Goal Setting in Third Grade:
Will Setting Learning Goals
Improve Student Achievement?

A Special Project

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Goal Setting in Third Grade:

Will Setting Learning Goals

Improve Student Achievement?

Approved for the Faculty

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ABSTRACT

The topic explored and tested in this study was whether third grade students who set their own learning goals in mathematics would demonstrate higher student achievement. The experimental study used a one-group pretest-posttest design where two test scores were compared and analyzed to see if there was a relationship between students' creating and setting their own learning goals and their growth in the mathematics strand based on their goals. The Measurement of Academic Progress test was used as a measurement tool, both for the overall Rasch Unit scores and the numbers and operations strand ranges the students earned. The study showed that goal setting was not a significant factor in demonstrating high student achievement.

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CHAPTER 1

Introduction

Background for the Project

An important challenge in education was how to help students achieve and work to their fullest potential as life-long learners. One theory for meeting this challenge was goal theory, which would have students set their own learning goals, which would help to self-regulate their learning. Studies had shown that there was a connection between students who showed high levels of goal-setting and wise time management to students who developed their talent(s) to high levels (Csikszentmihalyi, Rathunde, & Whalen, 1993).

In researching this topic, questions arose about the efficacy of goal setting as it related to student learning. Many factors influenced this concept, such as who sets the goal, the teacher or the student; long-term versus short-term, and performance versus learning goals; experience in creating goals; and how failure and success affect student motivation and self-efficacy (Bogolin, Harris, & Norris, 2003; Cunningham, Krull, Land, & Russell, 2000; Hodges, 2004; Kennedy, 1968).

Statement of the Problem

Within the researcher's third grade class, more than 70% of the 22 students did not meet fall third grade expectations in mathematics, based on Measurement of Academic Progress (MAP) fall scores. The researcher hypothesized that goal setting may help to increase student motivation, focus, and learning.

Purpose of the Project

The researcher's intent was to explore the subject of goal setting in a third grade mathematics class and its effect on student learning. Based on research, the researcher theorized that students who set learning goals should show an increase of learning growth. To test this theory, the students in the class met individually with the researcher to review current academic growth and to set a learning goal based on data derived from the MAP mathematics test taken in the fall. Learning growth would then be measured by comparing the fall's Measurement of Academic Progress (MAP) scores to scores from a MAP test taken in March.

Delimitations

The school where the study took place had a total enrollment of 714 students. Fifty-two point eight percent of the student body was male and 47.2% was female. The student body ethnicity consisted of 92.4% Hispanic, 6.0% White, and 0.6% other. Ninety-six point seven percent of the enrolled students qualified for free/reduced meals. Students within special education comprised 15.4% of the student body, migrant students 18.7%, and transitional bilingual 35.5% (Sunnyside School District Annual Report, 2010).

As a school, the Washington State 2010 Measurement of Student Progress (MSP) Washington state tests reported that 45.7% of third grade student passed the reading portion and 39.7% passed the math portion. The study took place in a third grade classroom during math class. Monday through Thursday was spent on regular mathematics curriculum; Friday mathematics period was spent on goal work for the students.

The students who participated in this study consisted of 22 students, 12 boys and 10 girls. Sixteen of these students scored below 196 Rasch Units (RIT) on the fall mathematics MAP test,

which indicated a need for improvement since the third grade expected fall score should be a RIT score of approximately 196, according to the test administrators, Northwest Evaluations Association (NWEA).

Assumptions

The researcher assumed that students completed the mathematics MAP tests to the best of their abilities. Also, the researcher assumed that students had created and worked toward a goal before this year.

Hypothesis

Third grade students who set their own proximal mathematical learning goals demonstrated higher student achievement on their mathematical learning outcomes, as measured by third grade Measurement of Academic Progress (MAP) tests.

Null Hypothesis

Third grade students who set their own proximal mathematical learning goals did not demonstrate higher student achievement on their mathematical learning outcomes, as

measured by third grade Measurement of Academic Progress (MAP) tests.

Significance of Project

This research would be significant if student learning improved through the use of goal setting. Also, this goal setting experience could help these same students in the future, in any subject or personal area in their lives. The implications on future teaching and goal curriculum usage with schools and districts could be significant for both instructional practices and student learning.

Procedure

After the students had taken the MAP test in the fall, they set personal learning goals chosen from the 3.1 Core Content area of the Washington state third grade standards. This standard included mathematics skills such as addition, subtraction, and place value. The students each created these learning goals based on what they felt were their academic needs in mathematics. The researcher then met with individual students to discuss their goals and examine MAP scores and student work. Using the Des Cartes mathematics learning continuum

statements found on the Northwest Education Association (NWEA) website, along with a goal outline, the researcher created goal curriculum for the students. These learning continuum statements were separate strands of mathematic skills, based on the state of Washington's academic standards in mathematics.

