

2015

A Program Evaluation of My Math™: Improving Student Computational Fluency Through Inquiry-Based Instruction

Andrea Townsend
Walden University

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Andrea Townsend

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Review Committee

Dr. Martha Richardson, Committee Chairperson, Education Faculty

Dr. Peter Kiriakidis, Committee Member, Education Faculty

Dr. Karen Hunt, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2015

Abstract

A Program Evaluation of My Math™:

Improving Student Computational Fluency Through Inquiry-Based Instruction

by

Andrea Townsend

MS, McDaniel College, 2002

BA, Ohio Dominican, 1996

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

March 2015

Abstract

This program evaluation study addressed a critical deficiency in early childhood math proficiency for a local urban school district. To strengthen students' skills in mathematics, the district adopted the Common Core State Standards and piloted an inquiry-based instructional program called My Math. The purpose of this project study was to determine the extent to which My Math met the goals of improving Grades K-2 students' math proficiency. The conceptual framework was based on theories of multiple intelligences, social learning, and foundations of social development. The National Program Evaluation Standards were used to guide the program evaluation. The research questions centered on the implementation of My Math in terms of usability, lesson coherence, support provided by program materials and effectiveness of materials in enhancing students' mathematical processes based on teachers' perspectives. Data were collected from 57 teachers who completed an electronic survey and 6 teachers who participated in focus groups and interviews. Survey data were descriptively analyzed and interview and focus group data were coded for development of common themes. Teacher participants reported gains in students' mathematical processes after using the My Math program. The program evaluation report reflected support for My Math as an effective instructional program for Grades K-2 along with recommendations for supplementation of the program with additional resources to address individual needs among students. Positive social change at the local level includes enhancing students' learning and achievement in mathematics and assisting other districts in understanding the benefits of the My Math program on student achievement for early childhood students.

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Dedication

This doctoral study is dedicated to my husband, Stephen Townsend, and my son, Matthew, who provided support throughout my doctoral degree. I also wish to dedicate this doctoral study to my doctoral committee for the continuous encouragement and guidance to complete this doctoral degree during difficult times.

Acknowledgments

I would like to thank my doctoral committee for their ongoing support, guidance, and encouragement. My gratitude goes to Dr. Martha Richardson for her feedback, discussions, and guidance of my doctoral study. I would also like to thank Dr. Peter Kiriakidis for his guidance regarding content for this doctoral topic and for his research methodology expertise. Dr. Karen Hunt provided feedback during my doctoral study.

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Section 1: Introduction to the Problem

Introduction

Critical deficiencies in basic mathematical skills of kindergarten through second grade (K-2) students were identified by the district of study and new strategies were needed to address these concerns. K-2 students in the school district accounted for 79% of the students who scored below grade level on the district benchmark assessments. On average, less than 40% of these students passed the initial kindergarten screening (Ohio Department of Education, 2011). The district responded to the critical need by (a) restructuring the math curricula, (b) adopting new math textbooks, (c) applying curriculum-based measurements (CBM), and (d) selecting My Math for struggling students. This program has a strong intervention component, with the focus on improving number sense, counting, and mathematical processes for underachieving students. This program is a research-based basal program aligning with the state's Common Core State Standards (CCSS, 2012) and focusing on increasing math proficiency. My Math had not been evaluated by the school district as a research-based math program for low socio-economic students. K-2 teachers reported the effectiveness of the My Math instructional strategies, materials, and overall effectiveness of the program after the initial implementation year.

In order to determine the impact of My Math after the first year of its implementation (2011-2012 academic year), I conducted a qualitative case study program evaluation to determine if the program met (a) the stated goals of My Math; (b) the

program evaluation standards of utility, feasibility, propriety, and accuracy set forth by the Joint Committee on Standards for Educational Evaluation (1994); and if K-2 students; (c) and if K-2 students increased math proficiency. The findings of this program evaluation were formulated into an evaluation report (Appendix A) to the district of study, which included recommendations and guidelines to strengthen mathematical instructional practices throughout the school district. In this section, I (a) define the problem, (b) discuss the rationale for choosing the problem, (c) list and define special terms associated with the problem, (d) state the significance of the problem, (e) list the guiding research questions that frame the study, and (f) review the literature that supports the conceptual framework related to the problem.

Definition of the Problem

In the district of this study, the initial screening of kindergarten students identified the need for extensive remediation in math. Disaggregated data identified a lower performing subgroup of kindergarten students who entered with deficiencies in number sense and counting skills. Less than 40% of the students passed the initial kindergarten screening (Ohio Department of Education, 2011), which translated to 60% of the students needing remediation to become ready for kindergarten.

During the 2011-2012 school year, K-2 students performed below grade level in mathematics as measured by scores on the short cycle assessments (SCA) and the standardized curriculum-based measurements (CBM) benchmark assessments. Low scores on math proficiency spanned across the district where less than 30% of students passed the benchmark tests. If math skills are not raised in K-2, as evidenced by test

scores and class performance, math deficiency will continue as these students move to successive grades. The Ohio Department of Education (2011) reported that in kindergarten through third grade, 42% of the students will most likely score below grade level in math proficiency (Table 1).

Table 1

Summary of District Data in Math for Grades K-3 for 2011

Test	Grade	Percent of proficiency
Kindergarten Readiness	K	39.3%
Short Cycle Assessment	1	Not available
Short Cycle Assessment	2	Not available
Ohio Achievement Assessment	3	42%

Note. Public data collected from the Ohio Department of Education (2011).

The problem not only affected underperforming students K-2 students, but also impacted teacher accountability for student performance on the district assessments. The district's minimum CBM goal was for all students to experience one year of instructional growth per year and for students to perform at grade level proficiency. The performance goal was equivalent to one year of growth per year. Narrowing the achievement gap of K-2 math students challenged teachers in the district of study who provided instruction that met the needs of all learners and mastered grade level standards aligned with the 2010 adoption of new CCSS. In response to the critical deficiency in basic math skills of K-2 students, the district purchased My Math, a research-based math program aligned with

the new CCSS in mathematics. This program was evaluated according to the American Evaluation Association (AEA) evaluation standards to determine the utility, feasibility, and accuracy of the program. The program used for the targeted students was not evaluated until after the pilot year.

Rationale

Evidence of the Problem at the Local Level

The research site was a school district located in Ohio that adopted a research-based instructional software program to increase the math proficiency of students in K-2. Narrowing the achievement gap in math during the early grades will help low achieving K-2 students from falling further behind in subsequent years. No Child Left Behind (NCLB) Act of 2001 mandates placed even more urgency to have all students perform on grade level by 2014.

In 2012 many states applied for the Elementary and Secondary Education Act federal waiver that extended the time frame to 2021, when the district would need to have 100% of all students meet grade level expectations. The district of study received the waiver and focused on increasing mathematical skills of K-2 students through research-based instructional strategies. To build a strong mathematical foundation through real world applications, the district purchased My Math program, which builds computational fluency through mathematical investigation (inquiry and curiosity) and provides practice and various problem solving strategies using research-based instructional practices (Carter, Cuevas, Day, & Malloy, 2012, p. 11). My Math contains mathematical investigations in the form of questions that create interest in math topics. Allowing

students to solve problems using their own problem solving strategies illustrates an ability to make a model, draw a picture, use a manipulative, or write an equation. To ensure students have a deep understanding of their method of choice, they show mastery by explaining how they arrived at their answer.

At the district of study in 2012, students did not meet grade level expectations as determined by the district SCA benchmark test scores. Many students who entered kindergarten did not attend any preschool educational program, came from single-family homes, and were often raised in poverty (Ohio Department of Education, 2012). The 2012 Ohio Department of Education Kindergarten Readiness Assessment results indicated that statewide only half of the students were ready for kindergarten. Because students in the district scored lower than the state average of 50%, educators at the district of study were challenged to meet the district's higher goals for student academic growth to meet percentage levels of 150% to 200% in order to narrow the achievement gap and perform on grade level.

The intent of the district was to increase the computational proficiency of students in K-2 through implementing a research-based mathematical program called My Math. The district of study purchased My Math as an instructional aid to remediate and apply interventions for 79% of K-2 students who scored below grade level on the district's SCA test of academic standards. The remediation components of My Math include the following:

- computational fluency through inquiry-based instruction;
- learning from concrete to abstract through guided practice research;

- problem solving activities that re-teach and remediate;
- teacher modeled strategies and explanations of new concepts and vocabulary;
- student exploration of problem solving strategies; and
- guided and independent practice of what they have learned (Carter, et al. 2012).

An overview of how these components of My Math function to remediate the K-2 math students follows.

Overview of My Math Intervention Program. My Math focuses on computational fluency through inquiry-based instruction with activities that move from concrete to abstract through guided practice. The program contains a component specifically designed to support struggling learners through research-based remediation as a way to assist students in K-2 to increase number sense, counting, and mathematical processes. My Math provides a wide variety of problem solving activities that allow students to explore their own methods of arriving at a mathematical solution. Inquiry and discovery-based learning in the math program support Bandura's (1977) theory that learning is acquired by trial and error. The teacher models strategies and explains new concepts and vocabulary (referred to as the "I do" stage of learning). Afterward, students explore and test problem solving strategies then explain and justify their thinking in guided practice (referred to as "we do" activities). Students work alone or in groups during the "we do" segment of the lesson as the teacher monitors work. Students solve math problems on their own (referred to as "you do" stage of learning) as they practice what they have learned. Inherent in learning through My Math is the premise that as

students became successful in increasing their skills and developing math concepts, they become more curious and exhibit an increased desire for learning (Carter, et al., 2012).

Evidence of the Problem From the Professional Literature

In 1983, the National Commission on Excellence in Education reported that schools in the United States are failing the students. During the 18-month study, the findings indicated that only a third of the nation's population was able to solve multi-step math problems. These findings were the impetus for the government and other educational groups to address concerns for the U.S. educational system. Increasing the readiness level of kindergarten students and math proficiency in K-2 grades was not an isolated problem in the district of study. Daily, Burkholder, and Halle (2010) summarized state and national initiatives that focused on kindergarten readiness in math and literacy:

Readiness programs were supported in 2002 by launching the Bush Administration *Good Start, Grow Smart*, which urged states to develop voluntary early literacy and early math guidelines for children between the ages of three and five and . . .

Obama's administration . . . prioritized the role and use of data in early childhood and K-12 education systems . . . Broad expectations for early math that are covered by most states include topics such as numbers and operations, patterns, geometry, measurement, and spatial sense. (p. 2)

The National Council of Teachers of Mathematics (NCTM; 2001) reported that changes needed to be made in teaching mathematical processes in math.

Recommendations were made to increase mathematical communication, enhance problem solving, and deepen mathematical understanding. The problem of achievement

gaps existing early in a student's education was identified in the professional literature of the NCTM (2001, 2010) and the U.S. Department of Education ([USDOE], 2001, 2004). The USDOE (2004) and the NCTM (2001) national and international mathematical test results indicated that students in the United States exhibited lower than desired levels of math proficiencies (National Assessment of Education, 2011). The same trend was identified in the 2007 and 2011 Trends in International Mathematics and Science Study (TIMSS) and in Gonzales et al., (2008). Analysis of the 2007 report showed that U.S. students continue to exhibit lower math proficiency than peers of the same age internationally. Wagner (2008) reported "Students needed to be more curious . . . to learn the inquiry process . . . and contended that without these skills, our students will not be effective workers in the global workforce" (p. 17). In order to raise awareness for the need for educational reform and improved programs, research needs to continue (NCLB, 2001).

The USDOE and the NTCM expressed the need for educators to use research-based programs and best practices in order for students to be successful. Early identification of student learning gaps would then enable educators to institute research-based practices, thus closing the achievement gap nationally and internationally (NCLB, 2001; NTCM, 2010; USDOE, 2004; Slavin, 2008). With the passage of NCLB in 2001, American schools instituted high-stakes testing and the intense process of data collection, which enabled educators to identify underperforming students and provide early intervention programs for students who were struggling. Foundational primary grade teachers are required to use standards as they teach remedial skills (Schmoker, 2011;

Slavin, 2008). Multiple research studies indicated that while materials have been purchased to improve student achievement, little has changed in the structure of math classes (Buhagiar & Murphy, 2008; Eaton & Carbone, 2008; Little, 2009). The professional literature clearly defended the need for research-based math programs that improve instruction through the use of materials and changes in instructional practices of rote memorization of basics math facts to instruction that is based on guided practice and remediation for underperforming students.

In 2001, with the passage of NCLB, the federal government required educators to use research-based programs and ensure students achieved 100% proficiency in reading and mathematics by 2014. More recently, in 2012 the federal government allowed states to request a waiver from meeting the deadline for 100% student proficiency. In 2013, the state of Ohio participated in the federal waiver to extend the timeline for student proficiency. Instead of students making annual yearly progress (AYP), they are required to meet the annual measurable objective (AMO). While the standards are new, the target is still the same, which is all students will be proficient. Despite years of research and mandates of research-based instructional programs in place, K-2 students in the local district are not passing the high stakes test required in order to indicate academic proficiency in math.

Definitions

Academic growth: Student academic growth that can be measured over time from kindergarten to high school (Northwest Education Association, 2011).

Academic proficiency: Data used to predict a student's future performance and current grade level equivalency (Northwest Education Association, 2011).

Accuracy standards: Measures that are intended to increase the dependability and truthfulness of evaluation representations, propositions, and findings, especially those that support interpretations and judgments about quality (Yarbrough et al., 2011).

Aggregated data: Data that enable educators to make instructional decisions to meet the needs of students at all levels (Northwest Education Association, 2011).

Back mapping: Planning an entire curricula series backward from high school to kindergarten (McGraw-Hill, 2012).

Conceptual development: Teaching a few math topics or skills to build mastery and foundational skills (Schmoker, 2012)

Discovery-based learning: Active discovery, inquiry, exploratory learning (Clark, Yates, Early, & Molton, 2010).

Feasibility standards: Standards that address the efficiency and effectiveness of a program (Yarbrough et al., 2011).

Fidelity: Fidelity refers to the use of a program as it was designed and intended (Ogonosky, 2008).

Mathematical knowledge for teaching (MKT): The mathematical knowledge that is common to individuals working in diverse professions and the mathematical knowledge that is specialized to teaching (Hill, 2008).

Mathematically proficient students: Students who start with various entry points to a math problem and then can explain their solutions and thought processes (McGraw-Hill, 2012).

Model with math: Teachers or students model mathematical concepts to deepen understanding (McGraw-Hill, 2012).

Propriety standards: Provides information related to legality and fairness of the program (Yarbrough et al., 2011).

Standards-based program: An educational product or textbook that is written based on academic standards (Schmoker, 2012).

Systematic inquiry: Evaluators conduct systematic, data-based inquiries about what is being evaluated (Fitzpatrick, Sanders, & Worthen, 2011).

Teacher content preparedness: Teacher training that prepares the teaching force utilizing a three-tiered approach. The three tiers build upon teacher skills, which allow them to earn advanced level diplomas in teacher preparation. A central leveled curricula for teacher preparation is unified with the expectation that teachers will further their education with a more specified curriculum. The program structures enable teachers to have more content area at the beginning of training and a wide range of teaching content by the end of the tiered program (Yeping, Dongchen, Huang, & Ma, 2008).

Utility standards: The value of a program in regard to meeting the needs of the stakeholders (Yarbrough, Shulha, Hopson, & Caruthers, 2011).

Significance

The significance of this study was based on the problem at the district of study whereby K-2 students are underperforming in counting, number sense, and problem solving strategies in math. Federal legislation created the Elementary and Secondary Education Act (ESEA) waiver application (2012) reset the date from 2014 to a year not yet determined by the state for student achievement to meet 100% proficiency. In the fall of 2012, the district of study purchased My Math as the primary math program for K-2. The program is research-based and uses the inquiry method for students to understand mathematical process, counting, and number sense. “A curriculum that is organized around mathematical habits of mind, allowing students to experience the process of creating, inventing, conjecturing, and experimenting and practicing should increase student achievement” (Cuoco, Goldenberg, & Mark, 2010, p. 11). My Math meets this description of a curriculum that will increase student achievement.

My evaluation of the new math program resulted in findings that included strengths and/or weaknesses of My Math and predicted the efficacy of using the math program after the pilot year. The evaluation occurred after the first year of implementation in 10 elementary schools of the district of study. Since mathematics is one of the four core subjects in the local and national CCSS, the significance of this program evaluation was to determine whether or not implementation of My Math provided a strong mathematical foundation and early intervention in the primary K-2 grades to continue to be utilized as the core math program. Moreover, the program

evaluation was important to measure the accuracy, feasibility, and utility of the program use and instruction for learning to improve for K-2 students.

Guiding/Research Questions

This doctoral study was a program evaluation of My Math. The program was evaluated with guiding principles for program evaluation set forth in Standards for Educational Evaluation (1994) through an adaptation of the Education Development Center (EDC) survey, which consists of open-ended and Likert-scale questions. Written permission was received from the EDC to utilize the survey (Appendix B). The following research questions guided this doctoral study:

RQ1: What instructional strategies in My Math did teachers perceive were effective for increasing number sense, counting, and mathematical processes?

RQ2: In what ways did implementation of the program meet the goals and objectives of My Math?

RQ3: How did the teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials?

RQ4: Which materials did the teachers perceive were most effective in increasing student mathematical processes?

Review of the literature supported the need for a research-based curriculum that helps K-2 students improve their proficiency in math and for program evaluation.

The research questions reflected the goals of My Math (a) ease of implementation; (b) improvement in instructional practices; (c) increasing proficiency in counting, number sense, and mathematical processes; and (d) accuracy, feasibility and utility of the

program as set. The literature that supports the program goals and applications of the program are discussed in the review of the literature.

In this chapter, literature on theoretical foundations of learning, instructional practices, and inquiry-based instruction will be reviewed. This chapter will also cover the literature on the need for teachers to use data to drive instruction and teaching students who are considered at-risk. The relationship between student learning preferences, instructional choices, and the theoretical foundations are significant to this particular study and are discussed in this chapter. Furthermore, research supporting the need for program evaluations is discussed in the chapter. The chapter concludes with an indication of the knowledge of the achievement gap that still exists between multiple subgroups, limitations of the study, and an introduction to of the contents that will be addressed in Section 2.

Literature Search Strategy

To locate articles that have investigated concepts of the three main theoretical foundations, instructional practices, and practices regarding inquiry-based instruction, a computerized Thoreau multiple database search was conducted. The search inclusive of Academic Search Complete, Education Research Complete, Educational Resource Information Center (ERIC), ProQuest Central, state and government information, international results, My Math, and SAGE Premier was conducted within various major journals by inputting the keywords *instruction, learning styles, pedagogy, mathematical instructional practices, inquiry-based learning, computational fluency, teacher training, cooperative learning, social learning, social learning theory, constructivist theory, RtI,*

assessments, guided instruction, algebra, social development, low socioeconomic status, differentiated instruction, number sense, counting, mathematical processes, and primary math teacher for the years 1977 to 2014.

Kajander (2010) provided a detailed and fundamental investigation into the need for reform of elementary mathematics teachers' preparation programs that prepare teachers in mathematical pedagogical instructional practices. The study provided detailed information regarding the procedural and conceptual knowledge necessary for teachers have a strong pedagogical foundation in order to meet the new high stakes requirements mandated by the state and federal government. This review showed the relationship between student learning and the instructional delivery of concepts and skill when the teacher has a strong pedagogical foundation. A teacher who has a strong understanding of the materials can assist students in obtaining foundational skills through the instructional model (I do, we do, you do), social learning, imitation, and student curiosity through inquiry-based learning. There is a lack of research on the topic of mathematical instruction at the primary grade levels of students from low socioeconomic homes with zero results. The lack of search results indicates a strong need to address mathematical instruction based on socioeconomic status. The basis of My Math is deeply rooted in constructivist theory. An extensive search of mathematics and constructivist theory in Thoreau revealed 284 journal articles in 86 journals, such as *International Journal of Learning, Computers and Education and International Journal of Mathematical Education in Science and Technology*, with 19 articles and books related to inquiry-based learning and instructional modeling. The results of the literature review were based on

119 articles, books, government reports, and information gathered at multiple conferences that related to inquiry-based mathematical learning and instruction, as discussed in the following sections.

Review of the Literature

This review was derived from 119 peer journals, multiple books, My Math textbooks, government reports, and information gathered from multiple conferences. The review included: (a) the theoretical foundation of social learning theory through modeling and repetition, (b) the theoretical foundation of social development, (c) the theoretical base of multiple intelligence theory regarding individuals who have different learning styles and strengths, and (d) the need for program evaluation. This review of the literature provided information on the ideal educational setting.

The Theoretical Foundation

Overview. My Math is based on Bandura's social learning theory, Vygotsky's social development theory, and Gardner's multiple intelligence theory. Bandura (1977) developed a theoretical foundation of social learning theory for observational learning, social modeling in human learning, and motivation in the learning process. Vygotsky's (1978) social development theory applies to learning as learners make connections between their surroundings and interactive experiences. In order to deepen understanding, teachers must deliver information slightly above the student's current ability level, which Vygotsky defined as the zone of proximal development (Clabaugh, 2010). Gardner (2006) defined multiple intelligence as optimizing different learning styles as diverse cognitive strengths and opposing cognitive styles. Gardner posited that students must be

exposed to multiple learning styles and instructional strategies to build upon their individualized learning styles. These three theories provided the foundation for research-based instruction found in My Math.

Bandura's social learning theory. Bandura (1986) described a process necessary for individuals to successfully model another individual. The teacher models the processes or concepts that students need to gain knowledge and mastery. The process included the subcategories of attention, retention, motor reproduction, and motivation. The intentional process indicated information is retained during the observation of modeled behavior (Hall, 2011). Modeled behavior is a fundamental aspect of teaching, as an intentional participation or limitations can directly affect the information that is retained by a student. Teachers may need to modify their initial modeling practices into more clear, concise manners (Hall, 2011). For example, in mathematics, instruction may include chunking steps into a smaller process, utilizing a differentiated form of instruction, providing additional guided practice, or providing a different problem solving method. The direct application to My Math occurs in the "I do" stage of My Math that is the first step of modeling during instruction. The "we do" process of teaching is another stage in My Math that unfolds as guided practice. Students repetitively model what the teacher has done in order to gain and retain new information. The "you do" process, of teaching included in My Math, enables the teacher to identify students who have retained the information or who need re-teaching or more modeling of a concept.

Bandura's model of retention refers to students' remembering the behavior through an active process of transforming information into rules and conceptual

processes as they practice with instructional guidance (Felix & Harris, 2010). Teachers can assist students in this process through differentiating instructional practices and build upon a student's prior knowledge. During instruction, differentiation would be the process in which teachers or other students model a behavior or concept through multiple modalities. Utilizing multiple methods of instructional practice enabled students to obtain and process information in different ways and to access new concepts. Bandura's model revolves around the student's ability to make sense of problems from the concrete to abstract. This step enables learners to deconstruct problems through the manipulation of the material in their own way.

Another step in Bandura's model is the motor reproduction or physical reproduction. Students are able to reproduce the model presented to them (Bandura, 1986). Case in point, Artino (2007) described Bandura's 1961 Bobo doll experiments at the beginning of observation learning through social modeling; however, before an individual can successfully model another's action, he or she must pay attention, retain what they are seeing, reproduce it, and then be motivated to continue. Keeping this in mind, students need to practice reproducing mathematic processes in order to learn and apply multiple problem solving processes. Repetition or reproduction helps students retain what they are learning. The motivation comes from teacher feedback, peer feedback, and success as they learn new processes. My Math (in print) researchers described the problem solving process as one that enabled students to make sense of problems through analysis of a problem and a method to solve it. Teachers can reinforce this process through guided practice and authentic feedback. Additionally, students are

able to guide each other by modeling different problem solving strategies and modeling alternative concepts building on current skills and processes (Kersaint, Thompson, & Petkova, 2009).

The final process in Bandura's model is motivation. Students want to demonstrate what they know and have learned. Motivation comes through various means leading to the repetitive behavior, which in turn reinforces the skills that were taught, learning vicariously (observed behaviors) and self-produced products or skills (self-satisfying and valuable).

Gardner's multiple intelligence theory. Gardner's multiple intelligence theory supports a more balanced instructional approach that incorporates a variety of strategies in order to leverage the intelligences and obtainment of concepts (Gardner, 2006). As students utilize skills of creating a coherent representation of the problem they are solving, they can build upon their multiple intelligences strengths to problem solve and build understanding. Students who learn how to apply newly acquired skills and processes can solve problems and fashion products based on their individual strengths in their preferred multiple intelligence areas (Armstrong, 2009). The individual will seek out the model or process that supports his or her intelligence area. Differentiated instructional strategies are necessary as students seek to utilize their preferential learning styles. Gardner (2006) described eight intelligences or strengths and skills that everyone has the potential of utilizing. These intelligences interact with one another to measure a student's readiness level and learning opportunities in order to increase the likelihood of academic growth. Matching student interest from learning profiles could increase the

likelihood of student motivation and engagement. The eight intelligences can be interwoven into multiple activities and student choice during instruction as they interact with one another. If educators understand the specific intelligence their students favor, they can differentiate instruction to group students and meet their needs.

The first intelligence is linguistic/verbal. A student who displays preference to this intelligence is one who has a sensitivity to the meaning of words and language (Gardner, 2006). A student whose dominant multiple intelligence of linguistic/verbal prefers a print rich environment and opportunities to write. Instructionally, a teacher can create a print rich environment, utilize a workshop model, and utilize a multitude of printed materials. Socially, these students would learn best with cooperative learning strategies and through an integrated curriculum.

The second intelligence is musical/rhythmic. A student who displays preference to this intelligence is one who has a sensitivity to rhythm, pitch, and can be musically inclined to play instruments or sing (Gardner, 2006). A student who has a main multiple intelligence of musical/rhythmic prefers instruction that includes music, sounds, and often verbally talks through a task. Instructionally, a teacher can create a musical environment with songs, raps, poems, or speech patterns that catch a student's interest. Socially, these students would learn best through individual or group activities that enable creativity and verbally active work that engages their creative side.

The third intelligence is logical/mathematical. A student who prefers logical/mathematical intelligence is a student who has the ability to understand concepts and the logical relationships between actions or symbols (Gardner, 2006). A student

whose dominant multiple intelligence is logical/mathematical excels in math class. This logical learning style directly relates to preferences based in problem solving, memorization, and the ability to create charts and graphs to solve problems. Instructionally, a teacher can create mnemonics to memorize math skills, utilize manipulatives for problem solving as students move from the concrete to abstract instructional concepts; and create an environment that utilizes challenging problems, technology, and real life applications. Socially, these students would learn in differentiated problem-based learning centers, hands on activities, or with groups that are highly structured with tasks that are connected to the big picture.

The fourth intelligence is visual/spatial. A student who prefers visual/spatial intelligence has the ability to understand concepts that relate to large spatial areas (Gardner, 2006). A student would do well in math if he or she were able to solve math problems by making a model or drawing pictures. Additionally, these students do well with graphic organizers, video demonstrations, and learning centers with picture representations. Instructionally, a teacher can create a learning environment that utilizes bulletin boards, posters and objects that provide visual representation, graphing software, visual aids, and a print rich environment. Socially, these students would learn best in paired groups where they are able to draw their steps during problem solving, visual projects and assignments and through reflection time so they can see the immense picture of the mathematical concept.

The fifth intelligence is bodily/kinesthetic. A student who displays preference to this intelligence utilizes their whole body, or parts of their body to solve problems and

create products (Gardner, 2006). A student would do well in math if he or she were able to role play, operate equipment, or have the ability to be physically active in the solution. Teachers need to allow these students lots of movement within the classroom through physical games, stretching, or many hands-on activities. Instructionally, a teacher can create a learning environment that utilizes role playing, field trips, and exploration through feeling and touch. Socially, these students would learn best with groups of students who are active in the same assignments, have little down time during learning, and need transition time to prepare for the next activity. Without these types of transitions or group activities, they can be easily distracted or distracting to other students.

The sixth intelligence is interpersonal/social intelligence. A student who favors interpersonal/social intelligence is described as a student who prefers to interact with others (Gardner, 2006). A student would do well in math if he or she were able to work in cooperative groups, be a peer tutor, or through discussion. Teachers need to allow these students to create a team atmosphere where they guide activities. Instructionally, a teacher can create a learning environment that utilizes classroom discussions, assign small group work, and provide a variety of instructional opportunities that include collaborative problem solving. Socially, these students need to be taught social skills to work in student groups as they are likely to take the lead. These students have a hard time with the “you do” independent instructional time. Without structure, a student would need to have an opportunity to work in a group or they will have difficulty working alone.

The seventh intelligence is intrapersonal. A student who favors the intrapersonal intelligence is one who is intrinsically motivated to make decisions and advocate for themselves based on personal needs (Gardner, 2006). A student would do well in math if he or she were able to have reflection time, ask questions and make choices, and work with a teacher who facilitates learning. Teachers need to allow these students to have wait-time, give them a quiet area in the class to work alone, and create individual goals for the student to achieve. Instructionally a teacher can create journal activities, individual centers, and independent work time. Socially, these students are quiet, have issues with overarching rules, and thrive working independently. These students do well in the “you do” portion of instructional practices as they are extremely independent.

The eighth intelligence is the naturalist. A student who favors the naturalist intelligence identifies with nature (Gardner, 2006). A student would do well in math if he or she able to lead activities, do hands on assignments, and be provided with projects that require long term research. Teachers need to allow real world applications, the ability to develop ideas through curiosity and inquiry, and through observation. Socially, these students would learn best in field experiences that relate to living things or nature.

Relating math to nature enables these students to perform better in math.

Teachers and peers can be more productive academically and socially if they understand each other’s preference of multiple intelligence. Gardner (1996) described interactions amongst the intellectual competencies as one that is encountered in cultural and social settings that develop from a person’s experiences. Sulaiman, Hassan, and Yi (2011) described a teaching process that differentiates instructional methodologies

through a multiple intelligence approach to meet the needs of a wider range of students. Classroom teachers who create natural learning opportunities for students will create more success in obtaining skills and determining the extent that information is obtained. Exposures to real world situations help shape and develop various intelligences. Individuals who develop one intelligence over another will need to utilize those strengths during instructional time. The relationship of their multiple intelligence to social development is clearly linked based on interactions and shared experiences. Multiple intelligence can be related to the “I do, we do, and you do” of the My Math instructional model. Educators are trained to deliver differentiated instructional practices in order to meet the needs of a diverse group of learners (Gibson & Hasbrouck, 2008). Teachers need to be proficient in research-based practices to narrow the achievement gap.

Vygotsky's theory of social development. Vygotsky (1978) defined zone of proximal development as the gap between a student's ability to perform a task above the student's current level with guided practice and the ability to solve a problem above their level independently (Clabaugh, 2010; Goldenberg, Mark, & Cuoco, 2010). According to Vygotsky's social theory, a learner will make connections between people and the surrounding culture in which they interact via shared experiences (Clabaugh, 2010). Students who are exposed to multiple problem solving strategies are able to select from processes that work best for their style of learning (Felix & Harris, 2010). Teachers need to support this learning process by making connections to prior knowledge, utilizing cooperative instructional strategies, checking for understanding and allowing students to share problem solving strategies and thought processes. As students move through

inquiry-based processes, they learn from others, they try new methods, and they learn from their mistakes (Parr, 2010).

Vygotsky (1978) believed that when the learner internalizes skills, higher thinking skills result creating reciprocal teaching, or social learning (Hall, 2011; Tomlinson & Imbeau, 2010). This higher order thinking and reciprocal teaching/learning create a positive environment and motivational learning. Therefore, when skills are self-satisfying, they will determine what extent new information will be obtained. Additionally, exposure to multiple teaching and learning styles will help students gain understanding.

Need for pedagogical change. Over the past 20 years, multiple educational reform movements have targeted teacher professional development to improve student achievement. An example of teacher reform and improved instructional practices came from the NCLB, which started the movement towards highly qualified teachers (Scher & O'Reilly, 2009). The certification requirements from NCLB imply that the teachers' strengths and their usefulness of pedagogical knowledge and practices would be strong based on their own education. If strong certification requirements are true, there should be a clear connection that teacher knowledge, practice, and student achievement are intertwined in order to increase student achievement. There are still students who perform below standards as measured by low-test scores, lack of interest, and poor grades. The NCLB reform required all students to be on grade level or above by 2014. In 2012, the Ohio Department of Education filed for a federal The ESEA waiver releasing the state from some of the strict constraints of NCLB. As such, the ESEA waiver that was

approved in 2012 extends the timeline of NCLB (yet to be determined by the state) and provides additional state support to the local districts. The waiver continues supporting subgroup progress, with the highest gaps in proficiency and graduation rate, to have interventions and improvement plans (ESEA Waiver, 2012). In this qualitative, case study program evaluation, I investigated the My Math program through primary grade teacher feedback, student mathematical achievement (growth and proficiency), inquiry discovery-based learning activities, and teacher usability.

Fullan and Levin (2009) described a need to develop instructional practices that are linked to results by changing the current practices are. Teachers are now faced with standards that teach content with more depth and breadth and a new textbook adoption to support new standards and a new math program. Faced with these new mandates, teachers are analyzing what instructional practices they currently use and what new strategies will be necessary as they pilot My Math. Teachers need to change their instructional practices and model curriculum outside of isolation and allow students to model what they have learned, thus supporting social learning theory (Bandura, 1977, 1986; Fernandez & Erbilgin, 2009; Ganis, 2009; Kersaint et al., 2009; Samuelsson, 2007).

In 2010, NCTM initiated a comprehensive mathematics reform movement to improve the instruction of mathematics. The same year, the new CCSS were released. Mandates still exist that all students are taught using **research**-based practices, with a significant focus to improve the academic achievement of disadvantaged students. The focus of the reform was to examine the pedagogical practices of math teachers from a

technical format with a more reflective practice. After several years, the NCTM (2010) took their efforts one step further and connected the practice of teaching math with research. This model has resulted in some changes in teaching math that require instructional practices to change. Practices have become more reflective in order to allow students to conceptualize math content standards at a deeper level; however, instructing students to become mathematicians who are more reflective may not be enough.

