561-a53b-47e0-8abf-851863c3a4f7%40sessionmgr4001&vid=1&hid=4104>

<http://web.b.ebscohost.com/libdb.heritage.edu/ehost/pdfviewer/pdfviewer?sid=e016114d-b3c0-4daf-9288-834dfef14ff8%40sessionmgr113&vid=1&hid=123>

RTI sought to prevent academic failure through early intervention, frequent progress measurement, and increasingly intensive research-based instructional interventions. According to NEA in order for RTI to work well teachers must have had the following components in place: High quality, scientifically based classroom instruction, On-going student assessment, Tiered instruction, and Parent Involvement. <http://www.nea.org/tools/13038.htm>

Math Instruction

Elementary teachers' understanding of mathematics was a huge contributor to students' success. Beginning in the early 1900s, the National Science Foundation funded several curriculum development projects that supported teachers in focusing on student thinking and teaching for understanding. (Cengiz, Kline, and Grant, 2011) According to the article, most of whole-group discussion time was devoted to sharing of solution methods and ideas. Extending student thinking was one of the most challenging aspects of whole-group discussion. According to that study students in whole-class scored higher in mathematics computation than control group students taught within their class ability group.

their niches and achieve success within their specific limitations. (Thorntan, Langrall, Jones, 1997).

Response to Intervention (RTI)

Research tells teachers that strategic use of student performance data to allocate instructional resources improved achievement for all students. Response to Intervention (RTI) has been described as application of the scientific method to educational problems. Educators want to know: Does this new math program work? Are students thriving in general education? Which students are at risk academically and behaviorally? RTI begins with quality core instruction and universal screening. RTI was an integrated system of data collection, data interpretation, and actions that must occur in correct sequence. (Tillman, VanDerHeyden, 2012)

<http://site.ebrary.com/libdb.heritage.edu/lib/heritage/reader.action?docID=10539288&ppg=39>

RTI employs three tiers of academic intervention: Tier 1-Universal, Tier 2-Strategic, and Tier 3- Intensive. Students were assigned to various tiers of intervention based on instructional needs. Instruction at this tier should have included differentiated instruction that incorporates flexible grouping and peer tutoring.

[library/how-to-effectively-observe-best-practices.html](http://www.tts.edu/library/how-to-effectively-observe-best-practices.html)) all the while leaving time for new ideas and integration of new practices.

Best practices were always getting better. Best practices wouldn't be best practices if it wasn't always better than something else. Somewhere, someone was doing something different and getting a different result that was better. The best teaching, just like the best science and best medicine, was a moving target and as teachers needed to constantly be looking for the new best

(http://www.ttms.org/best_practice/best_practice.htm).

“As student populations have become more diverse, the ability to teach to the needs of different learners has become increasingly important” (Haar, Hall, Schoepp, Smith, 2002, p. 142). Learning styles was defined as “individual differences in the way information is perceived, process, and communicated” (Campbell, Campbell, and Dickinson, 1999). The National Council of Teachers of Mathematics proposed five goals for rethinking mathematics teaching and learning. The five goals were: (a) learn value of mathematics, (b) become confident in their ability to do mathematics, (c) become mathematical problem solvers, (d) learn to communicate mathematically, and (e) learn to reason mathematically. (Thorntan, Langrall, Jones, 1997). According to Borasi learning groups may be formed on the basis of complementary learning styles. Students with different strengths can find

(<http://www.heinemann.com/shared/onlineresources/e00744/sample.pdf><http://www.ncpublicschools.org/docs/curriculum/bpractices2.pdf>).

It was said, “Why reinvent the wheel when there are plenty of practices that already work?” We can define “best practices” in education as existing practices that already possess a high level of widely-agreed effectiveness. In other words they work and they get results. According to [edutopia.com](http://www.edutopia.org) (<http://www.edutopia.org/blog/defining-best-practice-teaching-rebecca-alber>) here were just a few straightforward “best practices” that were known and used, by many educators: Check for understanding often and in a variety of ways; have a well-thought out plan for students; Set up the next activity while students are completing the current one; Design the end goals and end product first (also known as backward planning); Share models with students of the product or outcome wanted– and also continually model behavior; Don’t throw anything away, especially in the first few years of teaching.

Knowledge of instructional practices in education helped with everyday teaching. It presented teachers with ideas for organization, development of classroom management, lesson plan development, and even resources for specific needs of students (<http://www.benchmarkeducation.com/best-practices->

failing to acquire English or learn course content; rather, it more likely simply affirms that the students are indeed ELLs, and that language is posing a barrier reflected in their test performance.” (Menken, 2010, p. 125).

