Increasing Proficiency Achievement Using the Professional Learning Communities Model

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FACULTY APPROVAL

Increasing Proficiency Achievement

Using the Professional Learning Communities

Model

Approved for the Faculty

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ABSTRACT

This project was designed to determine the effectiveness of the Professional Learning Communities model to increase student achievement in mathematics for third grade students using SMART goals and essential outcomes. A Professional Learning Community, made up of third grade teachers, collaborated and focused on the success of all students in a systematic ongoing process by analyzing and improving classroom practices using SMART goals and essential outcomes. The intent was to lead students to higher levels of achievement as measured by formative unit assessments.

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TABLE OF CONTENTS

Page

FACULTY APPROVAL……ii

ABSTRACT……...iii

PERMISSION TO STORE……iv

TABLE OF CONTENTS……v

LIST OF TABLES……...viii

LIST OF FIGURES…….....ix

CHAPTER 1…….……...1

Introduction……..1

Background for the Project.....…….....…1

Statement of the Problem……..….....…2

Purpose of the Project…….....…2

Delimitations.....…….....…3

Assumptions.....…….....…3

Hypothesis or Research Question……..…….....4

Null Hypothesis……...5

Significance of the Project.....…….....…...5

Procedure.....……..5

Definition of Terms.....……..6

Acronyms.....……...…..7

Page

CHAPTER 2……8

Review of Selected Literature…….8

Introduction…….....……..…….....8

Nine Characteristics of Highly Effective Schools….……..…9

School Improvement Process…….……19

Professional Learning Communities.…….……23

Summary……..……..27

CHAPTER 3……..29

Methodology and Treatment of Data…….29

Introduction……29

Methodology……..29

Participants…….30

Instruments…....……31

Design……31

Procedure……...31

Treatment of the Data……..…..32

Summary…….……...33

CHAPTER 4……..34

Analysis of the Data……..34

Page

Introduction……..……...…34

Description of the Environment..…….……..34

Hypothesis/Research Question …….……35

Null Hypothesis..……..……35

Results of the Study…….……...…36

Findings……..……39

Discussion…….40

Summary….……..41

CHAPTER 5……..42

Summary, Conclusions and Recommendations……..…42

Summary.…….…..42

Conclusions…..……...43

Recommendations…….…….43

REFERENCES ….....……...….45

APPENDICES ….....…….48

LIST OF TABLES

Page

Table 1. Percentage of students with 75% or higher on unit assessments……37

LIST OF FIGURES

Page

Figure 1. Interrelationships of the Nine Characteristics……..….10

Figure 2. Overall 3rd Grade Math Assessment Data……37

Figure 3. Unit Assessments by Teachers.……..…..…38

CHAPTER 1

Introduction

Background for the Project

Public education had changed significantly over the past two decades. Educators were asked to do what never had been required; ensure high levels of learning for all students. The No Child Left Behind Act of 2001 (NCLB), signed into law on January 8, 2002, was based on the belief that setting high standards and establishing measurable goals improved individual outcomes in education. The goal in the act was to increase the quality of education by requiring schools to improve performance. In accomplishing this goal, the act encouraged schools to implement scientifically-based research practices in the classroom.

In an attempt to meet the new reformed standards, Pasco School District took the initiative to implement Richard DuFour's Professional Learning Community model, Professional Learning Communities. The model imposed a process in which teachers worked to analyze and improve classroom practices. Student achievement outcomes based on Strategic/Specific, Measurable, Attainable, Results-oriented, and Time-bound, (SMART) goal settings were created, which changed the focus from teaching to student learning (DuFour, DuFour, Eaker & Karhanek, 2004).

Statement of the Problem

Over the past decade the demand for school improvement had increased. Effective school research and the school improvement process provided the foundation for many schools to think and work on school reform. Many models and programs designed to improve student performance were being marketed. Pasco School District and administrators collaborated in the effort to understand successful change models. Through the process, the DuFour's model of Professional Learning Communities was recommended, based on research, as a new model of school culture and organization that actively supported educational change and improvement. Mathematic scores on the Washington Assessment of Student Learning (WASL) had declined over a three-year period. Because of this decline, many schools in the district that had not met annual yearly progress (AYP) goals were forced into school improvement. With teachers engaged in the need for improvement, the Professional Learning Communities model by DuFours was adopted and staff trained to implement the model in schools across the district.

Purpose of the Project

The purpose of the project was to determine the effectiveness of the Professional Learning Communities model to increase student achievement in mathematics for third grade students using SMART goals and essential outcomes. If the use of the model proved to be an effective tool in improving mathematics

achievement for third graders, other teachers and schools not using the model could be encouraged to implement the model.

Delimitations

The project was conducted using a third grade classroom, which consisted of 21 students of various backgrounds, races, socioeconomic status and behavior levels. There were 13 boys and 8 girls. In addition the project was conducted using all third grade classrooms, which totaled 140 students. The study took place from the fall of 2007 to the spring of 2008 in an elementary school located in Pasco, Washington. The elementary school where the project was conducted had approximately 775 students with demographics of 53.2% Caucasian, 39.2% Hispanic, 1.7% Black, 4.4% Asian, and .5% American Indian. Forty-four point two percent of students were on the free and reduced lunch program, which indicated a population of low socioeconomic status students. Special Education students were at 11.2%, Transitional Bilinguals students were at 21.4%, and Migrant students at 2.8% finished the demographics of the population (Report Card, 2008).

Assumptions

The NCLB Act required states to develop summative assessments in basic skills to be given to all students such as the Washington State Assessment of Student Learning (WASL). The data from this assessment as well as common unit assessments for mathematics was used to establish essential outcomes based on

the SMART Goal Settings: Strategic/Specific, Measurable, Attainable, Results-oriented, and Time-bound. With the use of unit assessments, data could be monitored and goals would be available as a formative tool for assessing student proficiency. This emphasis on learning rather than teaching led the author to concentrate efforts on three critical questions which were an integral part of the Professional Learning Communities model:

1. What did the author want all students to learn – by grade level, by course, and by unit of instruction?
2. How did the author know when each student had acquired the intended knowledge and skills?
3. How did the author respond when students experienced initial difficulty so that the author could improve upon current levels of learning?

The author believed that finding answers to these critical questions would lead to increased student achievement in mathematics for third grade students. The author also believed that these critical questions could be answered using the SMART goals and essential outcomes created by the Professional Learning Communities model.

Hypothesis

The percent of third graders who achieved 75% proficiency in mathematics would increase when teachers used the SMART goals and essential outcomes created by the Professional Learning Communities model.

Null Hypothesis

The percent of third graders who achieved 75% proficiency in mathematics would not increase when teachers used the SMART goals and essential outcomes created by the Professional Learning Communities model.