The CCSS provide skills and knowledge that students need to have during their K-12 education. The skills are aligned with college and work expectations, include rigorous coursework, and increase knowledge through higher order thinking skills. The evidence-based standards are based on top performing countries so that all students are prepared to succeed internationally. My Math was developed by a team of professional mathematical and educational leaders. With so many new initiatives facing educators, this objective-based evaluation needed to measure progress on achieving objectives. The information gained from this evaluation will help refine the district's instructional practices. The program developers described the program as being built on a solid foundation of conducted research in order to provide high-quality mathematics content and pedagogy.

With the new CCSS and the demand for research-based instructional practices under NCLB, the McGraw-Hill Publishing (2012) research team developed a new program aligned to the new CCSS called My Math. The program is designed to connect problem solving, conceptual development, and skill building through multileveled instruction. The program developers stated that there is a clear lesson design supported

with built-in professional development for ease in usability. As such, the district of study purchased My Math as a tool to increase student achievement through a deeper understanding of mathematical content.

The new program aligns with the CCSS and may allow for a stronger student mathematical foundation. As standards change, curricula combine content in ways that address the standards and maximizes student achievement. Foundational skills include an emphasis on academic vocabulary, problem solving, and real world mathematical applications. Additionally, McGraw-Hill (2012) integrated technology, interactive activities and digital manipulative to promote student engagement.

Instructional Practices

New mandates, such as textbooks and curriculum, inevitably cause change in a teacher's instructional and classroom practices. The elementary standards are based on a solid foundation such as whole numbers, addition, subtraction, and decimals. Students need to learn the foundational skills and then apply them in real world situations. The CCSS build on procedural skills and conceptual understanding. Primary grade teachers need to address new concepts in depth so students retain the new information and can apply the information at higher levels. Change may help solve problems found in classrooms that there are gaps between best practices for teaching math and instructional practices of teachers. The teachers have an opportunity to change due to circumstances beyond their control. Teachers and instructional coaches have asked for the new information to be presented in a manner that represents a full lesson. Teachers want to learn new materials and see gaps in their teaching practices by observing others model

lessons (social learning) and then try to repeat the same results. Teachers will receive feedback from instructional coaches and My Math trainers. Students will have teachers who have learned to teach through the social learning model, providing instructional practices that will increase student achievement in math according to results of standardized tests.

Curiosity as inquiry discovery-based learning. Teachers deliver mathematical instruction through materials, worksheets, discussion, and textbooks. Padaraig and McLoughlin (2009) found that many methods of instruction are passive and not active. Passive methods of instruction happen when teachers deliver instruction to students to complete assignments. Student are guided through materials but are not actively engaged in obtaining the information. Other methods of instruction are active; these methods have the teacher guiding the students through the foundational materials to gain mastery of the subject matter through inquiry (Kemp, 2009). Students exposed to an inquiry-based instructional model are able to create solutions to problems and build on prior knowledge (Padaraig & McLoughlin, 2009); therefore, obtaining new information through active learning, teachers are creating a learning environment of inquiry. Students need to understand a problem, solve it, and then be able to prove or disprove the answer through discussion, inquiry of multiple solutions.

Inquiry is created through a person's curiosity. Curiosity comes from students wanting more information and clarifying new information. Collins, Litman, and Spielberg (2004) described curiosity as a desire to witness, to know, or experiences through exploratory behavior that will create new knowledge. Children naturally want to

explore their surroundings and investigate why things happen in order to create new meaning (Avgerinou, 2009). Teachers need to focus on this naturally occurring phenomenon as they question students and encourage them to explain what they have learned through their investigations and inquiry. For example, Balir (2002) supported this need to create classrooms that have students focus their analytical and creative thinking skills through the use of goal setting, select strategy use, and self-regulation.

Teachers encourage children to describe their learning experiences by applying the student's ability to create a representation, coordinate information, and then produce a response. To illustrate, von Stumm (2011) described the relationship between intelligence and curiosity being a core determinant of a student's academic achievement. Educators need to create learning opportunities that allow students to be creative through trial and error. Students need to be able to solve problems using multiple modalities such as the use of a manipulative, drawing, physical expression, or making models. Furthermore, Vygotsky (1986) found that children are able to imitate processes in two ways through trial and error. The first is the way a child imitates by making a copy of an action through a basic understanding. Teachers model concepts and processes and allow children to build a basic understanding or foundation through parallel modeling.

The second imitation involves a deeper understanding of the different elements and their relationship to each other. Imitation that is basic does not lead to a deep understanding of concepts; however, persistent imitation enables students to repeat behaviors, learn from conceptual misunderstandings, and obtain a deeper understanding of the material. Teachers can encourage this process through guided practice and

allowing children to learn from their misconceptions. Imitation, in conjunction with discovery-based learning, allows the learner to be guided by new concepts, experience new ways to learn materials, and recognize that misconceptions are learning opportunities (Clark, Yates, Early, & Moulton, 2010). Eventually students will take a risk and combine skills that they have grown comfortable. Independent practice allows students to utilize skills and processes individually. My Math is described as giving the students creativity while allowing them to utilize a variety of problem solving strategies, through trial and error in a social learning environment. Regardless of the methods that the content is delivered, it is the teacher's goal to enable students to utilize the materials that have been delivered independently.

Meeting the needs of all learners. Not only does federal law mandate the need to differentiate instruction, in 2012 the Ohio Department of Education mandated that all school districts use formative instructional practices (FIP) to meet the needs of all students. Teachers are required to assess students formatively within their classrooms in an ongoing manner during instruction. The best practice of implementing multiple teaching modalities needs to occur in order to reach all types of learners (Ball, Sleep, Boerst, & Bass, 2009). The CCSS includes higher level thinking skills and a need for deep conceptual understanding. Students need to be able to apply skills outside of isolated repetition. Student performance on concepts and depth of knowledge will guide the teacher's instructional practices as skills are observable. From this information, the teacher is required to adjust instruction, create flexible groupings of students, and target instruction based on various cognitive demands. Tomlinson and Imbeau (2010) described

that leading a differentiated classroom enables the teachers to target a wide variety of learners. Flexible grouping and workshop model that include differentiation in the centers is a necessity if a teacher is going to balance instructional practices in a differentiated classroom with FIP.

Progress monitoring. In order to monitor and evaluate student learning to make adjustments during instruction, teachers need to evaluate their instruction based on student progress. Teachers need to ask themselves if their students are making progress, what is the next skill that the student needs to know, identify student misconceptions, and detect learning gaps if they are using FIP (Taylor-Cox, 2009). Teachers need to monitor student progress to help all students make gains and progress through the new math CCSS. Therefore, targeted instructional practices are needed to assist teachers in reaching all of their students.

Types of assessments. Two types of assessments utilize ongoing progress monitoring: formative and summative. Formative assessments do not have to be long, just one or two questions as a method for teachers to check for understanding (Oberdorf & Taylor-Cox, 2011). The information gained from these types of assessments enables a teacher to adjust instructional practices immediately in order to deliver explicit instructional needs. At-risk students need to have instruction delivered in order to meet their immediate needs as a way to build a strong foundation for the next concept. Summative assessments are longer and are administered at the end of a learning segment or a given point in time. Formative assessments measure ongoing student learning that can point to a need to or not to alter instruction. Burke (2010) described formative and

summative assessments as tools that can be used to measure what knowledge and skills have been learned by students. Both types of assessments seek out information indicating student mastery or student deficiency. The CCSS has been developed so student attainment of the standards is observable and verifiable through an assessment framework. The assessment framework will identify students who are struggling and then can become the focus for intervention groups. My Math offers research-based teaching materials that are designed to assist the at-risk learner that is required under NCLB.

Data driven decision making. Formative instructional practices are grounded in the use of data. Teachers need to establish baseline data and then continue to monitor student progress as they check for accuracy and gather information in order to inform the teacher in the selection of instructional practices (Mandinach, 2012). Educational reform has changed instructional pedagogy requiring the need to use concrete data to differentiate instruction and inform teaching practices. Teachers need to identify why students have a difficult time with concepts or why some students are accelerating. Levin and Datnow (2012) described a need for educators to know how to analyze, interpret, and utilize data so they can make informed decisions about student learning. Once there is an understanding of the data collected, it needs to be used to direct an educator's selection of researched- based instructional practices.

Research-based instruction. In past years, teachers were expected to cover several learning objectives in the primary grades. For example, in kindergarten, a student may need to count to 100, count by fives, and recognize one-to-one correspondence; all of this just during the morning calendar routine. More recently, shifts in instructional

methods are more inquiry-based through hands on learning activities (O'Brien & Bourke, 2011). The CCSS (2010) reduced mathematics content at each grade level in order to allow students to gain mastery of foundations skills. The mathematical procession in the CCSS is based on evidence that provide students with the basic skills necessary in Grades K-7 to succeed in higher level mathematical thinking (CCSS, 2010). Taylor-Cox (2011a) described the new standards as fewer, clearer, and aligned with career and college readiness expectations. The content has more depth and breadth then previously released state standards. With students learning less content at a deeper level, teachers can differentiate instructional practices to meet the needs of each learner. Now more than ever, teachers need to utilize formative assessment to drive instructional practices. Teachers need to be open to more diverse teaching strategies in order to meet the needs of all the students. At-risk students will be targeted and given the opportunity to have instruction delivered using multiple modalities in order to create a deeper understanding of mathematical concepts.

Teaching at-risk students. In the local district of study, 99.7 % of the students come from families that are considered in the range of low socioeconomic status. Low socioeconomic status is determined by the amount of students who qualify for the Food and Nutrition Services United States Department of Agriculture (USDA) free lunch program based on family income (USDA, 2014). Student's socioeconomic status can affect their learning by lack of support at home, lack of basic needs, and even a lack of interest in education. Bandura, Barbaranelli, Caprara, and Pastorelli (1996) found that family socioeconomic status was linked to student academic achievement. As such, often

parents of these at-risk students can create an environment of low aspirations, which in turn, creates students who do not set high expectations for themselves. Students who are raised in an environment with high self-efficacy expectations set out to be more successful than those that do not have high expectations for themselves (Bandura, 1977). Additionally, at-risk students may have a lack of support at home as related to homework, parent participation, and limited exposure to a variety of experiences. This environment can be conducive to students with limited background knowledge. Additionally, a student's identity can be molded by the knowledge and skills they have and the new skills and knowledge they seek to develop (Batty & Frank, 2008). These new skills and knowledge can create a new identity, thus creating students who have high expectations for themselves.

According to Fisher and Frey (2009), a student's prior knowledge in a content area is the best predictor of their success. As such, the local district of study was charged with seeking out a research-based program that would support the large at-risk population. Regardless of what program the district adopted, all students need to be reached in order to learn the skills that are required under the new CCSS. My Math offers a variety of instructional strategies and progress monitoring tools to assist teachers in ongoing progress monitoring and differentiated instruction. Additionally, the program has to have connections to real world problems in order to expand a student's prior knowledge (Demski, 2009). The SCA that the district has developed should enable the schools to collect data to measure student achievement in the primary grades. The data collected should be used to differentiate instructional practices through researched based

materials (Chatterji, 2008). The new program utilizes a variety of instructional strategies to meet the needs of all the students. For example, computer applications exist that allow students to play structured games that are designed to increase student achievement and classroom motivation. Kebritchi, Hirumi, and Bai (2010) found that student motivation increased as well as their background knowledge when exposed to computer games in class and in computer labs. Furthermore, Boiche, Sarrazin, Grouzet, Pelletier and Chanal (2008) found student motivation increased based on the materials used and the relationships between students and teachers. Teachers have the ability to increase a student's self-efficacy and increase student achievement (Frenzel, 2009). Finally, it is up to the teacher to conduct formative assessments, ongoing progress monitoring, flexible grouping, and differentiated workshops with targeted research-based instructional practices. The district purchased My Math and implemented the program for one year, and now the program needs to be evaluated in order to determine its efficacy, usability, feasibility, accuracy, and propriety to make the decision to continue the program.

Conceptual development. McGraw-Hill (2012) described My Math approach to instruction as concept development through students developing deep mathematical proficiency. Conceptual development is created through meaningful, repeated practice. Additionally, mathematical skills are introduced to students through building background knowledge, building real world connections, integrating technology, and modeling. The variety of learning modalities increases student interest and motivation (Kebritchi, Hirumi, & Bai, 2010). Concepts are continuously reviewed through multiple practice opportunities with real world applications utilizing inquiry discovery-based learning

strategies. Short cycle assessments and summative assessments are conducted through students given the opportunity to demonstrate true understanding by problem solving and explaining processes. The data collected from the pilot year was used to examine the success of the implementation of the program, program usability, teacher professional development needs, and changes for year two implementation.

Need for Program Evaluation

Slavin (2008) and Spaulding (2008) found that program evaluations are a valid method to assist in identifying and filling the gaps in current educational research practices. Program evaluations are used to build a deeper understanding and information about programs that give the consumer information to change or refine practices (Slavin, 2008; Spaulding, 2008). In the era of high stakes testing, educators have been prompted to take a more evaluative attitude toward the instructional practices, based on data, to examine the effectiveness of programs and guide pedagogical changes (Kiriakidis & Johnson, 2014). As such, the CCSS was developed to take the most effective models from states other countries and apply all the best practices to the new framework. Fitzpatrick, Sanders, and Worthen (2010) summarized a program evaluation as a process that uses inquiry and judgment methods to (a) determine standards, (b) collect relevant information, and (c) determine value, effectiveness, or relevance of a program. In this qualitative case-study the standards that are set based on measuring the effectiveness of the program and outcomes that came from using the program. The relevant information focused on the main stakeholders. In order to provide this information, a range of qualitative methods were used (Stufflebeam, 1999). These methods include focus walks,

questionnaires, rating scales and possibly one-on-one follow-up interviews. Through the collection of a multitude of data, a determination of the program's value and effectiveness will be produced by identifying trends and themes in the data. According to Stufflebeam and Shrinkfield (2007), a case study approach is highly productive as the evaluation looks at the programs as things naturally occur, thus being able to measure the accuracy, utility, feasibility, and propriety of the program. Additionally, Fitzpatrick et al. (2010) defined six key concepts that describe the role of a program evaluator who is conducting an educational program evaluation. The evaluator

- Identifies, clarifies, and determines criteria to determine the evaluation's value;
- Generalizes stakeholder involvement and training requirements;
- Renders judgments about the value of the objectives, provides suggestions for improvement, and provides oversight of the fidelity of the delivery of the program;
- Holds multiple roles including collaborator, decision maker, planner, and critical friend;
- Analyzes formative and summative data that informs program improvements and suggested changes;
- Utilizes internal and external evaluators and describes advantages and disadvantages of each type of evaluator (Fitzpatrick et al., 2010, pp. 52-108).

The information collected during a program evaluation will help the stakeholders determine what changes need to happen in order to improve practices and/or make

necessary programmatic changes. In an educational setting, program evaluation is used to improve instructional practices and evaluate curricula effectiveness. However, data driven decision making about student success cannot be based only on test scores. Additional information can be gained from program evaluations to determine if the program is impacting a student's success. Wiggins (1992) indicated and supported the need for program evaluation and that processes need to be put into place in order to create systematic change, thus shifting existing paradigms. Educational practices are always changing, and educators need to be prepared to meet these challenges. Finally, educators need to be able to see the necessity of program evaluations in order to select appropriate programs based on data as a way for continuous improvement.

Program evaluations have been utilized in many other professions outside of education. A program evaluation is utilized for decision making purposes, to collect data, or even change practices (Spaulding, 2008). In education, program evaluations are used to measure the effectiveness of instructional materials or programs in order to provide feedback. While program evaluations in education have been inconsistent, Ross (2010) described the need for program evaluations as a way to drive educational reform. A program evaluation is a plan that includes the following: (a) provides the basis for the model of evaluation that should be used to evaluate the program, (b) who should be involved in the evaluation, (c) data collection, and (d) a description of the plan. Program evaluations have been used in multiple professions outside of education. Fitzpatrick et al. (2010) summarized multiple models into five classifications of evaluation approaches. The following is a basic description of each type of program evaluation:

- A program-oriented approach is used to determine the extent to which program objectives or key elements of the program are delivered or achieved as specifically stated. The process is easy to utilize through pre/post assessments during the program development or evaluation process;
- A decision-oriented approach provides useful information to aid in decision making. The program is evaluated through the development in order to make changes through a systematic, comprehensive approach;
- A consumer-oriented approach seeks out information for making changes to consumer-based programs. Product development changes based on consumer feedback enables changes to be made to improve the program;
- An expertise-oriented approach utilizes recognized standards through expert feedback;
- A participant-oriented approach places the needs of the program participant or stakeholders to provide the evaluation. The evaluations are conducted by the users of the program utilizing multiple forms of information;
- An Adversary-oriented approach is used to seek out ways to identify weaknesses and identify strengths of a controversial issue.

Kirkhart (2011) described a seventh approach that integrates looking at current processes, changes at the end of the cycle, and long term goals for the program.

Regardless of the approach used, it is imperative that the correct method be selected in order to determine the effectiveness of the materials and programs through the use of formative and summative feedback. Ross (2010) recommended a discussion between

stakeholders to seek out the assumptions and needs in order to develop a coherent and consistent program that will help guide the program evaluation. This collaborative manner, as with collaborative teaching, would support a program evaluation that will strengthen programs through the sharing of feedback and ideas regarding the instructional resources, thus improving the likelihood of program evaluations being used in education.

As educators become more comfortable with program evaluation, data will be able to be collected and evaluated with a purpose. There are multiple types of program evaluations that educators can utilize to collect significant data. Without the use of data, programs will remain stagnate, and little headway will be made to improve educational practices. Multiple types of program evaluations exist. Each type of program evaluation has a specific purpose and was developed by various researchers. The types of program evaluations are listed in Table 2.

There are multiple types of program evaluations. Selection of the type of program evaluation used should be based on the goals of the evaluation and the types of questions that need to be answered. The program evaluation selected for this study is an expertise-oriented evaluation approach. The purpose for choosing this evaluation was to gain professional judgment on the program and suggest improvements for use during Year-2 of the program. The expertise-oriented approach is an evaluation process that is method of obtaining the participants professional feedback regarding the program and then determines if programmatic changes, maintenance, and refinements are given as suggestions for change. Spaulding (2008) described the characteristics of an expertise-oriented evaluation as having the evaluator serve as the judge of the program. Data are

collected through pre/post measurements of performance, clarification of goals, and objective measurements that are theoretically sound. Expertise-based evaluations are useful in shaping an evaluation; however, the expertise of the participants may limit the focus of the program evaluation (Spaulding, 2008, pp. 13-14).

Table 2

Summary of Types of Program Evaluations, Program Purpose, and Various Contributors

Program evaluation	Program purpose	Contributors
Objective- Based	Program evaluation is based on measuring progress on setting objectives. Information gained from the evaluation can be used to evaluate and change the program. The evaluation is goal free.	Smith and Tyler (1942); Travers (1983)
Management-Oriented	Program evaluation is used for decision making and accountability.	Stufflebeam (1968, 1985, 2000); Travers, (1983)
Consumer-Oriented	Product developers utilize this model to obtain feedback from consumers.	Scriven (1967)
Expertise-Oriented	The oldest evaluation approach. Experts evaluate a product and provide a recommendation in a summative manner.	Scriven (1967, 1974, 1984, 1991)
Adversary-Oriented	Strengths and weaknesses regarding controversial issues.	Owens (1973); Wolf (1975, 1979)
Participant-Oriented	Program evaluation is conducted by stakeholders describing needs and changes for the program.	Stakes (1975); Guba and Lincoln,(1985)

Note. Fitzpatrick et.at. (2011); Spaulding (2008)

Benefits of Program Evaluations. Program evaluations are utilized in a variety of settings for a multitude of reasons. The program evaluation may look at the effectiveness of new products, the expert review of materials, or to guide future decisions and programmatic changes. Program evaluation methods have evolved over the years, but the premise remains the same. Evaluations are used to identify, classify, or apply the merit of a program. Additionally, stakeholders are often involved in the process of program evaluations. For example, Merriam (2009) described a focus group interview as a discussion with a specific set of people who have a familiarity and understanding of a topic. Program evaluations utilize all forms of research, which are qualitative, quantitative, or a mixed-method design. Qualitative methods were selected to measure the experiences of the primary teachers who use of My Math and the usability of the program. The expertise-oriented program evaluation approach was selected for three reasons: primary teachers (a) are required to teach math to all of the students within their class, (b) they selected the program My Math, and (c) could use their expertise with the program to evaluate the components of the program as highly qualified educators. For the reasons described above, a program evaluation was clearly justified as the methodology for this study.

The program evaluation in this study was conducted to measure its effectiveness for the students in the district and will have implications for all districts that are seeking a program that will improve student achievement in math. A case-study based program evaluation examines a program's objectives and outcomes. According to Stufflebeam (1999), the main purpose of a case study approach is to outline and highlight a program.

The program evaluation was conducted after using the program for the first year. The first intensive training of the program for teachers began in October 2012 through the publisher. An electronic survey was given at to measure usability, content understanding, and the most effective strategies.

Since NCLB and the ESEA waiver require the use of scientifically based research practices, a program evaluation of My Math was justified in order to validate, improve, or disprove the use of the program. Conducting an evaluation of a new program tends to identify issues within the program materials. As such, the teachers who are using the materials are evaluating the materials. In this study, the teachers provided insight regarding the instructional materials and the improvement of their students' mathematical skills.

The current practices and processes needed to be evaluated in order to improve student achievement. The expertise-oriented evaluation program was selected to evaluate the new My Math program in order to gain insight into the implementation process, the materials and inquiry discovery-based learning activities, and the usability of the program in the primary grades. The expertise-oriented evaluation was reported as one of the most common forms of program evaluation. In this evaluation, the educators will be considered the experts within the group of individuals participating in the study. The program was evaluated using the guiding principles for evaluators from The Joint Committee on Standards for Educational Evaluation and the AEA basing results on K-2 teacher's feedback, recommendations for year 2 implementation, and recommendations for professional development (Sanders, 1994; Yarbrough et al., 2011). The evaluation

standards of utility, feasibility, propriety, and accuracy will be identified in this program evaluation. Utility is described as the value of the program to the stakeholders (Yarbrough et al., 2011). Feasibility is the standard that addresses the effectiveness of a program (Braverman, 2013; Yarbrough et al., 2011). A program evaluation defines propriety standards provide information related to the fairness and validity of the program. Additionally, Braverman (2013) described the rigor of an evaluation study as to what extent does the evaluation maintain authenticity and accountability. Finally, accuracy is defined as the reliability and legitimacy of the program (Braverman, 2013; Yarbrough et al., 2011). This study focused on the accuracy, feasibility, propriety, and utility standards.

Potential barriers to program evaluations. According to Fitzpatrick et al. (2010), there have been many critics that have named several potential barriers to conducting a program expertise-oriented evaluation. For example, the limitations of an expertise-oriented evaluation can result in tunnel vision, which tends to limit evaluation results. This happens because the evaluator is relying on the expertise of the participants, which may be limited. The local district of study was faced with the problem of student's performing below grade level in the area of mathematics, as measured by scores SCA and CBM. These tests were created by the district. The district uses this SCA test as its standardized CBM and it is used to measure a student's growth and proficiency rate in reading and mathematics. The district is also using the My Math benchmark assessments. In the fall of 2013, Ohio Department of Education developed screeners and end of year assessments that will be given to all K-2 students. Those data were reported to the state in the form of students being on-track, above track or below track (grade level). The

primary grades demonstrate the largest area of growth in reading but struggle in math; however, these grades have the lowest number of students who were considered grade level proficient. The SCA was used as formative and summative assessments to drive math and reading instruction. The SCA assessment data is necessary to drive instructional practices (Oberdorf & Taylor-Cox, 2011).

The sources of district data will be limited in the primary grades to items created by the teachers in the district of study and the My Math benchmark assessments. Additionally, screener data that will be reported to the state will indicate how many students are on-track or not to achieve grade level standards. These screeners are based on the CCSS (Ohio Department of Education, 2013). Educators are just starting to meet in teacher based teams (TBT) as defined by the Ohio Department of Education (ESEA, 2012). The actual use of data to drive instruction has remained within single classrooms until the 2012-2013 school year. The lack of TBT discussions is a potential barrier to program evaluations (Braverman, 2013; Goldie, 2006). The lack of expertise with data in the educational setting, including data collection and analysis is an issue. While, these practices were mandated under NCLB, 2001, the use of the new curriculum, standards, and TBT has created a lack of confidence in data management. As such, Weitzman and Silver (2013) described an improved data management system through the use of existing data. Training staff on the use of current data to drive instruction, through increasing their use of what they are already comfortable with. This process could potentially help increase the confidence level of educators with regards to data interpretation.

Even though the federal government mandated that educators use research-based practices to instruct students, data collect regarding these methods remained a challenge. Since there was a lack of guidance prior to the current school year, careful planning of a program evaluation will help avoid erroneous findings. In order to eliminate some of the inconsistencies, the district has stabilized the data collection process with a district wide calendar, common state screeners, and a test bank of questions. For example, in determining the effectiveness of My Math, other influencing variables should be considered. To illustrate this, Braverman (2013) found that when constructing a program evaluation it is important that the researcher considers the rigor of measure and measurement strategies and the feasibility of executing the evaluation. Environmental variables need to be considered. For example, students who participate in the remediation have defined characteristics. The minimum limitations for this study were the student's performance on SCA, student's performance on the Ohio Department of Education screener, teacher recommendations, and overall performance on the district benchmark test.

Each potential barrier should be considered when planning a program evaluation in order to measure the programs relevant construct. Careful measures need to be taken into consideration in regards to time, financial restraints, and the fidelity of the program evaluation. For example, Braverman (2013) described this process as having insights into tradeoffs that may need to take place while maintaining reliability and validity. In the district of study, most primary grade teachers were trained on the My Math materials in October 2012. Follow-up trainings occurred with instructional coaches and hired trainers

in order to implement the program with fidelity. Financial restraints of the study were not a factor as there was not a payment involved with the participants. The training was paid for out of the district Race to the Top grant dollars. A minimal time commitment will be overcome by utilizing an electronic survey, utilizing mandatory professional development days (ESEA, 2012) and not requiring any time outside normal contractual hours. Despite potential barriers, the potential implications of the program evaluation will prove valuable for improving math instruction in the district.

Ohio had several standards at each grade level in each content area until the state adopted the CCSS in 2011. For example, the new model curricula for mathematics provides instructional strategies and resources for teachers that help students make connections and identify misconceptions students may display. Additionally, the new model curricula elaborates on learning domains and clusters in order for students to have the opportunity to learn the content in more depth and make personal connections. This is significantly different from the states previously adopted standards that taught skills in isolation (Ohio Department of Education, 2011). My Math relates to the new CCSS and follows the clusters that are represented within the new CCSS. The rigor is significantly greater than in past years. Teachers will need to model what they are teaching, practice together as a group and then provide multiple opportunities for students to use inquiry-based practices and problem solving.

The increased rigor is evident on the new Ohio Department of Education screeners in K-2. Ginsburg, Leinwand, and Decker (2009) found a big disconnect in the text book and curricula used in American schools compared to countries that

outperformed the United States on the international test. Ginsburg et al. (2009) referred to the U.S. textbooks and curricula as “weak” at best. For years, states relied on local or state standards to guide instruction. The NCTM (2011) described the importance of mathematical processes and proficiencies that include problem solving, reasoning and proof, communication, representation, and connections. Skills need to be taught outside of isolation in order to have students be able to compete with the countries who continually outperform the United States. Years of research and math programs have not been able to close this achievement gap. The My Math program is aligned to the new CCSS that have been extensively researched with increased rigor. For this program evaluation of My Math, I measured the utility, propriety, feasibility, and accuracy of the program and used the implications as a tool to increase student achievement in K-2.

Implications

One possible implication of the findings of this study was a validation of My Math as a research-based mathematics program that narrows the achievement gap in the primary grades. Validating the program indicated that the research-based instructional strategies within the materials resulted in increased student proficiency in the primary grades resulting in narrowing the achievement gap in K-2. Additional validation came from the use of the targeted intervention portion of the program that targeted foundational mathematic skills through the re-teaching of skills necessary for students to move on. The materials of the My Math program provided research-based remediation/intervention strategies that supported student achievement and the effort to close the achievement gap identified in the ESEA waiver.

Implications can be examined on the individual level of the NCTM inclination to see if mathematics is sensible, useful, and worthwhile (CCSS, 2011). The materials focused on problems and problem solving strategies. The difference in the new methodology was that the student needs to explain and defend their answer. No longer can they just jump into solving a problem. The student must be able to take the problem from the concrete to the abstract. Students who are mathematically proficient can make sense out of problems; this is a skill that educators must explicitly teach students who do not have the skill. They must be able to decontextualize the problem and then reconstruct it into a viable solution which they can arguably defend. My Math lessons are set up to take students from the concrete to the abstract through modeling and manipulatives with real world life problems. Additionally, students need to be explicitly taught which tools are strategically appropriate when solving math problems. This is a key foundational skill as students move from the concrete to the abstract. In K-2, these tools might be manipulatives, cubes, a ruler, models, or drawing a picture. As students get older, the skills and tools they require to be successful in school changes and become more complex. Regardless of the skills or tools, students must be able to communicate their strategies with others verbally or through a written explanation. Implications for using My Math supported moving from practice to understanding in these necessary foundations skills (CCSS, 2011).

Information from the findings of this evaluation gave the district of study findings that were provided in the form of an evaluation report in order to make decisions to either or not continue the program. Teachers provided feedback about the program, the training,

and the materials. The evaluation report will be made available to others in the educational field as this is the first year of the new program. Additionally, this report will assist other school districts, school administration, and other stakeholders in the selection process of new mathematic programs that will benefit similar districts. Finally, as schools search for programs that serve students in urban districts, with students who enter school already behind grade level, the implication this study has for social change will assist other districts in minimizing the learning curve of implementing a new program that has the potential to close the achievement gap in math. This study showed a viable and research-based option for urban students to improve mathematical processes, through the use of My Math.

Summary

In 2001, the federal government set expectations that all children will be successful in school by 2014 (NCLB, 2001). This monumental task was expected to take place utilizing research-based materials in order to ensure all children made expected progress in school. Expected progress ranged from a few months to several years for students who were behind when they started. The education system fell short as an achievement gap still exists between multiple subgroups. With time running out, many states applied for a waiver granting them an extension on the mandates of NCLB. The extension of NCLB is important as the nation is adopting new national standards (CCSS, 2010), and educational funding has changed. My Math was recently adopted in the district of study as a response to a need for a research-based mathematics program that aligns with the new CCSS. The purpose of this project study was to evaluate the program

in regards to closing the achievement gap of identified subgroups, as well as the effectiveness of the instructional materials, as reported by the primary grade teachers. In Section 2 is a discussion of the methodology in the following areas: (a) rationale for using a case study program evaluation, (b) the purposive sampling, (c) ethical protection of the participants, (d) methods of data collection, (e) role of the researcher, (f) methods of data analysis and maintenance of credibility and rigor, and (g) limitations of program evaluation design. In Section 3 is a discussion of the project description and goals supported by a literature review. Additionally, the project potential implications and barriers will be discussed. Finally, in Section 4, is a discussion of the strengths and scholarship of the project, a reflection, and a discussion regarding the potential for social change at many levels.

Section 2: The Methodology

Introduction

National and local reforms based on instructional standards are becoming more uniform across the nation. The district's goal in adopting the CCSS was to raise academic performance for students at each grade level by covering content in depth to obtain content mastery. The district of study reviewed multiple programs and selected My Math as the main teaching resource for elementary K-2 educators. To support the decision of using the new program as a standard teaching resource in the district, a program evaluation was needed to determine the overall impact of the program. One hundred Grade K-2 teachers who implemented My Math were mailed the survey; 57 teachers participated. A convenience sampling of six teachers participated in interviews and focus groups.

Program evaluations are designed to improve learning and teaching by determining the level of success or failure of a program. A qualitative case study program evaluation of My Math was conducted to determine whether or not the program improved instruction and students became proficient in number sense, counting, and mathematical processes. Participation was on a voluntary basis and anonymity was maintained throughout the research study. K-2 teachers gave voluntary consent for participation in the study through assumed consent by completing an anonymous electronic survey (Appendix C). Focus group participant volunteers gave full consent and were assigned pseudonyms to maintain full confidentiality (Appendix D). K-2 teachers reported on the overall effectiveness of the program in increasing instruction strategies, the effectiveness

of the materials in increasing student achievement, and the program goals and objectives. Materials from My Math, available from the research site, were reviewed for program goals and objectives, for credibility of the teacher responses, and for triangulation of data.

I used analysis from data from an anonymous electronic survey. The survey consisted of Likert-scales and open-ended questions that allowed me to collect descriptive data from the teachers' perspective that answered research questions. The focus group consisted of open-ended questions, similar to the electronic survey, which allowed participants to engage in a rich open discussion. Indirect probes were used to elicit more information that enabled me to answer the research questions. In order to eliminate researcher bias, the role of the researcher was clearly defined in each consent form. My role as the researcher was to examine the various elements and materials of the My Math program with regard to usability, coherence, and teacher support.

My Math was evaluated for efficacy and recommended to the district for further use based on the data collected from the K-2 teachers who participated in the study. Protocols were followed in order to maximize the validity of the study through clarifying questions, focus group member checking, and developing trends and themes from the data collected. The findings of the program evaluation were compiled and presented to the district in the form of an evaluation report following the completion of the project study. The evaluation report included recommendations for future professional development, changes in instructional practices, and suggestions for improving mathematical proficiency. The program was validated as a tool that benefits teachers and

as a tool to reach at-risk students. Indirectly, the program will be utilized as a method to increase student achievement.