Students and researcher worked together to design a reasonable and reachable goal that would still challenge the students' learning. Students had a goal folder in which they kept track of the progress to their goal. The students were then grouped together based on similar goals. Once a week, the class concentrated only on goal work, where they actively spent mathematics time working toward their learning goal. At the end of the mathematics period, students then wrapped up their time by reflecting on what they had been working on in class, such as how much their effort in this helped or hindered their work for their learning goal, and where in their goal progress they were.

In March, the students took the MAP test again. These new scores were collected and the student growth was calculated

from fall to March. Student growth was then analyzed based on the NWEA's student growth standards for average and high learning growth in one year in third grade. A significant number of students whose scores indicated higher than average growth would have indicated that students' setting their own learning goals demonstrated higher learning outcomes than not setting goals. If no significant number of students scored within the high learning growth range, then students' setting goals would not have demonstrated higher learning outcomes.

Definitions of Terms

Des Cartes. This program was created by the Northwest Evaluations Association to examine student Measurement of Academic Progress test data.

distal goals. Distal goals were short-term goals.

learning goal. Learning goal referred to a goal set to learn a specific concept or skill.

motivation. Motivation was the process whereby goal-directed activity was instigated and sustained (Pintrich & Schunk, 1996).

performance goal. Performance goal referred to a goal set to earn a specific score.

proximal goals. Proximal goals were long-term goals.

rasch unit. Rasch Unit was the scale used to score MAP tests.

self-efficacy. Self-efficacy was an individual's judgment of his/her ability to organize and execute behaviors to achieve a goal.

self-regulated learning. Self-Regulated Learning was characterized as students who actively and efficiently managed their own learning through monitoring and strategy use; they were motivationally and behaviorally active participants in their learning.

Acronyms

MAP. Measurement of Academic Progress

MSP. Measurement of Student Progress

NWEA. Northwest Evaluations Association

OSPI. Office of the Superintendent of Instruction

RIT. Rasch Unit

CHAPTER 2

Review of Selected Literature

Introduction

Schools were faced with the challenge of how to support and encourage student learning. Within this challenge was how to help students become life-long learners who were aware of their learning and became active members in their education. In order to become active participants in their own learning, students needed to be able to self-regulate their learning, which included setting goals and managing their time. Setting goals would have helped students hone in on weak learning areas where they needed to focus. Studies had shown that there was a connection between students who showed high levels of goal-setting and wise time management to students who developed their talent(s) to high levels (Csikszentmihalyi et al., 1993).

Many factors influenced goal setting with students, such as who set the goal, the teacher or the student. Goal timelines were also important; long-term versus short-term and performance versus learning goals were important elements to consider when setting goals. Many students had not experienced setting goals

and so had not experienced the success or failure of one. All of these factors were also affected by student motivation and self-efficacy.

The question was would third grade students who set their own proximal mathematical learning goals have a positive impact on their mathematical learning outcomes, as measured by third grade Measurement of Annual Progress (MAP) tests? Any attempt at studying this question rested on the assumption that students were capable of setting goals for themselves that were reasonable and relevant. Research showed that many elementary students might not know how to set effective goals (Bogolin et al., 2003). Students incorrectly placed the responsibility of their learning successes or failures solely on outside influences such as teacher's assistance or luck. Often they had an inflated sense of skill and overestimated their ability to perform learning tasks, or the opposite was true, in which case the students underestimated their skill and ability to learn. As a result, the goals a student may set could be either under-challenging or unrealistic. Bogolin, Harris, and Norris (2003) researched the goal setting of three fifth grade classes in two

different schools. Students and their teachers at the two schools were surveyed about goal setting. Out of the 64 students surveyed, approximately 48% replied that they, or their teacher, had set student goals in a previous year. From those students who had set goals or had a goal set for them by a teacher, 63% answered yes to the survey question asking if they had met their goal. Also, within the participating schools, teachers responded to a survey question, which asked if their students set their own goals; 75% of them replied yes. When asked if students could set realistic goals, however, 62% of the teachers at one school responded no and 82% at a second school answered no. These statistics suggested that, while students may set goals, much of the time the goals were not realistic or reachable. Teachers needed to explicitly teach and model effective goal setting practices. Goals were set in the class every day, from teaching and learning goals to behavior and social goals. The first person a class of students was going to look to as an example was the teacher. Therefore, the first step in testing the goal setting theory was to assure that students knew how to create relevant, realistic, specific goals.