Significance of the Project

The effectiveness of Professional Learning Communities was based on formative unit assessment results aimed at improving student achievement. Professional Learning Communities was an ongoing process of identifying current levels of student achievement, establishing goals, and improving and achieving those goals. This approach was a powerful new way of affecting the practices of schools and shifting the focus from teaching to learning to improve student achievement. Depending on the success of this project, other schools and teachers not using the model could be encouraged to implement the model, thus ensuring higher levels of learning for all students.

Procedure

A Professional Learning Community was made up of six third grade teachers who focused on what students learned rather than what was taught. The team collaborated and held each other accountable for results. The Professional Learning Community model was focused on the success of all students by the team who collaborated in a systematic ongoing process to analyze and improve classroom practices by concentrating efforts on the three critical questions, as

noted in the assumptions section, which led to higher levels of student achievement.

In the school in which this study took place, the six third grade teachers studied standards, district curriculum and student data to identify essential knowledge and basic skills that students needed to learn, and then generated essential outcomes that students were to achieve. Formative unit assessments were used to monitor students' mastery of the essential outcomes. Mastery was based on essential outcomes that each student had to achieve to meet proficiency standards. After students completed the unit assessment, the author examined the results and compared them to all third graders within the school. Team members identified strengths and weaknesses in student learning and generated new outcomes and strategies that improved results in a continual process that raised student achievement.

Definition of Terms

collaboration. Collaboration was a systematic process in which people worked together, interdependently, to analyze the impact of professional practice in order to improve individual and collective results.

common assessment. A common assessment was an assessment created or used collaboratively by a team of teachers responsible for the same grade level or course and administered to all the students in that grade level or course frequently throughout the year.

essential outcomes. Essential outcomes were the critical skills, knowledge and dispositions each student must acquire as a result of each course, grade level, and unit of instruction. Essential outcomes may also be referred to as essential learnings.

Professional Learning Community. A Professional Learning Community was a grade-level team, school district or similar group that focused on learning rather than teaching, working collaboratively, and holding each other accountable for results.

SMART goals. SMART goals were goals that were Strategic and Specific, Measurable, Attainable, Results-oriented, and Time-bound.

Acronyms

AYP. Adequate Yearly Progress

EALR. Essential Academic Learning Requirements

GLE. Grade-level Expectations

NCLB. No Child Left Behind

OSPI. Office of Superintendent of Public Instruction

PLC. Professional Learning Communities

SIP. School Improvement Process

SMART. Strategic/Specific, Measurable, Attainable, Results-oriented, and Time-bound

WASL. Washington State Assessment of Student Learning

CHAPTER 2

Review of Selected Literature

Introduction

Over the past decade the demand for school improvement had increased. Since the passage of House Bill 1209 in 1993, Washington educators had focused on changing schools and improving student learning. In recent years, school improvement had been connected with the Nine Characteristics of High-Performing Schools while working toward school reform. The challenge remained to provide resources to school districts to close the achievement gap and help all students reach the high standards set for them (Shannon & Bylsma, 2007). Research indicated a need to improve the quality of teaching in all schools and raise the levels of learning by proven structures and practices that made an immediate difference in achievement (DuFour, Eaker & DuFour, 2005).

One research-based model, Professional Learning Communities, was developed and designed by Richard and Rebecca DuFour and Robert Eaker. This model, combined with the Nine Characteristics of High-Performing Schools and the School Improvement Process, was a widely-recognized means to achieve significant improvement in teaching and learning (DuFour et al., 2005). With this new model of school culture and organization, educational change in the schools occurred and improvements were made toward school reform efforts. This chapter

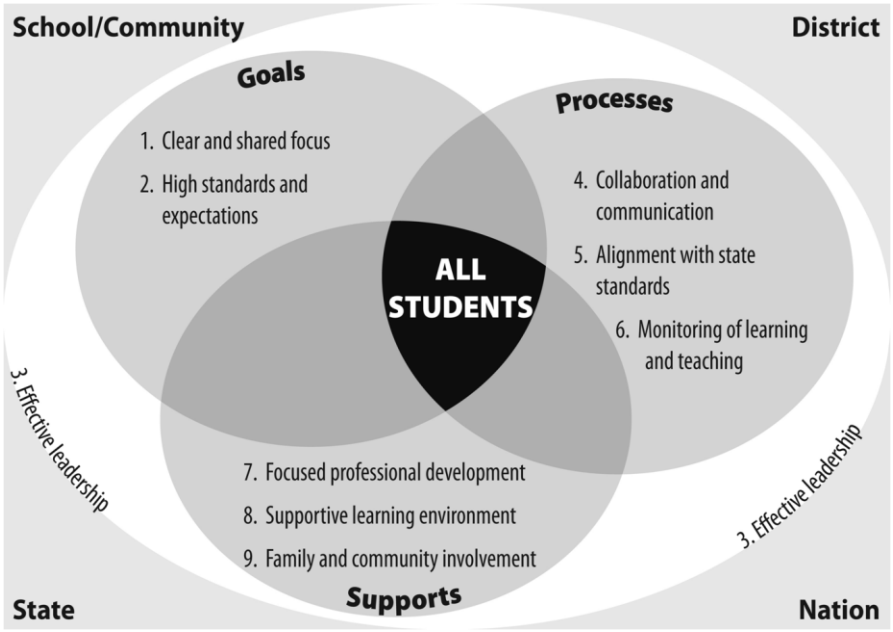
carefully investigated these three integrated strategies to determine their effectiveness when used together to bring about educational change.

Nine Characteristics of High-Performing Schools

Successful schools do exist. Researchers found that high-performing schools had a number of characteristics in common (Edmonds, 1979, and Lezotte, 1991). In 2002, Washington State school improvement specialists from OSPI reviewed more than 20 studies that looked at elementary schools, focusing on schools with students who had higher achievement results than other schools with similar demographic characteristics. From these studies, The Nine Characteristics of High-Performing Schools was published in 2003. The characteristics that were found most often as measured by high or improved scores were:

> A clear and shared focus, high standards and expectations for all students, effective school leadership, high levels of collaboration and communication, curriculum, instruction and assessments aligned with state standards, frequent monitoring of learning and teaching, focused professional development, a supportive learning environment, and high levels of family and community involvement. (Shannon & Bylsma, 2007, p. 3)

Figure 1. Interrelationships of the Nine Characteristics



Although the characteristics were presented separately, Figure 1 showed the interrelationships of the Nine Characteristics. The nine characteristics were chunked into three broad categories: Goals, Processes and Supports. The central part of the interrelated model was centered around all students and school improvement.

The first category, Goals, was aimed at school improvement, which included a clear and shared focus and high standards and expectations for all students. The second category, Processes, was to attain the goals of all students learning to high standards which included high levels of collaboration and communication, curriculum, instruction, assessments aligned with state standards,

and frequent monitoring of learning and teaching. The third category, Supports, included focused professional development, a supportive learning environment and high levels of family and community involvement.

Effective School Leadership, which was one of the nine characteristics, was essential in the implementation of all the other characteristics, and therefore surrounded the three categories. The local community, district, state, and national interests provided the external influence for school improvement.