Immigrant youth who entered the U.S as adolescents, in particular, face significant challenges. Researchers suggested that immigrant English learners scored lower on standardized test, graduated from high school at lower rates and drop out at higher rates than their Native English-speaking peers. (Stacey, 2012). English Language Learners (ELL) students spent more time thinking about the meaning of the questions, so they needed more time to answer the questions. “The question is do the test accurately measure the knowledge of the students in the subject matter?” (Nilufer, 2013, p. 127).

Best Practices

The expression best practices was originally borrowed from the professions of medicine, law, and architecture, where “good practices” or “best practice” are everyday phrases used to describe solid, reputable, state-of-the art work in a field. Until recently, we hadn’t had an everyday term for state-of-the art work in education and some people insist that education as a field does not enjoy the clear-cut evolution as do other professions.

In the No Child Left Behind act, the law required the inclusion in its assessments of English Language Learners (ELLs). These students made annual progress in English Language Proficiency as well as academic content on standardized tests. The standardized tests were administered in English, this posed a problem and greatly impacted the performance of ELLs. Kate Menken stated in her article *NCLB and English Language Learners: Challenges and Consequences* that “ELLs have yet to reap the benefits of this educational reform; instead, the quality of schooling for ELLS may indeed have worsened, rather than improved, during the NCLB era.” NCLB terminated the Bilingual Education Act and replaced it with other acts (Title III, Academic Achievement Act, English Language Acquisition, etc.) where these acts put a strong emphasis on English Learning and required students to take a pass statewide assessments. Testing research showed that a content-area test administered to ELL in English is unlikely to render a true portrait of what the student knows and was able to do because language impacts the result (Menken, 2010). Researchers argued that because of this, it was not valid to give an ELL and academic content test and use the results on a school’s evaluation. They also believed that these test should not be used to determine high school graduation, grade promotion, or program placement. In Menken’s article she stated, “This achievement gap does not mean that ELLs are

the ever wide achievement gap between rich and poor. The government instead spent federal dollars on research programs and practices. In George W. Bush's *No Child Left Behind* he stated that, "In America, no child should be left behind. Every child should be educated to his or her potential," (Bush, 2001) and he pushed to make this vision a reality.

No Child Left Behind was set in place to hold states and schools more accountable for student progress and success. Annual testing for students were aligned to state academic standards; schools had to meet Annual Yearly Progress, where it was required that states bring all students up to a "proficient level"; and it required all teachers to be considered Highly-Qualified in each subject that they taught.

Recent reports, after the act that had been put into place suggested immense growth and success, however, concerns began to arise after a few years of the act was in place. Based on rules regarding Adequate Yearly Progress, many schools failed to meet their set rates of improvement. Thirty-eight percent of schools in 2010 were considered failing. This was up from 29 percent in 2006. (Education Week, 2011) Since these schools continued to fail, federal funding was reduced and these schools lacked support to turn around and be successful.

CHAPTER 2

Review of Selected Literature

Introduction

This chapter has been organized around the following topics: (a) Educational Laws, (b) Best Practices, (c) Response to Intervention, (d) Math Instruction, (e) Assessment and, (f) Summary.

Educational Laws

The Elementary and Secondary Education Act (ESEA) was signed into law in 1965 by President Lyndon B. Johnson. The act offered grants to districts serving low-income students, scholarships for colleges of low-income, and it created centers for special education. In 2001 however, President George W. Bush reauthorized this act and renamed it: No Child Left Behind (NCLB). The purpose of reauthorization was to “ensure that all child have a fair, equal, and significant opportunity to obtain a high-quality education and reach at a minimum, proficiency on challenging state academic achievement standards and state academic assessments.” (Public Law 07-110 107th Congress An Act, 2001).

NCLB act was to reward success and sanction failure in our education system. It recognized that billions of dollars were being bumped into an educational system that was not meeting goals toward nation-wide educational success. It also closed

Acronym

ACLU American Civil Liberties Union.

AYP Annual Yearly Progress.

ELL English Language Learner.

KSD Kent School District.

MBA Math Benchmark Assessment.

NCLB No Child Left Behind.

OSPI Office of Superintendent of Public Instruction.

RTI Response to Intervention

SH Scenic Hill Elementary School

Intervention- Identify students who need assistance and address the needs of the students through focused instruction. This is done in addition to core instruction.

i-Ready: Built for the Common Core, i-Ready combines a valid and reliable growth measure and individualized instruction online.

Math standards- A written description of what students are expected to know and be able to do at a specific stage of their education in the area of mathematics.