Qualitative Research Design

Program evaluations are conducted as a way to measure the effectiveness of a program, to obtain funding, or to support programs. Program evaluations can be conducted by qualitative, quantitative, or mixed-methods design. For this program evaluation, I used qualitative methods based on an expertise-oriented approach. All participants provided feedback on the utility, feasibility and accuracy of the program after the pilot year. The expertise-oriented program evaluation approach was appropriate for this study for these reasons: (a) primary teachers at the research site were experts by virtue of their piloting the program for a school year, (b) this expertise allows the participants to evaluate the components of the program as highly qualified educators, and (c) the expertise-oriented model places the responsibility on the program participant or stakeholders to provide the evaluation. For these reasons, a program evaluation was clearly justified as the methodology for this study.

This program evaluation was aligned with NCLB, the ESEA waiver, and the Ohio Department of Education requirements for research-based practices with students. A program evaluation was justified as the program was adopted in 2011-2012 academic year in order to meet the ever changing requirements of the educational system. Mathematics and problem solving skills are interwoven throughout the CCSS; hence, conducting the My Math program evaluation enabled improvements to be made at the building level and included insights to educational reforms such as new standards, new

programs, and new teacher accountability models. This study was a qualitative case-study program evaluation conducted with primary grade teachers who used the program the first year of implementation.

An electronic survey was used to answer the research questions from the experiences of the participants who utilized the My Math program during the first year of implementation. I collected descriptive data from the teachers' perspective for the following research questions:

RQ1: What instructional strategies in My Math did teachers perceive were effective for increasing number sense, counting, and mathematical processes?

RQ2: In what ways did implementation of the program meet the goals and objectives of My Math?

RQ3: How did the teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials?

RQ4: Which materials did the teachers perceive were most effective in increasing student mathematical processes?

Information from the survey was collected to evaluate the following: (a) ease of implementing the new program; (b) the program's improvement in instructional practices; (c) the program's positive effect on increasing proficiency in counting, number sense, and mathematical processes; and (d) the accuracy, feasibility, and utility of the program as set forth in The Joint Committee Program Evaluation Standards for evaluating educational programs. Results of the program evaluation informed appropriate

personnel in the school and district whether or not the program should be modified during the remainder of the program adoption (see Table 3).

Table 3

Alignment of Research Questions, Program Objectives, Survey Questions, and Standards for Educational Evaluation

Research standards questions	Program objectives	Survey questions	Evaluation
1. How effective were the instruction strategies for increasing number sense, counting, and mathematical processes based on teacher perspectives?	1. Ease of implementing the new program; 2. The programs improvement in instructional practices; 3. Program's positive effect on increasing proficiency in counting, number sense, and mathematical processes	a.) 1-5, 8 b.) 1-5, 7 c.) 8	Utility Feasibility Accuracy
2. In what ways did the program meet the goals and objectives of My Math?	1. Ease of implementing the new program; 2. The programs improvement in instructional practices	b.) 6 c.) 6, 9, 10, 13	Utility Feasibility
3. How did the teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials?	1. Ease of implementing the new program; 2. The programs improvement in instructional practices 4. Accuracy, feasibility and utility of the program as set	a.) 6-7, 10 c.) 7, 10-12	Utility Feasibility Accuracy
4. Which materials were most effective in increasing student mathematical processes based on teacher perspectives?	2. The programs improvement in instructional practices 3. Program's positive effect on increasing proficiency in counting, number sense, and mathematical processes 4. Accuracy, feasibility and utility of the program as set	a.) 9 c.) 1-5	Feasibility Utility Accuracy

Simultaneously, a focus group was conducted as a way to elicit responses from the participants based on general broad overviews of the My Math program through open-ended questions similar to the electronic survey questions, and an open discussion. The questions that were designed for the purpose of the focus group were similar to the survey questions.

I used the focus group questions to elicit rich data from the focus group. The focus group was selected using a convenience sampling of six participants who had similar experiences in the K-2 grade bands at the research site. The probes were open-ended with the use of indirect probes to elicit more information. The focus group interviews focused on addressing the four main attributes of a program evaluation: (a) utility, (b) feasibility, (c) propriety, and (d) accuracy. The focus group probes were based on the listed open-ended questions (basis for discussion), possible probes, and evaluation standards (see Table 4).

Finally, a document review was conducted based on the recorded responses from the confidential electronic survey data and the focus group data. Program materials were utilized to review the recorded responses to review My Math program materials, which were available from the research site, in order to define credibility of the teacher responses. Those data from the electronic confidential survey and focus group were collected and analyzed for emergent themes. Descriptive data were reviewed and summarized to evaluate the program for its fidelity implementation, usability, and feasibility for the school district. The findings will be used by administrators at the

research site to improve the program for the remaining years of the program implementation.

Table 4

Attributes of Evaluation Standards, Basis for Discussion Questions, and Possible Focus Group Probes

Evaluation standards	Basis for discussion	Possible probes
1. Utility	How does My Math meet the needs of the students and teachers who utilize the program? What was previously lacking in the district's math program?	Why do you think...? Can you tell me more?
2. Feasibility	How do the My Math materials and activities address teacher needs and time constraints?	Why do you think...? Can you give me some examples of...?
3. Propriety	How does My Math promote the best interest of K-2 students who are exposed to the materials?	How did this happen? Can you give me some examples of...?
4. Accuracy	What My Math instructional strategies have been used in the district to improve learning for students in grades K-2? What was previously lacking in the district's math program? What other information do you believe is relevant regarding math instruction in our district?	How did this happen? What do you mean when you say...? Can you give me examples of...?

Data were analyzed for themes and summarized according to the AEA program standards to evaluate the accuracy of the program for fidelity of implementation, usability, and feasibility for the district. The findings will be used to improve implementation processes for the remaining years of the program implementation.

This program evaluation was aligned with NCLB and the Ohio Department of Education requirements for research-based practices with students. A program evaluation was justified as the program was adopted last year in order to meet the ever changing requirements of the educational system. Mathematics skills and problem solving skills are interwoven throughout the Common Core Standards, by conducting My Math program evaluation provided recommended improvements to be made within the program and at the building level. An expertise-oriented model was be used as it placed the needs of the program participant or stakeholders to provide the evaluation.

Participants

The data were collected to determine the perspectives of the K-2 teachers regarding the effectiveness of My Math as a valuable research-based program for students in the district of study. The participants in this program evaluation were K-2 teachers who have been employed in the local school district and were informed of this program evaluation study. All K-2 primary grade teachers were mandated to implement My Math in the fall of 2012. The group of K-2 teachers who implemented My Math were given the opportunity to participate in the program evaluation. The teachers were assured confidentiality by completing the survey online. Assumed consent was granted by the teachers who completed the electronic survey. The total number of participants was 100

teachers, as there are 10 schools with three to four teachers at each of the studied primary grades. When 57% of the teachers responded to the survey, the participation was considered slightly above the expected target.

The total estimated number of the focus group participation was approximately six to 10 teachers who were employed in the local district and who coach and teach math in the K-2 grade band; therefore when six participants attended the focus group, the participation was considered on target. The possible pool of participants received a letter of invitation to participate in the focus group and the informed consent for their review (Appendices E and F). The participants had 1 week to agree to participate and ask questions after receipt of the letter via e-mail or phone call to ask questions and agree to participate. Upon receipt of their response, the participant was contacted via phone regarding the review of informed consent form and the selected date, place, and time for the focus group. The members of the focus group returned the informed consent via e-mail to participate in the focus group. The full informed consent document was reviewed prior to starting the focus group discussion. The focus group members were assigned pseudonyms to ensure confidentiality for their participation in the study.

Access to the participants was limited to the K-2 teachers and teachers in other grade bands who were currently employed in the local district of study. Following approval from the Walden University Institutional Review Board (IRB), approval number 05-15-14-0157626, district procedures were followed for approval to conduct local research. I submitted the written proposal to the Office of Research and Accountability

for review and to IRB for approval from Walden University who reviewed the proposal and granted permission to conduct the program evaluation of My Math in K-2.

Ethical Practices for Electronic Survey Participant Protection

Ethical practices were ensured for the participants through the use of a confidential electronic survey. The teachers who completed the survey became the participants of the program evaluation. The purpose of the program evaluation was explained in an e-mail to the teachers in K-2 in the school district of study. Assumed consent was explained to the potential participants along with a detailed explanation of the nature of the study, potential risks by participating in the study, how the findings will be used, and the confidential practices for the electronic survey. No identifying information or questions were asked of the participants. The survey took approximately between 20 and 30 minutes to complete. The responses in this study were extracted directly from the electronic survey.

Ethical Practices for Focus Group Participant Protection

Ethical practices were ensured for the focus group participants. Six volunteers in the K-2 grade band, who coach and teach math, agreed to participate in the focus group. Participation in the focus group was completely voluntary. Participants in the focus group obtained a letter of invitation and written statement of purpose and written informed consent for review. The participants were contacted via phone to discuss the informed consent. Informed consent was explained to the voluntary participants along with a detailed explanation of the nature of the study, potential risks by participating in the study, how the findings will be used, and the confidential practices through the use of

pseudonyms for each focus group participant. No identifying information or questions were asked of the participants. The focus group took approximately two hours to complete. The participants were informed that their participation was entirely voluntary, and there was complete confidentiality through the use of pseudonyms. The informed consent was returned to me via e-mail after the individual phone call. Another copy of the consent was provided and reviewed prior to the start of the focus group. Participants received written copies of the open-ended questions. Additionally, I provided assurance that participation was confidential and voluntary, provided a statement that no rewards or compensation will be given, and provided a statement declaring no harm will come to them for participation. All focus group participants were assigned pseudonyms to guarantee confidentiality. The participants had the opportunity to decline to participate in the focus group interview at any time.

Data Collection

Data collection from the electronic survey and the focus group provided information to answer the research questions. The electronic survey consisted of open-ended questions, and Likert-scales was used to answer the research questions and to determine if the key objectives of the My Math program have been met. Simultaneously a voluntary focus group participated in open-ended questions and possible probes that provided a different perspective. The responses in this study were extracted directly from the focus group discussion to answer the research questions and assisted in determining if the key objectives of the My Math program were met. Both forms of data collection included the teachers' perspective to evaluate the (a) ease of implementing the new

program; (b) program's improvement in instructional practices; (c) program's positive effect on increasing proficiency in counting, number sense, and mathematical processes; and (d) accuracy, feasibility and utility of the program.

Once the data were collected, a document review was conducted using the My Math materials based on the results of the electronic survey and the focus group responses. The documents provided clarity and credibility of the teacher responses as a way to evaluate the components of My Math in relationship to the (a) ease of implementing the new program; (b) program's improvement in instructional practices; (c) program's positive effect on increasing proficiency in counting, number sense, and mathematical processes; and (d) accuracy, feasibility and utility of the program. The results were descriptively describe the data from the triangulation of sources.

Electronic Survey

Survey questions were adapted scale from a survey designed by EDC's published survey Thinking About Mathematic Instruction. Written permission was received from the EDC to utilize the survey. The adaptation was designed using the goals, intended outcomes, and instructional strategies contained in My Math. The electronic survey consisted of open-ended questions and Likert-scales that provided data that was analyzed for themes and implications regarding the My Math program. The EDC (2012) established validity and reliability of the survey, which was available on their website. EDC reported that validity and reliability of the Mathematics Content Knowledge instrument were established by the SII group. Cognitive interviews were conducted in order to understand how respondents formulated responses to the survey questions for

question validity. Additionally, a mini data collection study was used to assess the validity of the instrument. Interrater reliability was used while coding and calibrations were conducted in triplicate to measure reliability of the survey. Raters used Cronbach's alpha in which total scores were given to measure internal consistency for each Likert-scale question. There was a .95% correlation of the responses from the mini data collection study. Coding groups used a score of two or three to come to consensus by comparing scores and discuss disagreements. The validity and reliability of the adapted survey has not been previously documented and was addressed using an expert panel and the data in this study. Three district math coaches from the middle schools established the validity of this survey utilizing a mini data collection study to assess the validity of the instrument. Inter-rater reliability was used to assess the validity of the instrument. Calibration was conducted in triplicate as there were three math coaches. The effectiveness subscale consisted of 10 items ($\alpha = .75$), and the instruction strategies subscale consisted of seven items ($\alpha = .66$). Cronbach's alphas for the 10 program questions and seven instructional strategies questions were .88 and .66 respectively. The inventory was found to be acceptable (17 items; $\alpha = .70$). Reliability analysis might be limited due to the small sample size of this study. The results of this survey were bound by the case and that a detailed description of the context will be provided to assist in transferability.

The electronic survey, which took approximately thirty minutes to complete, was used for data collection in order to give K-2 teachers who participated the opportunity to facilitate open feedback and an assessment of the district of studies math program

without feeling like it is information that the curriculum department may seek out. Every K-2 district teacher received a written overview of the survey, the intent of the survey, and information regarding confidential, voluntary participation. There was no punishment or reward for completing the survey. No demographic or identifying information was collected. The survey window was open for 2-weeks for teacher convenience to participate in the survey.

Participants received a detailed description of the survey and the purpose of the survey. When 57% of the teacher responded to the survey, the participation was considered slightly above the expected target. The number was based on the following criteria: (a) the grade they teach, (b) they were assigned to an elementary school, and (c) willing to participate in the study.

The participants understood that their participation was entirely voluntary, and there was complete confidentiality. Participants received a written overview of the survey which included: (a) a detailed explanation of the survey, (b) assurance that participation was confidential and voluntary, (c) a statement that no rewards or compensation would be given, (d) a statement declaring no harm will come to them for participation, and (e) a 2-week timeframe for the survey to be completed. The district of study uses Survey Monkey for all anonymous surveys. The survey contained questions that included Likert-scales questions and open-ended questions. The Likert-scales were used to rate the instructional strategies, program implementation, and usability through descriptive reporting. A nonstatistical analysis indicated the percentages of response on Likert-scale questions and themes, trends, and interpretations from the open-ended survey results. The

open-ended questions related to the teachers understanding of the math materials and changes needed for future implementation. Additionally, the open-ended questions were used to gain an in-depth understanding of the participant's experiences with My Math program. All of the questions were linked to the program evaluation. This methodology was selected as a systematic way of collecting and analyzing the effectiveness of My Math through the participants who used the program during the pilot year.

Focus Group

Data from the focus group were tape recorded and later transcribed. No identifying information was placed on the transcription or on any other documents. Each participant in the focus group was assigned a pseudonym to guarantee confidentiality. The format of the focus group was conducted through open-ended, probing questions were asked to obtain additional information regarding the evaluation of My Math. The focus group questions consisted of open-ended questions and extending probes in order to obtain as much information as possible during the discussion. The questions were similar in nature to the open-ended questions in the survey. The voluntary participants of the focus group were instructional coaches and taught math within K-2; therefore different, detailed descriptive data was obtained from their responses. The validity of the open-ended questions was established by the SII Group in the *Mathematics Content Knowledge Instruction*. As suggested from EDC a small number of cognitive interviews will be conducted to measure the validity of the focus group questions. Three district middle school math coaches from the district of study established the validity of the focus group questions. Additionally, the three middle school coaches reviewed the surveys open-

ended questions and focus group questions for clarity, readability, relationship to math skills and learning, and the program objectives. The middle school teachers did not find any issues with the written questions as it related to the clarity of the questions, the readability, the relationship to math skills and learning, or the written program objectives.

The focus group was conducted in a conference room at the board of education in the district of study. The resulting focus group questions did not replicate the content of the questionnaires but were written to allow each participant to share his/her experiences while teaching My Math during the pilot year from their personal perspective.

The participants were informed that their participation was entirely voluntary, and pseudonyms were used to protect their confidentiality. Participants received a letter of invitation (Appendix E) and full written consent (Appendix F) that included a written overview of the survey, which included: a detailed explanation of the survey, (b) assurance that participation was confidential and voluntary, (c) a statement that no rewards or compensation would be given, (d) a statement declaring no harm would come to them for participation, and (e) an estimated timeframe of two hours for the focus group discussion. Findings were returned to each focus group member via participant e-mail, for member checking for review of correctness of the researcher's findings for their own data. Each participant was given the opportunity to discuss the results with the researcher via one-on-one, by e-mail, or phone (Table 5). The member checking results are listed in Table 5. Transcripts are being stored in a locked container in my home for 5 years.

Table 5

Member Checking Comments/Actions

Name	Comment	Action taken
RS Brown	"I found no discrepancies in my verbal offerings"	No action needed.
S Blue	"Good Morning-A job well done!" A few comments: As you read through my blue comments-gook is there instead Clarification needed "Boom" near the end-articulate....it says "ones" cans should there be others? It was interesting to read. I had fun."	Spelling corrected; need not be adjusted. "Boom". Met with participant to discuss the Use of "boom" as a finalization of the students obtaining skills. Participant agreed.
D Purple	I received the transcription. I only saw minor typos: i.e. thing for think, to for too in some places."	Spelling corrected. Phrases need not be adjusted.
R Orange	"I think all of mine looks good. I did not see any mistakes."	No action needed.
C Red	"I did not see any errors."	No action needed.
L Green	"Transcript looks great (and like a lot of work!)"	No action needed.

Document Review

A document review occurred after the data had been collected from the electronic survey and focus group. The review was based on the results and recorded responses. The documents review consisted of program documents relevant to the research questions. Access to the K-2 teacher and student My Math program materials were granted from the

district's Curriculum Department. The program objectives, key elements, and clarification of the program goals were identified and reviewed. This analysis enabled me to understand the teachers' experiences with regards to fidelity and use of the program. Seeking out information in the program revealed holes that existed in the program/research. The gaps did not become evident through the results of the electronic survey or focus group. The documents review enabled inductive and interpretative theoretical ideas based on the triangulation of data through a content analysis.

Role of the Researcher

My role as the researcher during this program evaluation was designed to monitor the program evaluation, obtain approval from the research department, and collect and analyze the data collected regarding My Math and draw conclusions. I obtained the necessary local district clearance for research, as well as the appropriate consents from the participants. I collected data and conducted a data analysis from the survey data collected and the focus group using NVivo10. I analyzed the survey and focus group data collected by using coding and themes might emerge. The use of the software minimized validity threats in the analysis phase caused by potential research bias. I also used a document review of My Math materials to seek clarification on program requirements, teacher utilization, and program processes and procedures. The data were used to make program recommendations to the district from the results of the program evaluation. As the director of the elementary program in the local district, I am familiar with the elementary teachers in the district who have implemented My Math, but do not directly

evaluate them. This group of teachers was the pool of participants who met the participation requirements.

I took precautions based on my own experience outside of this district to maintain my objectivity and limit bias. I digitized the survey and e-mailed it to the teachers with explicit directions and instructions. In order to limit bias further, a data collection tool, NVivo10, was used to analyze the data, identified themes, and coded data. The software allowed the computer to identify the repeated themes, which removed the human error from the data analysis.

Data Analysis

The data that I sought to obtain were to examine the teacher perspectives of My Math program as a research-based instructional program for an urban district of high poverty. The survey and focus group specifically targeted the objectives and outcomes of the program.

Data from the Likert-scale, open-ended questions, and focus group were descriptive in nature. As each survey was conducted, the data analysis phase was entered into NVivo10. The software was selected in order to minimize any potential bias during the data collection phase. The data specifically targeted current instructional practices and future professional development needs of the My Math program. A document review of program materials was conducted as part of the data collection and analysis to provide another mean of establishing validity, draw conclusions, and credibility of the findings. Finally, the survey data were used to determine the teacher's specific feedback on the program and postprogram instructional strategies.

Data obtained throughout the evaluation process and document review were coded and analyzed through qualitative NVivo10 software program. The software was used to conduct a word frequency analysis. Additionally, I manually coded the data to identify themes. In the first phase, open coding was utilized to review the responses collected from the open-ended questions, focus group questions, and the documents review into categories and subcategories. In the second phase of the data analysis, axial coding was utilized to explore program objectives, causal conditions, strategies, and outcomes from the information. Finally, a coding paradigm was constructed in order to identify relationships of the conceptual framework, program objectives causal conditions, strategies, and outcomes. The interpretation resulted in the descriptions and conceptual relationships (Stark, 2010). The use of the software validated the data that were analyzed during the study. The Likert-scale data were used to calculate the percentages and means regarding specific questions regarding the program. The open-ended responses and short response were analyzed for themes through coding and categorizing to identify the key ideas. The data were used to draw conclusions based on the participant's responses through the identification of major themes and through drawing conclusions.

Maintaining Accuracy and Credibility

Safeguards were followed to ensure credibility and accuracy of the program evaluation data analysis to have procedures in place to maintain credibility and the quality of the program evaluation. An explanation of the program evaluation was provided to potential confidential survey participants and focus group participants. Confidentiality of the K-2 primary teachers will be maintained through the use of

anonymous electronic surveys and pseudonyms were assigned to the focus group participants. An explanation of the electronic evaluation was provided to the K-2 teachers. Assumed consent was obtained from the participants through the completion of the survey. Completion of the survey was completely voluntary. Validity and reliability have been established by the EDC. The modified survey and focus group questions have validity established from math three middle school math coaches. Informed full consent was obtained from the focus group prior to asking any questions. No identifying information was used for the participants in the focus group and pseudonyms were given to all participants. Interpretations of the Likert-scale responses, survey items, and through understanding of personal experiences created an experiential understanding (Stake, 2010). A rich descriptive report included the different interpretations and description collected during the program evaluation and was based on a non-statistical analysis of the information that was obtained during this program evaluation. Triangulation of data included the survey data, focus group, and document review that established credibility through multiple sources. According to Stake (2010), qualitative research is experiential, meaning that personal experiences and judgment rely on the personal experiences of the group being studied. Personal experiences impacted the information obtained from the participants. The program document review was important to refer to when the data was reviewed. Comparisons of the K-2 teachers on open-ended questions, focus group notes, Likert-scale ratings, document review, and results from the qualitative software NVivo10 was used in the descriptive reporting. Member checking of the findings for the focus group was used with the focus group members to review their information for accuracy

(Appendix T). Additionally the focus group participants had an opportunity to discuss the findings with the researcher. Any discrepancy noted were reported and possible explanations were provided. The participants of this program evaluation were communicated with through e-mail after the end of the pilot year was used to determine teacher perception (a) how effective were the instructional strategies for increasing number sense, counting, and mathematical processes; (b) in what ways did the program meet the goals and objectives of My Math; (c) how did the teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials; and (d) which materials were most effective in increasing student mathematical processes.

Limitations of the Program Evaluation

One of the largest potential limitations to a program evaluation is the human element that was involved in the evaluation as the teachers were the recipients of the program being evaluated. Spaulding (2008) found that program evaluations are limited based on the experience of the participants. The program that was being evaluated was purchased for a pilot due to the rapidly changing educational environment (Fitzpatrick et al., 2010). The rapidly changing environment was a particularly complex issue that emphasized the need for case study research to be conducted. Stake (1995) reported that an effective way to study educational programs is through a program evaluation as a way to study around significant issues. The experiences of the K-2 teachers have been limited. The district had to develop new SCA that meshed with the new CCSS and textbook. Data were collected to make changes to improve the math program within the district. Data

driven decision making was required to improve instructional programs and improve student achievement (NCTM, 2010; NCLB, 2001).

Program evaluations have evolved over time. There is a lack of experienced researchers who are trained in program evaluations. Expertise must exist with data analysis, professional experiences, and with experience comes the ability to remain objective. Program evaluations for new products can be difficult if there preconceive bias amongst the participants from previous programs or experiences (Fitzpatrick et al., 2010).

Other limitations regarding program evaluations are related to data collection, time constraints, and programmatic understanding. Often teachers or educators do not want to participate in program evaluations because they believe their participation results will be shared and they will be identified. Additionally, with the exception of classroom SCA and state test, the district has not faithfully collected data in the area of math. The data management program is not easy to use and has created another deterrent to data collection. Educators should understand data from the student view as well as their own view (Spangenberg, 2012). Well-developed program evaluations may assist in teachers wanting to participate in program evaluations. Well-developed processes and questions that take little time, can peak interest of educators who want to improve their craft.

This program evaluation had some anticipated limitations. The willingness of teachers to participate in this study could decrease the participation pool, which would limit the data that are collected. Additionally, teacher's views of the program itself could influence the data that were collected and cause discrepancies in the data. Finally, the adoption of the new curriculum and new standards at the same time has created a sense of

being overwhelmed. The importance of understanding the constraints of program evaluations was essential to conducting a well-constructed program evaluation that would obtain meaningful data and create change.

Findings

This program evaluation was designed to determine if the program objectives and goals of increasing mathematical fluency for students in an urban district were met. The survey questions were developed to answer the research questions in order to determine the goals of My Math (a) ease of implementation; (b) improvement in instructional practices; (c) increasing proficiency in counting, number sense, and mathematical processes; and (d) accuracy, feasibility and utility of the program as set. The participants' responses to open-ended survey questions (Appendices G-S), rankings on Likert-scales, and the focus group were used to answer the research questions that guided the study.

Research Question 1

How effective were the instructional strategies for increasing number sense, counting, and mathematical processes based on teacher perspectives?

In the primary grades, teachers focus on number sense, counting, and the foundational mathematical processes necessary for students to become successful in subsequent grades. In order for this to happen, teachers must use effective instructional strategies in these skill areas. Desimone, Smith, and Phillips (2013) used a term called *core theory* that described a moderate relationship between teacher attitudes and beliefs, classroom practices, and student outcomes. In this study, "teacher perspectives" were used to describe the effectiveness of the instructional strategies in the My Math program.

The K-2 teacher participants were asked to provide their perspective of three program objectives (a) ease of implementing the new program, (b) improvement of instructional practices, and (c) the positive effect on increasing proficiency in counting, number sense, and mathematical processes. The teachers who participated in the study were considered teachers who used the program during the pilot year. Approximately half of the teachers reported a combined percentage of 52.63% ($n = 30$) of the implementation of instructional strategies in My Math as *effective* or *very effective*. The remainder of the teacher participants reported a percentage of 47.37% ($n = 27$) of the implementation of the instructional strategies *average* (Table 6). Similar results were obtained regarding the effectiveness of improvement of instructional strategy practices through the use of My Math program. Approximately half 54.38% ($n = 31$) of the teacher participants indicated improvement in implementation of instructional strategies when using My Math were *effective* or *very effective*. The remainder of the teacher participants reported a percentage of 45.61% ($n = 26$) of the effectiveness of improvement in implementation of instructional strategies as *average* (Table 6).

Table 6

Perception of My Math Instructional Strategies

Instructional strategies	Very ineffective		Ineffective		Average		Effective		Very effective	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Implementation of Strategies	-	-	-	-	27	47.37	27	47.37	3	5.26
Effectiveness	-	-	-	-	26	45.61	28	49.12	3	5.26

The teacher participants reported that the implementation and effectiveness of the instructional strategies *average* or *above average* as a group. The teachers did not report *ineffective* or *very ineffective* influences on the implementation of instructional strategies or effectiveness of the My Math program based on teacher perception (Table 6). Teachers reported on the effectiveness of increasing number sense, counting, and mathematical processes. These specific skills are foundational skills that are necessary for students to be successful in school. Regarding the teacher participants perceptions of specific skills 50% ($n = 29$) of the teachers rated the program's effectiveness on increasing number sense *effective* (45.61%, $n = 26$) and *very effective* (5.26%, $n = 3$; Table 7). Approximately 44% ($n = 25$) of the teacher participants rated the program's effectiveness on increasing counting skills *effective* (47.37.61%, $n = 27$) and *very effective* (5.26%, $n = 3$) (Table 7). Finally, 47% ($n = 27$) of the teachers rate the program's effectiveness on increasing mathematical processes *effective* (42.11%, $n = 24$) and *very effective* (5.26%, $n = 3$; Table 7).

Table 7

Increasing Number Sense, Counting, and Mathematical Processes Using My Math

Instructional processes	Very ineffective		Ineffective		Average		Effective		Very effective	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Number Sense	-	-	4	7.02	24	42.11	26	45.61	3	5.26
Counting	-	-	5	8.77	27	47.37	22	38.60	3	5.26
Mathematical Processes	-	-	2	3.51	28	49.12	24	42.11	3	5.26

A small percentage of teacher participants reported the program as *ineffective* (Table 7). A possible explanation of these results was that the teachers were reporting on specific processes and not the full My Math program. Overall, the teacher participants found the program to have *average* or *above average* effect on increasing number sense, counting, and mathematical processes for K-2 students.

Three instructional strategies focused on teaching mathematical process, number sense, and counting. Teacher participants were asked to reflect on teaching experiences before and after they had used My Math related to teaching number sense, counting, and mathematical processes before and after you taught with My Math. While $n = 57$ in the previous questions, not all teachers participated in answering the reflective portion of the survey. There was a slight increase in instructional skills after using the My Math program (Table 8). One teacher participant reported a decline in instructional skills in number sense (1.85%, $n = 1$) and counting (1.85%, $n = 1$) after using the My Math

program (Table 8). A possible explanation for this the teacher participant saw a decline in his or her students skills or simply found the methods in the program *ineffective*.

Table 8

Pre/Post Instructional Skills Number Sense, Counting, and Mathematical Processes Using My Math

Instructional processes	Very ineffective		Ineffective		Average		Effective		Very effective	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Pre Number Sense	-	-	-	-	15	28.30	30	56.60	8	15.09
Post Number Sense	-	-	1	1.85	11	20.37	33	61.11	9	16.67
Pre Counting	-	-	-	-	12	22.22	31	57.41	11	20.37
Post Counting	-	-	1	1.85	13	24.07	31	57.41	9	16.67
Pre Mathematical Processes	-	-	-	-	18	34.62	29	55.77	5	9.62
Post Mathematical Processes	-	-	-	-	14	25.93	35	64.81	5	9.26

The teacher participants reported the greatest gains pre/post in mathematical processes with a 9.04% increase from *average* (55.77%, $n = 29$) to *effective* (64.81%, $n = 35$) after using the My Math program. The possible response for this increase was that the teacher participants learned new instructional processes or strategies to deliver material to the students (Table 7). Interestingly, 52.63% of the teacher participants reported mathematical processes *average* (49.12%, $n = 28$) or *ineffective* (3.51%, $n = 2$) as an effective instruction process (Table 7). Regarding the overall effectiveness of My Math for students who are in the participant's classroom 94.34% ($n = 50$) of the teacher

participants reported that My Math met the needs of the students in their classroom. The data obtained on the pre/post questions enabled teachers to reflect on their instructional practices, acquisition of student skills, and utilize data to drive differentiate instruction.

In the open-ended questions, one teacher participant made the comment that “kindergarteners are in inquiry mode 24/7,” another commented that “My Math is a good start to inquiry-based learning strategies.” These findings indicate that teachers a need for future research regarding the selection of additional strategies outside of the My Math program.

Through the use of visual inspection and qualitative software, Nvivo10, themes emerged from the teacher participants regarding the program goals and objectives. An example of a survey question that addressed the utility of the program were questions that asked the teacher participants about how the materials met the needs of the students in the classroom or with regards to ease of instruction. The feasibility of the program was measured by teacher participant reports of improvement in their instructional processes after use of the My Math program. The validity of the program was measured by asking the teacher participants about the effectiveness of the program and student outcomes in mathematical skills. Based on teacher participant responses, this program evaluation study supported My Math as an effective instructional program for K-2 urban students. This was evidenced by the effectiveness ratings (Table 7), reported improve in instructional skills (Table 8), and the overall effectiveness rating for instructional processes (Table 6). Based on these findings it was determined that My Math effectively met the program evaluation standards of utility, feasibility, and accuracy.

As part of the program evaluation, a focus group was conducted in order to address the utility, feasibility, propriety, and accuracy of the program. The focus group was designed to elicit responses that addressed the research questions and triangulated data. The focus group participants discussed the utility of the program in great depth. Overall three main themes emerged throughout the discussion that were based on the utility of the materials in the program for students and teachers. Common search terms revealed that the instructional skills and processes, differentiated instructions, and mathematical processes were the most beneficial components of the program in meeting the needs of the students and teachers. One focus group participant responded by describing the student benefits as “Hands on . . . makes sense . . . different levels . . . small groups . . . reteach and enrich. . . the program has everything.” The instructional practices of the “workshop model” were mentioned several times. This practice was described by participant as a way to “differentiate instruction” though the “I do, we do, you do” instructional process that met the needs of all of their students.

The focus group discussed multiple components of the program utilized to meet the needs of their students. The participants specifically mentioned materials that increased students number sense, counting, and mathematical processes. With regards to number sense, one teacher participant stated her students were “Able to explain what strategies they used, and it start out with ‘the strategy I used was a number sentence.’” Another focus group participant stated that My Math that “you get the math facts and multiplication, you get down to the basics, and spend time on concepts.” With regards to

number sense, one focus group participant stated that “they are seeing the students pulling from different strategies to solve problems.”

In regards to counting, all focus group participants discussed the necessity for fact fluency and fact practice. While students were able to utilize strategies and apply number sense to solve problems, there was a prevalence amongst the group that My Math lacked fact drills and repetitive practice. The group specifically mentioned the need to supplement the My Math program in order to improve fact fluency and counting. One participant stated the materials allow you to “Use a hundreds chart, a number line and counters” as tools to teach counting. The participants found the utility of the materials assisted the students with their counting skills but lack the repetitiveness that daily drills provided for memorization. Overall, the materials enable students to improve counting skills through the use of various manipulatives.

Mathematical processes are described as a student’s ability to make sense of problems and persist in solving them (Carter et al., 2012). Students who are able to explain to themselves and others the meaning of a problem and solve them in a variety of ways are utilizing a variety of mathematical processes. These processes include making connections, change the solution process, and explain the correspondence between the question and the answer. A student who is mathematically proficient is able to utilize different methods to solve a math problem and answer the question by having the solution make sense. Focus group participants discussed mathematical processes in detail. One focus group participant stated that My Math as a program that “provides building blocks and there is more time to practice, a long period doing the same concept . . . builds

your foundational skills.” Another focus group participant stated that more students have mastery of skills. Students need to master a multitude of mathematical processes in order to apply strategies when solving mathematical problems. Mathematical processes are the foundation of inquiry-based learning.

Based on the detail and frequency of comments from nearly every focus group participant regarding the variety of mathematical process, increased number sense, and examples of students counting, the findings of this study support the utility of My Math. The detailed descriptions provided through the survey and focus group responses find a more favorable outcome than the district of studies previous math program. The explicit comments regarding the variety of problem solving strategies supports the student’s ability to use a multitude of skills, as they think through a problem (inquiry-based), to construct and explain their answers in detail, thus creating a deeper understanding.