Research on the first characteristic, Clear and Shared Focus, emphasized the importance on achieving a shared vision developed from common beliefs and values, which created a consistent direction for all involved. Effective school systems that were connected to the focus were more likely to impact student achievement rather than fragmented uncoordinated systems (Newmann, Smith, Allensworth, & Byrk, 2001). To determine a specific focus, collaborative procesess were used to analyze data and target one or two areas as common data-driven goals. The approach DuFour and Eaker described was building a foundation by projecting themselves into the future to describe the school they would like to become (DuFour & Eaker, 1998). This involved a cycle of school improvement.

The second characteristic, High Standards and Expectations for All Students, focused on three concepts; content standards which were learning targets, performance standards which raised the student potential, and

expectations that students would meet both the content and performance standards that were set. Increased student learning required that students and teachers shared the belief in their ability to learn the higher academic standards. When teachers planned, taught and assessed using common lessons and assessments, the teachers were able to compare how well their students had performed. This collaboration also revealed differences in expectations and standards among teachers in which the support and expectations were aligned and raised. To meet the learning standards for all students, teachers had to scaffold learning time and instruction, which provided more opportunities for students to learn the standards based on their ability levels (Shannon & Bylsma, 2007).

The third characteristic, Effective School Leadership, focused on qualities exhibited by successful leaders as well as the views of teachers. Research stated that leadership depended upon relationships and shared values between leaders and followers, the teachers (Burns, 1978). Principals played a critical role in improving schools and increasing student achievement. Sustainable leadership put student learning at the center. A study done by Marzano, Waters and McNulty found 21 leadership attributes in relation to student learning. Seven more likely to affect student learning were: knowledge of curriculum, instruction and assessment, awareness and discussions of current theories and practices, monitoring and evaluating school practices based on student learning, strong ideals and beliefs about schooling, willingness to change, flexibility, and the

capacity to inspire new and challenging innovations (Marzano, Waters & McNulty, 2005).

An effective approach school leaders used in displaying these leadership qualities were collaborative professional learning communities. When leaders and staff collaborated and built relationships, a culture of reflection, growth and refinement was created. Professional learning communities provided an opportunity for staff to learn together by tapping into the strengths of all staff members as well as a focus on student learning and achievement.

The fourth characteristic, High Levels of Collaboration and Communication, focused on collaboration among school staff, teachers, and principals for improving student learning. Research found that student learning increased when school staff focused on teaching and learning, shared their work, and took joint responsibility for student learning (Newmann & Wehlage, 1995). The effectiveness of professional learning communities was for educators to collaboratively work to develop curriculum and lessons, commit to common goals and standards for students, use common assessments, analyze student data, score student work together, identify strengths and weaknesses in student learning based on the work, determine next steps to build on achievement, and work together to improve classroom practices (DuFour, Eaker, & DuFour, 2005).

The fifth characteristic, Curriculum, Instruction and Assessments Aligned with State Standards, focused on equity and effectiveness of the teaching and

learning processes. Alignment correlated between what was to be learned (curriculum based on learning standards), what was actually taught (instruction), and what and how it was tested (assessment). Research studies reported that alignment between testing content and curriculum content was highly significant in explaining improved test scores (Cohen, 1987).

An aligned system raised the equity for all students. In the standards-based system, the subject knowledge and skills students in Washington State were expected to learn were identified by the Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs). Understanding and implementation of these standards were the foundation for alignment through curriculum, instruction and assessment. Several steps were identified to align the curriculum, instruction and assessment which included; analyzing the standards to ensure teachers understood the knowledge and skills that students were required to learn, reviewing the match between the standards being taught and the assessments given, integrating assessments into instruction, identifying curriculum gaps, reviewing effective instructional methods, providing professional development to improve teacher's skills, and allowing sufficient opportunities for students to learn and demonstrate knowledge and skills of learning (Shannon & Bylsma, 2007).

The sixth characteristic, Frequent Monitoring of Learning and Teaching, was the ability to analyze what the teachers were doing against the results

received from the students by regular review and refining processes that directly contributed to the designated results. Learning was monitored by tracking assessments and other evidence of learning. Assessment results were used for monitoring teaching and used for planning instruction, which were modified based on the evidence of learning through data. Frequent monitoring provided continuous feedback for improvement. Feedback was treated as learning opportunities which led to additional instruction and practice. Research supported students being given multiple opportunities to learn in order to improve and overcome initial failures (Good & Brophy, 2000).

Another aspect of monitoring learning and teaching was effective grading and reporting practices to communicate student achievement. Performance information provided students an opportunity to take responsibility for their learning. The data informed the students where additional work was needed in order to meet the standards and communication was part of the learning process. An effective approach used in monitoring the learning and teaching was the focus of three critical questions suggested through DuFour's Professional Learning Communities. The questions were, What do we want all students to learn, How will we know when each student has acquired the skill, and How will we respond when students experience difficulty acquiring the skill? The goal of frequent monitoring was to improve the quality of teaching and raise the levels of learning for all students (DuFour et al., 2004).

The seventh characteristic, Focused Professional Development, had a strong emphasis on staff training that provided learning opportunities for educators. The No Child Left Behind Act required funds to be available for professional development in areas where adequate yearly progress was not made. Frameworks were developed that described attributes and behaviors of educators as they pertained to student learning. These frameworks helped educators reflect on the strengths and weaknesses of their teaching expertise.

Research on school improvement had linked change with professional development. The effectiveness of professional development was evaluated in relation to the impact on student learning and improvement of teaching performance rather than documented participation (Guskey, 2000). Experts reflected on common themes present in professional development that worked. These themes were, "Importance of explicitly connecting teacher and student learning, supporting professional collaboration and accountability, teaching and assessment practices, development of common language, development of structured tools and protocols to guide discussions, and using real-life events of ty teaching" (Lieberman & Miller, 2001, p. ix.).

There were various effective models of professional development that exemplifed the themes. One approach of teacher learning that increased with student learning was Professional Learning Communities. Educational experts saw professional learning communities as an important resource towards

reforming schools through improved instructional practices. Research supported the potential power of professional learning communities and found that student learning increased when the whole organization focused on teaching and learning and shared their work (Newmann, 1996).

The eighth characteristic, Suppportive Learning Environment, focused on school climate and culture based on behavior, consistent and fair rules, caring responsive relationships between adults and students, warm and inviting classrooms, and learning activities that were engaging and purposeful. In a supportive learning environment, positive relationships were built. Students felt a sense of belonging and were valued. Students were encouraged to take risks in their learning and as they learned rigorous content, they applied their knowledge to the real world. One approach that supported school environments was school-wide support to target unsuccessful students before they fell too far behind. Schools were advised to answer the three critical questions suggested through DuFour's Professional Learning Communities. Building a pyramid of intervention strategies based on the targeted student outcomes was essential in building a positive learning environment.