Teacher-Assisted Goal Setting

There was also the issue of who should set the goal, the teacher or the students. When a teacher set a goal for the students to work toward, there could be a sense of disconnection between the goal and the students. The students were aware of the goal and might have been working toward it, but often the level of motivation was much less than if the goal was personal. Personally creating and setting a goal gave students a sense of ownership and control. They knew exactly why the goal was made and were starting to formulate a plan to meet it. Students could use self-evaluation to gauge where they were currently in their learning and to look ahead to where they wanted to be. In that way, productive goals could be made and had a better chance in being met. Quest School, a school in Humble, Texas, that was a 2002 National School of Character, used mastery learning to help motivate and educate its students. Mastery learning, according to the position paper written by the Character Education Partnership (2008), "requires all students to achieve a certain level of mastery of a given concept or skill" (p. 7). This meant that students worked at their learning and knew

that if it was not right, they would have to do it again. The students who attended this school worked with goal setting every day, so that it became second nature. As one school leader said, "Over the four years, students come to set an internal bar for the quality of their work. Our goal is for them to internalize the revision process" (p. 7).

Attitude and Self-Efficacy

Motivation was a strong element of student learning and goal setting. A common definition for motivation, based on research, was, "the desire to achieve a goal that has value for the individual" (Madden, 1997, p. 414). According to Rader (2005):

> When students write down their goals, they are forced to examine themselves and see their own dreams. This is important because, ultimately, reflecting on why they hope to achieve their goals, rather than simply knowing what their goals are, is what motivates them to pursue their life ambitions. (p. 123)

If students were not motivated to put importance on what they were learning, then the learning was ineffective. Schunk wrote that teachers should "foster academic achievement and

motivation for continued learning among all learners" (p. 170). Motivation and goal setting were interconnected in that students needed to be motivated to set a goal, and then work to meet it. Later, meeting or achieving the goal motivated the students to further learning and goal setting. Even when goals were not met, if students could see progress in their work, they would continue to work toward it, perhaps with a change of timeline or adjustment of the goal (Rader, 2005).

If motivation was a strong element of student learning and goal setting, at the heart of motivation was self-efficacy. Self-efficacy, according to Clifford (1991), was "an individual's judgment of her ability to organize and execute behaviors to achieve a goal" (p. 269). Setting goals that had a challenging learning process had been suggested to have more impact on self-efficacy (Hodges, 2004). Clifford (1991) discussed how easy tasks gave no new knowledge about a student's abilities and that challenging tasks provided a more valid proof of improved learning or competency, which was apparent to both student and teacher. This was where self-efficacy played such an important role in goal setting. When students were able to set personal

and realistic, but also challenging, goals they were more likely to be engaged and self-directed, which could help increase "task-relevant knowledge, meta-cognition, and skill development" (p. 269). Madden (1997) wrote that children who have high self-efficacy in reaching their goals show effort and persistence in their continued learning.

This led to the question, what if the students failed to reach their goals? Would that be so counter-productive to learning that no teacher would want to chance having his/her students set learning goals? Paris and Winograd (2001) suggested, "Failure is defined by students and teachers within classrooms in different ways" (p. 11). This led to what Clifford (1991) referred to as constructive failure. When tasks and goals were set at an appropriately challenging level, constructive responses to error making and failure could occur if goals were not defined solely by success or failure. The climate and atmosphere in a classroom would determine how the students looked at failure and then reacted. This made how a teacher set the tone for learning very important. Students developed a positive view of failures, where meeting a goal was important, but also kept in

mind that goal setting was a learning strategy, not a result. These students were more apt to self-evaluate their thinking and rethink previous strategies, perhaps search for new ones, and try again. In short, they learned from their mistakes.

Self-Regulated Learning

This was where self-regulated learning (SRL) came into effect. Self-regulating learning was a concept that was popularized in the 1980s. This concept emphasized students taking charge of their own learning (Paris & Winograd, 2001). In their commissioned paper for the U.S. Department of Education project, "Preparing Teachers to Use Contextual Teaching and Learning Strategies to Improve Student Success in and beyond School," Paris and Winograd (2001) discussed how in self-regulating learning, self meant each individual student and regulating meant the ways students could "approach problems, apply strategies, monitor their performance, and interpret the outcomes of their efforts" (pp. 4-5). They summarized three main components of SRL: being aware of effective thinking and how it related to your own thinking habits, having a toolbox of strategies to draw upon so that an appropriate one could be

utilized for each individual problem or situation facing the student, and learning motivation that was sustained. Students who were aware of their own thinking habits evaluated the strategies they used to solve problems or created a plan of action to reach a set goal. They then compared their thinking habits or strategies to another student's and adapted or adjusted if necessary. Students who were self-regulating learners knew to monitor their learning and understood that the amount of effort applied and the strategies chosen had a direct effect on whether they would meet their learning goals or not.