Research Question 2

In what ways did the program meet the goals and objectives of My Math?

The My Math program is designed to enable teachers to use (utility) a systematic approach to teaching through the customizable format of their materials (Carter, et. al., 2012). Through the systematic approach to teaching, educators are able to address the needs of students mathematical processes through a variety of learning platforms in order to differentiate instruction. A combined percentage of 74.07% ($n = 40$) of the teacher participants found the instructional in My Math as *effective* (64.81, $n = 35$) or *very effective* (9.26%, $n = 5$). The remainder of the teacher participants reported a percentage

of 25.93% ($n = 14$) of the implementation of the instructional strategies *average* (Table 9).

Table 9

Instructional Skills Number Sense, Counting, and Mathematical Processes Using My Math

Instructional processes	Very ineffective		Ineffective		Average		Effective		Very effective	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Mathematical Processes	-	-	-	-	14	25.93	35	64.81	5	9.26

The data indicated that the program was an effective tool as related to the teacher's instructional skills while teaching mathematical processes. Through the use of visual inspection and qualitative software, Nvivo10, themes emerged from the teacher participants regarding the program goals and objectives. This information was obtained from the open response on the survey. In response to the ease of implementation, one teacher participant stated that "it was very easy to implement." Other teacher participants stated that "lesson plans were nicely laid out and easy to follow" and that "all components assisted in meeting the needs." These statements supported the goal of the My Math regarding the ease of implementation for teachers.

The teachers who utilized My Math during the pilot year attended professional development that was provided by the book company. The purpose of this professional development was to introduce the program to the teachers and how the program can be utilized to improve their instructional practices. The teacher participants did not find the

professional development training helpful. One teacher participant stated, “It (the professional development) was general and vague.” Another teacher participant stated that “more is needed as we (teachers) move into common core project learning.” The professional development that was provided covered the manual and the workbook offerings and an overview of the program. There was a second professional development day related to the technology component of the program. Not all teacher participants attended this training. One teacher participant reported “I like the technology piece” and others who attended found that portion of the training useful in helping them plan and teach. The online portion of the program contains all of the instructional materials, interactive whiteboard activities, and other materials that enable teachers to differentiate instruction.

The focus group reported similar situations regarding the professional development portion of the program. Focus group participants reported that “we (teachers) haven’t any professional development since My Math at the beginning” and that they would like to have professional development on the “workshop model.” The workshop model enables the teachers to differentiate instruction during the math block by pulling small groups and teaching through remediation, review, and enrichment. Teachers are able to conduct small groups during the “you do” portion of the instructional process.

Overall, while the initial professional development program was provided on a very limited basis. According to teacher participants, there needs to be additional training provided on differentiated instructional practices through the workshop model. Based on the teacher participant responses the professional development that was provided was not

effective during the pilot year. As such, the teachers were in need of additional training on how to use the student data as a tool to select appropriate resources for instruction. This information will be beneficial to the district as they plan future professional development program.

In the open-ended questions, teacher participants responded to the question continuing or discontinuing My Math as the major math program in the district of study. This prompted elicited many responses regarding the programs utility and feasibility. Common terms searchers revealed common themes that emerged were materials and the sequence (utility) of the program. Teacher participants responded (89%, $n = 34$) that the feasibility of My Math was appropriate to keep as the major math program, except four respondents (11%, $n = 4$) stated that they would not recommend maintaining the program. There were one third (33%, $n = 19$) of the teacher participants that did not respond to this question. Various types of response included ways to improve the current delivery of instructional organization such as “volume 2 at the beginning of the year,” “well organized,” another teacher participant reported that “lessons flip back and forth too much . . . supplement,” and that “consistent chances to quiz” (see Table 10). The second noted theme that emerged was materials the teacher participants preferred and listed as their reason to maintain the program as the major math program. The teacher participants made comments such as “I like the music and the technology,” and that “the program provide a strong background,” “manipulatives,” “ties into reading,” and “great computer support” (Table 10).

Table 10

Teacher Participants Comments Regarding Continuing or Discontinuing My Math

Respondent	Theme instructional organization	Theme materials	Suggested changes
Teacher 1	Volume 2		Use volume 2 first skills are easier
Teacher 2	Supplement		Supplement where needed
Teacher 3	Strong background		
Teacher 4	Check data	Consistent chances to quiz, online support	
Teacher 5	Book set-up differently, flips back and forth		Change to addition: 2 digit, 3 digit, regroup follow by subtraction
Teacher 6		Many resources and tools	remove some of the writing...identify high area of need (facts and fluency)
Teacher 7		Music and technology	Other teacher made materials
Teacher 8	Supplement		Move time and money...spiral back
Teacher 9	Pacing Guide... Supplement		Need more repetition
Teacher 10	Book easy to follow	Manipulatives... homework	
Teacher 11	Program set-up	Manipulatives	Happy medium
Teacher 12	Well-organized easy for teachers	Technology	
Teacher 13	Supplemental resources	Independent work pages	Help with small group
Teacher 14	Differentiation from lesson	Tie into reading... manipulatives	Incorporate my own teaching style...tweak
Teacher 15	Homework... helped parents know what we are learning/teaching	More hands-on manipulatives	Not recommended for sole program...more repetition

Respondent	Theme instructional organization	Theme materials	Suggested changes
Teacher 16		Manipulatives, computer Support, home-practice	
Teacher 17	Diverse	Materials not user friendly	Lesson sequence
Teacher 18	Best I have seen In my years		More hands-on activities
Teacher 19	Easier to navigate more effective	Workbook, homework, review pages	Circular review helpful
Teacher 20	Common core		Second book should be taught first
Teacher 21	Great Improvement		More materials and Games
Teacher 22	Common Core		Not teaching money early enough
Teacher 23	No re-teaching		Implement our own way, revisit topics
Teacher 24	Covered information Confusing directions		More manipulatives, change the sequence
Teacher 25	Not developmentally appropriate		Geometry should be at the end of the year
Teacher 26	Variety of topics		
Teacher 27	Good program		Not much enrichment

In regard to recommending the program, teachers would recommend continuing My Math as the major math program in the district of study. The teacher participants reported (80%, $n = 27$) suggested changes or improvements that would assist them in improving their instruction using this program. For example, one teacher participant reported that “would like to see the lessons in the book set up differently” referring to the sequence of skills and lessons. Also referenced were developmental appropriateness of the skill sequence did not make sense. Kindergarten teachers should teach geometry (shapes, colors, and patterns) prior to teaching number sense and addition as students do not know what numbers are at the beginning of the year. These findings indicate that teachers a need for future research regarding the selection of additional strategies outside of the My Math program. Professional judgment should be used when using pacing guides and developmental abilities should be looked at prior to teachers teaching from any program.

Research Question 3

How did the Teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials?

Since this was a qualitative evaluation of the My Math program, the teachers were asked to rate the utility of each of the material components has online access and program support for teachers that mirror the hard copy teacher’s edition, student materials, and additional online materials. The program materials that are available online are designed to provide easy accessibility to the materials, online lesson supports, and student materials instead of having to transport the materials to and from school (Carter et al.,

2012). Teacher participants had a combined percentage 66.67%, or two thirds, found the ease of implementing My Math as *effective* (49.12%, $n = 28$) or *very effective* (17.54%, $n = 10$) with regards to program usability, lesson coherence, and support. The remainder of the teacher participants reported a percentage of 33.34% ($n = 18$) of the ease of implementation of the program as *average* (31.58%, $n = 18$) and *ineffective* (1.75%, $n = 1$). The teacher participants reported specifically on lesson coherence, readability and usability of printed materials, and the support provided by the program materials (Table 11).

Table 11

Usability, Lesson Coherence, and Support Provided by the My Math Materials

Instructional processes	Very ineffective		Ineffective		Average		Effective		Very effective	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Overall Ease	-	-	1	1.75	18	31.58	28	49.12	10	17.54
Lesson Coherence	1	1.75	2	3.51	27	47.37	25	43.86	2	3.51
Usability of Printed Materials	-	-	2	3.57	13	23.21	32	57.14	9	16.67
Support Provided by Program Materials	-	-	3	5.36	26	46.43	21	37.50	6	1.71

This data indicated that the program was an *effective* tool as related to usability, lesson coherence, and support provided by the program materials. An interesting point was the split between *average* (47.37%, $n = 27$) and *effective* (43.86%, $n = 25$) in lesson

coherence. The possible reason for this report could be related to the grade level of the reporting teacher. The focus group participants stated that based on their grade band, lessons needed to be taught in a different order. For example, one focus group participant stated that “teach chapter one and chapter three together and then chapter two and four.” Additionally, in the open-ended responses, one teacher participant stated that “the program seems to me to be out of order at some points in the year.”

While data pertaining to lesson coherence was divided, the teacher participants found the program usability of the 73.81% ($n = 41$) *effective* (57.14%, $n = 32$) or *very effective* (16.67%, $n = 9$). Usability is supported through teacher time saved or refuted through time constraints of the materials. On the open-ended questions a teacher participant stated “It is difficult to get through all of the math for that particular setting” while another participant stated that “it save time on homework, planning, and ideas for activities to reinforce skills.” The teachers in the district of study received professional development during the pilot year of implementation. The professional development was limited to an introduction session or a technology session. The teacher participants had mixed reviews regarding the usefulness of the profession development program. In the open-ended response, one teacher stated that “not really (useful) until you actually have the materials in hand and can look at them in detail.” Another teacher participant stated that “I was familiar with the information I could use and how to use it with my students” and another participant found the professional development useful “Because I was a first year teacher.” One teacher participant found the professional development useful because “It provided time to go through the materials and ask the publisher questions about the

intended use.” The conflicting perceptions could be related to the amount of familiarity and support each teacher received during the pilot year.

The focus group participants discussed the limited professional development as well. Each focus group participant attended a professional development conducted by the publisher and found it beneficial. The focus group respondents discussed the desire to have more professional development in many areas as that would enable them to collaborate. One focus group participant described a need for professional development in the workshop model in order to help teachers differentiate instructional practices. Another focus group participant stated that “if we (teachers) could just talk to each other and share ideas (collaboration).” The focus group participants and the survey teacher participants both found a need to have more professional development.

The My Math materials provide support for teachers within the teacher’s manual. Each unit provides a variation to each lesson based on student performance data (below, on, above grade level). The student books and assignments are leveled based on their performance data. There are also online resources, video clips and training webinars within a section called Professional Development. A focus group participant described the My Math materials as “Having everything right there.” During the focus group discussion, not all of the participants were aware of all of the materials that were available with the program. One focus group participant stated “I didn’t have access to all of those items.” Based on the specificity and frequency of the comments from nearly every teacher participant regarding the lesson coherence, usability, and support provided by the program, the findings of this study supported the utility, feasibility, and accuracy

of the program. The voids and negative comments regarding the program could be addressed through professional development and more exposure to all of the materials available within the program. These comments support the need for additional training and time necessary for teachers to fully access the utility and feasibility of the program.

Research Question 4

Which materials were most effective in increasing student mathematical processes based on teacher perspectives?

This was a qualitative evaluation of the My Math program; the teacher participants were asked to rate the materials that were most effective in increasing student mathematical processes. The program materials described students who will become mathematically proficient through defending their assumptions through their answers (Carter et al., 2012). Students who are able to justify their reasoning for a problem will be able to apply this knowledge to their own mistakes, as well as others, thus creating problem solvers and critical thinking skills. Teacher participants had a combined percentage 47.37% found the effectiveness of teaching mathematical processes using Math as *effective* (2.11%, $n = 24$) or *very effective* (5.26%, $n = 3$) with regards to program usability, lesson coherence, and accuracy. The remainder of the teacher participants reported a percentage of 50.88% ($n = 29$) of the ease of implementation of the program as *average* and 1.75% as *ineffective* ($n = 1$).

The teacher participants reported specifically on improvement in instructional practices, the effects on increasing proficiency in counting and number sense, and mathematical processes. The data indicated that the program was an effective tool as

related to feasibility, utility, and accuracy. The possible reason for this report could again be related to the grade level of the reporting teacher. The teacher participant open-ended responses were positive with regards to improved instructional skills in mathematical processes. One teacher participant believed that the materials were more rigorous because the program used terms “Like composing and decomposing.” Another participant stated that “my instructional skills improved through the resources.” Many of the teacher participants and focus group participants commented positively on the resources (technology, manipulatives, smart board activities, and songs) improving their instructional skills. Specifically related to mathematical processes, one teacher participant mentioned that “a part to whole method of teaching processes” and another participant mentioned that “the program materials show them how to think through the way the solved the problems and think about their thinking.” These comments support the mathematical processes necessary for students to understand math problems moving from concrete processes (small pieces) to abstract processes (thinking and explaining).

With relation to improved instructional skills in number sense and counting, teacher participants reported mixed reviews. One teacher participant stated that “sometimes too repetitive” and another teacher participant reported that “students were exposed to more in-depth information.” Additionally, the teacher participants found the program materials beneficial in supporting improvement in instructional skills in number sense. One teacher participant stated that “the manipulatives and pictures . . . helped with developing number sense.” Teacher participants reported the manipulatives, consumables, and the tools and resources available did help the students with counting.

One teacher participant reported that “it is difficult when the lessons are moving forward and you still have student who need the core number sense.” Other teacher participants reported that with regards to counting, there is a lack of materials and resources that support counting patterns and re-teaching materials. The focus group participants found the program lacked materials to teach the foundational skills of counting, number formation, and the formation of writing numbers. In general all of the focus group participants found a lack of fact fluency, counting in patterns, and the need to supplement the programs number sense and counting materials (utility). Recently (D. Paul, personal communication, October 22, 2014) a program manager acknowledged the lack of resources in this area and shared an entire new section of online teaching materials related to number sense and counting. Thus supporting the elicited responses obtained from the teacher participants through the open-ended questions and focus group discussion. The written program materials described a need to attend to the precision and accuracy of numerical answers. Yet, until recently, the program lack practice in this area, which supported the need for more accuracy with counting and number sense.

Finally, the teacher participants addressed the gaps in instructional materials within the My Math program. Teacher participants drilled down to very specific skills in the open-ended responses and with the focus group participants. One teacher participant stated that “many of (teachers) feel that there are other important skills to teach . . . such as money, time, patterns, and graphing.” Another teacher participant stated that “the program does not have enough repetition of skills so that students can master facts . . . money, and grouping coins.” Additionally, a number of teacher participant mentioned the

lack of number grids for to work on missing numbers and number patterns. The focus group echoed the same concerns with regards to gaps in the instructional materials.

Overall, the teacher participants found several of the program features that promoted the wellbeing of students. The teacher participants all found the homework, manipulatives, books, and songs beneficial to the students' wellbeing as they supported a deeper understanding of the program goals and objectives of creating a deep mathematical foundation. One teacher participant reported that "the pieces that involves real life situations when trying to promote math and used every day." Another component of the program that all teacher participants found helpful was the differentiation of the materials presented in the program. The variety of materials enabled the teachers to have multiple resources, at different levels, teaching the same concept, for exploration and guided practice. The program materials tell teachers what resources to utilize depending upon student progress. The focus group participants commented on the utility and feasibility of the program regarding the explicit teaching instructions in order to meet the needs of their learners.

There were several possible variables that may have influenced or affected the teacher perceptions of the materials that were most effective in increasing student mathematical processes. These variables included the grade level they taught and the order of the materials, missing content, pacing that needed to be reordered, and the lack of counting and mathematical processes. One big variable is the adoption of the new CCSS that rearranged skills and content in grade bands. Skills and materials teachers taught for years were no longer assigned to their specific grade, but a whole new grade

level. The overall perception of the program, when not focused on specific skills, was above average and discussed in a positive manner. Overall, the teachers found the program accurate, easy to use (utility), and feasible in supporting the needs of their students.

Conclusion

My Math was a recently purchase research-based math program that was based on the new CCSS. The need for change in the district was evident as students struggled to be successful on the SCA using the previous mathematics program (Appendix U). Additionally, students were already entering the district below grade level as they were not passing the initial kindergarten screening. An expert-oriented program evaluation was conducted to evaluate My Math after the pilot year. Participation in the program evaluation was entirely voluntary, and safeguards were created to ensure confidentiality of the participant identities.

I do not have any direct evaluative roles or direct supervision of the primary teachers in the district. This limited my bias and possible preconceived notions that increased the validity of this program evaluation. The surveys were conducted electronically and confidentially. There was no identifying information present in that data that was collected. A data log was used to keep track of the data collected. All of the data was analyzed using the AEA evaluations standards that measure utility, feasibility, and the accuracy of the program. Qualitative software was used as well as manual visual inspection and methods of data analysis to identify trends and themes in the collected data.

Based on the findings of this program evaluation, the data gathered supported My Math as an effective research-based program for increasing mathematical skills of low socioeconomic students and who have a critical deficiency in K-2 math. The My Math program objectives of ease of implementation and improvement in instructional practices were met. In this study, teacher participants had a combined percentage 66.67%, or two thirds, found the ease of implementing My Math as *effective* (49.12%, $n = 28$) or *very effective* (17.54%, $n = 10$) with regards to program usability, lesson coherence, and support. Additionally, slightly more than half of the teachers reported a combined percentage of 52.63% ($n = 30$) of the implementation of instructional strategies in My Math as *effective* or *very effective*. Most importantly a combined percentage of 74.07% ($n = 40$) of the teacher participants found the instructional practices in My Math as *effective* (64.81, $n = 35$) or *very effective* (9.26%, $n = 5$). With regards to the objective of increasing student proficiency in counting, number sense and mathematical processes were met with suggested improves to the program. The teacher participants perceptions of specific skills 50% ($n = 29$) of the teachers rated the program's effectiveness on increasing number sense *effective* (45.61%, $n = 26$) and *very effective* (5.26%, $n = 3$; Table 7). Approximately 44% ($n = 25$) of the teacher participants rated the program's effectiveness on increasing counting skills *effective* (47.37.61%, $n = 27$) and *very effective* (5.26%, $n = 3$; Table 7). Finally, 47% ($n = 27$) of the teachers rate the program's effectiveness on increasing mathematical processes *effective* (42.11%, $n = 24$) and *very effective* (5.26%, $n = 3$; Table 7). The final program objective of accuracy, feasibility and

utility of the overall program was met with over 80% ($n=46$) of the teacher participants recommending keeping My Math as the current core mathematical program.

In this study, the focus group participants and the teacher participants consistently reported positive improvements in student learning through the use of the My Math materials. They specifically mentioned an increased in the student's ability to write mathematically, use vocabulary, use multiple problem solving strategies, and work successfully during the "you do" part of the instructional workshop model. Additionally, the groups specifically mentioned the level program materials that enabled the teachers to differentiate lessons, enrichment materials, and assessment materials that helped them make instructional selections base on student needs. The program materials supported the teacher comments by having color coded materials, multiple instructional selections, and online resources. The materials specifically support the differentiation and utility of the program described as tailored instruction to meet the needs of every student (Carter et al., 2012). Therefore, this program evaluation supported My Math as a research-based program that supported the needs of teachers and students, based on a triangulation of teacher perceptions, survey data, program materials, and focus group responses.

This program evaluation affected social change by validating the need for a research-based program that supports instructional practices and improves student mathematical learning. This study was necessary for local change in the district of study due to the low math scores across the state and local region. My district in Grades 3-8 and 10 put the district's scores in the bottom 5% of the state for the state test as reported on the state Department of Education website (Ohio Department of Education, 2014). While

my study did not cover those grade levels, it does focus on the need for strong foundational skills necessary for students to have in math to be successful in future grades. On a larger scale, this study could effect change nationally as low math scores are a national problem. The 2011 NAEP data indicated a 1-Point increase for fourth graders in the United States not closing the gap from previous years. Internationally, the 2011 Trends in International Mathematics and Science Study (TIMSS) report indicated the United States is performing much lower than other countries.

While overall the participants found the program well done, the teacher participants described a gap in between the foundational grades and the testing grades. Hopefully this program evaluation will provide information to similar districts that will assist in addressing gaps in their math programs during implementation and what foundational skills need to be substituted to improve the foundational years. Additionally, the teaching method of workshop model (I do, we do, you do) has been found to be very beneficial, future implementation process as well as the adoption and implementation of future curriculum in the district. The program evaluation affected social change by guiding revisions and new content standards that will enable students to compete in a global society. Students who are exposed to the next generation of changes have the opportunity to outperform other countries, at a global level, that they may not have been able to compete against before. Continuous improvement in instructional practices, deep understand for students, and quality professional development will help guide the changes that will enable teachers to keep current in this ever evolving educational environment.

In this qualitative expertise-oriented program evaluation of My Math project overview and designed will be described in Section 3. A detailed description and program goals will be defended as well as the project rationale. An additional literature review was conducted that supported the description of instructional practices, the need for a program evaluation, potential barriers, and local and far reaching social change.

Section 3: The Project

Introduction

This study was a qualitative expertise-oriented program evaluation of My Math. The My Math program was a newly published math program that aligned to the CCSS and was designed to provide a differentiated instructional model for teachers to utilize in order to meet the needs of all their students. The program utilizes an “I do, we do, you do” model to deliver instruction. An electronic anonymous survey that contained a Likert-scale and open-ended questions was used to obtain feedback from K-2 teachers who implemented My Math during the pilot year. Simultaneously, a focus group was conducted to obtain in-depth feedback and deeper responses through a rich discussion. Finally, program documents were utilized to triangulate data obtained through the focus group and through the survey results. The program evaluation was designed based on the AEA standards of utility, feasibility, accuracy, and propriety. My Math was largely reported by the K-2 teachers as an effective research-based core mathematics program for students who start school below grade level and who are classified as low socioeconomic status. An evaluation report of recommendations for future implementation, pacing, and materials were developed based on the findings of this program evaluation.

Description and Goals

My Math was developed as a new math program that aligned to the more rigorous CCSS. The program was adopted in the district of study because the program contained a vast array of differentiated instructional materials for teachers to use and utilized the “I do, you do, we do” instruction model. These features were very important considering the

district of study has a reported poverty rate of 99.7% (Ohio Department of Education, 2012). Prior to the purchase of My Math, teachers utilized a program that covered a large amount of material in a short period of time (as reported by the focus group participants). This type of program did not benefit the students as they needed time to gain the necessary foundational skills that would enable them to be more successful in the higher grades.

The qualitative program evaluation was conducted through an anonymous electronic survey, a focus group, and a review of the program materials. Subsequently, the survey consisted of open-ended questions and Likert-scale responses. Additionally, the focus group consisted of open-ended questions and possible probes to elicit deeper, richer responses. The My Math program materials provided an opportunity to review the recorded responses in order to define credibility of the teacher responses and triangulate data. The two main program objectives of My Math were an improvement in instructional practices and increasing proficiency in counting, number sense, and mathematical processes. Additionally, by measuring the accuracy, feasibility and utility of the program, the findings of this program evaluation were used to determine if the My Math program objectives were met. More importantly, I wanted to know if My Math was increasing mathematical fluency for students in an urban district who are of low socioeconomic status, through inquiry-based learning. Two other goals were related to teacher implementation. One goal was to learn the ease of implementing the new program (utility). The second goal related to improvement in teacher instructional strategies. The responses of the teacher participants were used to develop an evaluation report of

recommendations for future implementation, pacing, and materials were developed based on the findings of this program evaluation. The evaluation report will be provided to the district of study as a tool to guide future program implementation, reorganization of program materials, and suggestions for supplemental materials that are necessary to support the student learning needs.

Based on the findings of this qualitative program evaluation, My Math was validated as an effective research-based core math program. Teacher participants who used the program reported an overall positive effect on students' proficiency in counting, number sense, and mathematical processes. Additionally, the teacher participants reported students responded positively to many of the components of the program (i.e., music, books, problem solving strategies, etc.). Furthermore, teacher participants reported improvement in their instructional skills through the use of program materials. Specifically, they reported that the materials used a consistent, robust vocabulary, clear examples and engaging activities. The way the lessons were laid out, with modeling followed by guided practice and independent practice (I do, we do, you do), made them easy to use and effective. These two objectives of the program are the most important as they impact student achievement through a research-based core mathematical program. This study supported the continuation and use of My Math as an effective mathematical program in the district.

As part of this qualitative program evaluation, the results also focused on specific skills that students need to have during the primary school grades. The instructional practices utilized by teachers and outlined in the materials had a positive effects on

student achievement in the areas of increasing proficiency, number sense, and mathematical processes. The specific instructional model used to teach all of these skills were the “I do, we do, you do” model. The specific learning strategies reported by the teacher participants were the use of the instructional model, workshop model, scaffolding, manipulatives, real world connection, and direct, explicit instruction. The teacher participants identified the levels materials and support as the most effective component of the program through the instructional skills and processes within the program. This program evaluation will provide a list of resources and recommendations for future users of My Math for future implementation and for future users of the program.

Rationale

The use of program evaluations was to assist in identifying and filling the gaps in current educational research practices. Program evaluations are used to build a deeper understanding and information about programs in order to change or refine practices (Slavin, 2008; Spaulding, 2008). In this program evaluation the usability, feasibility, and accuracy of My Math was validated or refuted. If the program is validated as a tool that benefits teachers and/or as a tool to reach at-risk students, the benefits will help teachers and students locally as well as in other educational systems. In this program evaluation, the use of My Math was validated with students who are of low socioeconomic status and possessed a critical deficiency in K-2 math. Though the district of study can continue utilizing this program as an effective program that improves supports mathematical processes, number sense, counting and mathematical proficiency. Additionally, the study

supported the ease of use and improvement of instructional strategies. The evaluation report also linked My Math program objectives to program evaluation of standards of utility, feasibility, and accuracy.

Review of Literature

Critical deficiencies in basic mathematical skills of K-2 students led the school district of study to integrate My Math into the math because it is aligned to the new CCSS and is research-based. This program has a strong intervention component (leveled materials and remediation materials), with the focus on improving number sense, counting, and mathematical processes for underachieving students. In 2012, the Ohio Department of Education expanded a grant opportunity called Ohio's State Personnel Development Grant (SPDG) that is a statewide model for district-wide reform efforts through shared responsibility and accountability for all students through the Ohio Improvement Process (OIP) of continuous improvement. The district of study was selected to participate in the SPDG grant as a first cohort member during the 2012-2013 school year. The SPDG grant enabled staff to work collaboratively, with guidance from a State Support Team (SST) member as a way to implement and monitor continuous improvement strategies. The district of study started to follow the guidelines as prescribed by the OIP document (2012). The OIP is based upon core principles that focus on recursive continuous improvement through a review of instructional strategies, programs, and student results at level of the organization (Ohio Department of Education, 2012). Additionally, the OIP process is part of the Ohio ESEA flexibility request that has intertwined the OIP and SPDG as a process of continuous improvement through ongoing

state support through the SST (Ohio Department of Education, 2012). With an increase in state accountability and the mandate for continuous improvement, educators must continue to evaluate programs used with struggling students as a significant and relevant resource to increase student achievement. Given the current state mandate for ongoing increased student achievement with the SST and SPDG processes, evaluation of current programs and instructional practices is imperative.

An additional review of literature was conducted to make the connection between the instructional practices and the effects to increase student number sense, counting and mathematical processes from the information gained from this program evaluation based on the new CCSS. Because program evaluations and the CCSS are new to the educational realm, new research continues to occur through program evaluation and other types of research.

Instructional Practices

With the ESEA waiver, SPDG, and the OIP, continuous improvement, through better instructional programs and instructional practices, is being monitored at the state and local levels. Modeling, small group instruction, differentiated instruction, “I do, we do, you do,” workshop model. Traditionally, state test math scores in the district of study, put the district in the bottom 5% of the state for student performance as reported on the Ohio Department of Education’s 2014 Ohio Achievement Assessment results. These results have put the district of study into a high need district of support through the SST. Through the state support team, a tremendous emphasis has been placed on the instructional practices of teachers, differentiated instructional practice, and the

continuous improvement process. Firmender, Gavin, and McCoach (2014) described mathematical strategies that improved learning for K-2 students. Mathematical units should incorporate the importance of students verbalizing their thought process (Kiriakidis & Geer, 2014). This information mirrors the same items described by the focus group participants in this study. Additionally, teacher modeling through various instructional practices (vocalizing mathematical processes and vocabulary. Mathematical pedagogical change, or continuous improvement models in mathematical instruction needs to involve changing the instructional focus to mathematical reasoning, problem solving, encouraging students' conceptual understanding, and developing mathematical classrooms that are utilizing a shared community learning model (NCTM, 2010c). Utilizing the workshop model has enabled teachers to incorporate all of these components into their daily instructional practices as students are divided based on data, skill levels, and individual needs into small groups.

Mathematical processes are taught through direct, explicit instruction blended with inquiry-based learning. Bottage, Ma, Gassaway, Toland, and Butler (2014) described a curriculum built around a blended model of explicit instruction and inquiry-based learning (computation and problem-solving) had positive effects on lower performing, high needs students. These models implied that teachers must model the instructional materials (I do) using explicit instruction, correct terminology, and verbalizing their thought processes will assist students in learning the necessary to build a strong mathematical foundation. The teachers are then able to differentiate their instructional practices through the guided practice through the gradual release of students

attempting to apply their new knowledge (we do). During the “we do” students are able to use and share the mathematical vocabulary and verbalize the mathematical processes they used to solve their problems with their small group or with the entire class. Finally enabling students to solve problems on their own, using the various instructional strategies they have learned, enables students to use the skills they learned outside of isolation to solve problems and develop solid mathematical skills and processes.

These instructional practices are based on Vygotskian tradition or through the views that learning takes place through social interaction. Specifically in mathematics, this comes through the teacher and student interactions that take place on tasks assigned in the classroom (Bottage et al., 2014). The use of My Math as a tool to focus on mathematical skills related to increasing number sense, counting and mathematical processes builds the student's mathematical foundations necessary to be successful as they progress through school.

My Math addresses many essential basic mathematical skills defined in the CCSS. The program was purchased as the core program because it enabled teachers to address computational fluency through mathematical investigation, practice and various problem solving strategies using research-based instructional practices (Carter, et al., 2012, p. 11). Some of their important My Math contains mathematical investigations in the form of real life questions that create interest in math topics. The program materials offer the teacher multiple instructional strategies to teach students how to solve problems using their own problem solving strategies. The strategies included allowing students to make a model, draw a picture, use a manipulative, or write an equation. To ensure students have

a deep understanding of their method of choice, they showed mastery by explaining (vocalized or written) how they arrived at their answer. van Oers (1996) described the interaction between student and teachers as the following:

Students are responsible for taking part in discussions related to the mathematics they are exploring. In this way, meaningful learning is made dependent on the pupils' opportunity to evaluate their own insights and ideas in critical comparison with culturally available concepts, norms, and methods. (p. 92)

Therefore, much emphasis has been placed on instructional practices that create meaningful, engaging learning that increases student achievement. In order to engage students in their learning, teachers need to move away from whole group instruction, and meet the students' needs by differentiated activities. By using the workshop model, students have the ability to take part in learning opportunities that promote social interaction. My Math contains many materials that enable teachers to select items of high interest activities that increase student participation, and a deeper understanding of the content. A plethora of instructional strategies, materials, and practices are available throughout each grade level in the My Math program. Teachers should review their mathematical instructional practices in order to continuous improvement related to their pedagogical skills (Casa, Copley, & Gavin, 2010). My Math was developed to enable teachers, through multiple resources and instructional model, to reflect on what materials they have utilized to measure student success and continuously improve their practices.

The use of My Math as a research-based core math program was also supported in literature. Cobb and Steffe (2011) reported, "Knowledge gained (by teachers) through

experiencing the dynamics of a child doing mathematics . . . experiences children gain through interactions with adults greatly influence their construction of mathematical knowledge” (pp. 20-21). In My Math the program lessons are developed to utilize the “I do, we do, you do” instructional model. Through this format teachers model the content (I do), then gain knowledge through the formatively assessing their students during the group practice (we do), and finally allowing the student to demonstrate their own mathematical knowledge while students work independently (you do). Firmender et al. (2014) reported that the relationship that existed between the teachers’ implementation of curriculum and the students’ mathematics achievement. The instructional model and instructional practices used in the My Math program utilize the mathematical processes and vocabulary consistently, throughout the grades, to create an environment of continuity throughout the grades. The NCTM and the CCSS (2010) specifically identified mathematical communication as one of the five mathematical processes teachers need to develop in students in order to develop skills that enable students to develop viable arguments and critical thinking skills during the problem solving process. The district of study has a high poverty rate of 99.7% low socioeconomic status. As mentioned in Section 1, a student’s socioeconomic status can affect his or her learning and is linked to low student achievement (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). The engagement of students in mathematical discussion can grant them the ability to create viable arguments, evaluate the thought process of others, and communicate effectively to others mathematically. Communication in math throughout the mathematical process enables the student to collaborate, reflect, and solve problems through varied inquiry-

based processes. Additionally, only 40% of the students in the district of study come to school with the skills necessary to be successful (Ohio Department of Education, 2011). Considering that the district of study has the majority of students coming from high poverty and come to school below grade level, the district of student needed implement a program that differentiated instruction, contained the ability for appropriate mathematical dialogue.

In addition to the need to look at mathematical processes and instructional strategies, the program materials needed to be flexible enough to meet the diverse needs of the students. The teachers needed to be able to differentiate instructional materials and practices in order to remediate, teach, and enrich student learning. Gregory and Chapman (2012) described differentiated instruction as a combination of classroom climate, understanding the learner, assessments and data, instructional practice, and curriculum. Teachers need to identify the different needs of each student and select the appropriate instructional materials, supports, and materials to support the learning styles and multiple intelligences (Gregory & Chapman, 2012). Additionally, Gregory and Chapman (2012) described the diverse learners as having different abilities, experiences, learning preferences and social development from previous experiences. The need to differentiate activities to meet the needs of the wide range of student is imperative. Within My Math there was a focus on personalized “differentiated learning materials” and a “diagnose and prescribe” needs assessment to help teachers in prescribing the appropriately leveled instruction, intervention, and enrichment.