The ninth characteristic, High Level of Family and Community involvement, supported the shared responsibility of students' education between teachers, school staff, families, community as well as the students. Research confirmed that family involvement was a key factor in improving student

achievement. The benefits included higher grade point averages, enrollment in more challenging classes, better attendance, improved behavior and better social skills (Henderson & Mapp, 2002). The National Parent Teacher Association (PTA) published standards for school, family and community partnership involvement programs. The six types of involvement included two-way communication between school and home, promoting and supporting parenting skills, assisting student learning, volunteering, parent involvement in school decision-making, and collaborating with community resources to strengthen schools, families and student learning.

As confirmed, successful schools do exist. Research supported by the Nine Characteristics of High-Performing Schools had become a framework for school improvement that provided common language and established structures and practices that made an immediate difference in schools. Through goals, processes and support, the quality of teaching improved and the level of learning was centered around the success of all students. With the Nine Characteristics of High-Performing Schools being highly correlated to high achievement among students, schools went through the process of school improvement planning and incorporated the characteristics while focused on the need to close the achievement gap for students not meeting the high standards set for them.

School Improvement Process

Recent research had created a better understanding of the continuous effort to reach all students. The Office of Superintendent of Public Instruction (OSPI) and the Washington Association of School Administrators (WASA) produced a School Improvement Planning Process Guide that focused on three critical issues essential to improving schools. The School Improvement Process was aimed at: cultural competence, student engagement, and parent and family involvement. For schools to sustain effective school improvement, the districts required many members in the school community to become active, engaged, and empowered. The plan was outlined in eight distinct stages and provided tools that helped educators in collecting and analyzing data while being focused and engaged in the three critical issues surrounded by the School Improvement Process.

The Washington State Board of Education in WAC 180-16-220 required school districts that received state basic education funds to develop a school improvement plan or process that included active participation and input by building staff, students, parents, and community members. The School Improvement Process fulfilled the requirement. The plan was used by schools to ensure that all students achieved high standards. Through collaboration with families and the community, better environments for student success were created.

The School Improvement Process focused on second order change, or outcomes that altered the culture of the school in which members worked together. The plan had eight stages: "Assess readiness to benefit, collect, sort, and select data, build and analyze the school portfolio, set and prioritize goals, research and select effective practices, craft action plan, monitor implementation of the plan and evaluate impact on student" (MacGregor, 2005, p. 2).

The first stage, Assess Readiness to Benefit, focused on the varied levels of readiness among staff members. Steps were taken by the leadership team to create effective processes for meetings, determine how decisions were made and what the strategies were for consensus, determine the time needed to meet and the resources used to support the plan, encourage open communication and trust among staff and district support, and facilitate an understanding of the school improvement planning. The desired outcome was to have a clear focus on the eight stages along with collaboration with students, parents and community members.

The second stage, Collect, Sort, and Select Data, focused on the school's strengths based on data. The team gathered data that created a baseline of student success, provided an accurate picture of current school processes, guided actions to change outcomes, allowed members to measure progress over time and develop an understanding of the school's demographic factors. The desired outcome was

to gather data on achievement, demographics and school programs in order to proceed to the next stage.

The third stage, Build and Analyze the School Portfolio, focused on presenting the data in a way that was understandable to all members. The portfolio displayed the demographic makeup of the school, how the students were performing on measures, programs that were in place, how the parents, community and students were involved in the school, what was important to staff, students and community, and assessed equitable education for all students. The desired outcome was for staff to analyze the data, which showed the current status of the school and to determine the areas of concern. This stage also focused on strengths as well as what to celebrate in the portfolio.

The fourth stage, Set and Prioritize Goals, focused on student achievement. Goal setting involved goals already set by the state, areas of greatest need and ranking the goals by the potential of impact on students. Members had to follow a process to develop focused, student-centered, measurable, realistic and time bound goals to improve student achievement. The desired outcome was to group the challenges and concerns into themes and create goal statements that were written and prioritized.

The fifth stage, Research and Select Effective Practices, focused on instructional practices based on reliable research. This process involved looking at similar schools that had achieved goals of deeper learning. The desired

outcome was research conducted by members on school practices related to their school improvement goals. The members also evaluated data and selected research-based strategies to meet their goals.

The sixth stage, Craft Action Plan, focused on the creation of an action plan. The plan was based on the members' findings and aligned with three to five school improvement goals that were identified based on the data. The action plan outlined the goals, activities and steps to achieve the goals, responsible staff, timeline, resources including professional development, impact, and evaluation. The desired outcome was a committed action plan that was specific, organized and focused on the school improvement goals.

The seventh stage, Monitor Implementation of the Plan, focused on the progression of the action plan and the impact on student achievement. Members followed the schedule and timeline and monitored activities and tasks that led the school toward accomplishment of the goals set for student achievement. The desired outcome was student analysis based on formative assessments in each of the goal areas to demonstrate progress, focus attention on the plan, provide basis for necessary changes, and reasons to celebrate efforts of staff, students and parents.

The eighth stage, Evaluate Impact on Student Achievement, focused on the effectiveness of the plan. The members collected and analyzed data to determine if school improvement goals had been met and if the action plan was

successful in improving student achievement. The stage was the improvement process being repeated again. By celebrating the successes, the plan reinforced performance and school improvement resulted in student success. The desired outcome was analysis of summative measures such as WASL to determine the level of progress made toward the improvement of student achievement.

To become a high-performing school took a continued commitment by students, parents and members of the school. Through research, common characteristics and processes had been identified to improve effective schools and programs developed to assist schools in creating and maintaining a school culture that increased student learning. One highly-effective program well-known by researchers was Professional Learning Communities. Since the 1980s, this positive approach was noted for advancing school improvement through collaborative work cultures and affecting student learning. The research was focused on explicit common learning goals, more successful instructional solutions, and gains in student achievement. Researchers and experts believed Professional Learning Communities offered the best hope for increasing student learning (DuFour et al., 2005).

Professional Learning Communities

In 2004, the Research and Evaluation Office at OSPI published Characteristics of Improved School Districts. More than eighty research studies were reviewed and analyzed to identify attributes of school districts that engaged

in reform. The study revealed thirteen themes that emerged similar to the Nine Characteristics of High-Performing Schools. These themes were then clustered into four over-arching categories.

The first category was Effective Leadership. Included in that category were a focus on all students being able to learn, the need for dynamic and distributed leadership, and the need for sustained improvement efforts over time. A second category was Quality Teaching and Learning. Included in this category were the requirements for high expectations and accountability of all adults involved, coordinated and aligned curriculum and assessment, coordinated and embedded professional development, and quality classroom instruction. The third category was Support for System-Wide Improvement. Included in this category were the effective use of data, a strategic allocation of resources, and policy and program coherence. The fourth category was Clear and Collaborative Relationships. Included in this final category were the need to cultivate professional culture and collaborative relationships, attain a clear understanding of school and district roles and responsibilities, and interpret and manage the external environment (Shannon & Bylsma, 2007, p. 13).