A study by Tollefson, Tracy, Johnsen, and Chatman (1986) found that effective goal setting by students must have a realistic goal and a plan to reach that goal. Also, students should be able to have monitored and evaluated their progress and understood they may or may not reach their goal. "By self-evaluating, students are also more likely to seek other methods in reaching the desired goal, as opposed to being locked into one dead-end method" (Cunningham et al., 2000, p. 8).

Feedback was another crucial step to how students reacted and adapted their plans on the way to meeting their goal(s).

Without timely feedback and progress reports, students would not have known where they stood in relation to their learning. As the students were progressing toward their proximal learning goal, current feedback helped keep track of their progress. In keeping track, the students could see how close or far away from the goal they might have been. Also, according to Madden (1997), "students work more diligently on self-made goals, than from the expectations of others" (p. 414).

Goal Types

According to Hodges' (2004) goal theory, there were two types of goals set by learners; learning goals or performance goals. "Performance goals are goals that center on some evaluation of one's competence in a specific area" (p. 2). An example of this type of goal would be students setting a goal of at least 95% on their multiplication test. The goal was set against a specific scoring standard. A learning goal, on the other hand, would be focused on "the learner developing new skills, knowledge, or attitudes and not aiming for some performance level or judgment" (p. 2). So, instead of aiming for a specific score or grade, students would focus their goal on understanding

multiplication. In actuality, if the students met their learning goal, a standard performance goal would more than likely also be met through the learning process.

Proximal and distal goals referred to the goal's timeline. A proximal goal was set for a short time; distal goals were long-term. Students had a hard time setting effective distal goals, perhaps because the success or failure outcomes were too far away to be real to them (Hodges, 2004). Proximal learning goals helped to maintain student motivation. This research suggested that several proximal goals working toward that ultimate benchmark might have been more effective for third grade students. In that way, students had a chance to assess their own learning and see for themselves how their goals, hard work, and motivation could make a difference.

Summary

The important question was whether or not goal setting increased student learning. According to research, there could be a strong relationship between effective learning and related goal setting. According to Kitsantas, Steen, and Huie (2009), "Students who are self-regulated learners are partially

distinguished from non-self-regulated learners because they set mastery oriented goals rather than performance goals and utilize and differentiate effective versus ineffective self-regulated learning strategies to accomplish these goals" (p. 66). There were important factors that needed to be involved for goal setting to be optimal. Goals needed to be specific and realistic, since "being specific in developing the goal is more effective that telling students to 'do the best they can'" (Madden, 1997, p. 414). For elementary students, short-range goals appeared more effective than long range goals, perhaps because young children have difficulty mentally representing distant outcomes (Schunk, 2003). Also, learning goals were more effective than performance goals. Goal setting may have been an effective way to get students motivated to learn and increase their self-efficacy, which helped students' willingness to try difficult tasks. According to Schunk (2003), "Goal progress and accomplishment convey to students that they are capable of performing well, which enhances self-efficacy for continued learning" (p. 160).

CHAPTER 3

Methodology and Treatment of Data

Introduction

"Compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level" (Schunk, 2003, p. 161). This was what educators wanted their students to feel and do in regards to their education, but young children did not always know how to go about setting goals and implementing strategies to help them meet those same goals. In this paper, the researcher created goal setting curriculum, such as goal outlines, practice work on goal area, and reflective journal goal writing, as well as used goal setting tools from the NWEA website. The goal setting curriculum was taught with mathematics learning goals as the target learning outcome and goal progress was measured by MAP mathematics tests given in September and March.

Methodology

The research methodology was quantitative. Quantitative research was "the collection and analysis of numerical data to describe, explain, predict, or control phenomena of interest" (Gay, Mills, & Airasian, 2009, p. 7). Data from the mathematics MAP test the students took in September was used to write goals, based on the Washington state mathematics number sense Core Content area 3.1 standards and the number sense mathematics strand of NWEA. Scores from the MAP test taken in March were then reviewed to assess goal success.