The most important component of the My Math program is that the program is grounded in foundational skills necessary in K-2 that are necessary to be successful in future grades. By providing students with instructional materials that meet the needs of the students at their level, they will be more successful. Verdine, Irwin, Golinkoff, Michnick, and Hirsh-Oasek (2014) reported that foundations skills and early math instruction needed to focus on more than just number knowledge. Students must utilize higher order cognitive abilities, process information (verbally and in writing), and utilize problem solving strategies. My Math materials focused on more than just counting. The program provided support and materials related to number sense and mathematical processes. Through the use of the various My Math materials, teacher participants provided differentiated instruction that benefited the diverse needs of the students.

Number sense, counting, and mathematical processes. There were an abundance of instructional materials used for increasing number sense, counting and mathematical processes in My Math. These specific skills are necessary to build a strong foundation for future grades. Friso-van den Bos, Krpesbergen, and van Luit (2014) described number sense as the ability to use, understand and manipulate numbers. This process includes patterns, symbols and nonsymbols processing through mentally representing the number, quantity, and relationships (one-to-one correspondence). While 50.87% ($n = 29$) of the teacher participants rated the number sense materials *effective* or *very effective*, 42.11% ($n = 24$) found the materials *average* for increasing number sense. It should be noted that 7.02% ($n = 4$) participants found the materials *ineffective*. The open-ended responses and the focus group found the materials (songs, manipulatives, and

pictures) enabled the students to create connections between concrete materials to the abstract thoughts. The patterns, symbols, and nonsymbol processes were developed through the use of the materials. With regards to counting, 43.86% ($n = 25$) of the teacher participants rated the counting materials *effective* or *very effective*, 47.37% ($n = 27$) found the materials *average* for increasing counting skills. It should be noted that 8.77% ($n = 6$) participants found the materials *ineffective*. The possible explanation regarding more teachers finding the counting section average related to the organization of the materials and the limited practice within the program materials. Finally with regards to mathematical processes, while 47.37% ($n = 227$) of the teacher participants rated the mathematical process materials *effective* or *very effective*, 49.12% ($n = 28$) found the materials *average* for increasing mathematical process skills. It should be noted that only 3.51% ($n = 2$) participants found the materials *ineffective*. The teacher participants and focus group participants found the materials were laid out well for modeling, guided practice and independent practice They also found the problem solving strategies very *effective*. In Section 2, the findings portion of this study, the teacher participants and focus group participants provided feedback on the materials. The materials related to number sense, counting, and mathematical processes were viewed as *effective* based on teacher perspectives. Overall, all of the study participants supported the continued use of My Math as an effective research-based core mathematical program.

Program Evaluation

The teacher participants were asked to provide specific feedback regarding the usability, lesson coherence, and support provided by the program materials. Additionally

they were to identify what materials were most effective in increasing student mathematical processes. Since they supported the program continuation as the core math program, the teacher participants provided suggestions in order improve the program during future implementation years.

During the use of My Math, teachers were asked to implement the program utilizing the workshop model. This model enabled the teachers to group students based on individualized needs. At the start of the year the teachers were asked to administer the programs diagnostic test and then the unit diagnostic test prior to starting each unit. For example, if a group of students took a unit diagnostic test and did not do well with on the prerequisite skills required to move forward, the child would need to be part of a group that reteaches previous skills taught (addition properties), the student would be unable to move onto skills in that unit (base 10, adding signing numbers, writing a number sentence). Firmender et al. (2014) noted that teachers need to interact with students and engage them in mathematical learning by giving them the opportunity to evaluate their own insights and ideas. This enables the students to learn from their mistakes through reviewing their work, discussion, interventions (Triumphs), utilizing the programs formative assessments, and small reteach groups. Students need to move from the concrete (models) to abstract representation (words, numbers, and symbols). Between the concrete to abstract students need to create a link between the concrete and abstract through pictorial representation (drawings, number lines, diagrams). These various strategies are all helpful skills students will need to use during the problem solving process. Students who are taught how to use these different strategies are able to then

review and reconstruct their problems. Students are also able to use these skills as they go to various math learning stations during the workshop model. The practice of identifying the gap between a student's ability to perform a task above their level with guided practice and the ability to solve a problem above their level independently is the zone of proximal development described in Section 1. Students who have repeated exposure to solving problems, gaps in skills, and are supported by their teacher through various problem solving strategies will enable them to learn from their mistakes (Parr, 2010).

A consistent theme was evident regarding sociocultural theory in the results was related to the goal of the program related to students participating in what and how they learn. A sociocultural framework was described as personalized to fit each students' own individual interest and needs, vocalizing and explaining, teacher modeling, and utilizing the workshop model. The participants from both groups commented on how the skills, materials, and vocabulary, were carrying over into other content areas. The skills are no longer in isolation, but students are speaking, writing, and demonstrating their learning connections. Students are learning from the "I do, we do, you do" teaching model of students see what they are learning (modeling), learn from each other and their surroundings (we do), then apply what they have learned independently (you do). Gomez (2009) described the importance of learning as a social practice in terms of Wegner's theory of social learning. Wegner's social theory of learning is based on meaning, practice, community, and identity (Wegner, 1998). Students create meaning from participation and relationships with others, engaging in a community, and converting your experiences into something concrete. This information related to Bandura's social

learning theory in which students learn from watching and interacting with others. This relationship is important as students move from the concrete to abstract when building mathematical skills, strategies, and knowledge. My Math contains multiple materials that support increasing number sense, counting, and mathematical processes.

In 1991, the NCTM published the *Professional Standards for Teaching Mathematics*, that defined a mathematical instructional model that encouraged teachers to use and promote instructional practices that engage students through discussions and connections to previous knowledge by allowing students to investigate their mathematical tasks. Forbringer and Fuchs (2014) described a five-step process that included explicit instruction during a mathematical lesson. The model starts with a review of prerequisite skills and concepts during the introduction, teacher modeling (procedures and thought processes), guided practice (social learning), independent practice (teacher can pull small groups for differentiated instruction). Again this model supports the “I do, we do, you do” model presented in the My Math materials, allowing students to learn through social interactions, explicit instruction, and differentiated instruction.

In summary, this expertise-oriented qualitative program evaluation of My Math endorsed the program as a valid research-based effective program to use with students who come from low socioeconomic status and start school below grade level. The teacher participants and focus group participants’ found the materials were *effective* in increasing student mathematical processes based on teacher perspectives. Additionally, they found the instructional strategies were *effective* for increasing number sense, counting, and mathematical processes. A majority of the teacher participants 89% ($n = 38$)

overwhelmingly elected to continue the use of My Math as the core mathematical program with suggestions and modifications for future implementations. The recommendations include the usability, lesson coherence, and support provided by the My Math program materials. A list of recommendations and implementation changes, based on the findings of this study, was collected and placed into an evaluation report for the district of study.

Implementation

As a result of the responses elicited from this program evaluation, a list of recommendations and implementation changes was placed into an evaluation report. The purpose of the evaluation report was to measure the program effectiveness for the students in the district of study and for all districts that are seeking a program that will improve student achievement in math. The evaluation report will be provided to the district of study as the teacher participants elected to keep My Math as the core math program. One major concern that emerged from this program evaluation was the need for extensive professional development.

Potential Resources and Existing Supports

Potential resources and supports for distributing the information in the evaluation report include the district of study learning management system, the publisher's website, and through professional development created based on the results of this study. The materials and program website contain many resources, training videos, and sample lessons for teachers and parents to utilize. The materials are not available to the general public as a product key code is necessary to log into the materials website. The publishing company has already provided professional development (one or two sessions)

during the first year of implementation. The district of study needs to review the recommendations and create professional development that specifically supports the teachers of the district as it was reported that previous professional development was a product overview. In a recent meeting regarding a reading program from the same publisher, the information collected in the evaluation report was requested to improve future implementation and resources of the My Math program.

Potential Barriers

A potential barrier to relaying the information gathered in the evaluation report will be dependent upon the district of study and the publisher. The district of study will need to create professional development that meets the needs of the teachers and disseminate the evaluation report through multiple venues. The publisher may or may not disseminate the evaluation report outside of their research department. The publishing company seemed interested in this program evaluation as it validates the math program. Another potential barrier to this program evaluation was the limited teacher participants limited exposure to the CCSS in combination with the new instructional materials.

Proposal for Implementation and Timetable

As mathematical instructional practices and CCSS has created and immediate need for social change in order to improve student learning outcomes in mathematics, the distribution of the findings and recommendations will be forthcoming. The evaluation report, with the findings and recommendations, will be provided to the district of study and the publisher upon completion of the program evaluation.

Roles and Responsibilities of Student and Others

There were many roles of the researcher in this program evaluation. I researched and designed and monitored the program evaluation, obtained appropriate approval, and collected and analyzed the data collected regarding My Math. I aligned the program objectives with the research questions, survey questions, focus group questions, and the AEA standards. The electronic survey was e-mailed to all potential participants with an explanation of the project, risk factors and potential biases of the researcher. The teacher participants who completed the survey became the anonymous teacher participants of this study. A focus group was also conducted that consisted of open-ended questions and extending probes in order obtain as much information as possible. An invitation went out electronically to all potential focus group participants with an explanation of the project, potential risk factors, and the potential biases of the researcher. The focus group participants were informed that their participation was completely voluntary and pseudonyms were going to be used to guarantee confidentiality. Focus group participants received a letter of invitation and full written consent was obtained. The focus group followed the AEA evaluation standards. The focus group was tape recorded and transcribed. The focus group findings were returned to each focus group member via participant e-mail for member checking and review of correctness. Each participant was given the opportunity to review their results with me. After the survey and focus group had been completed, I compiled the participant responses conducted a program document review of the responses and defined the credibility of teacher responses. I utilized the triangulation of data (open-ended survey questions, focus group, and program materials)

to draw themes and summarize the Likert-scale ratings of the teacher participants.

Descriptive data were reviewed and summarized to evaluate the program for its fidelity implementation, usability, and feasibility for the school district. The findings will be used by district administrators at the research site to improve the program for the remaining years of the program implementation. Additionally, I will contact the publisher of My Math and provide them with a copy of the evaluation report and encourage them to utilize and disseminate the information for future program users.

Implications Including Social Change

Local Community

The My Math program evaluation had a significant impact on the local district of study. The implementation of the My Math was effective in increasing student number sense, counting, and mathematical processes. My Math was validated and a research-based core mathematical program that narrows the achievement gap in the primary grades. Through this validation, the teacher participants have elected to continuing using My Math as they have found the program feasible, accurate, and valid for use for at-risk students of low socioeconomic status who already start school lacking the basic skills necessary to be successful in school.

Far-Reaching

Student proficiency is an issue that reaches far beyond the local district. The findings in this program evaluation may assist other broader educational settings in narrowing the achievement gap for K-2. Additionally, the information presented in the evaluation report will assist other districts in minimizing the learning curve of

implementing My Math as a research-based option for urban students. My Math meets the state requirements for the Elementary Secondary Educational Act (ESEA) waiver that requires the use of research-based programs for all students in order to close the achievement gap. It should be noted that the ESEA waiver is an extension of the No Child Left Behind Act of 2002 that requires districts to close the achievement gap for all students. The use of My Math creates positive social change by guiding revisions and new CCSS that will enable students to compete in a more global society through the benefit of a more rigorous curriculum and stronger foundational skills.

Conclusion

This qualitative case-study program evaluation of the recently adopted My Math provided descriptive findings and data that validated the program followed the AEA evaluation standard of utility, feasibility, and accuracy. The expertise-oriented validation of My Math provides local districts and other schools districts in the nation the assurance that they can utilize the program as an *effective* program for high-risk students. The ESEA waiver has created increased state accountability and a mandate for continuous improvement. The findings of this program evaluation resulted in program implementations suggestions; educators must continue to evaluate programs used with struggling students as a significant and relevant resource to increase student achievement. Given the current state mandate for ongoing increased student achievement with the SST and SPDG processes, the program evaluation resulted in a written report for future program implementation, reorganization of program materials, and suggestions for supplemental materials that are necessary to support the student learning needs.

Additional conclusions and recommendations for further study and changes is described in Section 4.

Section 4: Reflections and Conclusions

Introduction

This program evaluation was designed in response to a need across the state of Ohio and in the United States regarding the critical need to improve basic math proficiency through a strong mathematical foundation of basic skills. More specifically, in the district of study, K-2 students in the school district accounted for 79% of the students who scored below grade level on the district benchmark assessments and less than 40% of the students passed the initial kindergarten screening (Ohio Department of Education, 2011). The district of study responded to the critical need to improve the basic math proficiency of the low performing K-2 students by adopting My Math for struggling K-2 students. This program is a research-based basal program aligned with the state's new CCSS. My Math had not been evaluated for the low achieving students who attend the school district of study. In response to the lack of the effectiveness of the program to improve student achievement, in districts of high poverty and low progress, this qualitative program evaluation was designed to have K-2 teachers report the effectiveness of the My Math instructional strategies, materials, and overall effectiveness of the program after the initial implementation year. The result of this study resulted in a written report that contained recommendations future program implementation, reorganization of program materials, and suggestions for supplemental materials that will assist in student achievement. As this program evaluation is coming to an end, there will be a sense of fulfillment that this project will improve instructional practices and therefore hopefully increase student achievement for all students. Conducting this study truly supported the

notion that teachers are lifelong learners. The learning experience of completing a research project from start to finish was a true learning experience from start to finish. The ability to select the project topic, the format of the data collection tools, gathering and analyzing data, and writing the research will continue to help me develop a better education and enable me to grow as a lifelong learner. I will encourage my staff to conduct action research, as well as continue to conduct research, in order to make informed decisions that support student learning.

Project Strengths

This program evaluation was designed review a newly adopted research-based as an effective core math program for students of low socioeconomic status and who enter school below grade level. The district of study adopted a new core mathematics program, My Math, to align with the new CCSS and close the achievement gap in the foundational K-2 grades. The program was evaluated to determine the overall effectiveness of the program as a tool to remediate and apply interventions for 79% of K-2 students who scored below grade level on the districts SCA test of academic standards. Specifically, the following components of My Math that were included in this program evaluation were counting, number sense, mathematical processes, and instructional strategies to increase student achievement. In order for teachers create a learning environment of continuous improvement, instructional practices need to be linked to results by changing what the current practices are based on data and the use of a research-based program (Fullan & Levin, 2009). Recommendations in the evaluation report can be incorporated into future implementations and training.

Recommendations for Remediation of Limitations

While the program evaluation was successful, one major limitation of this study was the number of participants in the district of study. Approximately 100 K-2 teachers implemented My Math during the pilot year. When 57% of the teacher participant completed the survey, the participation exceeded the expected participation pool. While 57 teacher participants was a large participation rate for the district, it is a considerably low number of participants for reviewing a research-based core mathematical program. In addition to the teacher participants, there were only six focus group participants. That was the least number expected to participate in the focus group. The limited number of the participants did not provide as rich of a discussion as could have been elicited. Additionally, I am the director of the elementary program in the district of study. However, I do not directly evaluate any of the anonymous teacher participants. The focus group participants received full disclosure and were assigned pseudonyms in order to protect their identities. The protection of all participants' identity was important to collect accurate, open feedback on the survey and during the focus group. Obtaining full consent from the focus group participants enabled me to follow-up with each participant in order to check for accuracy of the responses.

A potential alternative to the study would have been to expand the participant pool with additional grade levels who implemented the program in Grades 3-6. Another potential way to increase participation in this study would be to have an independent researcher conduct the research project. As more school districts implement My Math as

their core research-based math program, additional data should be collected, and further recommendations could be collected easily through replication of this study.

Scholarship

The use of program evaluations is relatively new in education. This was my first experience in developing and conducting educational research that has enabled me to develop a deeper understanding of the research process. The creation of a research project from start to finish has been very complex. It was evident during this process that the educational process is continuously changing and evolving. This is especially true in Ohio as they have adopted the ESEA waiver, the SPDG process, and the SST support system as a model of continuous improvement. The need to improve practices and increase student achievement is the focus from the state. Throughout this research project I had continuously read several new research articles and projects that related to mathematics. This process encouraged me to dig deeper and strive to find more information that would assist the teachers in the continuous improvement process.

Another area of scholarly development came from a deeper understanding for the need of program evaluations in educational institutions. Program evaluations can be utilized to review existing programs, current practices, evaluation of a new program, or instructional practices. Data collected can be used for the continuous improvement process or to make data imperative decisions that impact educational institution. This practice is very important as the state and federal programs are requiring more accountability and improvement in the educational system.

Project Development and Evaluation

Through this research project, I learned that research projects were not built on one processes, but a culmination of multiple processes. The constant revisions and reviews of the research project, during the design, was vital to maintain the intended course of the research project. Any deviation from the desired course could have an influence the results of the study. There were many hours spent investigating research, working in collaboration with experts, and discussing the findings with the focus group. Additionally, there was a significant amount of time reviewing research, program materials, and similar research studies. Following the blueprint created in this study resulted in an easy implementation of the survey, focus group, program material review, and data analysis of the program evaluation.

Leadership and Change

Educational reform is coming at educators at an alarming rate. In more recent history, first major change in education came in 2001 with No Child Left Behind. The federal mandate stated that all children in the United States would be on grade level by in 2014. In 2010, there was another major change in education with the development of the CCSS. The creation of new standards caused multiple states to seek out new textbooks, programs and materials to support the more rigorous standards. In Ohio, the state not only adopted the CCSS, but also implemented the SPDG process (continuous improvement model), and the provided people through the SST. No longer are schools able to work in isolation, the state and federal mandates has forced educators into a collaborative model as data and processes are consistently reviewed in order to increase student achievement.

The changes in education have been difficult for some, as they are not comfortable having their professional practices reviewed. As a school leader, I have found the changes important as they have forced teachers outside their silos and has created a culture of collaboration and continuous improvement. This project grounded me back to the classroom level and created a deeper understand from the teacher perspective. I have developed a better understanding of how I need to provide support and communicate changes while creating a safe environment that encourages teachers to take risk.

Program evaluations are a relatively new form of research (in education) that has enabled me to focus on changing current practices in order to continually improving educational pedagogical practices. The single biggest event that brought program evaluations to education was the Elementary and Secondary Education Act of 1965 (Fitzpatrick, et al., 2010). Educational programs change consistently as new programs or ideas emerge as the next best fix. With increased accountability, and experiencing multiple changes in educational programming, I have learned the importance of the need to investigate the effectiveness of each new program. This research project has increased my knowledge on how to use program evaluations as an effective tool to evaluate educational programs. With the state implementing a continuous improvement model, it is important that educational leaders in the state look at improving current practices to improve student achievement. Educational discourse will be necessary to move educators from their current comfort levels into practitioners that make data driven decisions to improve student achievement. As an educational leader, this program evaluation has

taught me how to be a change agent through the use of a program evaluation to evaluate and improve educational practices for all students.

Analysis of Self as Scholar, Practitioner, and Project Developer

As a lifelong learner and scholar, I thought I understood how to evaluate programs and practices within the educational realm through root cause analysis. Program evaluations and research development has created a much deeper appreciation and understanding of the need to conduct research. This process has been lengthy, but has taught me so much. Completing this program evaluation in conjunction with teachers who work in the field created a sense of collaboration and a deeper understanding of current instructional practices. Developing this program evaluation with the guidance of a committee, following the suggestions of the committee members, following a specific writing format, and completing this process, has given me a great deal of personal satisfaction. I learned that what I originally thought my project would be changed greatly throughout the process. When I started this process, I originally wanted to conduct this study in K-6. That project would have been too large to complete as there would have been another massive educational reform in the process. I narrowed my focus to the foundational K-2 as the skills taught at the primary level build upon what is learned in future grades. I know that my ability to extend my research after this project has enabled me to limit my focus on this project.

During this process, as I developed the project, I was able to refine my program evaluation ideas continually and expand upon my initial intentions. Originally, my project was designed narrow, only using a survey to collect data. Through guidance, I

expanded my data collect to include a focus group and a review of program materials. Through this process, I learned that in order to gain insight into the big picture, you need a well-rounded picture of the educational program. This can not be obtained through one piece of data. Thinking about the importance of seeing the educational program through multiple data points is a practice I can apply in many aspects of my job. For example, district test scores in math in 3-12 continue to be flat on state assessments. The district is expecting a significant drop in test scores this year with the Next Generation Assessments (Ohio Department of Education, 2014), which include performance task, as well as end of course exams. These new tests are based on the CCSS. The data collected in the primary grades can support additional research, changes in instructional practices, and other support for K-2 students and 3-12 students. Vertical teaming K-12 will enable the teachers to collaborate as a way to review district trends, specific deficits, and identify quality instructional practices. Broadening the process beyond the primary grades needs to include further research, staff development, and the curriculum department to create processes and communicate changes with all stakeholders. Expanding the process at the local level, can then be shared with other districts or other contents as a way to expand deeper into the system.

The Project's Potential Impact on Social Change

One of the insightful lessons I learned during this project was the need to focus the research study to a smaller group of participants. As previously mentioned, I selected the K-2 grades because that grade level focused on the foundational skills necessary for students to be successful. The potential impact on social change is extraordinary. This

program evaluation looked specifically at a low achieving, a low socioeconomic district that needs to improve math scores. The true issue is not one that is just in this district, but mathematical performance around the state needs to be evaluated. Further reaching than just the state level is the lower scores across the nation when compared to other states (NAPE) or other countries (TIMSS) on norm-referenced test over time. The United States continues to underperform, or remain flat, when looking nationally or internationally at mathematical performance. This particular program evaluation may encourage other districts and states to take a look at their practices and programs and evaluate their successes or revise their practices. This program evaluation provided several other opportunities for future research-based on the current program evaluation.

Implications, Applications, and Directions for Future Research

The findings of this study identified four additional areas for additional research. This program evaluation was designed in a qualitative manner that was based on the teacher perspectives who utilized the program during the pilot year. The first recommendation of future research would be a quantitative design on the effectiveness of My Math based on student data. It would be interesting to compare the teacher perspectives of this study to actual student data regarding the effectiveness of increasing number sense, counting, and mathematical processes.

The second area of future study would be an expansion of this program evaluation into the intermediate grades. The state test scores are flat. This study would focus on what instructional strategies would be beneficial on closing the achievement gap and

increasing the student achievement scores. The skills and strategies students need to utilize become more difficult as the students progress throughout the grades.

The third area of future study would be the development and evaluation of a Grade 3 transitional program. Teacher participants in this study identified a gap in instructional materials between Grades 2-3. Considering this material does not currently exist in My Math the materials would need to be developed and then evaluated qualitatively or quantitatively for effectiveness.

The fourth area recommended for future study is in regards to developing a deeper understanding of the type of professional development needed to improve instructional practices. Teacher participants in this study stated they attended one to two professional development activities. The teacher participants specifically mentioned professional development in utilizing the workshop model during mathematical instruction. Collecting qualitative presurvey information regarding the types of professional development needed and then collect postsurvey data on the professional development effectiveness would be beneficial to program development. A quantitative study could then be conducted in order determine if the professional development increased student test scores and therefore and increase in student achievement.

Conclusion

In conclusion, this qualitative program evaluation validated My Math as a research-based core mathematical program for use with low socioeconomic students who enter school below grade level based on the AEA standards. While My Math was validated as an effective program, additional areas of research were identified. Through

this process, I have grown to understand that teachers can provide valuable feedback regarding the programs they use daily in their instructional program. Additionally, I have learned about the importance of scholarly research and scholarly writing. A significant amount of time was invested into this project that enabled me to grow professionally and develop new researcher skills. I have found the desire to continue reviewing and evaluating other processes within my position in order to improve instructional practices and student achievement for all students. Social change occurred through the feedback collected during this process and the variations in delivery that will occur to improve the program. Mathematical instruction extends beyond the scope of the local district as it extends nationally. Besides the local and national social change, a professional change has occurred within me. The growth I have personally experienced is beyond words. I have found that I have grown professionally and personally after completing this project and plan on continuing my work in the future. The results of this program evaluation indicated validation of the program, the primary teachers can use My Math with confidence knowing that the research-based mathematical processes utilized in the program support student achievement.

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Appendix A: Evaluation Report

A Program Evaluation of My Math Regarding Student Computational Fluency Through Inquiry-Based Instruction

A qualitative case study program evaluation was just completed on My Math in a district in the southeastern Ohio. This evaluation report provides a summary of the findings of the program evaluation and recommendations to the district of study and the publisher of the program. The program evaluation was aligned to the American Evaluation Association (AEA) evaluations standards that measure utility, feasibility, and the accuracy of the program (Yarbrough, Shulha, Hopson, & Caruthers, 2011).

Research Question	AEA Evaluation Standard
1. How effective were the instruction strategies for increasing number sense, counting, and mathematical processes based on teacher perspectives?	Utility Feasibility Accuracy
2. In what ways did the program meet the goals and objectives of My Math?	Utility Feasibility
3. How did the teachers who taught My Math during the pilot year rate the usability, lesson coherence, and support provided by the program materials?	Utility Feasibility Accuracy
4. Which materials were most effective in increasing student mathematical processes based on teacher perspectives?	Utility Feasibility Accuracy

Program Purpose and Goals

Recently in the district of study, many math programs were reviewed in order to select a research-based core mathematical program. The selection committee chose My Math as the main teaching resource for elementary K-2 educators. To support the

decision of using the new program as the core teaching resource in the district, a program evaluation was needed to determine the overall impact of the program. The district of study previously utilized another math program that was not aligned to the new Common Core State Standards (CCSS). The district of study was not getting the results desired as 79% of the students who scored below grade level on the district benchmark assessments. Additionally, less than 40% of the students passed the initial kindergarten screening (Ohio Department of Education, 2011). Disaggregated data identified a lower performing subgroup of kindergarten students who entered kindergarten with deficiencies in basic number sense and counting skills. Less than 40% of the students passed the initial kindergarten screening (Ohio Department of Education, 2011), which translated to 60% of the students needing remediation to become kindergarten ready. A qualitative case study program evaluation of My Math was conducted to determine whether or not the program improved instruction and students became proficient in number sense, counting, and mathematical processes. The purpose of the program was to evaluate or refute the use of My Math as the core research-based mathematical program for use with low achieving students of low socioeconomic status.

An expertise-oriented program evaluation was chosen to evaluate the newly acquired program. This approach was selected in order to obtain professional expertise judgment on the program. Yarbrough, et al. (2011) found that curriculum that was evaluated by subject-matter experts were able to judge the programs value and provide valuable feedback. The program objectives of My Math were: (a) ease of implementation; (b) improvement in instructional practices; (c) increasing proficiency in

counting, number sense, and mathematical processes; and (d) accuracy, feasibility and utility of the program as set. Data were obtained through the use of a focus group that consisted of six participants, and an anonymous electron survey that was completed by 57 of the 100 teacher participants who had used My Math during the pilot year. The program materials were utilized to confirm and support the teacher participant responses and triangulate data.

Summary of Findings of Program Evaluations

Overall Ease of Implementing My Math: Based on the program evaluation, approximately half of the teachers reported a combined percentage of 52.63% (n=30) of the implementation of instructional strategies in My Math as *effective* or *very effective*. The remainder of the teacher participants reported a percentage of 47.37% (n=27) of the implementation of the instructional strategies *average*.

Overall Improvement to Instructional Practices with My Math: Approximately half 54.38% (n=31) of the teacher participants indicated improvement in implementation of instructional strategies when using My Math were *effective* or *very effective*. The remainder of the teacher participants reported a percentage of 45.61% (n=26) of the effectiveness of improvement in implementation of instructional strategies as *average*. Therefore, the teacher participants found the implementation and effectiveness of the instructional strategies *average* or *above average* as a group. The teachers did not report *ineffective* or *very ineffective* influences on the implementation of instructional strategies or effectiveness of the My Math program based on teacher perception. The teacher participants reported the greatest gains pre/post in mathematical processes with a 9.04%

increase from *average* (55.77%, n=29) to *effective* (64.81%, n=35) after using the My Math program.

Overall Positive effect on Increasing Proficiency in Counting, Number sense, and Mathematical Processes with My Math: The teacher participants perceptions of specific skills 50% (n=29) of the teachers rated the program's effectiveness on increasing number sense *effective* (45.61%, n=26) and *very effective* (5.26%, n=3). Approximately 44% (n=25) of the teacher participants rated the program's effectiveness on increasing counting skills *effective* (47.37.61%, n=27) and *very effective* (5.26%, n=3). Finally, 47% (n=27) of the teachers rate the program's effectiveness on increasing mathematical processes *effective* (42.11%, n=24) and *very effective* (5.26%, n=3). It was noted that when the instruction processes were specifically mentioned, a small percentage of teacher participants reported the program as *ineffective*.

Overall Effectiveness of My Math as a Core Research-Based Program: The teacher participants overwhelmingly reported 94.34% (n=50) of the teacher participants reported that My Math met the needs of the students in their classroom. Moreover, teacher participants responded (89%, n=34) that the feasibility of My Math was appropriate to keep as the major math program, except four respondents (11%, n=4) stated that they would not recommend maintaining the program.

Repeated Themes Reported Regarding the Effectiveness of the My Math Materials: The following comments were reported by the six focus group participants and through the 57 survey teacher participant respondents:

- Technology improved number sense, counting, and mathematical processes

- Music and songs improved number sense, counting, and mathematical processes
- Worksheets and homework were age appropriate
- Differentiation was easy because the materials were leveled based on student needs
- Lesson plans were laid out nicely and easy to follow
- Instructional materials followed the “I do, we do, you do” instructional model
- Manipulatives helped students move from concrete to abstract thinking
- More rigorous
- Encourage students to explain their answers through verbal and written formats
- Vocabulary was consistent throughout the grades
- Multiple problem solving strategies for students to select from
- Instructional strategies and information carried over into other content areas.

Recommendations

1. My Math needs to be supplemented with additional materials in order for students to have more practices in the following areas:
 - a. Fact fluency which includes repeated practices of facts, additional drills, more practices with basic facts (teachers reported fact practice needs to be conducted daily) AND
 - b. Money and coins need to be taught at an earlier age, sample coins, and more counting money (adding and subtracting money) need to be included AND

- c. Counting and patterns need to be addressed more consistently by remaining with addition and/or subtraction without flipping back and forth between the two mathematical processes AND
 - d. Time and measurement need to be addressed more consistently and more often.
2. The pacing guides and materials need to be rearranged in My Math in order to teach skills that are more age appropriate or foundational for students.
3. The instructional manual needs to be followed, but adjusted based on data driven decision making.
4. Since 11% ($n = 7$) of the teachers would recommend discontinuing the use of My Math as the core program, a few possible variables have been identified that may have influenced the ratings. It is recommended that teachers who implement My Math in the future consider the following factors:
 - a. *Reorganize the pacing guide.* Many of the students who enter school do not attend any preschool program. Volume 2 should be implemented at the beginning of the kindergarten year as those skills relate to patterns, shapes, colors, and counting. The skills in the book do not directly related to what a number is, but the 1:1 correlation. Many of the students in the district of study need to learn how to hold a pencil, write a number, or learn some number sense skills, prior to starting mathematical computation.
 - b. *Create additional practice for fact fluency.* The limited practice with fact fluency needs to be addressed. The district of study suggested sending

home a set of flash cards and other supplemental materials for students to practice their facts. The memorization of addition and subtraction facts at the primary grades will assist the students with multiplication and division facts in the upper grades.

- c. *Pacing of the teacher as the lesson is presented.* Since there are so many materials in the program, the lessons pacing should be adjusted based on the suggestions of the program. It is suggested that teachers utilize the pretest in each unit in order to determine what materials need to be covered in their classroom.
 - d. *Workshop model.* The data obtained during the pretest and during ongoing formative assessments should be used to create the workshops for the students as well as the flexible grouping and differentiated instruction (based on student need).
5. The professional development provided from the company was not sufficient enough for the staff. Most staff reported attending one to two professional development activities. The first professional development was an overview of the program and the second session was a technology session that gave an overview of the online components. Teacher participants recommended ongoing, job embedded professional development.

Conclusion

This program evaluation validated My Math in the areas of utility, feasibility, and accuracy to use as a core math program with students who are considered low

socioeconomic status and who enter school below grade level. The participants reported that the instructional strategies were effective for increasing number sense, counting, and mathematical processes due to the depth and rigor of the program. Each of the components of My Math were reported as effective as they moved from concrete to abstract learning and made real world connections. Two unintended outcomes came from the information obtained during this program evaluation. The program increased student academic vocabulary and improved the students writing skills. Students had to use mathematical vocabulary and explain their thinking through writing and the problem solving process. Mathematical processes is described as a student's ability to make sense of problems and persist in solving them (Carter, Cuevas, Malloy, & Day, 2012). The program materials were easy to use, color coded, and differentiated. The materials are easy to access through printed materials and completely online. The validation of My Math has endorsed the use of the programs with students who are below grade level and of low socioeconomic status as a tool to increase student achievement and deepen their mathematical understanding.

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Appendix B: Permission from EDC



January 23, 2012

Dear Andrea Townsend,

The Education Development Center, Inc. is granting you permission to utilize the Leadership Content Knowledge Elementary and Middle School Principals' Pre-Survey© (2006) and Leadership Content Knowledge Elementary and Middle School Principals' Post-Survey© (2006) on January 13, 2012 in your dissertation work at Walden University. As mentioned in our conversation, items from *Mathematics Content Knowledge for Teaching* are not included on our survey and permission to obtain that information would need to be granted from the University of Michigan.

The Leadership Content Knowledge Elementary and Middle School Principals' Pre-Survey© (2006) and Leadership Content Knowledge Elementary and Middle School Principals' Post-Survey© (2006) was developed by researchers at the Education Development Center (EDC) under NSF grant EHR-0335384. The survey is the intellectual property of EDC. The scenario in the survey was excerpted from a case in *Developing Mathematical Ideas* (Schifter, et. al, 1998). The Beliefs Scale in the survey was adapted from the Teacher Education and Learning to Think (TELT) belief scale (National Center for Research on Teacher Education, 1985). For more information please see <http://www2.edc.org/tmi/index.html>.