In each over-arching category, Professional Learning Community characteristics were prevalent. These included a focus on student learning, aligned curriculum and assessment, quality classroom instruction, effective use of data and professional culture and collaborative relationships.

Researchers and educational leaders had agreed that the characteristics of a professional learning community were essential for continued improvement and student success. The Professional Learning Community model could be grouped into three major themes: solid foundation built upon a shared mission, values, and goals, collaboration of teams that worked to achieve common goals, and a focus on results based on the commitment to improve student learning. Through these themes, professional learning communities were established and steps were followed to change the school culture into a learning community (Eaker, DuFour, & DuFour, 2002).

The first theme, Shared Mission, Vision, Values and Goals, focused on setting the foundation of the learning community. The members focused on the three critical questions suggested through DuFour's Professional Learning Communities. The questions were, What do we want all students to learn, How will we know when each student has acquired the skill, and How will we respond when students experience difficulty acquiring the skill? (DuFour et al., 2004). When staff collaborated based on the three essential questions, the direction of the school's decisions were established and therefore became the essential building blocks of the school improvement plan. The professional learning community's response to students who experienced difficulty was timely, quick to identify students who needed additional time and support, based on intervention rather

than remediation, and directive, which required students to devote extra time until the skill or concept was mastered.

The second theme, High-Performing, Collaborative Teams, focused on contributing members working together to improve the ability of the school to help all students learn at high levels. Teams worked together to answer critical questions, clarify outcomes, develop common assessments and analyze student achievement data. Based on the results, team improvement goals were created once again and the cycle repeated. The teams had the benefits of time, focus, access to information and ongoing support as they engaged in collective inquiry to discover best practices and expand their professional expertise.

The third theme, Results-Oriented Culture, focused on what worked best for student learning. Professional learning communities based their effectiveness on results. The process was ongoing to identify the level of student achievement and to establish goals to improve the current level. Teams worked together to achieve the goals based on progress and new goals were set to raise achievement standards. The SMART goal settings were created through the process which modeled student achievement outcomes that were based on strategic/specific, measureable, attainable, results-oriented, and time-bound (DuFour et al., 2004).

Improved districts focused on student learning and high expectations for all students. When members worked together and shared the characteristics of a professional learning community, students made continued improvements and

were successful. The Professional Learning Community model was a well-known model that focused on a shared mission, values, and goals of the school, had team members who worked collaboratively in teams to achieve common goals, and focused on results based on the commitment to improve student learning. Through the process, the use of the model proved to be an effective tool in improving achievement of all students.

Summary

Washington educators continued to focus on changing schools and improving student learning. With recent research, school improvement had been connected with the Nine Characteristics of High-Performing Schools while working toward school reform through school improvement processes. The challenge remained to provide resources to school districts to close the achievement gap and help all students reach the high standards set for them (Shannon & Bylsma, 2007). Through the need to improve the quality of teaching in all schools and raise the levels of learning, research had provided proven structures and practices that have made an immediate difference in achievement (DuFour et al., 2005). Professional Learning Communities, combined with the Nine Characteristics of High-Performing Schools and the School Improvement Process, continued to be a widely-recognized means to achieve significant improvement in teaching and learning (DuFour et al., 2005). With this new model of school culture and organization, educational change in the schools has

been occurring and improvements have been made toward school reform efforts. With the integration of these three strategies and research to support their effectiveness when used together, educational change has indeed taken place.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The project was designed to determine the effectiveness of the Professional Learning Communities model to increase student achievement in mathematics for third grade students using SMART goals and essential outcomes. A Professional Learning Community, made up of six third grade teachers, collaborated and focused on the success of all students in a systematic ongoing process by analyzing and improving classroom practices using SMART goals and essential outcomes. The intent was to lead students to higher levels of achievement in mathematics as measured by formative unit assessments.

Methodology

With the emphasis in education on high standards and establishing measurable goals, the teachers focused on data-driven decision-making that resulted in best classroom practices through critical reflection and analysis of data collected. The research method used in this study was the QUAN-Qual Model. Quantitative data was collected using formative mathematical unit assessments. The data was followed by qualitative data collection, analysis and interpretation to gain insight into the strengths and weaknesses of the results among all six classrooms over the given school year (Gay & Airasian, 2003). The combination of methods allowed the teachers to explain and elaborate on the quantitative results from unit to unit

and therefore focused on increasing the percent of students meeting proficiency. Action research was an approach used to help teachers change classroom practices using the collaborative model, Professional Learning Communities. Action research was conducted in four phases: a focus, topic or issue to study, collection of data, analysis of data and actions taken based on the results (McMillan & Schumacher, 2001). The focus was to raise student achievement in mathematics for the third graders in the author's classroom as well as all the third graders in the school. In the experiment, the students could not be divided into control groups, therefore all third graders received similar mathematics instruction.

Participants

The project was conducted using a third grade classroom from fall of 2007 to the spring of 2008 in an elementary school located in Pasco, Washington. The author's classroom consisted of 21 students of various backgrounds, races, socioeconomic status and behavior levels. There were 13 boys and 8 girls. In addition the project was conducted using all third grade classrooms, which totaled 140 students. The teacher team consisted of 3 women and 3 men with teaching experience greater than five years, and all received training using the Professional Learning Communities model. This training included workshops as well as monthly staff training on the process of establishing and implementing SMART goals and essential outcomes.

Instruments

The data gathering device used in the study was Math Investigations formative unit assessments. Based on data results from each assessment, scores were compared for reliability or consistency between the third grade classrooms. To verify the validity of the project, SMART goals and essential outcomes were reviewed in light of the three critical questions, and this process was repeated over the course of the school year to monitor achievement on unit assessments.

Design

Quantitative data was collected using formative mathematical unit assessments. The data was followed by qualitative data collection, analysis and interpretation to gain insight into the strengths and weaknesses of the results among all six classrooms over the given school year. The action research design was used to guide the teachers using the collaborative model, Professional Learning Communities, to verify reliability and consistency of essential outcomes and SMART goals across the six classrooms.

Procedure

A Professional Learning Community was made up of six third grade teachers who focused on what students learned rather than what was taught. The team collaborated and held each other accountable for results. The Professional Learning Community model was focused on the success of all students by the

team who collaborated in a systematic ongoing process to analyze and improve classroom practices by concentrating efforts on the three critical questions, as noted in the assumptions section, which led to higher levels of student achievement.

In the school in which this study took place, the six third grade teachers studied standards, district curriculum and student data to identify essential knowledge and basic skills that students needed to learn, and then generated essential outcomes that students were to achieve. Formative unit assessments were used to monitor students' mastery of the essential outcomes. Mastery was based on essential outcomes that each student had to achieve to meet proficiency standards. After students completed the unit assessment, the author examined the results and compared them to all third graders within the school. Team members identified strengths and weaknesses in student learning and generated new outcomes and strategies that improved results in a continual process that raised student achievement.