Participants

The participants of the study were a third grade class. The class represented several ethnic and cultural backgrounds, including Caucasian and Hispanic. The ages of the children ranged from eight years to nine years old. There were 12 boys and 10 girls. There was a range of fall MAP RIT assessment scores, from 164 as the lowest to 205 as the highest. Out of the total number of 25 students, one student's data was not included, as this student spent only twenty minutes in the classroom during each mathematics lesson, due to Individual

Education Plan (IEP) scheduling. None of the time this student spent in the mainstream mathematics class was during the time set aside for goal work. Two other students, who had joined the class later in the year, were also not included within the group of student participants. In total, twenty-two students and their goal setting data and results participated in the study.

Instruments

The instruments used in the study were the MAP test, goal setting papers, student goal folders, student self-reflection on learning and motivation, and the NWEA website. The NWEA website included instruction tools such as Des Cartes and average and high student yearly growth standards.

Design

The research method was experimental. According to Gay, Mills, and Airasian (2009), "in experimental research, at least one independent variable is manipulated, other relevant variables are controlled, and the effect on one or more dependent variables is observed" (p.11). The researcher used a one-group pretest-posttest design. The pretest data were September MAP test scores and growth, while the posttest data

were taken from MAP test scores and growth after students worked toward a mathematics goal and then took the test again in March. The data was analyzed based on the growth standards set by NWEA for average and high student academic yearly growth.

Procedure

The students pre-tested in the fall. These MAP scores were then examined by the students to help them create personal learning goals in the Core Content 3.1 area in the Washington state third grade standards. These standards outlined the skills required for addition, subtraction, and place value. The students selected one of the five skills listed in their goal sheet and explained why they chose that particular skill. This plan guided the students in making specific, measurable, and realistic mathematics goals. The researcher set individual meetings with students to discuss the learning goals they had chosen based on their academic needs in the number sense standards component. Student and researcher worked together to come up with a reasonable and reachable goal that would still challenge the student's learning, based on the goal plan. Students had a goal

folder in which they kept track of their work for their goals. The students were grouped together based on similar goals. Once a week, the class concentrated on goal work, where students actively spent math time working toward their learning goal.

The students were posttested in March with the MAP test. Their scores were analyzed against NWEA standards for average and high growth in math over a school year. Those students whose scores indicated a significant growth between fall and March, based on the yearly growth standards set by NWEA, demonstrated that creating goals helped to raise student achievement. Student scores that had not indicated a significant amount of growth had not demonstrated this. The researcher analyzed the data to find if a significant number of students were able to improve their MAP scores within the high growth area.

Treatment of the Data

Data within the study was analyzed based on learning growth measured by comparing the September's Measurement of Academic Progress (MAP) scores to scores from a MAP test taken in March. Student identities were represented by numbers, so that names were anonymous to all but the researcher. Growth

was marked and charted, then compared to average and high academic growth, based on the growth expectations given by NWEA.

Summary

The goal of this study was to improve student learning outcomes through student-created goals and self-regulated learning. This study was based on a goal curriculum that had the 22 students creating, working, and reflecting on their learning goals, with the assistance of the researcher. Using a one-group pretest-posttest experimental design and quantitative methodology, the researcher analyzed the two sets of mathematical MAP data to determine if students who set learning goals and student achievement and growth had a significant relationship. Student scores were measured against high and medium academic growth; medium growth demonstrated average mathematical growth and high growth demonstrated a corresponding high student achievement and growth. A significant number of students who had met high student achievement and growth targets was needed to

demonstrate a positive relationship between students who set personal learning goals and high student achievement.

Chapter 4

Analysis of the Data

Introduction

Student learning and growth had been a concern and challenge for all teachers. Goal setting was a method used to improve student learning and create self-regulated learners who took responsibility in their own learning. Students who set their own learning goals had been shown to increase their effective learning more than students who had not set goals or had someone else set their goals for them.

Description of the Environment

The study took place in a third grade classroom during math class time. There were 22 students participating in the study, twelve boys and ten girls. Every Friday, the students worked towards meeting their goals within the Washington state standards mathematics core content area 3.1; addition, subtraction, and place value. Monday through Thursday was spent on regular math lessons and curriculum. The researcher provided practice worksheets, time for group collaboration, and individual help for the students based on their learning goals.

Hypothesis

Third grade students who set their own proximal mathematical learning goals demonstrated higher student achievement on their mathematical learning outcomes, as measured by third grade Measurement of Academic Progress (MAP) tests.

Null Hypothesis

Third grade students who set their own proximal mathematical learning goals did not demonstrate higher student achievement on their mathematical learning outcomes, as measured by third grade Measurement of Academic Progress (MAP) tests.