Sincerely,

A handwritten signature in black ink that reads "Kristen Reed". The signature is written in a cursive, flowing style.

Kristen Reed
Senior Research Associate
Education Development Center
kreed@edc.org

Appendix C: Electronic Survey Questions

My Math Survey

The My Math survey will consist of Likert-scale ratings and open-ended questions. The questions prompt your response regarding your feedback, opinion, and experience using My Math. A short description is provided for each section of the survey.

Time: The survey should take approximately 30 minutes to complete.

Survey Questions:

In evaluating an educational program, it is important to rate the teacher's perspective regarding the ease of delivering K-2 mathematic instruction using My Math in regard to the (a) ease of implementing the overall My Math program based on teacher perspective; (b) effectiveness of the instructional strategies of My Math for increasing number sense, counting, and mathematical processes; (b) usability, lesson coherence, and feasibility of My Math; and (d) support provided by My Math in readability and use of printed instructions based on teacher perspective.

You have volunteered to participate in this survey which will be anonymous to me. The results will be analyzed to use in the evaluation of My Math Based on your teaching K-2 students using My Math during the 2012 pilot year, please complete the questions below:

A. Rate the following items using the Likert-scale below:

How would you rate My Math in the following areas?

1. Effectiveness of instructional strategies

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

2. Ease of implementing the program

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

3.. Effectiveness for increasing number sense

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

4. Effectiveness for increasing counting

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

5. Effectiveness for increasing mathematical processes

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

6. Lesson coherence

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

7. Readability and usability of printed materials

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

8. Instructional strategies

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

9. Effectiveness of teaching mathematical processes

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

10. Support provided by the program materials

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

B. Three instructional strategies focused on teaching mathematical process, number sense, and counting. Reflect on teaching experiences you had teaching number sense, counting, and mathematical processes before and after you taught with My Math.

1. Prior to using My Math, how would you rate your instructional skills in teaching number sense?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

2. After using My Math, how would you rate your instructional skills in teaching number sense?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

3. Prior to using My Math, how would you rate your instructional skills in teaching counting?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

4. After using My Math, how would you rate your instructional skills in teaching counting?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

5. Prior to using My Math, how would you rate your instructional skills in teaching mathematical processes?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

6. After using My Math, how would you rate your instructional skills in teaching mathematical processes?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

7. After using My Math, rate how the materials met the needs of the students in your classroom?

Very ineffective	Ineffective	Average	Effective	Very effective
1	2	3	4	5

C. Open-Ended Questions. If you have no response, place N/A as the answer.

1. Describe which components of My Math improved your instructional skills in mathematical processes.
2. Describe which components of My Math improved your instructional skills in number sense.
3. Describe which components of My Math improved your instructional skills in counting.
4. Describe any areas of instruction you do not believe that the program material did not cover.
5. Describe what features in the program promote the well-being of K-2 students.
6. Describe what features in the program met your needs as a K-2 math teacher.

7. Describe any time constraints the program caused for you. If none, respond with ways the program saved you time.

8. What if anything would you like me to know about the My Math inquiry-based learning strategies?

9. Did you attend any of the professional development activities for My Math?

10. (Refer to #9 to respond.) If so describe the professional development activities you attended during the pilot year.

11. (Refer to #9 to respond.) Were the professional development activities useful to you in the classroom? How or why not?

12. In which circumstances did you rely on the support materials provided by the program materials?

13. Summarize why you would recommend continuing My Math as the major program for teaching K-2 math students or summarize why you would not recommend continuing My Math as the major program in teaching K-2 math students.

Appendix D: Focus Group Letter of Invitation

Dear Sir/Madam,

I am Andrea Townsend, a doctoral student in the College of Education at Walden University. I am inviting you to volunteer to participate in a program evaluation about the districts My Math curriculum. As a critical stakeholder at this school, you have important insights with regards to the various elements and materials of the My Math program. My topic is “*A Program Evaluation of My Math: Improving Student Computational Fluency Through Inquiry-based Instruction*” The purpose of this study is to examine the various elements and materials of the My Math program in regard to usability, coherence, and teacher support. My goal is to identify potential benefits to the participants and other educators who use My Math. The usability, feasibility, and accuracy of the new program will be validated or refuted. To achieve this goal, I am requesting that you participate in a confidential focus group in order understand your experiences regarding the My Math program. The focus group will last approximately two hours. You will be provided via e-mail with a copy of the researcher’s findings for the review the accuracy of your own data. You will then be given the opportunity to discuss the results with the researcher via one-on-one, via e-mail, or phone. The findings of this study could be useful to teachers and/or students with a similar at-risk population. To protect your privacy, your name will not be used in the research report as a pseudonym will be provided. Please be assured that your responses during the focus group be held in the strictest of confidence. Your individual identity will be kept confidential in any published reports.

If you are interested in participating in this research effort, I would appreciate your response within a week via e-mail or phone call and you may ask any questions you may have. Upon your response, I will contact you regarding the review of the consent form and the selection of a date, place, and time for the focus group. You may contact me via phone or e-mail.

For questions regarding the rights of research participants, any complaints, or comments regarding the manner in which the study is being conducted, you may contact Dr. Endicott who is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-33681-800-925-3368, extension 3121210.

Appendix E: Focus Group

Statement of Purpose and Full Consent

You are invited to participate in a focus group related to a program evaluation of My Math. The title of the project study is *A Program Evaluation of My Math: Improving Student Computational Fluency Through Inquiry-based Instruction*. This for is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by Andrea Townsend, a doctoral student at Walden University. You may already know the researcher as a director, but this study is separate from that role.

Background Information:

The purpose of this study is to examine the various elements and materials of the My Math program in regard to usability, coherence, and teacher support. The results of this study will be used to improve mathematical instruction in the district and further implementation years of the My Math program.

Voluntary Nature of the Study:

Your participation in this program evaluation is voluntary. It is your decision regarding whether or not to participate in this study. Your participation decision in this study will be respected. No one at the school district of study will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. At any time during this study, you may cease to participate.

Written Assurance:

When the researcher is already known to the participant, the consent form must include written assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher or (if applicable) the participant's access to services.

Focus Group Participant Inclusion Criteria:

The participation criteria include the following:

1. K-2 math teachers in the local district who used My Math in the classroom during the pilot year of implementation.
2. District mathematics coach, teacher or administrator.

Procedures:

- The focus group questions are attached for your review.
- The focus group will be recorded for transcription purposes. Assumed permission to audiotape is granted through signature and return of this form.
- Each of you will receive a pseudonym that will be used throughout this process.
- The data from the focus group will be transcribed and responses will be evaluated.

The researcher will return the findings for member checking to the participants of the focus group via e-mail to check for accuracy of their own data. Each focus group participant will have an opportunity to discuss the findings with the researcher via one-on-one, via e-mail, or phone.

- The e-mailed data review of the findings will take approximately 1 hour.
- The data review with the researcher via one-on-one, via e-mail, or phone will take approximately 15 minutes or more based on individual participant needs.

- The focus group will take approximately two hours.
- Notes will be taken by the researcher during the focus group.

Role of the Researcher and Potential Conflict of Interest:

The role of the researcher, Andrea Townsend, is to conduct this program evaluation as partial fulfillment of the requirements of a doctoral program at Walden University. My role, as the researcher, is detached from my role in the district of study as a director Confidentiality of the participants through pseudonyms and their responses will prevent any potential conflicts of interest. Since your participation is voluntary and there is no identifying information collected, your identity will remain confidential, there is no monetary benefit, or punishment for your participation based on your responses.

Risk and Benefits of Being in the Study:

There is little to no risk for participation in this study. While the risks are minimal, there are potential risk factors that include psychological stress and perceived coercion based on the researcher's role and the relationship between the participants. Being in this study will not pose risk to your safety or wellbeing.

Anticipated Benefits to Participants and/or Others:

With the completion of the pilot year, there are potential benefits to the participants and other educators who use My Math. The usability, feasibility, and accuracy of the new program will be validated or refuted. If the program is validated as a tool that benefits teachers as a tool to reach at-risk students, the benefits will help teachers and students locally as well as in other educational systems.

Compensation:

Due to your participation being voluntary, no compensation is offered.

Confidentiality:

No identifying information will be asked in the focus group; therefore your identity will remain confidential. All information regarding this focus group will be kept confidential and be used for the purposes of this study only. The researcher will not use your personal information for any purposes outside of this research project. Each of you will be assigned a pseudonym so the researcher does not need to include your name or anything else that could identify you in the study reports. Data will be kept secure by Andrea Townsend, in a locked safe box, at home. Data will be kept for a period of 5 years as required by Walden University.

Contacts and Questions:

You may ask any question regarding the study that you have now, or contact me later via e-mail or phone. Andrea Townsend, or via e-mail. For questions regarding the rights of research participants, any complaints, or comments regarding the manner in which the study is being conducted, you may contact Dr. Endicott of the Office of Research Ethics and Compliance at Walden University. Her phone number is 1-800-925-33681-800-925-3368, extension 3121210. Walden University's approval number for this study is _____ and it expires on _____. You may also contact the Coordinator of Research and Accountability in the district of study.

Please retain your signed copy of this form for your records. Additionally, I will give you a copy of this form to keep during our first interview.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. I understand that I am agreeing to the terms described above. By signing below, “I consent” to be a part of the study.

Date of consent: _____

Printed Name of Participant _____

Participant’s Signature (interviewee) _____

Researcher’s Signature (interviewer) _____

I will provide you with a copy of this consent form during the first interview.

Consent Disclaimer

Hello and thank you for agreeing to meet with me today. My name is Andrea Townsend. I am working on collecting data as a requirement for partial completion of my doctoral program.

The purpose of this interview is to gather information about My Math through the four main attributes of an evaluation (a) utility, (b) feasibility, (c) propriety, and (d) accuracy. Your responses will help the district understand the elements of the My Math program in relationship to the students in the district of study and in a broader context.

I will ask you some questions which I have prepared. Your responses will be recorded in order for me to transcribe our discussion and identify trends and themes. Please feel free to answer the questions openly. I simply want to know your thoughts and experiences on the subject. All your answers will be kept confidential and your name will not be identified with the information you provide. All of you will be assigned

pseudonyms. I have received your signed full informed consent prior to our meeting. Do you agree to participate in this interview? Your participation is fully voluntary and at any time during this study, you may cease to participate.

Appendix F: Interview Questions

Attributes of Evaluation Standards, Basis for Discussion Questions, and Possible Focus Group Probes Attributes

Evaluation standards	Basis for discussion	Possible probes
1. Utility	How does My Math meet the needs of the students and teachers who utilize the program? What was previously lacking in the district's math program?	Why do you think...? Can you tell me more?
2. Feasibility	How do the My Math materials and activities address teacher needs and time constraints?	Why do you think...? Can you give me some examples of...?
3. Propriety	How does My Math promote the best interest of K-2 students who are exposed to the materials?	How did this happen? Can you give me some examples of...?
4. Accuracy	What My Math instructional strategies have been used in the district to improve learning for students in grades K-2? What was previously lacking in the district's math program? What other information do you believe is relevant regarding math instruction in our district?	How did this happen? What do you mean when you say...? Can you give me examples of...?

Appendix G: Transcription of Open Responses for Improved Instructional Skills in
Mathematical Processes

Answered: 40 Skipped: 17

1 The workbook pages were fine but doing 2 pages front and back for a total of 4 pages is not developmentally appropriate especially at the beginning of the year.

6/1/2014 10:39 PM

2 It uses terms that are "rigorous" like composing & decomposing.

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 Clear examples, engaging worksheets and activities the manual suggests.

5/29/2014 8:18 PM

5 Daily homework consistent with lesson for practice at home consumable math books "on my own" pages reteach and enrichments pages from "connected" online introductions to each lesson and other online songs/activities.

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 N/A

5/23/2014 11:23 AM

8 The vocabulary terms and processes to apply math concepts.

5/23/2014 7:56 AM

9 The music and songs. The technology for the students. They like that. My instructional skills improved through the resources.

5/22/2014 3:03 PM

10 N/A

5/22/2014 2:49 PM

11 N/A

5/21/2014 5:42 PM

12 The way the lessons are laid out, with modeling, followed by guided practice, followed by independent practice is easy to use and effective.

5/21/2014 4:52 PM

13 N/A

5/21/2014 4:14 PM

14 N/A

5/21/2014 1:35 PM

15 N/A

5/21/2014 11:57 AM

16 I did like the flow and of the smart board activities and the practice work.

5/21/2014 8:18 AM

17 The instruction on problem solving was consistent and this is effective when teaching children to solve different types of word problems.

5/21/2014 7:53 AM

18 N/A

5/21/2014 7:34 AM

19 The **technology** pieces of the instruction have been beneficial when teaching. The students enjoy seeing real life objects on the math pages and up on the screen and love to come up and move things around on the smart board. As a teacher of younger students, they love when there is a **video** that goes along with the lesson. The brightness of the pages also help to **motivate students** to want to do the math.

5/21/2014 7:25 AM

20 N/A

5/21/2014 4:13 AM

21 N/A

5/20/2014 10:12 PM

22 The use of **technology**. My students love the **songs**.

5/20/2014 9:48 PM

23 Clear cut **instructions** on how to teach.

5/20/2014 8:58 PM

24 The **order of how concepts were taught** and the **worksheets and homework** which gave the students practice with particular skills.

5/20/2014 8:56 PM

25 N/A

5/20/2014 6:38 PM

26 I like how in some instances My Math used a **part to whole method** of teaching processes. One example was in using **tens frames**. Another example is in **teaching fractions**.

5/20/2014 5:56 PM

27 I don't feel that it did.

5/20/2014 2:35 PM

28 The **videos, songs, and games** gave the right amount of novelty for the students.

5/20/2014 1:05 PM

29 **reteach, videos**

5/20/2014 12:59 PM

30 I think that the "**Write Math**," located in many of the lessons, is helpful for me to remember to get my kids **writing about math**, and not just solving problems. It helps me to show them how to **think through the way they solved the problems and think about their thinking**.

5/20/2014 11:39 AM

31 My Math does a better job of **using manipulatives and pictures** to **build concrete knowledge** than Everyday Math. I like how it provides materials to tier instruction (reteach, enrichment).

5/20/2014 10:57 AM

32 The **technology** component of My Math has great **videos** to help teach each math lesson in each chapter.

5/20/2014 10:55 AM

33 N/A

5/20/2014 10:35 AM

34 N/A

5/20/2014 10:33 AM

35 N/A

5/20/2014 9:50 AM

36 the **manipulatives** are nice to use with the students. Many of the sets are only for a class of 20

which is not practical or effective for all learners.

5/20/2014 8:58 AM

37 N/A

5/20/2014 8:56 AM

38 Using the **online components** and "Launch presentation" **improved my instructional skills**.

5/20/2014 8:50 AM

39 The **array of options made it useful for differentiated instruction**.

5/20/2014 8:45 AM

40 I like the **manipulatives** to use with the program. There is not much enrichment.

5/20/2014 8:40 AM

Ledged:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix H: Transcription of Open Responses for Improved Instructional Skills in
Number Sense

Answered: 39 Skipped: 18

1 The workbook pages were fine but sometimes too repetitive.

6/1/2014 10:39 PM

2 It starts the first week with numbers & number sense.

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 The videos and vocabulary cards really helped give the students some background before we would dive in.

5/29/2014 8:18 PM

5 lessons set up to practice skills with students and then pages provided for independent work

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 N/A

5/23/2014 11:23 AM

8 The tools and resources available.

5/23/2014 7:56 AM

9 My skills increased through the use of the instructional strategies and lesson format.

5/22/2014 3:03 PM

10 N/A

5/22/2014 2:49 PM

11 N/A

5/21/2014 5:42 PM

12 I think my instructional skills are the same as before we used the program.

5/21/2014 4:52 PM

13 N/A

5/21/2014 4:14 PM

14 N/A

5/21/2014 1:35 PM

15 We did not teach the chapters in order of text this year. We moved the chapter on shapes and measurement to earlier in the school year. We taught numbers 11-20 after the shapes and measurement. Our students tested well at the end of the year. We felt like this worked well. Students had a better understanding of numbers, when they had more time to understand 1-10 before moving so quick to 11-20.

5/21/2014 11:57 AM

16 N/A

5/21/2014 8:18 AM

17 N/A

5/21/2014 7:53 AM

- 18 N/A
5/21/2014 7:34 AM
- 19 N/A
5/21/2014 7:25 AM
- 20 N/A
5/21/2014 4:13 AM
- 21 N/A
5/20/2014 10:12 PM
- 22 I used the manipulatives on the smart board, the manipulatives from the boxes, and the workbook pages.
5/20/2014 9:48 PM
- 23 Presented material in different ways.
5/20/2014 8:58 PM
- 24 N/A
5/20/2014 8:56 PM
- 25 N/A
5/20/2014 6:38 PM
- 26 I like how My Math covered place value. I would like to see more addition and subtraction practice using place value blocks.
5/20/2014 5:56 PM
- 27 I don't feel that it did.
5/20/2014 2:35 PM
- 28 The "On My Own" sheets provided excellent group and partner work. This process held student engagement.
5/20/2014 1:05 PM
- 29 leveled practice, leveled homework, a variety of assessments, and many visuals.
5/20/2014 12:59 PM
- 30 Have these standards placed in the second book not at the first part of the year.
5/20/2014 11:14 AM
- 31 I'm using manipulatives and pictures more so I feel that has helped with developing number sense. The materials for tiering instruction help me to reach more students at their instructional level.
5/20/2014 10:57 AM
- 32 N/A
5/20/2014 10:55 AM
- 33 N/A
5/20/2014 10:35 AM
- 34 N/A
5/20/2014 10:33 AM
- 35 My students were exposed to more in depth information through My Math.
5/20/2014 9:50 AM
- 36 N/A
5/20/2014 8:56 AM

37 The manipulatives provided and the practice of multiple strategies being taught improved teaching number sense.

5/20/2014 8:50 AM

38 I was able to use it for whole group instruction. The students liked "On My Own" work because they could show what they knew. I also liked the Homework section for practice at home.

5/20/2014 8:45 AM

39 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix I: Transcription of Open Responses for Improved Instructional Skills in Counting

Answered: 37 Skipped: 20

1 The tubs of manipulatives were not really helpful for a majority of the skills and many of us already had manipulatives we already use.

6/1/2014 10:39 PM

2 N/A

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 The students really enjoy **the songs and video from** the website.

5/29/2014 8:18 PM

5 Daily **homework** consistent with lesson for practice at home consumable math books "**on my own**" pages reteach and enrichments pages from "connected" online introductions to each lesson and other online songs/activities.

5/29/2014 6:57 PM

6 N/A

5/23/2014 11:23 AM

7 The **tools and resources** available.

5/23/2014 7:56 AM

8 The **music helped me teach my students how to count.**

5/22/2014 3:03 PM

9 N/A

5/22/2014 2:49 PM

10 N/A

5/21/2014 5:42 PM

11 I think my instructional skills are the same as before we used the program.

5/21/2014 4:52 PM

12 N/A

5/21/2014 4:14 PM

13 N/A

5/21/2014 1:35 PM

14 N/A

5/21/2014 11:57 AM

15 The counting materials were helpful.

5/21/2014 8:18 AM

16 N/A

5/21/2014 7:53 AM

17 N/A

5/21/2014 7:34 AM

18 Although there is some counting embedded in some of the lessons, it is difficult when the lessons are moving forward and you still have students who need the core number

sense. There isn't much to the enrichment and reteach pages that go with the lesson so any supplemental material has to be created.

5/21/2014 7:25 AM

19 N/A

5/21/2014 4:13 AM

20 N/A

5/20/2014 10:12 PM

21 The songs.

5/20/2014 9:48 PM

22 Presented materials in different ways and gave clear direction on how to teach.

5/20/2014 8:58 PM

23 N/A

5/20/2014 8:56 PM

24 N/A

5/20/2014 6:38 PM

25 Honestly, I felt the components did not do a lot in this area for first grade. I worked more on my own with my students for that skill in first grade.

5/20/2014 5:56 PM

26 I don't feel that it did.

5/20/2014 2:35 PM

27 The introduction to each lesson provided a secure foundation to springboard each lesson. Available manipulatives and number lines were also implemented.

5/20/2014 1:05 PM

28 manipulative box.

5/20/2014 12:59 PM

29 Honestly, there's not a whole lot of counting lessons in first grade My Math. I've incorporated a lot of counting by 10s and 5s into our calendar routine.

5/20/2014 10:57 AM

30 N/A

5/20/2014 10:55 AM

31 N/A

5/20/2014 10:35 AM

32 N/A

5/20/2014 10:33 AM

33 My students were exposed to more in depth skills regarding counting through My Math. 5/20/2014 9:50 AM

34 N/A

5/20/2014 8:56 AM

35 Not in first grade curriculum.... wish it reviewed counting patterns (2, 5, 10, etc.)

5/20/2014 8:50 AM

36 Overall, I liked all the components.

5/20/2014 8:45 AM

37 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix J: Transcription of Open Responses for Gaps in Instructional Materials

Answered: 39 Skipped: 18

1 Many of us feel that there are other important skills to teach kindergarteners such as money, time, patterns, graphing etc. even though the common core doesn't think so.

6/1/2014 10:39 PM

2 I find that the materials that we use cover more on following directions than on whether a child can complete the skill in focus. Many times there are 3-4 step instructions for children to follow & I find my ELL students may be able to do the skill but they get caught up in all the instructions

6/1/2014 7:44 PM

3 I think they should touch money just a little.

5/30/2014 8:07 AM

4 I would have liked to see more about counting, especially to 100.

5/29/2014 8:18 PM

5 The measurement unit was not very good we used other outside resources to supplement. 5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 N/A

5/23/2014 11:23 AM

8 N/A

5/23/2014 7:56 AM

9 N/A

5/22/2014 3:03 PM

10 My Math introduces the hundreds chart but there isn't much to the lesson. The First Grade Full Diagnostic requires our students to solve problems using the hundreds chart.

5/22/2014 2:49 PM

11 Program does not have enough repetition of skills so that students master facts etc. There appears to be some chapters that could be covered or taught prior to others as math is a building block process. Moreover, in grade 2, when money is taught, there needs to be a sufficient review of identification of coins prior to counting collections of coins.

5/21/2014 5:42 PM

12 The program is very heavy in number sense and calculations, and very little emphasis is on time and money, which traditionally are the most difficult and abstract concepts for young children to grasp.

5/21/2014 4:52 PM

13 There needs to be more introduction of money such as counting a group of coins.

5/21/2014 4:14 PM

14 I feel that it did not cover number sense where you would have to add larger numbers with the help of a number grid. An example would be that a student needs to find 80 and add 14 using a number grid.

5/21/2014 1:35 PM

15 N/A

5/21/2014 11:57 AM

16 N/A

5/21/2014 8:18 AM

17 I would like to see more practice for three digit addition and subtraction with regrouping.

5/21/2014 7:53 AM

18 N/A

5/21/2014 7:34 AM

19 N/A

5/21/2014 7:25 AM

20 There is very little true work in the area of addition and subtraction fluency. Also, for a program marketed to hit the "common core"....it provided woefully little in the way of teaching counting money and telling time. Whoops!!! The common core only allows for instruction in that at the second grade level. That being said, wouldn't you think the program would have provided more than a just a few cursory lessons in those areas at the second grade level?!

5/21/2014 4:13 AM

21 N/A

5/20/2014 10:12 PM

22 Letting students explore and figure things out: problem-based learning.

5/20/2014 8:58 PM

23 N/A

5/20/2014 8:56 PM

24 N/A

5/20/2014 6:38 PM

25 My Math needs more student hands-on work with number grids. Specifically 1. Finding and locating numbers to 120. 2. Adding and subtracting 2-digit numbers by multiples of 10. 3. More practice with missing addends. All 2 things were on the new state math diagnostic test for first grade.

5/20/2014 5:56 PM

26 I don't feel the subtraction is strong. Using all pictures, students are just counting what is left. Too much paper/pencil instruction!!!

5/20/2014 2:35 PM

27 The plan for next year is to introduce Chapter 11 and 12 before the diagnostic screening measures. I did not introduce Geometry until after the diagnostic and some of my very good students missed some easy problems as a result. I believe that I worked with such intensity with subtracting and regrouping; that I needed to move on. When we test next year in subtraction, we are going to break up the concepts into 3 major categories and test after each one. It was rather a lot to digest.

5/20/2014 1:05 PM

28 Needs more practice in basic skills and informing numbers.

5/20/2014 12:59 PM

29 I think that there were a few concepts that needed further practice so I had to supplement from other sources. I also believe that it may have been helpful to do some circular review. I don't feel that measurement was covered sufficiently or in a way that was practical. Also, I need a class set of solid shapes if I am going to teach them and their attributes successfully.

5/20/2014 11:39 AM

30 The program offers very little in the way of math stations or center activities for the students to work on while I'm pulling small groups. The reteach worksheets are often too simple and short. There are many areas of weakness in the curriculum (adding and subtracting ten to a given number, missing addends, and missing numbers in subtraction number sentences).

5/20/2014 10:57 AM

31 I do not think My Math gives children a strong foundation of number and number sense. I have had to supplement materials to meet this standard.

5/20/2014 10:55 AM

32 Problem solving is not covered as much as it should be. Need more intervention for struggling students.

5/20/2014 10:52 AM

33 Patterns, time, money.

5/20/2014 10:35 AM

34 N/A

5/20/2014 10:33 AM

35 All areas were covered. I did not like the sequence of skills presented. I would have changed the organizer to reflect shapes being taught in the beginning of the year for kindergarten.

5/20/2014 9:50 AM

36 N/A

5/20/2014 8:56 AM

37 Counting, patterns, and money. My students also struggled when it came to adding and subtracting due to the fact that there were too many strategies to learn.

5/20/2014 8:50 AM

38 None that I can think of.

5/20/2014 8:45 AM

39 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development
Implementation/Time
Materials/Support
Differentiated Instruction

Appendix K: Transcription of Open Responses for Program Features that Promote the Well-Being of K-2 Students

Answered: 39 Skipped: 18

- 1 Daily homework keeps the parents involved. However you always have several families that never do homework and they are the ones who need it most.
6/1/2014 10:39 PM
- 2 It hits common core math standards.
6/1/2014 7:44 PM
- 3 N/A
5/30/2014 8:07 AM
- 4 The reteach and enrich worksheets are great.
5/29/2014 8:18 PM
- 5 The manipulatives are user friendly.
5/29/2014 6:57 PM
- 6 N/A
5/27/2014 12:04 PM
- 7 N/A
5/23/2014 11:23 AM
- 8 Hands on materials.
5/23/2014 7:56 AM
- 9 The connection between real world and instructional pieces.
5/22/2014 3:03 PM
- 10 The guided math, enrichment and re-teaching components are helpful to our students.
5/22/2014 2:49 PM
- 11 N/A
5/21/2014 5:42 PM
- 12 Colorful pages with illustrations are engaging.
5/21/2014 4:52 PM
- 13 Manipulatives are great.
5/21/2014 4:14 PM
- 14 I like the manipulatives that we use along with the math program.
5/21/2014 1:35 PM
- 15 I used the books and songs online. The students enjoyed singing math songs to learn.
5/21/2014 11:57 AM
- 16 N/A
5/21/2014 8:18 AM
- 17 N/A
5/21/2014 7:53 AM
- 18 N/A
5/21/2014 7:34 AM
- 19 The pieces that involve "real life" situations are helpfully when trying to promote math and why it is important and used every day.
5/21/2014 7:25 AM

20 The manipulative materials are helpful and necessary.

5/21/2014 4:13 AM

21 N/A

5/20/2014 10:12 PM

22 I felt the program did a great job sticking to a skill for more than just one week. Students had a lot of time to learn and practice the skills. I do feel that numbers 0-10 need to be mastered before moving onto 11-20. After introducing the chapters with numbers 0-10, then move to shapes and measurement, which is easier, while students continue to work on numbers 0-10 in small groups.

5/20/2014 9:48 PM

23 All of the different online features.

5/20/2014 8:58 PM

24 Songs, videos, manipulatives, and brightly colored work sheets.

5/20/2014 8:56 PM

25 N/A

5/20/2014 6:38 PM

26 LOVE how differentiated My Math is. For example the testing and the plans all include ways and forms to differentiate. Also, homework can be differentiated as well. This is a huge plus for our kids! I also love how the series comes with many hands-on manipulatives.

5/20/2014 5:56 PM

27 The games.

5/20/2014 2:35 PM

28 They delight in Math and the provided materials are just a pleasure to look at-and the videos etc. well, they are just over the top. I (along with the students) have just loved it.

5/20/2014 1:05 PM

29 Songs, videos, colorful objects, online for use with smart board.

5/20/2014 12:59 PM

30 I think that the graphics make it engaging and the "homework helper" at the top of each homework page is very helpful for both parents and students for a quick review/model of each lesson.

5/20/2014 11:39 AM

31 Like I've mentioned before, the reteach, enrichment, and common core quick checks are helpful to use for tiered instruction. The heavy use of manipulatives and pictures is great for building concrete knowledge.

5/20/2014 10:57 AM

32 N/A

5/20/2014 10:55 AM

33 N/A

5/20/2014 10:35 AM

34 N/A

5/20/2014 10:33 AM

35 N/A

5/20/2014 9:50 AM

36 NA

5/20/2014 8:56 AM

37 The use of exploration and guided practice.

5/20/2014 8:50 AM

38 The variety of subjects covered.

5/20/2014 8:45 AM

39 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix L: Transcription of Open Responses for the Features That Met the Needs of the
K-2 Math Teacher

Answered: 39 Skipped: 18

1 It was easy to implement.

6/1/2014 10:39 PM

2 It hits common core math standards.

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 I enjoyed the different versions of the tests and the reteach and enrich worksheets.

5/29/2014 8:18 PM

5 being able to print reteach and enrichment sheets.

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 N/A

5/23/2014 11:23 AM

8 All components assisted in meeting the needs

5/23/2014 7:56 AM

9 The smart board activities and the online materials.

5/22/2014 3:03 PM

10 N/A

5/22/2014 2:49 PM

11 I enjoyed the computer generated lessons and the ability to use the Elmo and whiteboard.

5/21/2014 5:42 PM

12 N/A

5/21/2014 4:14 PM

13 N/A

5/21/2014 1:35 PM

14 N/A

5/21/2014 11:57 AM

15 N/A

5/21/2014 8:18 AM

16 The lesson plans were nicely laid out and easy to follow.

5/21/2014 7:53 AM

17 N/A

5/21/2014 7:34 AM

18 The technology with this program is very helpful to motivate the class.

5/21/2014 7:25 AM

19 The lessons are easy to follow and clear enough that a substitute teacher can follow them without much advance prep time

5/21/2014 4:13 AM

20 N/A

5/20/2014 10:12 PM

21 The program was very user friendly. Ample materials were provided to teach this program. 5/20/2014 9:48 PM

22 Provided a variety of resources to meet the needs of all of my students.

5/20/2014 8:58 PM

23 Building of skills and the worksheets providing more opportunities for practice. Also the assessments provided needed feedback

5/20/2014 8:56 PM

24 N/A

5/20/2014 6:38 PM

25 LOVE how differentiated My Math is. For example the testing and the plans all include ways and forms to differentiate. Also, homework can be differentiated as well. I really liked the hands-on manipulatives.

5/20/2014 5:56 PM

26 The online components, when they worked.

5/20/2014 2:35 PM

27 Web support.

5/20/2014 1:37 PM

28 This is a solid program and when taught with fidelity, the outcome is positive. There is so much, that it is nearly impossible to get it all in. I need to start out next year on day 1 to keep up My Math game for their benefit.

5/20/2014 1:05 PM

ease of using the workbook, many online features.

5/20/2014 12:59 PM

30 Having the homework directly after each lesson and in a tear-out page is very helpful. I like the way that each lesson uses a simple format and how it moves from modeling to guided practice to independent to problem solving.

5/20/2014 11:39 AM

31 I had access to materials however many of the materials were needed to be sorted or were very hard to access in a quick way. Would be easier in class sets of individual bags as I found myself using the last programs materials due to being easier to use.

5/20/2014 11:14 AM

32 The enrichment and common core quick check materials are useful for small group activities.

Overall, I like the program, but it does have weaknesses.

5/20/2014 10:57 AM

33 I feel the assessments in My Math are age appropriate and easy to administer.

5/20/2014 10:55 AM

34 Mostly aligned with Common Core.

5/20/2014 10:35 AM

35 N/A

5/20/2014 10:33 AM

36 N/A

5/20/2014 9:50 AM

37 N/A

5/20/2014 8:56 AM

38 The variety of subjects covered.

5/20/2014 8:45 AM

39 The online activities.

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix M: Transcription of Open Responses Regarding Time Constraints or Saved Teacher Time

Answered: 38 Skipped: 19

1 Doing four **workbook pages a day takes too long** with children at various attention levels which is extremely frustrating in the fall.

6/1/2014 10:39 PM

2 It is very difficult to **get through all the math pages** for that particular setting. At the beginning of the year, I have to choose which are most pertinent because there are many tears when children come to school & cannot write their name. It is very difficult to do 4 math pages when we are talking about numbers & many have no idea what it is.

6/1/2014 7:44 PM

3 Lots of hands on material and practice.

5/30/2014 8:07 AM

4 The **worksheets and extras from the website were so engaging to the students that it saved time.**

5/29/2014 8:18 PM

5 Mostly with the exception of the measurement unit the lessons were **set up in a way that was complete with guided learning, cooperative learning and independent practice as well as built in homework.**

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 N/A

5/23/2014 11:23 AM

8 N/A

5/23/2014 7:56 AM

9 **Technology issues caused constraints.** For example, my ELL information stopped working recently which limited my access to the program. A school employee had to have the company send the information to the school. This took away time.

5/22/2014 3:03 PM

10 I **felt that the program takes much longer to complete than the time given** The students need to be able to master skills.

5/22/2014 2:49 PM

11 N/A

5/21/2014 5:42 PM

12 N/A

5/21/2014 4:14 PM

13 I feel like **2 front/back worksheets is a lot at the beginning** of the year for First Grade. Now at the end of the year, it is fine.