Treatment of the Data

The data for analysis was comprised of the scores obtained on the formative unit assessments for individual classrooms as well as the total number of third grade students. Through SMART goals and essential outcomes, the data was evaluated based on the percent of third grade students who achieved 75%

proficiency. Through the systematic process, current levels of achievement were identified and new goals were set for students to improve and achieve proficiency.

Summary

The project was designed to determine the effectiveness of the Professional Learning Communities model to increase student achievement in mathematics for third grade students using SMART goals and essential outcomes. Formative unit assessment scores were consistent among the classrooms, which resulted in accountability among the team members. By analyzing the results in comparison to all third grade classrooms, strengths and weaknesses in student learning were identified and new essential outcomes and strategies to raise student achievement were created.

CHAPTER 4

Analysis of the Data

Introduction

The No Child Left Behind Act of 2001 (NCLB), signed into law on January 8, 2002, was based on the belief that setting high standards and establishing measurable goals improved individual outcomes in education. The goal in the act was to increase the quality of education by requiring schools to improve performance by implementing scientifically-based research practices in the classroom. In an attempt to meet the new reformed standards, Pasco School District took the initiative to implement Richard DuFour's Professional Learning Community model, Professional Learning Communities. The model imposed a process in which teachers worked to analyze and improve classroom practices. Student achievement outcomes based on Strategic/Specific, Measurable, Attainable, Results-oriented, and Time-bound, (SMART) goal settings were created, which changed the focus from teaching to student learning (DuFour et al., 2004).

Description of the Environment

The project was conducted using a third grade classroom, which consisted of 21 students of various backgrounds, races, socioeconomic status and behavior levels. There were 13 boys and 8 girls. In addition the project was conducted using all third grade classrooms, which totaled 140 students. The teacher team consisted of

3 women and 3 men with teaching experience greater than five years, and all received varied training using the Professional Learning Communities model. This training included workshops as well as monthly staff training on the process of establishing and implementing SMART goals and essential outcomes.

The study took place from the fall of 2007 to the spring of 2008 in an elementary school located in Pasco, Washington. The data from common unit assessments for mathematics was used to establish essential outcomes based on Richard DuFour's Professional Learning Communities model through SMART Goal Settings: Strategic/Specific, Measurable, Attainable, Results-oriented, and Time-bound. Essential outcomes were then created based on the three critical questions and used to guide instruction and raise student achievement.

Hypothesis

The percent of third graders who achieved 75% proficiency in mathematics would increase when teachers used the SMART goals and essential outcomes created by the Professional Learning Communities model.

Null Hypothesis

The percent of third graders who achieved 75% proficiency in mathematics would not increase when teachers used the SMART goals and essential outcomes created by the Professional Learning Communities model.

Results of the Study

The data for analysis was comprised of the scores obtained on the formative unit assessments for individual classrooms as well as the total number of third grade students. The data was evaluated based on the percent of third grade students who achieved 75% proficiency. Table 1 showed the results of the analysis. In comparing unit assessments, there were significant differences in the scores among the six teachers.

Teacher A and B scores were considerably lower in comparison to Teacher C, D, E and F. Although standard was not met for any unit, Teacher A scores were higher than Teacher B. Teacher B had the lowest scores reported on five out of the six units. The scores were well below the average range and did not meet standard on any unit. Teacher C and D had the most success with scores within the average range or meeting standard. Teacher C met standard for four out of the six units and Teacher D followed with three out of the six units meeting standard.

Teacher E and F were Dual-Language teachers who worked closely together with English language learners to achieve standard. Teacher E met standard for three out of the six units and Teacher F met standard for two out of the six units. With the emphasis on SMART goals, although the classes did not meet the high standard that was set, most scores for each unit were within a comparable range with similar results. Therefore, the null hypothesis was

rejected. From the first unit, the percent of third graders who achieved proficiency increased when most teachers used SMART goals and essential outcomes created by the Professional Learning Communities model.

Table 1. Percentage of students with 75% or higher on unit assessments

Teacher	Mathematical Thinking	Groups	Flips	Paces to Feet	Landmarks	Combining
A	48	27	59	27	43	39
B	9	53	38	5	0	14
C	44	92	88	84	72	64
D	58	67	96	79	72	52
E	58	90	75	79	58	74
F	48	90	89	48	40	50

Figure 2. Overall 3rd Grade Math Assessment Data

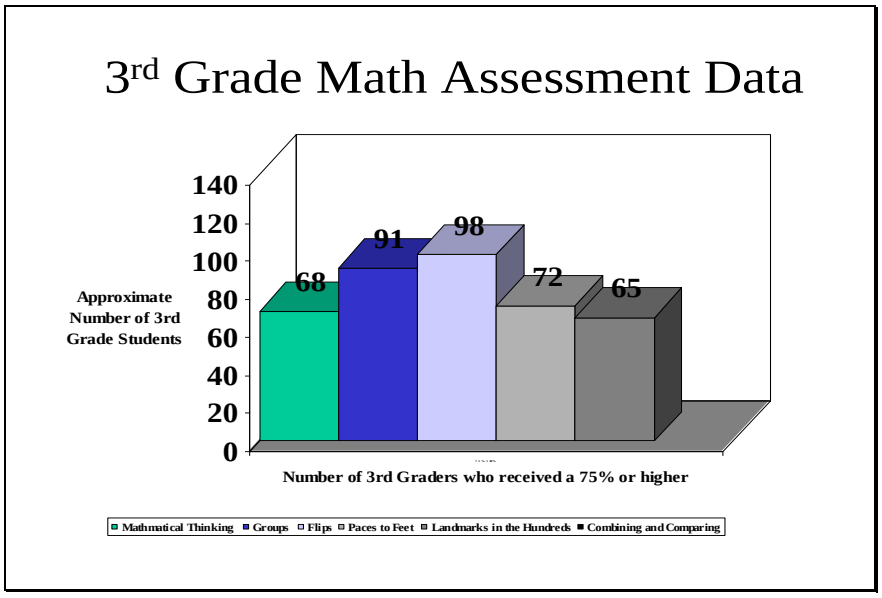
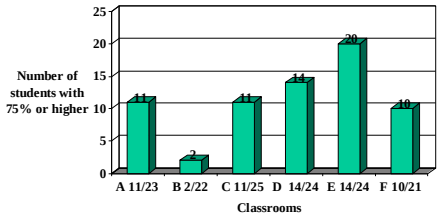
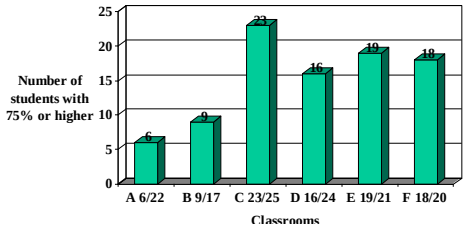