Results of the Study

The data was analyzed using the comparison of student actual growth and the yearly growth goal, based on a high yearly growth for third grade, as scored on the MAP mathematics test. Student overall RIT growth was also compared to an average RIT growth based on their September RIT scores. Data from skill strands within the MAP tests were analyzed as well, in which RIT point ranges from September and March were compared and any

growth noted. Since the posttest was taken in March, at the end of the third quarter of the year, three-fourths of the yearly goal growth was compared to the actual student growth measured at that time.

In Table 1, students' actual and goal growth points were shown together. The researcher found that 8 students met or exceeded their targeted growth point amounts and 14 students had not met their goal growth. Within those students who had not met their goal, two students were two or less points away from reaching their goal growth. In this respect, 45% of the students had met and/or exceeded their goal or were only a point or two away. The other 55% of the class demonstrated a larger disparity between their actual and goal growths, ranging from a difference of four to almost eleven points.

Table 1
RIT Scores: September to March

Student	September RIT	March RIT	RIT Growth	High yearly growth	High RIT growth?
#2	197	199	2	10.5	
#3	191	197	6	11.25	
#4	200	201	1	10.5	
#5	199	201	2	10.5	
#6	183	198	15	12	Y
#8	188	202	14	11.25	Y
#9	196	210	14	10.5	Y
#10	183	195	12	12	Y
#11	181	192	11	12	*
#12	179	195	16	12	Y
#13	187	195	8	11.25	
#14	189	190	1	11.25	
#15	181	201	20	12	Y
#16	185	197	12	11.25	Y
#17	180	183	3	12	
#18	205	206	1	10.5	
#19	168	192	24	13.5	Y
#20	186	188	2	11.25	
#21	185	195	10	11.25	*
#22	190	190	0	11.25	
#23	196	195	-1	10.5	
#24	187	189	2	11.25	

Total: 8 out of 22 students
*within ≤2 points of reaching goal

The mathematics skills that MAP tested were separated into four different strands: algebra, geometry and measurement, numbers and operations, and probability and data. When tested, students were placed within a range of RIT scores for each of these strands.

The skills within MAP's numbers and operations strand included whole number relationships, place value, addition, subtraction, and word problems. Student goal work was based on the skills in this strand. The researcher compared the numbers and operations ranges the students tested at in September and the new ranges the students tested at in March to see if an increase in scores could be demonstrated. As shown in Table 2, out of the 22 students, eight demonstrated an increase in their numbers and operations ranges by ten or more RIT points. Nine students showed a range growth between four to nine RIT points, one student's range remained the same, and four students demonstrated a lower range in March than September.

Table 2
Student Numbers and Operations Range

Student	Numbers/ Operations RIT range: Fall	Numbers/ Operations RIT range: March	Numbers/ Operations≥10 point growth?	Student	Numbers/ Operations RIT range: Fall	Numbers/ Operations RIT range: March	Numbers/ Operations≥10 point growth?
#2	181 – 194	197 – 208	14	#14	183 – 195	187 – 199	4
#3	189 – 202	195 – 207	5	#15	176 – 188	189 – 201	13
#4	203 – 215	195 – 207	-8	#16	175 – 188	193 – 204	16
#5	201 – 214	198 – 210	-4	#17	174 – 186	183 – 195	9
#6	177 – 189	199 – 210	21	#18	198 – 210	190 – 203	-7
#8	183 – 195	196 – 208	13	#19	157 – 170	189 – 202	32
#9	198 – 210	202 – 214	4	#20	178 – 189	184 – 197	8
#10	186 – 199	194 – 206	7	#21	180 – 192	195 – 206	14
#11	177 – 188	187 – 199	11	#22	185 – 198	178 – 190	-8
#12	176 – 188	183 – 196	8	#23	179 – 194	180 – 193	0
#13	184 – 197	191 – 203	6	#24	177 – 189	186 – 198	9
Total: 8 Students							

The researcher also compared student growth to an average growth for each RIT score. Again, since the posttest was taken in March, which was at the end of the third quarter of the year, three-fourths of the average growth was used in the comparison.

As shown in Table 3, of the 22 students, eleven students exceeded the average growth.