5/21/2014 1:35 PM

14 N/A

5/21/2014 11:57 AM

15 N/A

5/21/2014 8:18 AM

16 The program helped to save time with planning.

5/21/2014 7:53 AM

17 N/A

5/21/2014 7:34 AM

18 When planning, it is difficult to look at both the teaching manual and the slides in the electronic version of the lesson. There are often more materials on the electronic version that aren't laid out in the teaching manual. When planning a lesson it's time consuming to visit both places and decide the layout of the lesson.

5/21/2014 7:25 AM

19 N/A

5/21/2014 4:13 AM

20 N/A

5/20/2014 10:12 PM

21 I liked the practice book pages to progress monitor student learning. I was able to use them to assess and guide my interventions.

5/20/2014 9:48 PM

22 The program seems to me to be out of order at some points in the year and in some lessons. For example: in kindergarten at the beginning of the year, they are introducing numbers then addition then subtraction. Learning shapes comes at the end of the year. I believe that during the beginning of the year, while it is the first time school experience for many students, learning shapes would be more beneficial, especially since working with numbers is limited in the fourth quarter. The math Triumphs does not correlate with the book AT ALL.

5/20/2014 8:58 PM

23 It saved time on homework planning and ideas for activities to reinforce skills.

5/20/2014 8:56 PM

24 N/A

5/20/2014 6:38 PM

25 The program saved me time by providing manipulatives, differentiated plans, tests and intervention/homework sheets. The lessons could be printed off the computer, complete with differentiation and assessment. This saved time because I didn't have to write out the plans, just tweak them after I printed them off.

5/20/2014 5:56 PM

26 Tearing out millions of workbook pages to help kindergartners be successful took a lot of time!

5/20/2014 2:35 PM

27 Were able to complete all chapters and lessons on time. Lessons were appropriate in time limits for our day.

5/20/2014 1:37 PM

28 Subtraction with regrouping is where I got bogged down. Also, I should have reported this to School Dude, myself and my teaching partner have not been able to retrieve the videos the past couple of weeks.

5/20/2014 1:05 PM

29 Students need a lot of practice time for math. Sometimes L.A./Reading overflows into the math time. Math is usually (in our building) taught in the afternoon when students are tired.

5/20/2014 12:59 PM

30 The program is very **light on lessons. I had to supplement a lot** to meet the needs of my students. Some of the concepts do not offer enough lessons for students to master the skill. The skills in which lessons are lacking or too few are adding and subtracting ten to a given number, missing addends, missing numbers in subtraction sentences, time, 3-D shapes, and regrouping using base ten blocks.

5/20/2014 10:57 AM

31 The **pacing guide is very helpful with keeping me on track** with teaching My Math.

5/20/2014 10:55 AM

32 Lessons are well scripted, and all the objectives CC etc. are listed for each lesson.

5/20/2014 10:35 AM

33 N/A

5/20/2014 10:33 AM

34 The program **wastes my time dealing with the 700+ pages of workbook!**

5/20/2014 8:58 AM

35 N/A

5/20/2014 8:56 AM

36 Some lessons took **more than an hour to teach... we had to take breaks.**

5/20/2014 8:50 AM

37 Some of the sections can be combined, but overall, I was able to pace the topics per my students' abilities.

5/20/2014 8:45 AM

38 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix N: Transcription of Open Responses Regarding Inquiry-based Learning Strategies

Answered: 30 Skipped: 27

1 N/A

6/1/2014 10:39 PM

2 N/A

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 It is effective.

5/29/2014 8:18 PM

5 N/A

5/27/2014 12:04 PM

6 I would like to see the math workshop in progress!

5/23/2014 11:23 AM

7 N/A

5/23/2014 7:56 AM

8 N/A

5/22/2014 3:03 PM

9 N/A

5/22/2014 2:49 PM

10 N/A

5/21/2014 5:42 PM

11 The problem solving involving more than one step is very difficult for primary students. There are a select few who are able to solve these problems independently. We have tried working on the problems whole class, and with partners, and sometimes in small groups. Most students are not able to plan to correctly solve multiple step problems.

5/21/2014 4:52 PM

12 N/A

5/21/2014 4:14 PM

13 N/A

5/21/2014 1:35 PM

14 N/A

5/21/2014 11:57 AM

15 N/A

5/21/2014 8:18 AM

16 N/A

5/21/2014 7:53 AM

17 N/A

5/21/2014 7:34 AM

18 N/A

5/21/2014 7:25 AM

19 N/A

5/21/2014 4:13 AM

20 N/A

5/20/2014 10:12 PM

21 N/A

5/20/2014 8:56 PM

22 N/A

5/20/2014 6:38 PM

23 I feel My Math is a good start to inquiry-based learning strategies, but as a teacher, I would often put my own spin on the lessons to encourage higher level thinking and questioning.

5/20/2014 5:56 PM

24 Kindergartners are in inquiry mode 24/7.

5/20/2014 2:35 PM

25 Page 1 of each lesson allows room for CGI practices and rich discussion. We drew as many of our problems as we could-this page was geared for the process, not the answer and this works with young learners.

5/20/2014 1:05 PM

26 N/A

5/20/2014 10:55 AM

27 N/A

5/20/2014 10:35 AM

28 N/A

5/20/2014 10:33 AM

29 N/A

5/20/2014 8:56 AM

30 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix O: Transcription of Open Responses Regarding Attending Professional Development (PD)

Answered: 40 Skipped: 17

1 Yes.

6/1/2014 10:39 PM

2 Yes, the one we went over during our work day at the beginning of the year.

6/1/2014 7:44 PM

3 Yes.

5/30/2014 8:07 AM

4 No.

5/29/2014 8:18 PM

5 No.

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 Yes.

5/23/2014 11:23 AM

8 Yes.

5/22/2014 3:03 PM

9 No.

5/22/2014 2:49 PM

10 Yes, all the second grade teachers attended an in-service prior to teaching the program.

5/21/2014 5:42 PM

11 No.

5/21/2014 4:52 PM

12 No.

5/21/2014 4:14 PM

13 Yes.

5/21/2014 1:35 PM

14 Yes.

5/21/2014 11:57 AM

15 N/A

5/21/2014 8:18 AM

16 Yes, as part of the building staff.

5/21/2014 7:53 AM

17 N/A

5/21/2014 7:34 AM

18 No.

5/21/2014 7:25 AM

19 Yes.

5/21/2014 4:13 AM

20 Yes.

5/20/2014 10:12 PM

21 An all-district training. Not very helpful because it was for grades K-8. Not real helpful in my grade level.

5/20/2014 9:48 PM

22 No, but I spoke to the math curriculum coach about many things and he was very helpful. 5/20/2014 8:58 PM

23 No.

5/20/2014 8:56 PM

24 N/A

5/20/2014 6:38 PM

25 Yes.

5/20/2014 5:56 PM

26 Yes.

5/20/2014 2:35 PM

27 Yes.

5/20/2014 1:37 PM

28 Yes! Introduction Phase was attended along with all second grade teachers.

5/20/2014 1:05 PM

29 Yes, but more is needed as we move into common core project learning.

5/20/2014 12:59 PM

30 I attended some last year during waiver days but it was very general and vague.

5/20/2014 11:39 AM

31 Yes.

5/20/2014 10:57 AM

32 Yes.

5/20/2014 10:55 AM

33 Yes.

5/20/2014 10:52 AM

34 Yes.

5/20/2014 10:35 AM

35 N/A

5/20/2014 10:33 AM

36 Yes.

5/20/2014 8:58 AM

37 N/A

5/20/2014 8:56 AM

38 No.

5/20/2014 8:50 AM

39 No.

5/20/2014 8:45 AM

40 Yes

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix P: Transcription of Open Responses Regarding the Description of the Professional Development During the Pilot Year

Answered: 26 Skipped: 31

1 Waiver Day only.

6/1/2014 10:39 PM

2 I can't recall any other ones throughout the year. We didn't even get the manipulatives before school started to go through them.

6/1/2014 7:44 PM

3 Review of materials.

5/30/2014 8:07 AM

4 N/A

5/27/2014 12:04 PM

5 A presenter came to Clark and I was there. He showed us the technology piece. I liked the information.

5/22/2014 3:03 PM

6 N/A

5/21/2014 4:14 PM

7 We had a one day workshop.

5/21/2014 1:35 PM

8 I attended a day at the local high school. We also got together as a kindergarten group, the leveled district group and were taught some information about the new series.

5/21/2014 11:57 AM

9 N/A

5/21/2014 8:18 AM

10 One of the activities focused on the technology portion and how to use it to help plan and teach.

5/21/2014 7:53 AM

11 N/A

5/21/2014 7:34 AM

12 N/A

5/21/2014 7:25 AM

13 We attended an in-service during a waiver day. The in-service basically covered how to use the manual and some of the extra materials.

5/21/2014 4:13 AM

14 I attended a one day professional development where the presenter went over the workbook offerings.

5/20/2014 10:12 PM

15 N/A

5/20/2014 6:38 PM

16 District-wide training that was provided.

5/20/2014 5:56 PM

17 It was an overview of the program.

5/20/2014 2:35 PM

18 The introduction session.

5/20/2014 1:37 PM

19 Our team reinforced each other with problems or achievements throughout the year. Our Math coach was available as needed.

5/20/2014 1:05 PM

20 I attended two workshops showing the components of My Math, and how to explore the online portion

5/20/2014 12:59 PM

21 They were very vague in talking about the online components, not going into practical use in detail.

5/20/2014 11:39 AM

22 The only activity I recall was a training session on waiver day in which a textbook representative showed us the setup of the program.

5/20/2014 10:57 AM

23 N/A

5/20/2014 10:55 AM

24 N/A

5/20/2014 10:33 AM

25 NA

5/20/2014 8:56 AM

26 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix Q: Transcription of Open Responses Regarding the Usefulness of the Professional Development Activities in Classroom

Answered: 30 Skipped: 27

1 Not really until you actually have the materials in hand and can look at them in detail.

6/1/2014 10:39 PM

2 Yes, but more would be better.

6/1/2014 7:44 PM

3 Yes, I always like having new ideas.

5/30/2014 8:07 AM

4 N/A

5/27/2014 12:04 PM

5 Yes, because I was familiar with what information I could use and how to use it with my students.

5/22/2014 3:03 PM

6 Yes, I liked the way the instructor went through each step of each lesson in a detailed manner and modeled a shutter fold activity for lesson plans.

5/21/2014 5:42 PM

7 N/A

5/21/2014 4:14 PM

8 Yes, because the lady walked us through the program and explained how things would flow for us and where to find items in the books. No, it would have been helpful to have had the books before hand to look at them.

5/21/2014 1:35 PM

9 We had already looked through the materials and gotten the information about the online activities prior to both trainings with our grade level teachers at our building. Information was just repeated. I do not think either training was very useful.

5/21/2014 11:57 AM

10 N/A

5/21/2014 8:18 AM

11 Yes, because I was a first year teacher.

5/21/2014 7:53 AM

12 N/A

5/21/2014 7:34 AM

13 N/A

5/21/2014 7:25 AM

14 Yes. It provided time to go through the materials and ask the publisher questions about intended use.

5/21/2014 4:13 AM

15 No.

5/20/2014 10:12 PM

16 Yes, because I found out about different resources to use with my students that I would not have found if it was not for my curriculum coach.

5/20/2014 8:58 PM

17 There were none.

5/20/2014 8:56 PM

18 N/A

5/20/2014 6:38 PM

19 Yes, as a start. I learned most through my own exploration and teaching using the program. Also my math curriculum coach was a great help!

5/20/2014 5:56 PM

20 Slightly.

5/20/2014 2:35 PM

21 slightly. The best professional development is when I implement the curriculum daily

5/20/2014 1:37 PM

22 I have only attended the initial introduction class but it was very beneficial and concise regarding the materials.

5/20/2014 1:05 PM

23 Yes, but not enough. After you have taught the program for a year or two, it's time to revisit PD. For the next few years we will be hiring many new teachers, so a round of math PD would be useful.

5/20/2014 12:59 PM

24 I didn't find them very helpful because they were not in any detail and no one seemed to go to much trouble to explain anything, but more gave a broad general idea of the materials available.

5/20/2014 11:39 AM

25 It was useful in that it gave me a basic understanding of the setup of the series. It did not go in depth much.

5/20/2014 10:57 AM

26 N/A

5/20/2014 10:55 AM

27 Yes

5/20/2014 10:52 AM

28 N/A

5/20/2014 10:33 AM

29 N/A

5/20/2014 8:56 AM

30 N/A

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Appendix R: Transcription of Open Responses Regarding the Reliance of the Support Materials Provided by the Program Materials

Answered: 33 Skipped: 24

1 N/A

6/1/2014 10:39 PM

2 When a student needed more help on a skill.

6/1/2014 7:44 PM

3 N/A

5/30/2014 8:07 AM

4 After a **Check My Progress, Am I Ready, My Review or walking around and observing** **I could get an idea of who needed to complete a reteach or an enrich.**

5/29/2014 8:18 PM

5 I went to **connected** when needed to find other means of teaching skills when some students were not being successful with activities in the lessons

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 ELL and students who are below grade level.

5/22/2014 3:03 PM

8 N/A

5/21/2014 5:42 PM

9 For **re-teaching and re-assessing.**

5/21/2014 4:52 PM

10 N/A

5/21/2014 4:14 PM

11 **Daily for my leveled groups**

5/21/2014 1:35 PM

12 N/A

5/21/2014 11:57 AM

13 N/A

5/21/2014 8:18 AM

14 **Base ten blocks, shapes, and reteach lessons for subtracting with regrouping.**

5/21/2014 7:53 AM

15 N/A

5/21/2014 7:34 AM

16 N/A

5/21/2014 7:25 AM

17 N/A

5/21/2014 4:13 AM

18 N/A

5/20/2014 10:12 PM

19 Most of the time.

5/20/2014 8:58 PM

20 The whole time. There was no in service after the initial introduction.

5/20/2014 8:56 PM

21 N/A

5/20/2014 6:38 PM

22 Finding and locating numbers on a grid to 120; Missing addends (a lot in this area); counting and writing numbers to 120; adding and subtracting using a number grid and multiples of 10; some addition and subtraction using place value blocks.

5/20/2014 5:56 PM

23 Not much of that in kindergarten.

5/20/2014 2:35 PM

24 I used support for a struggling student with Triumphs and with parental support, this student became a success story.

5/20/2014 1:05 PM

25 ELL, homework, leveled tests, reteach and enrich-need more practice papers on basic skills

5/20/2014 12:59 PM

26 I used many of the manipulatives which were helpful, although not complete. I used the homework and also went online to get the reteach and enrich pages for extra practice.

5/20/2014 11:39 AM

27 I relied on the support materials to tier instruction. I also use the games on the SMARTBOARD when meeting with small groups. I use the songs to give my students a "brain break" before starting a math lesson.

5/20/2014 10:57 AM

28 N/A

5/20/2014 10:55 AM

29 CD's were useful, as well as videos for each chapter.

5/20/2014 10:35 AM

30 N/A

5/20/2014 10:33 AM

31 NA

5/20/2014 8:56 AM

32 When students were not understanding, I was able to use the support materials to provide extra instructional understanding.

5/20/2014 8:45 AM

33 Re-teach but the enrichment was too easy for some.

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes
Instructional skills/processes
Professional Development
Implementation/Time
Materials/Support
Differentiated Instruction

Appendix S: Transcription of Open Responses Continuing or Discontinuing My Math as the Major Math Program for K-2 Students

Answered: 38 Skipped: 19

1 **It is a fine program** but we would like to know why we weren't allowed to do Volume 2 at the beginning of the year when those skills are easier.

6/1/2014 10:39 PM

2 I think since I have been able to see what works and what doesn't work I can supplement where needed. I also usually have found that when I introduce a skill I have the same concept in mind but I may do it differently than what is actually in the manual. I am indifferent about the series because I have learned where my students need more or less.

6/1/2014 7:44 PM

3 **I would recommend keeping the My Math program** because I feel my students have a strong background.

5/30/2014 8:07 AM

4 I enjoyed the online support, the consistent chances to quiz, and check data for understanding or who needed a little more help.

5/29/2014 8:18 PM

5 **I like the program as a whole** except for measurement. I would like to see the lessons in the book set up differently. The lessons flip back and forth too much between addition and subtraction. Our kids would do better if they had addition: 2 digit, 3 digit, regrouping followed by subtraction 2 digit, 3 digit, regrouping

5/29/2014 6:57 PM

6 N/A

5/27/2014 12:04 PM

7 My Math gives many resources and tools to meet the needs for students to master concepts.

5/23/2014 7:56 AM

8 **There are parts of the program that I like.** I like the music and the technology, but not the workbooks. I believe that we might have **too many extra items and not enough in high areas of need. This includes money and fact fluency.**

5/22/2014 3:03 PM

9 As with any program, it **needs to be supplemented** with other teacher made materials.

5/21/2014 5:42 PM

10 **I believe it can be effective, but would recommend a different instructional pacing guide.** For example, after students learn 2 digit addition and subtraction, we could move to time and money, and then spiral back to 3 digit addition and subtraction. I also think place value should be taught before we try to teach any regrouping or trade first strategies. My Math needs to be supplemented to allow students to be successful.

5/21/2014 4:52 PM

11 I would recommend My Math because of the manipulatives. The book is easy to follow but not enough repetition for the students. I like once the students do a lesson there is a homework sheet to enforce the lesson being taught that day.

5/21/2014 4:14 PM

12 I like how the program is set up, the manipulatives that they students are able to use and the flow of the program. I do think that sometimes it is a little easier than the program we had before...could there be a happy medium?

5/21/2014 1:35 PM

13 N/A

5/21/2014 11:57 AM

14 I used My Math in third grade, but I did not use it in second grade so I feel I cannot response to all features.

5/21/2014 8:18 AM

15 Overall, I would recommend it because it is well organized and easy for teachers and students to follow. There are a lot of technology resources to go with this program as well.

5/21/2014 7:53 AM

16 Yes.

5/21/2014 7:34 AM

17 I would recommend continuing to use the program. The staff is still adjusting to the material and feeling more confident in their abilities to plan and implement the lesson. More supplemental resources and more ideas for small Math groups would be helpful. It is difficult to get in a small Math group when the independent work page only has three problems on it.

5/21/2014 7:25 AM

18 This program COULD continue to be used, but we need supplemental instructional materials for teaching addition/subtraction fluency, telling time, and counting money. Also, the online component for the children is cumbersome and a virtual waste. The online component for teachers is adequate.

5/21/2014 4:13 AM

19 I feel it is not developmentally appropriate for young children to be tied to a workbook. They should be exploring math in thematic units, seeing how math relates to them in real world situations, exploring with manipulatives, and problem solving through journal writing.

5/20/2014 10:12 PM

20 I would recommend the continued usage if we get to decide what order to teach the concepts in and if we have more room to use supplemental materials of our own making. Also, if we have more time to reteach

5/20/2014 8:58 PM

21 N/A

5/20/2014 6:38 PM

22 I would recommend the continued use of My Math mainly because of the differentiation provided by the lesson plans, testing, homework and intervention. I like

that is has books with it that the students can read to tie into Reading. I like the manipulatives that the program comes with. I do think teachers need to be aware of tweaking the areas mentioned. I also like to incorporate my own style of teaching and methods as needed.

5/20/2014 5:56 PM

23 Some of the homework sheets may have helped parents know what we were teaching/learning. Our students need more hands on experience with manipulatives. Most lessons used manipulatives for one or two exercises and then pictures for paper/pencil work. **I would not recommend it to be the sole program for kindergarten math.** I did not solely use it. I provided a lot of hands on activities after the My Math lessons each day!

5/20/2014 2:35 PM

24 Great manipulatives and computer support. I like the home-practice piece.

5/20/2014 1:37 PM

25 The program is diverse, presents concepts with variety and novelty, and the materials are user friendly. Wrap-up Chapter 7, subtracting across zeros was problematic and when we combined numbers to subtract-our team skipped this one concept. It threw our students and their parents for such a curve. I believe this is the only strategy we left out. The other negative piece was when we tested for Money in Chapter 8, we would use the workbook page next year because they are colored. The black and white test sheets were not the best representation of money and that caused some scores to go down. Thank you for this opportunity. **I have embraced this program and plan to teach it next year with greater clarity and fidelity.**

5/20/2014 1:05 PM

26 **It is the best that I have seen in my years as a teachers,** although with any program, one size does not fit all. Teachers, especially new teachers, need to have more access to basic skills practice. Geometric shapes are not included in the manipulative box, and a hands-on approach would result in better learning.

5/20/2014 12:59 PM

27 **I feel that it has both good and bad components but overall, is easier to navigate and more effective than the previous** Everyday Math. I like that My Math moves in a logical order going from one concept to the next, although I do think that some circular review would have been helpful. I enjoy having a workbook that includes all lesson pages as well as homework and review pages.

5/20/2014 11:39 AM

28 As a kindergarten teacher we were told to follow the book as it is set up with book outlined in the order of the common core standard set up. The items taught at the end of the year in the second book need to be taught at the beginning of the year so the students can have some success for in easier skills with geometry as compared to number sense of addition and subtraction. They don't even know all their numbers yet and are expected to add and subtract.

5/20/2014 11:14 AM

29 I think overall My Math **is a great improvement** over Everyday Math. I think it should continue to be used. It is lacking in some curricular areas. It also is lacking in

materials/games to have students work on while pulling small groups. If the district does something to help fill in these gaps, or allows teachers the time and opportunity to share/develop methods to help these gaps, the program would be very strong.

5/20/2014 10:57 AM

30 N/A

5/20/2014 10:55 AM

31 I would support it because it covers the common core standards. I feel the common core standards have "holes" in them- not enough problem solving, and not teaching money early enough.

5/20/2014 10:52 AM

32 No I would not. There is no mastery before moving on, and the program does not come around to reteach. We have to implement on our own to revisit some topics.

5/20/2014 10:35 AM

33 N/A

5/20/2014 10:33 AM

34 I feel the My Math covered the information needed by K students to succeed.

However, the layout of the workbook pages and conflicting directions throughout the same worksheet became confusing to students and parents. I also felt the sequence of chapters/skills was not appropriate. I feel that we should have been able to change the sequence we taught the skills based on what our students needed. My Math is a program that help the children learn. I would like to see more manipulatives for the children to use during whole group instruction.

5/20/2014 9:50 AM

35 I would not-use in the manner we use the program. Children need instruction in all the skills over the whole year. Learning numbers 11-20 in December is not developmentally appropriate for some learners. The geometry segment of instruction should be at the beginning of the year.

5/20/2014 8:58 AM

36 N/A

5/20/2014 8:56 AM

37 I liked the My Math program because of the variety of topics covered. There was always enough work to cover each topic. I would recommend this program to another teacher.

5/20/2014 8:45 AM

38 It's good program for the average student not much enrichment.

5/20/2014 8:40 AM

Legend:

Inquiry-based learning

Number Sense

Counting

Mathematical processes

Instructional skills/processes

Professional Development

Implementation/Time

Materials/Support

Differentiated Instruction

Continue

Discontinue

Appendix T: Transcription of Focus Group Responses

Focus Group Transcription

Conducted 5/22/2014 from 4:00-6:00pm

6 members

Researcher – Reviewed Statement of Purpose and Full Consent

Focus Group

Statement of Purpose and Full Consent

You are invited to participate in a focus group related to a program evaluation of My Math. The title of the project study is *A Program Evaluation of My Math: Improving Student Computational Fluency Through Inquiry-based Instruction*. This for is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part. This study is being conducted by Andrea Townsend, a doctoral student at Walden University. You may already know the researcher as a Director, but this study is separate from that role.

Background Information:

The purpose of this study is to examine the various elements and materials of the My Math program in regard to usability, coherence, and teacher support. The results of this study will be used to improve mathematical instruction in the district and further implementation years of the My Math program.

Voluntary Nature of the Study:

Your participation in this program evaluation is voluntary. It is your decision regarding whether or not to participate in this study. Your participation decision in this study will be respected. No one at the district of study will treat you differently if you decide not to

be in the study. If you decide to join the study now, you can still change your mind later.

At any time during this study, you may cease to participate.

Written Assurance:

When the researcher is already known to the participant, the consent form must include written assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher or (if applicable) the participant's access to services.

Focus Group Participant Inclusion Criteria:

The participation criteria include the following:

1. K-2 math teachers in the local district who used My Math in the classroom during the pilot year of implementation.
2. District mathematics coach, teacher or administrator.

Procedures:

The focus group questions are attached for your review.

The focus group will be recorded for transcription purposes. Assumed permission to audiotape is granted through signature and return of this form.

Each of you will receive a pseudonym that will be used throughout this process. The data from the focus group will be transcribed and responses will be evaluated. The researcher will return the findings for member checking to the participants of the focus group via e-mail to check for accuracy of their own data. Each focus group participant will have an opportunity to discuss the findings with the researcher via one-on-one,

via e-mail, or phone. The e-mailed data review of the findings will take approximately 1 hour.

The data review with the researcher via one-on-one, via e-mail, or phone will take approximately 15 minutes or more based on individual participant needs. The focus group will take approximately two hours. Notes will be taken by the researcher during the focus group.

Role of the Researcher and Potential Conflict of Interest:

The role of the researcher, Andrea Townsend, is to conduct this program evaluation as partial fulfillment of the requirements of a doctoral program at Walden University. My role, as the researcher, is detached from my role in the district of study as a director.

Confidentiality of the participants through pseudonyms and their responses will prevent any potential conflicts of interest. Since your participation is voluntary and there is no identifying information collected, your identity will remain confidential, there is no monetary benefit, or punishment for your participation based on your responses.

Risk and Benefits of Being in the Study:

There is little to no risk for participation in this study. While the risks are minimal, there are potential risk factors that include psychological stress and perceived coercion based on the researcher's role and the relationship between the participants. Being in this study will not pose risk to your safety or wellbeing.

Anticipated Benefits to Participants and/or Others:

With the completion of the pilot year, there are potential benefits to the participants and

other educators who use My Math. The usability, feasibility, and accuracy of the new program will be validated or refuted. If the program is validated as a tool that benefits teachers as a tool to reach at-risk students, the benefits will help teachers and students locally as well as in other educational systems.

Compensation:

Due to your participation being voluntary, no compensation is offered.

Confidentiality:

No identifying information will be asked in the focus group; therefore your identity will remain confidential. All information regarding this focus group will be kept confidential and be used for the purposes of this study only. The researcher will not use your personal information for any purposes outside of this research project. Each of you will be assigned a pseudonym so the researcher does not need to include your name or anything else that could identify you in the study reports. Data will be kept secure by Andrea Townsend, in a locked safe box, at home. Data will be kept for a period of 5 years as required by Walden University.

Contacts and Questions:

You may ask any question regarding the study that you have now, or contact me later via e-mail or phone. Andrea Townsend via Walden e-mail.

For questions regarding the rights of research participants, any complaints, or comments regarding the manner in which the study is being conducted, you may contact Dr.

Endicott of the Office of Research Ethics and Compliance at Walden University. Her phone number is 1-800-925-33681- 800-925-3368, extension 3121210. Walden

University's approval number for this study is **05-15-14-0157626** and it expires on **May 14, 2015**. You may also contact Coordinator of Research and Accountability in the district of study. Please retain your signed copy of this form for your records.

Additionally, I will give you a copy of this form to keep during our first interview.

(Completed)

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. I understand that I am agreeing to the terms described above. By signing below, "I consent" to be a part of the study. Please sign below. The date of this focus group is 5/22/2014. Please print your name as the participant, sign as the interview and I will sign as the interviewer.

Date of consent: _____

Printed Name of Participant _____

Participant's Signature (interviewee) _____

Researcher's Signature (interviewer) _____

I will provide you with a copy of this consent form during the first interview.

Copies were received, signed by participant and researcher, and a copy was given back to each participant for their records prior to starting Focus Group.

Researcher read the following:

Consent Disclaimer

Hello and thank you for agreeing to meet with me today. My name is Andrea Townsend. I am working on collecting data as a requirement for partial completion of my doctoral program.

The purpose of this interview is to gather information about My Math through the four main attributes of an evaluation (a) utility, (b) feasibility, (c) propriety, and (d) accuracy. Your responses will help the district understand the elements of the My Math program in relationship to the students in the district of study and in a broader context.

I will ask you some questions which I have prepared. Your responses will be recorded in order for me to transcribe our discussion and identify trends and themes. Please feel free to answer the questions openly. I simply want to know your thoughts and experiences on the subject. All your answers will be kept confidential and your name will not be identified with the information you provide. All of you will be assigned pseudonyms. I have received your signed full informed consent prior to our meeting. Do you agree to participate in this interview? All six participants gave verbal affirmation of their willingness to participate. Your participation is fully voluntary and at any time during this study, you may cease to participate.

Researcher: Interview Questions were given to the group as a reference.

Attributes of Evaluation Standards, Basis for Discussion Questions, and Possible

Focus Group Probes Attributes

Evaluation standards	Basis for discussion	Possible probes
1. Utility	How does My Math meet the needs of the students and teachers who utilize the program? What was previously lacking in the district's math program?	Why do you think...? Can you tell me more?
2. Feasibility	How do the My Math materials and activities address teacher needs and time constraints?	Why do you think...? Can you give me some examples of...?
3. Propriety	How does My Math promote the best interest of K-2 students who are exposed to the materials?	How did this happen? Can you give me some examples of...?
4. Accuracy	What My Math instructional strategies have been used in the district to improve learning for students in grades K-2? What was previously lacking in the district's math program? What other information do you believe is relevant regarding math instruction in our district?	How did this happen? What do you mean when you say...? Can you give me examples of...?

Researcher - Ready – This is an open honest discussion amongst all of us. So we are going to look at the attributes for a program review these are utility, feasibility, propriety and accuracy. These are pretty standard items looked at during a program review. We are going to start with utility. The first question for our discussion is “How does My Math meet the needs of the students and teachers who utilize the program?” feel free to discuss

S – My teachers like that the materials are provided for each child. They do not have to stand by the coping machine every day. They like that there is color coordinated type problems in the younger grades to help draw the children’s interest in. The fact that it is related to the common core and they have quick reference to know if they are teaching and covering the standards that they need. That is the plus side for the teacher.

Researcher – Can you tell me more?

S – Tell you more? Of what they like and don’t like?

Researcher - Well how does it meet the needs of the students and teachers? You discussed the teachers – can you tell me more about how it meets the student’s needs.

S – Well in my school there are re-teaching pages which are utilized and in the school where we teach we use a lot of the Triumphs pages which are Tier 3 interventions. Which aren’t necessarily all of our special education students; we have such low level children that sometimes Triumphs is a better introduction than My Math and is kind of an entree into the lesson. So it is giving the teachers a wide range.

Researcher - How about the rest of you? Can you tell me about the utility for the students and teachers?

L –I like the way in second grade, I like the way that they do the C – Yes “I do it, we do it, you do it” and the homework, everything is right there.

L - And we do flexible grouping for math, so it is real quick for us to see if someone needs to go back and get the materials again (reteach). We just like the way that everything is set-up, the manipulatives that match the book, C – Yes, the kids especially like the color, and I especially like the “Write About Math”. The writing that they are having them do “WRITE” they have the written response has been very good this year. And I have seen the results. In fact, I am grading diagnostics right now and it has come out, I have done other things in addition, but the improvement has been big from the “Write About Math”. I really like that component.

C – The students have benefited because every lesson is hands on so especially for those tactile children, they can get in there and all of the sudden you can see that it makes

sense. I like it is at different levels, while we pull small groups, others can do “on my own” by themselves, and then I can go back and work with my little guys and then go back to reteach and enrich, I like how the program has everything there for you. I don’t have to go dig.

D – I was on the committee that selected the program, so there are other components we looked at. The fact that it did teach the common core, that it was interactive, that the children have the opportunity to put their hands on it at the start of the lesson. Then just like you said slowly “we do it together” you know, we can move away and they can be more independent to do it on their own. It also provides all the wonderful resources.

Researcher – Can you tell me more about the resources?

D- In addition to the re-teaching and the enrichment, we did get some books that go or are made to coordinate with each one of the units.

Researcher – Are they reading books?

D – Yes, they are stories that go along with it and they are leveled.

R – Yes! They are leveled.

S -There is a literacy component that goes with each chapter at each grade. It would be nice if each library could have a complete set. The book are good and that would be very nice.

C- My students love Ms. E., Ms. E. can we read the story and watch the videos. This book has a video! They love the videos.

S – And the songs.

D – The videos are another component that the kids love. And another component, that is more for the teacher, but it trickles down to them (the students), on site, any resource you need it is there. We recently finished the geometry, they give you the print out pages, some of those kids with the manipulatives. Some of my kids I have to glue it down so they can see how it fits. If they spin it around they don’t get it. I printed it off and it was right there. If I glue it down, the resource doesn’t move and it is right there.

L- I believe the resources are there to print off in Spanish.

S – Yes they are.

RS – Yes.

R – I don't know, coming from the coaching role, and not being in the classroom every day, and not being hands on with it, I see that math for me, or in general for our teachers, in the past what they were not doing, there were no center activities or small group activities. I think now they see that are seeing that math is much more than just worksheets, but they can do workshop. Sometimes they (the teachers) need to be pushed or guided to do that. They do need the facts, times tables and things like that, but they are seeing that math is more than worksheets and times tables. I think they are seeing that with math, the same, like with reading, work centers can be used in math to differentiate instruction.

D – And this program is very good to go along with the workshop model, which we implemented in language arts. It is another one of the reasons we choose this program it did that.

R – And the writing aspect which goes with writing across the curriculum, which is what we want.

D – The even the talk math you will hear conversations, even when they are to be working independently, “no this has this or this has this” as they are having conversations are really coming out.

Researcher – Tell me more about that – is that academic vocabulary – what exactly is that?

D – Yes, it is academic vocabulary – it the academic vocabulary is definitely coming out. You hear the same words across the grades “sum, difference, vertices” all of those are coming out.

S – Yes, vertices goes all the way up in each grade and the same vocabulary words up the grade levels. They are using the exact mathematical word, they are using it over and over, so the kids are getting exposed to the same words at each grade level. It is nice because when they get to the next grade it is familiar.