Figure 3. Unit Assessments by Teachers

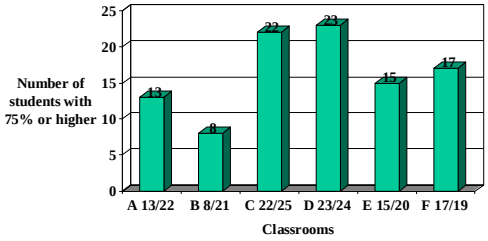
Mathematical Thinking



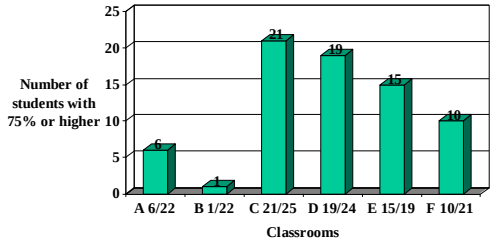
Things That Come in Groups



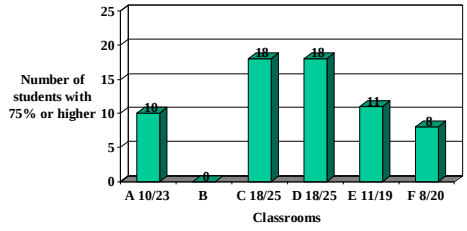
Flips, Turns and Area



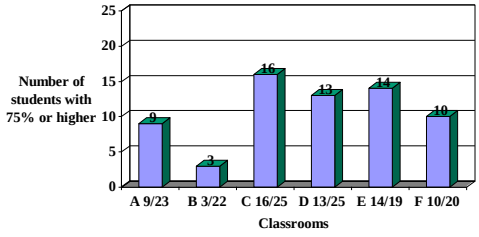
Paces to Feet



Landmarks in the Hundreds



Combining and Comparing



Findings

The results indicated that the Professional Learning Communities model did indeed lead to the effectiveness of the SMART goals and essential outcomes by increasing student achievement as measured by the math assessment data. The formative unit assessment scores showed similar results among the classroom teachers that followed the model consistently. Although there were a number of positive results, there were varying degrees of success.

Teacher A and B had significantly lower scores in comparison to C, D, E and F. Smart Goals were not achieved on any of the unit assessments. Teacher A, new to the model, was implementing SMART goals to the best of her ability based on limited knowledge and experience and therefore had scores higher than Teacher B. Teacher B did not fully engage in the model nor did he work collaboratively with the team in planning and analyzing student results and therefore reverted to reporting data as a requirement, not a goal for focusing on student achievement. Scores for Teacher B were not in an acceptable range for five out of the six units, which resulted in the lowest scores of the group.

Teacher C and D had the highest, consistent success rate. These teachers were team members that taught, frequently monitored student progress, tested, focused on results and created intervention strategies to re-teach. Therefore, scores for Teacher C and D reflected increased student achievement over the given time period. Teacher E and F were Dual-Language teachers who worked

closely together with English language learners to achieve SMART goals. Although Teacher E and F had lower scores, their students performed at a much higher level than Teacher B even with the language barriers. The scores also were within the average range among most unit assessments. Therefore, the null hypothesis was rejected. The Professional Learning Communities model did indeed lead to the effectiveness of the SMART goals and essential outcomes by increasing student achievement as measured by the math assessment data.

Discussion

The results supported the Professional Learning Communities model. Through research and the study conducted, common characteristics of highly effective schools were noted for advancing school improvement through collaborative work cultures that affected student learning. The concerns were evident based on current research about the ability of professional learning communities to be successful as a singular or voluntary group approach to impact large-scale, systemic change. Some teachers remained reluctant to dedicate the extra time needed for deeper level of understanding of effective change and delivery of their classroom instructional practice, which affected the group as a whole. Through the process, all but one member worked together and shared the characteristics of a professional learning community, which resulted in students making continued improvements. The use of the model proved to be an effective tool in changing the school and improving student learning.

Summary

The percent of students who achieved 75% proficiency as measured by the unit assessments showed improvement from fall of 2007 to the spring of 2008. The hypothesis was accepted and the null hypothesis rejected. The model supported increased achievement for most teachers using SMART goals and essential outcomes to raise student achievement. For the teachers who did not fully implement the model, scores remained at a lower success rate than the teachers who followed the model. This approach proved to be a powerful new way of affecting the practices of schools and shifting the focus from teaching to learning to improve student achievement.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

With the NCLB act based on the belief that setting high standards and establishing measurable goals improved individual outcomes in education, there was a need to increase the quality of education. Schools were encouraged to improve performance by implementing scientifically-based research practices in the classroom. Through the process, Pasco School District adopted the Professional Learning Communities model by DuFours in which teachers worked to analyze and improve classroom practices based on outcomes that were Strategic/Specific, Measurable, Aattainable, Results-oriented, and Time-bound. These SMART goals changed the focus from teaching to student learning.

Summary

The project was designed to determine the effectiveness of the Professional Learning Communities model to increase student achievement in mathematics for third grade students using SMART goals and essential outcomes. The intent was to lead students to higher levels of achievement in mathematics as measured by formative unit assessments. Quantitative data was collected using formative mathematical unit assessments. The data was followed by qualitative data collection, analysis and interpretation to gain insight into the strengths and weaknesses of the results among six third grade classrooms over a given school

year. The action research design was used to guide the teachers using the Professional Learning Communities collaborative model to verify reliability and consistency of the essential outcomes and SMART goals across the six classrooms.

Conclusions

Educators continue to focus on changing schools and improving student learning. Research has provided proven structures and practices that have made a difference in student achievement. Professional Learning Communities, combined with the Nice Characteristics of High-Performing Schools and the School Improvement Process, continues to be a widely-recognized means to achieve significant improvement in teaching and learning. The results of the project supported the model as an effective tool in changing schools and improving student learning for teachers who fully implemented the Professional Learning Communities model to guide instruction and raise student achievement.

Recommendations

Based on the conclusions, the Professional Learning Communities model, combined with the Nine Characteristics of High-Performing Schools and the School Improvement Process, was a recognized means to achieve significant improvement in teaching and learning. The researcher concludes that, although training was provided to staff, the ability and knowledge to carry out the program resulted in varying degrees of success. The level of staff training also varied

within the building. It is suggested that leadership take an active role in providing yearlong incremental training to guide educators through the model during the given school year. With similar training and guidance, more opportunities should be available to teachers to allow them to be successful with the model across grade levels and school-wide as they share expertise and implement new strategies.

The researcher also recommends that the formative assessments be given as pre and post tests. Due to time constraints only one assessment was given for each mathematical unit, which made it difficult to analyze and adapt SMART goals. If pre and post tests were given, student growth would be considered in the results analysis and strengths and weakness areas would be more evident within and across classrooms.

As portrayed in the project results, the skills and abilities of the teachers contributed to the achievement level of their students. The project separated the teachers who fully implemented the model vs. the teachers who dabbled with the model. The model was only as effective as the level of staff commitment to the implementation of the model. In order to achieve the highest results, staff must be willing to work together to fully implement the model with unwavering dedication.