No Child Left Behind Act- Is a law that requires all states to establish a standards test. The goal is to close the achievement gaps by providing all children with a fair, equal, and significant opportunity to obtain a high-quality education.

OSPI- The Office of Superintendent of Public Instruction for the State of Washington.

Small group: Instruction where the teacher teaches 3-5 students the lesson based on where those particular students are at.

Title 1- Is a federal grant program designed to give educational assistance to students living in areas of high poverty.

Whole group- Instruction where the teacher teaches the entire class the same lesson regardless of where any particular students is.

11. A 10 question survey was written by the teacher (see appendix B)
12. Data was collected using Excel spreadsheet and graphs were made.
13. Statistical analysis was run using StatPak.
14. Surveys were shared with the staff and administration.
15. At the conclusion of the research, the researcher and classroom teacher discussed the results and implications of the research project.

Definition of Terms

For the purpose of this study, the following words are defined:

Accountable talk- The use of structured sentence frames to guide students in oral communication about target instructional learning objectives.

Core Instruction- Instructional strategies used routinely with all students in the general education setting using grade level appropriate material and standards.

English Language Learner- A student who needs modified or specialized instruction in the English language.

Formative assessment- A diagnostic test both formal and informal employed by a teacher during the learning process in order to modify teaching a learning activities.

Procedure

For the purpose of this project, the following procedures were implemented:

1. Permission to conduct research at Scenic Hill Elementary was granted by Harjeet Sandhu-Fuller.
2. A review of selected literature was conducted at Kent School District, Heritage University, and various search engines.
3. All first grade students were given a standardized assessment i-ready before the study began.
4. Spreadsheets were developed to analyze the data.
5. Based on i-Ready scores students were divided into small groups for core math instruction in researchers classroom.
6. Students in other classroom were given whole group instruction during core math instruction.
7. All first grade students were given the i-Ready test mid-year.
8. Based on the mid-year i-Ready test students were divided into different small groups for core math instruction in researchers' classroom.
9. Students in other classroom continued receiving whole group instruction during core math instruction.
10. All first grade students were given the i-Ready test at the end of the year.

Hypothesis

Students who receive small group instruction in math will have equal to significantly higher scores on the i-Ready test than students who receive whole group instruction in math. Teachers will report their preference in whole group and small group instruction in math.

Null Hypothesis

Students who receive small group instruction in math will not have equal to significantly higher scores on the i-Ready test than students who receive whole group instruction in math. Teacher will not report their preference in whole group and small group instruction in math.

Significance of the Project

The purpose of this project was to provide a factual base of information regarding group size in relation to math achievement on the i-Ready. Students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math. Teachers reported their preference in whole group and small group instruction in math. If the results are positive it would mean that small group instruction were more beneficial than whole group instruction. If the results do not turn out as expected it would mean that there was no benefit to small group instruction.

in the experimental group, nine were male and five were female. In that group of students there were nine students that were ELL. In the controlled group there were 13 students at the end of the study, nine were male and four were female. In that group there were six students that were ELL. 53% of students had passed the math i-Ready. Scenic Hill had an enrollment of 625 students in the fall count of 2015. The ethnicity of Scenic Hill Elementary was White: 20.5%, Hispanic: 42.1%, American Indians/Alaskan Native: 0.3%, African American: 17.3%, Asian: 6.4%, Native Hawaiian/Other Pacific Islander: 2.1%, and Multi-racial: 11.3%. Free and reduced lunch was 84.5% Special Education 11.2%, Bilingual ELL 43.8%. There were 42 classroom teacher, of which 64.3% had their master's degree. However 100% of the teachers were highly qualified. (Office of Superintendent of Public Instruction 2014)

Assumptions

For this study it was assumed that students paid attention, asked clarifying questions, and did their best work during core math time. Students also tried their best on their math i-Ready test and attended school on a regular basis. Teachers would be honest on their survey questions.

school was scored low across all grade levels. Scenic Hill Elementary had a school wide intervention program for all students.

The researcher had students that have been taught in small group instruction and whole group instruction. The students received one hour of core math in whole groups and thirty minutes of math intervention.

Purpose of the Project

The purpose of this study was to determine if students who received small group instruction during core in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math. In addition teachers involved in small group and whole group instruction would report their preference in best way for group instruction in math.

Delimitations

This project was delimited to two first grade classes at Scenic Hill Elementary School in the Kent School District, located in Kent. The project was conducted during the 2015-2016 school year. At the start of the study there were 16 students in the experimental group, nine were male and seven were female. In that group of students there were ten students that were ELL. In the start of the study in the controlled group there were 16 students, ten were male and six were female. In that group six students were ELL. At the end of the study there were 14 students

became more important to learn different ways to engage students. Knowledge of instructional practices helped with ideas for organization, development of classroom management, lesson plan development, and even resources for specific needs of students (<http://www.benchmarkeducation.com/best-practices-library/how-to-effectively-observe-best-practices.html>).