Table 3
Comparison of Actual, Average, and High Growth

Student	RIT Growth	Average yearly Growth	High yearly growth	High RIT growth?	Student	RIT Growth	Average yearly Growth	High yearly growth	≥ Average RIT growth?
#2	2	6.6	10.5		#14	1	7.1	11.25	
#3	6	7	11.25		#15	20	7.8	12	Y
#4	1	6.5	10.5		#16	12	7.5	11.25	Y
#5	2	6.5	10.5		#17	3	7.8	12	
#6	15	7.6	12	Y	#18	1	6.5	10.5	
#8	14	7.2	11.25	Y	#19	24	8.9	13.5	Y
#9	14	6.6	10.5	Y	#20	2	7.4	11.25	
#10	12	7.6	12	Y	#21	10	7.5	11.25	Y
#11	11	7.8	12	Y	#22	0	7.1	11.25	
#12	16	7.9	12	Y	#23	-1	6.6	10.5	
#13	8	7.4	11.25	Y	#24	2	7.4	11.25	

Findings

The number of students who demonstrated higher than average growth was an even 50% of the students, which did not represent a significant number of students who demonstrated higher student achievement. The researcher could not reject the null hypothesis of third grade students who set their own proximal mathematical learning goals. They did not

demonstrate higher student achievement on their mathematical learning outcomes, as measured by third grade Measurement of Academic Progress (MAP) tests.

A finding the researcher noticed was the placement of students who demonstrated higher than average growth within the range of September RIT scores. The lowest September student RIT score was 168 and the highest 205. This made the range of scores 37 RIT points. Within that range, eight of the eleven students who demonstrated the higher growth in March were in the bottom half and two of the eleven students were just past the halfway mark. Only one student within the higher range of the September RIT scores demonstrated high learning growth in March.

Also, of the highest September RIT scores, ranging from 196 to 205, five of those six students had growths of -1, 1, and 2 RIT points. The students appeared to have demonstrated either large learning growth or small learning growth, based on this assessment of their growth.

Discussion

As discussed in Chapter 2, any attempt at studying the relationship between goal setting and student achievement rested on the assumption that students were capable of setting goals for themselves that were reasonable and relevant. Research showed that many elementary students might not know how to set effective goals (Bogolin et al., 2003). Often students had an inflated sense of skill and overestimated their ability to perform learning tasks, or the opposite was true, in which case the students underestimated their skill and ability to learn. The researcher found that very few of the students in this study had ever set a goal for themselves. Therefore, the first step in testing the goal setting theory was to teach how to create relevant, realistic, specific goals.

Chapter 2 also discussed the important role of motivation and self-efficacy in setting goals and student achievement. During goal work time on Fridays, the researcher observed students encouraging each other and becoming more confident in their mathematical abilities. This included students who worked and reworked problems in their efforts to improve or help each other.

This agreed with Clifford's (1991) and Rader's (2005) stands on motivation and self-efficacy. Rader's (2005) research showed that when students saw progress in their work, they would continue to work toward it. Clifford's (1991) showed that when students had a positive attitude toward failure, they were more apt to self-evaluate their thinking and try a new strategy.

The study took place in a third grade classroom during math class. Monday through Thursday was spent on regular mathematics curriculum; Friday mathematics period was spent on goal work for the students. This could have been a limiting factor in this study, since goal work occurred only one day of the school week. More time spent on working towards their goals could have increased student achievement.

The students who participated in this study consisted of 22 students, 12 boys and 10 girls. Student September MAP mathematics scores indicated a need for improvement, because sixteen of the students scored below 196 RIT, which indicated a need for improvement since the third grade expected fall score should be a RIT score of approximately 196, according to MAP. With the group tested so small, the results and conclusions

drawn from the data could be considered limited in scope or inconclusive.

Summary

Student learning and growth had been a concern and challenge for all teachers, who make the decisions on how to help student demonstrate high learning achievement. The effect of goal setting on student learning was one method the researcher studied. The researcher studied the effect of goal setting in a third grade class in mathematics. The students set personal learning goals with the help of the researcher, based on the Washington state standards mathematical core content 3.1; addition, subtraction, and place value. Using a one-group pretest-posttest experimental research design, the researcher tested the students in September and March. The test scores were then analyzed and evaluated for high student growth. High student growth would show that the students demonstrated higher student achievement. The analysis showed that nine of the 22 students were able to demonstrate a high growth in the numbers and operations strand of the MAP test, which included the mathematical core content area 3.1. The researcher could

not reject the null hypothesis that third grade students who set their own proximal mathematical learning goals did not demonstrate higher student achievement on their mathematical learning outcomes, as measured by third grade MAP tests.

Several findings and observations were made by the researcher. Most of the students who demonstrate high growth were those students who had scored in the lower half of the RIT score range. Also, those students who scored the highest on the September MAP test demonstrated the smallest growth gains.

Chapter 5

Summary, Conclusions, and Recommendations

Introduction

Goal setting could be an effective method for helping students to increase their learning growth and become self-regulated learners. The researcher created a study to test if students who set personal learning goals would be able to demonstrate higher learning achievement.