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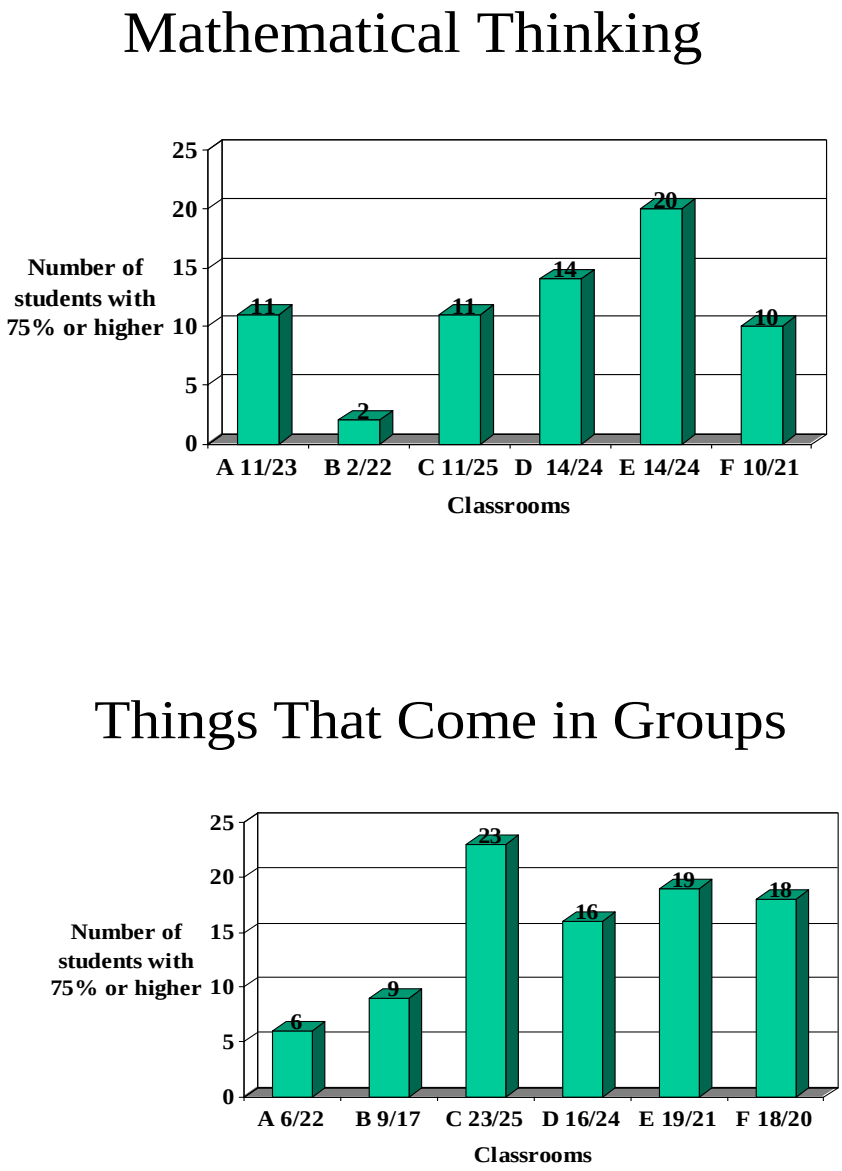
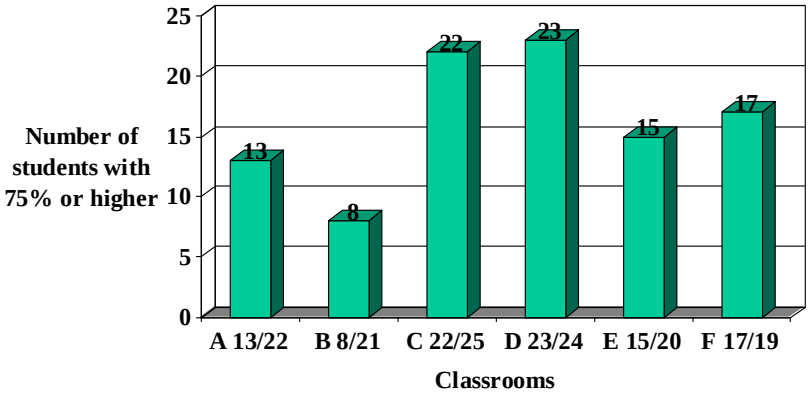
APPENDICES

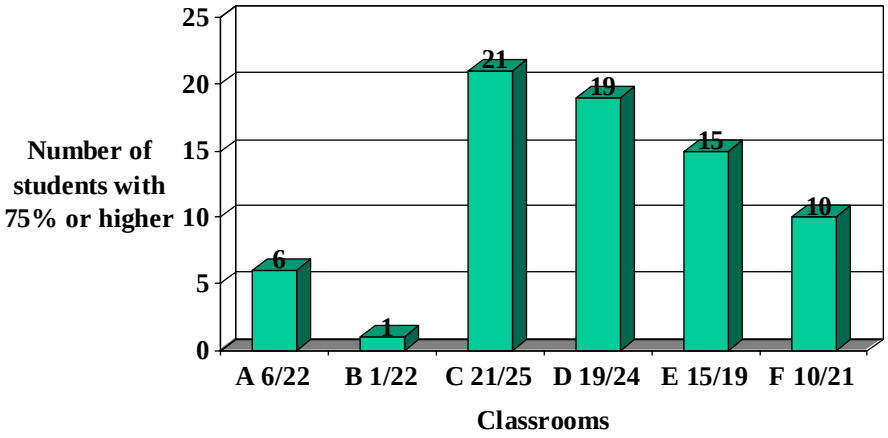
Figure 3. Unit Assessments by Teachers



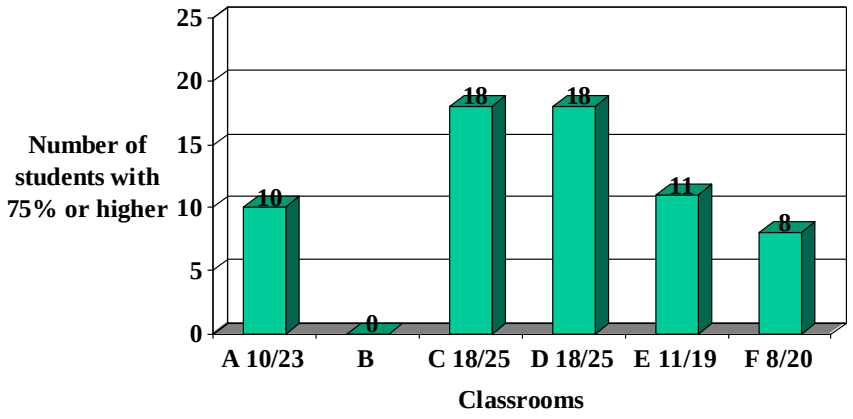
Flips, Turns and Area



Paces to Feet



Landmarks in the Hundreds



Combining and Comparing