Response to Intervention (RTI) was an integrated system of data collection, data interpretation, and actions that must occur in correct sequence. (Tillman, VanDerHeyden, 2012). RTI had three tiers: Tier 1-Universal, Tier 2- Strategic, and Tier 3- Intensive. Grouping students in these intervention tiers helped students in the areas that they were struggling in.

Using formative and summative assessments were ways that teachers checked the progress of students. One summative assessment that was being used was the i-Ready test. Since the i-Ready test was online, teachers were able to see the results immediately. (http://www.mlive.com/news/grand-rapids/index.ssf/2015/03/how_online_iready_program_is_i.html). Teachers could immediately see what the students struggled with.

Statement of the Problem

Scenic Hill Elementary looked at their i-Ready scores for the 2014-2015 school year and decided there was a need to take action in math instruction. The

CHAPTER 1

Introduction

Background for the Project

A representative from the Office of Superintendent of Public Instruction (OSPI) was assigned to Kent School District to facilitate changes that impacted positive student growth in both reading and math using the i-Ready. At Scenic Hill Elementary the first grade students were given the i-Ready test for math. This study helped determine if students who received small group instruction in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math.

There were different educational laws impacting reading and math instruction. One of the laws that guided student learning was the No Child Left Behind Law. The purpose was to “ensure that all child have a fair, equal, and significant opportunity to obtain a high-quality education and reach at a minimum, proficiency on challenging state academic achievement standards and state academic assessments.” (Public Law 07-110 107th Congress An Act, 2001). This law helped to hold states and schools more accountable for student progress.

Best practices were described as checking for understanding as often as possible and in different ways. As the world changed and became more diverse it

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PERMISSION TO STORE

I, Sarah Leopold, hereby irrevocably consent and authorize Heritage University Library to file the attached Special Project entitled, *Success in Small Group instruction during Core Math Instruction*, and make such Project and Compact Disk (CD) available for the use, circulation and/or reproduction by the Library. The Project and CD may be used at Heritage University Library and all site locations.

I state at this time the contents of this Project are my work and completely original unless properly attributed and/or used with permission.

I understand that after three years the printed Project will be retired from the Heritage University Library. My responsibility is to retrieve the printed Project and, if not retrieved, Heritage University may dispose of the document. The Compact Disc and electronic file will be kept indefinitely.

Sarah Leopold, Author

July 2016, Date

ABSTRACT

Success in Small Group Instruction during Core Math Instruction

Researcher: Sarah Leopold, B.A. in Elementary Education, CWU
M.Ed., Heritage University

Chair Advisory Committee: Robert P. Kraig, PhD.

The purpose of this study was to determine if students who received small group instruction during core in math had equal to significantly higher scores on the i-Ready test than students who received whole group instruction in math. In addition teachers involved in small group and whole group instruction would report their preference in best way for group instruction in math. The results of the independent t-Test showed the number of scores for group X was 14, the mean score was 51.29 while the number of scores for group Y was 13 with mean score of 13. The t-value was .52 with a degree of freedom of 25.

FACULTY APPROVAL

Success in Small Group Instruction during Core Math Instruction

A Master's Special Project

by

Sarah Leopold

Approved for the Faculty

Robert P Kraig, Faculty Advisor

Dr. Robert P. Kraig

7/7/2016, Date

Heritage University Special Project Permission to Conduct Research

Permission has been given for Sarah Leopold by Harjeet Sandhu Fuller, to conduct an action research project as part of the Heritage University Masters Degree Program entitled Teacher Leadership with a specialization in English as a Second Language. The Hypothesis of this study is the following:

First grade students who receive small group instruction will have significantly higher scores on the i-ready test than students who have whole group instruction in math. First through third grade classroom teachers will report they feel that individual conferencing instruction is the preferred method of reading instruction.

A copy of the project survey will be presented to the Harjeet Sandhu Fuller before being given. The results of the study will be shared with the Principal and other building departments as appropriate.

Signature

Harjeet Sandhu Fuller

Date

Students who receive small group instruction will have significantly higher scores on the I-ready test than students who have whole group instruction in math.

Success in small group instruction during core math instruction

A Special Project

Presented to

Dr. Robert P. Kraig

Heritage University

In Partial Fulfillment

of the Requirements for the Degree of

Masters in Teacher Leadership with a specialization in English as a Second

Language

Sarah Leopold

June 25, 2016