Summary

The effect of goal setting on student learning was the topic the researcher studied. The researcher tested the effect of goal setting in a third grade class in mathematics. Research had shown that students who personally set learning goals increased their learning and academic growth. Goal setting research had also shown that setting goals was connected to student motivation, self-efficacy, self-regulated learning, and time management skills.

In this study the students set personal learning goals with the help of the researcher, based on the Washington state standards mathematical core content 3.1; addition, subtraction,

and place value. Using a pretest-posttest experimental research design and quantitative methodology, the researcher tested the students in September and March, using the MAP test. The test scores were then analyzed and evaluated for high student growth. If high student growth was demonstrated, it would indicate that the students demonstrated higher student achievement. The analysis showed that only half of the 22 students were able to demonstrate a higher than average growth in their overall RIT scores between September and March. Also, out of the 22 students, nine showed an increase in their numbers and operations strand range of the MAP test, which included the mathematical core content area 3.1. The researcher could not reject the null hypothesis.

Several findings and observations were made by the researcher. Most of the students who demonstrated high growth were those students who had scored in the lower half of the RIT score range. Also, those students who scored the highest on the September MAP test demonstrated the smallest growth gains.

Conclusions

Students who had been personally involved in creating and setting learning goals had shown better motivation and self-efficacy in regards to their learning and growth. Setting realistic, but challenging goals students could achieve, along with regular feedback on student progress, had also been shown to help students increase their learning and become self-regulated learners. In this study, the researcher observed that most students became motivated to learn and work together in their goal work. Students knew where they had scored in September and by creating and setting their own mathematical goal, were able to be personally invested in their goal work. However, this motivation did not translate into improved test scores.

Half of the 22 students demonstrated a ≥10 RIT point increase in their numbers and operations strand range of the MAP test, which was a higher than average increase in RIT. Most of the students who demonstrated high growth had scored in the bottom half of the September overall RIT range, so a conclusion could be drawn that goal setting may be more

effective in this instance for students needing the most improvement.

Recommendations

The researcher would recommend that goal setting should be included in student curriculum. Students who were able to set their own goals, with the guidance of a teacher, were knowledgeable in where they stood academically and motivated to improve. Other benefits of goal setting would be self-regulated learning, improved self-efficacy, and time management skills. Goal setting is a life skill that needs to be taught; students do not automatically know how to set goal for themselves. The researcher would recommend using goal setting in a classroom to help focus students on their learning. In doing this the students could become self-regulated learners, students who were able to examine their progress and learning and adapt the strategies they used in approaching problem-solving and critical thinking. As Schunk (2003) found in his research, "Goals are integral parts of motivation and learning" (p. 162).

A further recommendation would be to use a formal goal setting curriculum or a grade level or school collaboration of a goal setting curriculum. The curriculum could help narrow the focus of how the students will work towards or meet their goal(s) and provide a step-by-step plan or guide for implementation. While this project did not support the hypothesis, the researcher believes that goal setting is a worthwhile activity and deserves further study.

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APPENDIX

Name _____

Math Goal

	3.1 Core Content: addition, subtraction, and place value	Examples:
☐	**3.1.A: Read, write, compare, order, and represent numbers to 10,000 using numbers, words, and symbols.**	**Fill in the box with <, >. Or = to make a true statement sentence: 3,546 ☐ 4,356** **Is 5,683 closer to 5,600 or 5,700?**
☐	**3.1.B: Round whole numbers through 10,000 to the nearest ten, hundred, and thousand.**	**Round 3,465 to the nearest ten and then to the nearest hundred.**
☐	**3.1.C: Fluently and accurately add and subtract whole numbers using the standard regrouping algorithms.**	**Know basic addition and subtraction facts quickly and accurately.**
☐	**3.1.D: Estimate sums and differences to approximate solutions to problems and determine reasonableness of answers.**	**Maria has $10 and plans to spend it on items priced at $3.72 and $6.54 use estimation to decide whether Maria's plan is a reasonable one, and justify your answer.**
☐	**3.1.E: Solve single- and multi-step word problems involving addition and subtraction of whole numbers and verify solutions**	**Students show work, explain their thinking, and verify that the answers to the problem are reasonable.**

My Goal: My goal is to work on standard _____ because _____

_____

_____

_____

Working on this goal will _____

_____

which I will be able to show on my MAP tests. My fall overall RIT score is _____ and focusing on my goal will help me to score higher on my next MAP test. I hope to score a _____ overall RIT the next time I take the MAP test in March.