L – I kind have done something different, so I started to us in addition to do the same things, I started using a daily math journal. A real simple math problem that went along with whatever we were doing, there was an area for them to explain what strategies they used, and it started out with “The strategy I used” – the number sentence. It really came out on the diagnostic today on a 4 pt. question was $3+3+3+3$ and I got 1, and then she wrote “the strategy I used was wrote a number sentence and drew a picture”. I thought that was incredible second grade.

R – Yes that is.

C – That is one great thing about My Math is it teaches kids how to use more than one strategy.

L – Yes

D – And they have a problem of the day every day. Every day they have that so if you want something else you can go to that, they have a warm-up, a closing, whatever it is it is there. You can pull one of those problems of the day.

L- In looking at the diagnostic the amount of explaining and writing that's and I said we did flexible groups. I have the kids who move quickly and even for them it was very difficult, because they are from the concrete operational, I got to touch it, because these kids can get an answer like that. It was very difficult for them to do explain it in writing. How do you explain it, "While I". This is where I think that even our top 20% need that practice.

D – Even give them those projects for the upper level kids they need that writing. Actually all kids need projects, but those kids can take those and soar.

L – And they do

D- They will

Researcher – I have and administrator in the group – when you are doing classroom walkthroughs what are you seeing?

RS – While this administrator reserves comments when surrounded by teachers... laugh. But really, I was going to say I have seen a whole lot more of the "I do, we do, you do" in my classes. It is because of the structure of the program. I have seen it on a macro level at the centers and on a micro level at the conference table during small group. It is actually more in the lesson plans then it has ever been before. I think that is a direct relation to the program.

Researcher – What was previously lacking in the districts previous math program?

R- I think Everyday Math (EDM) had a lot of gaps.

L – Yeah and the thing is kids would not get something and then it would not come up again for a long time and they would forget. Never the ability to master anything.

S – They kept telling us with EDM that it was cyclical and it would come back.

C – But they did not get it the first time

R – Not taught every day

S – The difference is now there are building blocks and there is more and there are more time to practice, a long period of time doing the same concept. They are doing the same concepts over and over because elementary school is where you want to build your foundational skills. They aren't ready for you know.

R – I always felt that they aren't ready. As the teacher in grades 1 and 2 if you don't know your times tables and facts then you are sunk the further you get up. I felt like they did not get that repetition they needed in EDM, unless the teacher went outside the program. I feel like that the repetition is more here now than in the previous program.

D- This program gives us time to build a foundation. Where EDM did not give us the time. I liked the fact that it did loop back around, which we don't see here as much, as the kids tend to forget, and we needed to do a lot of review here, but I do believe we are building the foundation. I do think we have to as teachers touch back on the skills.

RS – when it cycles in a spiral fashion, it doesn't hit in depth the second time around. By the time they get to fifth grade if they don't have their facts they are in trouble.

S – When I was a teacher and did EDM, I was very selective in the homework I sent home. Often times I got some not so nice letters back from parents. I sent home an alternative type of practice paper as the homework was too difficult for our parents to help their children do the homework.

L – When I taught second and fourth grade – the fourth grade stuff parents did not know what to do.

R- Our parents

S – Partial question division algorithm, boom

L – Lattice multiplication

R – I can remember my first year of coaching, we were at the old Simon Kenton and we were watching a fourth grade math lesson, it is like the second week of school. I got up when we are done, because I had been teaching middle school ELA and asked the teacher “What are we doing?” because it was just a whole new way of thinking. It wasn't the way we were taught how to do things.

S – No

C – No

L – No, I think that was the premise for that, if you could not get two digit multiplication the way that we were taught or learned it, the problem was we taught the alternative method first and then the traditional method and they never,

R – So parents could not help, because they did not understand it. I couldn't get used to it

L – Exactly that was our parent's frustration

D – And what you need to do is teach what we consider traditional first and then for those kids who don't get it you teach alternatives for everybody, because something will click with someone.

S – What you just said reminds me of something that my first grade teacher and I had a conversation about today. She teaches the 1A class which are the children who would have been repeat kindergarten students, but she felt that one chapter was addition and one subtraction, one addition and one subtraction. Normally for a good math student you would teach it that way, multiplication/division, addition/subtraction as the facts complement each other. Next year she wants to teach chapter 1 and chapter 3 together and then chapter 2 and 4 to really get the addition down. Then show the algorithm or the relationship to subtraction after they have gotten addition. I guess what we need to do is tweak our instructional organizers a bit. Some of our teachers are scared to go outside the organizers (district made). They need to be quarterly. Of course then the test would have to be adjusted and recreated because the test would no longer align with the instructional order.

L – We did that at our school. In second grade we talked about that, we felt that it would make more sense to teach chapter one and chapter five. It is place value. I can't remember the exact chapters, it makes more sense to do place value first, two digit addition, three digit addition, and then two digit subtraction and three digit subtraction. That way they get good mastery, because switching back and forth between addition and subtraction is difficult. Even for capable students is difficult.

S- The program has good materials, but we have trust our teachers and not put so many restraints on them with the pacing guide.

L- We were just talking about that – there is so much – up until March we are doing computation all year long. We said would it be nice to get a break from computation and teach time and then get a break from computation and teach geometry.

S – We were just talking about that today too – geometry – kindergarten would like to teach geometry at the start of the year because they use the concepts in so many

kindergarten activities. For example here is a triangle, let's count the sides of a triangle, 1, 2, and 3. So many of our students come to our building and are not ready for kindergarten. They don't even know how to hold a pencil, they haven't been to preschool. Just writing their numbers. You can't start with computations when you can't write letters or numbers. They need time to get ready for school.

Researcher – So let me ask you this – as far as the previous program EDM – you brought up things that need to be tweaked in My Math as far as the progression. How about the progression in EDM? Can you tell me about the things that were lacking there?

S – Oh Yeah, yeah.

L – That program was a mile wide and an inch deep

R and C - yes

L – that is the best way to describe it

S – It was very difficult to teach, navigate, I spent lots of money at the teacher store supplementing (D – me too) materials

L- It was like reading trivia – you know one question was about this and one question was about that - there was boxes and a question here and there. There was instruction but there wasn't. It was very strange.

S- I had to use post-it notes over the boxes I did not want them to use because I did not want them getting nervous because they did not know what they were talking about. I did not want the students to work on some of the things in the boxes.

L – I felt like it was confusing for them because they never could get their head wrapped around one concept enough to master it because you skipped on to the next thing.

S- MM is definitely an improvement, and now we are tweaking it to make it even better

D- That is any program. Nothing is perfect.

L- We know our kids and that is the important thing with any program.

Researcher – You mentioned boxes – Can you tell me more about the boxes

S – EDM – Oh yeah. There were 6 boxes in fourth grade and 4 boxes in second grade. The practice pages were the boxes.

D – Do you want me to draw them? There were six boxes and in each box there were different things for the students to do, one might be time with a picture of a clock, one might be money and it would say count the money, base ten, four or five math problems, and then a story problem. Missing number sentence, geometry, it just depended. Great for review but not for instruction. Right now I do pull from EDM because we are at the end of the year. The kids are finding them fun. It is a great check for them to see what they know from all year.

S – My teachers did not get to use the enrichment papers during the year in My Math. A lot of the enrichment pages are like puzzles. You get a letter and a clue and then you have to figure it out. They are having fun with that, their skills are a little bit better now so they are having fun with that. They weren't really ready for it, enrichment pages, in October, so, now they are really having fun with it. We are using the enrichment pages from earlier in the year, with the skills they have learned they are really able to do it. So, when they see the work enrichment, they are all feeling good.

Researcher – So let me ask you this, as you bring up enrichment, and you talked about skill building, can you tell me more about enrichment, do you think this program will allow our students to use the enrichment earlier?

S – At my school?

Researcher - at any of your schools.

C – There is a difference from this year to last year. I know that this is completely different set of students but just the end of the year testing this year versus the end of year testing from last year, many, many more of my students have mastery of those skills. And they had that (My Math) in kindergarten.

L - I think you are going to see that in OAAs as they (students) go up.

R- I think last year a lot of my teachers were scared, not a good word, nervous (L – unfamiliar) with going there with the enrichment. But I think now that they know they have to go there with some of our students, so they have to think outside of the box more than they ever have. Those are the things, because the things (materials) are there, why not use them in this program. Whereas before, doing enrichment and even general work, we were going to have to go everywhere else to get it. But MM does at least have the materials there to use. We need to do more. I need to see more, we just have to do that. Especially with the population we have right now. But that is something we are trying to push on the teachers. Sometimes the teachers are resistant. (L, D that is everywhere).

L- but I also think, thinking back as a teacher anything you do, it takes time to get familiar (S- Comfortable) with what you do and if this comes up what do you do. Just

like when you first begin teaching. It takes you five years before you know what you are doing, half way in my opinion. Which is the same with any program. I think we need to have training. I think we need to be able to talk like we are now. Hey this is working, that is working. We need to continue.

S – that is with any program – we had math training.

R – I think with the Journeys and the MM program there are so many materials it is overwhelming. (L, D, C Yeah very overwhelming). It is a good problem to have because there are so many things there. You just have to figure out what they are and how to use them. (C, L yes)

Researcher – That leads right into my next question “How do the MM materials and activities address teacher needs and time constraints?”

S – Oh, it is a no brainer. It tells you right in the manual if they passed 4 or 5 of these problems, these are the problems they do, if they passed or missed these problems, these are the problems they do, if they are enriched they do these problems. They are all on the same page so you just have the kids circle the problems they need to doing. They are doing the same topic but on different levels. The same way there are 4 test for each chapter. Some teachers use the first test as a review in class, some send the test home to let them work on the problems at home returning them for review and correction, and then a test in class, with reteaching and retesting, some students have the opportunity to take the fourth test. The different test allow children to be as successful as they are really capable of doing – (Differentiation through the testing materials) As a teacher, I did not care what grade they had, as long as they were learning. So what if they had the same tested topic 4 times in a row, it’s wonderful. We have a rapidly growing Hispanic population, the teachers the English pages in class, but the parents are not learning English nor do they want to learn English, especially our first grade teacher, who was an ELL tutor. She sends home the English page and the Spanish page so the parents can help their child. The parent letter goes home in Spanish. By the time they get to kindergarten, first and second grade the kids are on their own because they have had enough. Kindergarteners and first grade they need that crutch coming from a non-English speaking home as I said they don’t speak English nor do they want to speak English.

D – Another nice component in the teacher’s manual – it will even tell you if there is a time constraint, skip this part and move to that part.

L – Or another thing that I like is if you think your students can do this then just skip right to the part.

Researcher – So with the time constraints in the teacher’s manual – if you have a time constraint how do the activities address your time constraints to allow you to skip to go to that part in materials.

D – Some of it is – if you have time constraints and so many manipulative activities you can cut that down and move on, that is the beauty of this program, you can move to the pictorial, there is a lot of hands on – so we take that to a picture, so now we are moving on our way. You just have the ability to move to that and you are on your way. If you don’t, and you know there is a time constraint, guess what you have to do the lesson in two days.

Researcher – Are these things you could use in your centers – can you give me some examples?

D – Absolutely - the 3D objects shapes in a center, count the vertices, everything they need, the faces give them the base 10 blocks.

RS – What about the smart boards – even teachers who were reluctant to use the smart board have found benefit in using with this program.

Researcher- why tell me more

RS- I think it helps them demonstrate in small groups the “I do”. I knew you were going to ask that question (laugh). When they are doing the “We do” showing them how to do it and then the kids get to come up and show them, which they love doing, and it builds the students confidence so when they go back to their seats during the work period, “you do” they feel better.

R – I know when we have our open houses or our literacy night, the first thing our kids say to their parents is, they point to the Smart Boards because they can move pictures and stuff like that. I can’t even imagine, I have learned how to use a Smart Board now but I did not have one when I was teaching. It is really cool because you can do so many things with materials and things like that.

Researcher – So the materials you have with this program and the activities you have described so far. It addresses the needs of the teachers in what ways, you mentioned the smart board, manipulatives, papers, those are examples you have given. How do the materials address your needs as you are picking things for your students?

D- You have to know your kids, number one and you have to know what is going to click with them. Not all manipulatives are going to work with all kids. (R – It gives you options). It gives you options, yep. My kids this year cannot keep a manipulative, they can’t they are all over the floor, school boxes, everywhere. They have absolutely no idea

how to hold on to materials themselves. My goodness, last year's group I gave them each a set of whatever pieces. My goodness, this year they are all over the place. Using the smart board is better for me this year because of my kids. I still am using the same materials.

S – I bought my teachers lots of gallon zip lock baggies and that really works well if they get them out (manipulatives) in the sets of each chapter. They get a little bit, they have to close up the bag, and put them back in the little container.

C – Yes, that is what I do.

D- I don't know about you, but those vocabulary cards great.

C – They love them, they cannot wait to cut them out (vocabulary cards) and put them in their little envelope. They come with a special little envelope. They take them out and practice them. They take them home and practice them. It is a lot of fun. If it is fun for me it is fun for them.

D – We play tic-tac-toe with them

C – That's a good idea

D – I have a little tic-tac-toe board – I put the definitions in, I have an extra set of the words, the kids use the words to play tic-tac-toe and they get it – they get to put it an X or an O on the square. They love it. (Games)

R- You can put it (game) on the smart board and make it a center.

L – You can use the Elmo screen

C – Because the program teaches the kids on how to use all different kinds of manipulatives, number line, counters. I already have those things set up in baskets in the room. And when it is time to use the materials, only one person will ask can I use the materials, the students will ask if they can go and get the materials. Each student will get what they need for their needs. I let them choose after they learn how to use them all, each of the manipulatives. Whatever works for you I am not going to stop you. I think they like that independence.

D – And that is another point, it does teach them so many strategies. It could be one concept, but so many different ways to work on it, you can use a hundreds chart, a number line, you can go and get your counters. Whatever it is you need, MM has so many things that we need. That's why I like that the program gives us time and depth.

L – I makes them feel successful.

C – It's when they feel successful they really like doing it.

D – We really have to develop that.

L – The other thing that I really like is the success. Homework, I do like it which means I am not the majority on my team. I am not a big homework person because I don't think a lot of our kids have the support at home they need, you get into battles you don't need to get into battles and that stuff. I do like the homework in MM because it is 5 minutes and the other thing I really like. If they (students) come in and it is done that is great because it is a review of what we did yesterday. They are getting it again during the next 5 minutes, so it is fresh and then we can build on that again. I really like that component.

D- And the parents really like that.

L- Yes

S- And it has examples and pictures to show the parents how to do it.

L- Yes, it has examples and pictures which help the parents help their student.

S – As opposed to EDM which was a nightmare.

Researcher – That's good, that is one of the things you mentioned earlier that the parents were very frustrated. So can you tell me a little bit more about how the feedback from the parents has been?

S – I am not familiar with the feedback because I am the coach not the teacher, but I know our teachers send math homework home nightly. Occasionally, if they are still working on a skill, they may send home a skill page, and not a homework pages. You can't send homework home if you haven't mastered a skill to do. Sometimes times tables sheets or things like that go home because they want the kids to be in the habit of going home and doing their homework. Sit down do it, you know this is what we do in school. I don't think that this has been an overwhelming homework page in that a parent would say, oh my gosh, they have to sit here for 2 hours.

L- Why I always tell my parents that if in 20 minutes your kids sit down and they are frustrated and upset walk away.

C –me too

L – They are not learning and it is pointless, I don't fight about it.

C – Every homework page in this series has been very quick. A few questions, very quick, I have the “On My Own” and it’s quick, if they finish with that I will send home homework. Sometimes, kids come in and say I had nobody home with me and did not get it finished. I tell them it is ok and don’t worry about it. We sit down and do it together. So, if it one of those kiddos, who might not have the help (at home), they will ask if they can do their work at school. I tell them yes you may since we have time; however, I want you to take it home and show someone how well you did.

L – It helps keep them motivated. I have never heard anything negative this year.

C – Me either. Nope.

L – Which is something new, not to have negative feedback.

D- I have parents say this was too easy. It went too fast, it was too easy, and don’t you have anything more challenging for them.

C - Yeah

D- I’m glad, to me the philosophy for homework is it should be easy because it should be a review of what they learned.

S- Exactly, it is a review

L – Part of it for me is what we were talking about earlier- longer, faster, harder. Some of them get up at 5:30 and have been in school all day. They need to go home and play.

D – Yes

L- That is where I operate and I just send it home – it is never graded, if they don’t get it done at home, then they do it in class the next day.

S- My last two years in the class, which was with EDM, I stopped giving math homework because I was tired of the letters I got back – (L-this is stupid). That would have been a mild word because I had a self-contained fourth grade. I called it homework in school because they were so happy they could do their homework at school. The ones who could did, the ones who needed support got a partner, and the ones who did not know what I was talking about in the morning, sat with me at the kidney table and we taught the lesson and they did it with me. So everyone had a half hour of practice, not one was upset, and they did it with me.

L- That is because they got to go home and be done with school for the day.

S- They had to read but that was it.

L and C – yeah but that's it.

L – that is the only activity (reading) that makes a difference.

S- Nobody fooled around because they did not have to take home their math.

L- how many parents have you had come in and say – you know what we have sat there for 2 hours and he was crying and I was trying to help him when I was doing dishes. They are not learning when they are at that point. It is just frustration at that point (C – no no).

R- I think the old philosophy was that more was better too. You know if you did 50 of the same math problems or 10 of the same math problems you still have the same intent then you would if you did all.

L- That's right. Or even if you did 3 problems, five minutes tops.

RS-I have a couple of kids at home that would whole hardly agree with coming home and playing. The complaints I had in the previous years the parents would come in and say they did not get this program (EDM). That they did not understand it at all. I would be political about it, and say I understood, but it was part of the program. This year I have not had any complaints at all.

L- Me either. Positive comments.

R- I heard, finally, you are doing regular math. Finally doing math like I (parents) learned.

L – I got to tell you I have 15 of my 20 math diagnostics graded and all but one student is on track. High 40's.

Researcher – you guys have the best lead into my next question. How does MM promote the best interest of K-2 students who are exposed to the materials?

R- From my standpoint as we have already talked about, the depth of this program gives them the time and the resources to get what they need to get out of it. Well as before teachers were always in a rush and the kids were always in a rush and not being taught in depth what they needed to do.

Researcher –Why do you think they were being rushed?

R – While I just think it wasn't as in depth as what this program is. You did not spend as much time on things like you do in this program. I believe that in this (MM) program you get the math facts and multiplication, you get down to the basics, and spend time on concepts, than the EDM where in the other program you talked about it and moved on quickly.

L – And I think that is why our math scores were so low. Low on the OAA proficiencies and other test because they did not get the basic skills. Eight weeks later we would come back to a concept and they had forgotten it.

S – Yes

R – There was no memorization.

L – The teachers were frustrated because they felt like, I taught this three times.

Researcher – How about from another coaches perspective, how is MM benefiting your kids?

S – I think it is benefiting our kids because it is engaging, the videos, the music, and the use of the smart boards. Some of our younger teachers our whizzes on those smart boards, we can get manipulatives up there, the kids can go up there and move the manipulatives up there (1A class), they can move it around and do their problem. Some of our teachers have taken the things from the materials and have done great centers. The teachers are using the same routines they use in reading for center as they do in math. So even though it is a different subject, the kids are used to the routine. The only thing I find that is missing with our kids is that they go a little slower, and they may need more practice. Teachers want more practice, not necessarily the Reteach, or the Triumphs, but more practice pages because it takes our kids a little longer to retain it. Most of our kids don't have anyone at home to sit down with them and reteach or explain and go over it with them. I want some of them get picked up and the parents are on their cell phone – tell the kids to come on – they are not getting that nurturing when they are getting home. It is definitely a step in the right direction as I see much less papers coming through the copier for math because the teachers have so much in their workbooks, on their computers, online. They can go home and plan and be ready because everything is right there on the computer. They don't have to lug home books all the time as they can get everything online.

Researchers – Do the kids have access to the music and some of the components at home, you mentioned music and computer?

S – No

C – There is a section where each child can have their own login. I remember last year a sixth grade teacher set her kids up.

S- No, it is just homework.

C – I thought the music and things were on there

S – We stopped doing that because our kids don't have the resources at home, the internet, things like that, a printer, we did not go that route.

L – I had four.

C – When they ask me can we listen to that song today, I say yes and take the time to do it because they are asking me. If they are asking me they need it. The kids know it, we are all smart in our own way. If one kid needs it we do it, I try to make that accessible to the students.

Researcher – Is that something you could put it a center?

C – Oh yeah, that could be in a listening center with the math songs.

D – I did not think we have a CD.

C – We do, it is green.

D- I don't have one.

Researcher – Tell me more about the CD.

C- I have the CD, it also has kindergarten songs on, it is the same songs we see online, every concept we teach them there is a song for it. It reviews everything from kindergarten and first grade there is a song for it. It is really the same songs online too. I know online, I don't have access to all of those items.

S – I have to find the CD.

L- As I am sitting here thinking, was it buried in the trifold with our little books.

C-I don't remember where I found it.

D- What about the games!

Researcher – Tell me more about the games.

D- Oh my goodness. The games.

Researcher-tell me more about the games and the trifolds.

D- It is just a part of what I do, because I use it I forgot about it. In fact, I have taken mine apart and use them in centers. I store them in a big container. There is a game that goes with each unit. If you are working on addition, there is a cute dice game, subtraction, place value, it is all there.

Researcher – So if there is a math night or something, could you do a make-it take-it so the kids can have the games at home?

D – Absolutely.

L – The trifold has all the books, the games and all the things in it. I hope that is where the CD is.

D- I don't recall a CD being in there.

S- Me either, but I am going to look.

D – You might have the only one in the district.

C - I might.

S – I unpacked every bit of MM and don't recall any of that.

C-It is blue and has a handle – it opens up and clips like an easel. Everyone should have one.

R –Light blue

C and L – yes

D- And it has the books in it and hopefully the CD.

R- There was so much stuff. I unpacked it and I don't remember seeing it. That is one thing I can say – the program comes with a lot of materials – it was like here you go – teach this

L- It came in shifts

R – It was hard to keep track of – when you get a piece of shipping paper it is hard to know what everything is.

When the program is new and you don't know what it all is and 10 skids came in. Teachers are asking me R did we get in, and I don't even know what they are talking about. I go to my list and it was there, but I can't find it.

S- Tell me about it. I sat on the floor for 2 days going through it.

L and C – It is like an easel (trifold).

S –When you are talking about math night – the parent letter has games on each letter we send home. I think it would be a great resource to show parents how easy it is to reinforce what we are teaching. It is right there.

L- I was just thinking we could do that at our open house.

C- Yeah, that would be great!

R- Last year at math night we had the kids teach the parents what they were learning using the materials we have in the program.

L – I was just thinking, we have our open house the night before school that would be a great way to introduce them to the program.

S – The only books I unpacked were the science and social studies books (MM) that came with the program. I have them at every level.

L – They weren't in a carrier

S – No, a long box

D – Ours was a long box too

R – I remember getting some trifold.

S – There are six books except in grade 6

L- No, I did not get six books only 3, it is starting to sound like we all got different materials

S – Let me know if anything you have says L on it!

SCL – We should do a visit to see what each other has.

S – Our teachers use the **science and social studies books in the set.**

D – We have one class set to share. There are not books for grade 6 because that is another program. While it complements it, it is different.

S – That is because they belong in middle school –even MM is telling us that.

Researcher – So is there anything else you would like to tell me about the MM materials and how it supports our K-2 students?

D - We bought the **manipulative kits** to go with MM they did not come with the program. As we looked through the materials see if they say MM. We had to find a compliment to the program.

C- They are blue tubs of manipulatives

D- Double check because I don't think they are MM

L- While they did a good job because they match the program perfectly, even the color.

D – I am pretty sure that they are an **additional program** that we purchased to support the MM program.

Researcher – So earlier you stated everything was color coded, does that included the manipulatives?

L- **Taking for example, the first chapter for second grade, they have little orange counting tiles and they are orange in the book. You guys did a great job matching.**

C – We can pick out what we need.

L- The **two-sided counters – they are yellow and red.**

D- The only think I don't like is they are foam and they peel apart.

L – I kept my old ones too.

D – I kept my plastic ones too.

L- I wanted to tell you **I am seeing the light bulbs go one and they are able to extend their skills.** It has been really fun watching the kids have fun. I think they really like it.

Research – so I have heard that a couple of times – the extending through writing.

S – Yes, many of my teachers have a math notebook. They have the vocabulary words, they glue them in and then they write about it. It is definitely a good program. You know you can pick apart any program, as not one entire program has everything. But out of all the programs I have taught, and I have been doing this for a very, very long time, this is probably the best.

L- Me too

C – Me too

Researcher – So let's move into the accuracy of the program – What MM instructional strategies have been used in the district to improve learning for students in grades K-2? I know there are a lot of strategies you have mentioned, are there specific strategies you can speak to.

RS – I say incorporating workshop model into math, with the previous program we were trying to force our teachers to try that. I think with this program (MM) it is so much easier. The program is set-up that way with the materials and different levels.

D- Differentiated instruction is very easy

S – Vocabulary – the vocabulary is the same across the grade levels. After two years of having it, next year will be the third grade.

D – No that will be next year's second grade who will have had it all 3 years. Starting in kindergarten and moving up to second grade

Researcher – Earlier you were talking about different problem solving strategies and the way the kids would use these strategies for problem solving, manipulatives, concrete to abstract, models to paper and pencil, what instructional strategies are seeing them select as you teach them? How do you do this during the “I do, we do, you do”?

D – What I like is it does teach them (the students) different strategies to use to solve a problem and knowing that they have some choices, for example I am not good with number sentences, but I can illustrate that for you, and we see that a lot. They have to show their thinking. This program allows them to show their thinking in whatever way they want. Can I do it in a table? Can I do it in a number sentence? I have some kids that won't draw that picture, but can give you the number sentence. They can explain in writing what is going on and I think that is critical.

L- Well the other thing that I really like too and it is really showing up on the diagnostics and in their confidence in the 4 point answers. I am blown away by their responses and

the thing that I like about this program that on the back of the “On My Own” there are 3 story problems and a write about math, so they are writing their answers again. The nice thing I like, because what is hard for them, is the story problems and what is a good place to start, let's underline what we know, that is a strategy that they teach, underline what you know, circle the question. Then we discuss what kind of strategy can we use, I can draw a picture, I can write a number sentence, you can do both. I am thinking about one today, they drew the box and drew the apples. I suggested that they write the number 3. I am seeing them pull from different strategies to solve the problem.

S – So, it is not guided reading, but guided math. It is giving them the track of what they do, then what they do, and then what they do (step-by-step).

L – Yes, seeing the story problems over and over and the strategies, underline, what is the question. I like that they can use multiple strategies, then write the number sentences. I have seen a big improvement in that and it is showing up on the diagnostics, and I am absolutely thrilled.

D – I think sometimes we forget that math is important. I am not discounting reading, but they are the same guidelines. You have to teach the letters, you have to teach the numbers, you have to teach the concepts. It is not going to happen through osmosis.

L- Story problems are very abstract-what do I need to know? How do I begin? I have seen the development over the year. (C-yes). They are much more comfortable and don't look panic stricken like they do at the beginning.

D- I think they could give the kids a few more story problems to help them become more confident. Just to make sure we have that down. It is very difficult to manage. So much emphasis has been placed on the reading that I do believe we forget to focus on the math. With the developmental stages.

S- I know a few of my teachers have switched the schedule around because the kids were starting to lose interest and they started doing math in the morning. Huge difference. Wow! They could not believe the difference. I think we need to shake things up. They taught ELA in the afternoon. I know reading is the focus, but we have to remember math is just as important.

L- Most of us do our better thinking at the beginning of the day. I found this poster with math response sentence starters. I know there is 10 of them. Just ways they can start explaining and thinking. That is abstract. You have to back up and say explain that. Really bright kids can give you the answer but can't tell you how. I don't know I just knew it. You have to back up.

C – I added.

D – You have to get down and explain this stuff. This program gives us the time to do that.

Researcher – I want to go back to something you said earlier, tell me more about the strategies you used in the beginning of the year, numbers, adding, counting.

S – My kindergarten teachers would love to have a whole month to teach the kids how to count, what is a number, what is a letter, how do you hold a pencil, maybe use an easel, how do you make a one or two, tracing over things before they get into the workbook because they are scribbling and are not sure on what they need to do. It starts out too soon. Your students may be more inept as they have been to preschool. We just don't have that type of population.

L – Ours has been changing

R – Ours too

S – Ours is what it is, but we are hoping it is going to get better. We have large classes across the city, we need smaller classes.

Researcher- We have a very transient population and a high mobility rate. Let's go back to what happens with the constant growth in our population as students are arriving from out of state? How are you introducing them or using the strategies that our MM to catch them up and are they the same as we use with our current students?

C – A lot of guided groups

D – Yes, guided groups

C – Yes, a lot of small guided groups and centers. Those who, might come beyond where are kids are, again guided group so I can push them harder, I can differentiate the centers for them.

L – I love the centers

S – Centers is where it is. People are still trying to fight them. You are only going to get 1/10 of the kids attention at time not 25 kids for the entire class. You are never going to get 25 kids on and listening. You get six of them at the table and you teach them and then they go on to the centers and they have independent work or partner work. The kids love working in the centers on those skills.

Researcher – You were just talking about our population, guided groups, and centers and the kids that are coming in – how does MM allow you to select the centers if they are way behind or way ahead.

S – While you give them a little assessment, and you find out where they are at with a formative assessment

C – There is the **Are you Ready, chapter test, and our book assessments.**

D – A **whole book of other assessments.**

S – We have all kinds of ways to find out **where they are at, what level they are on and slide them right into a group.** You know there are so many materials to use and the thing I like is our teachers are being trained on the formative assessments and we don't have to spend lots of time with long test. You can **quickly find out, two sentences a quick check, more time for practice.**

R- It is funny you bring up formative assessment, I was having a conversation with a colleague regarding formative assessments. I think we do need data, but I think we get caught up in data. We always here we need data from test when really I can check **quickly with formative assessments. Thumbs up, thumbs down,** I can figure out they are beyond this or move along quicker. I think this is the hardest things to get them to understand we don't need to take a big long assessment to get that data. Some of those kids are here, some here, and some here.

L – This is why we **have flexible grouping.** For example we have **a student who is ELL and she did not do well in money. She was able to come to my class because we were working at a faster pace so she went back and got it a second time.** Then the tutor came and worked with her. That is why we like our flexible grouping because she was able to get coins 3 times. We are able to move our kids around.

D – Even to know you can **differentiate your centers – we have one center on (previous skills) where we have to know what they did the year before. You can't just throw the kids in there. Once I know, I code the groups and then break it down again. I will have something with geometry, computation, place value, so I hit all the strands.** At the beginning of the year I will do a very simple geometry center with shape blocks, one activity is simple where they can just match the shapes, ones that are more complicated that they make pictures (tangrams) and then others who make their own pictures. Ok now I have the three groups, I have **one-to-one correspondence,** I am in the middle and can make a picture, or I am ahead and can make my own picture. It's all **pattern blocks,** but you go from here to there.

L- It is amazing, today one of the other math classes was finishing up diagnostics, so we used their tile blocks. This child made this picture that looked like Italian tile in a piazza, it was beautiful. It blew me away. What the other kids did with 3D.

C – We do that with our blocks. I give them a piece of paper and ask them to trace – is it the shape book – I couldn't find it – so I find it, on YouTube – A square is just a square until you add something more, you know, some added a triangle and made it into a house. They then had to explain it in their writing and finish the picture. It is just neat how you can see how all of the skills have built up. I worked with my little guys and they get to talking and teaching during my small group.

D – Yes, and I like to have the higher kids trace their pictures, so I can put them in a box. The kids the following year get to try to make their pictures. I don't want them to say “oh that is my picture.” This is something they can do outside of the book. The kids like to do this as they take ownership of their work.

Researcher – Student ownership is key. Tomorrow we will have our last formative assessment training and it is on student ownership. R you just mentioned that. Tomorrow we will talk about the importance of that and how students need to set goals. Can you tell me how MM helps students set their own goals and take ownership in their work?

S- I have a teacher who has taken off with Formative Instructional Practices (FIP) already – she has a bulletin board that is from that module that states “I've got it,” “I think I've got it. “or “I don't know what you are talking”. At the start of each new concept the kids fill out a 3x5 card and they put their name where they believe they believe were they are at. They are very honest. From there she forms her groups for that week. The kids are right on the money they know if they know it or if they don't know what language she is speaking. It is what she does, and it is working great.

D – I have done something similar with the two-sided counters – I gave them the two-sided color tile – red they did not have it and yellow was they were ok. I slide the cup over so only I could see it. I formed my groups from this the next day we did it again. (S- they know exactly what they know and don't know (C –Yes)). I liked it because it was private under the cup. Some of the kids did not want to say they did not know.

S – I have to tell you my favorite story, was when I had a classroom teaching math and a concept, the kids would go back to their seat to work with a partner and those who did not understand came back and worked with me. While here comes my one little boy who was my GT student - the kids were all looking and snickering – like what is he doing here. He sat down and said “what I am GT in Reading and Writing! I can't do math. I am not GT in math”. The other kids all went whew. So if he can be here we can be here. He was tall so there was the ostrich in the middle with all these other little kids. He would

come up for extra help in math. It's ok to get help when you don't know it. There he was leaving one time a week with Elena for GT and here he was getting help in math.

L – I kind of do the same thing with how we got it to task – got it, kind of, not got it (thumbs up, sideways, down). I make sure I always say to the kids “I am so glad you asked that question” so they got comfortable asking if they are not sure with the process. It is that group of kids and if they are comfortable.

S – The other things I like about MM is that the statement of what they are learning, the essential question, and what the standard is. The kids get used to reading them, seeing them, seeing the vocabulary, so if the words show up on a test they know how to handle them. It is a little bit more sophisticated and grown up then other math programs, even though it is child like looking. You know, it sneaks it in there.

Researcher – So if I was going to do a walkthrough and I ask a child the essential question how would they be able to answer that? Tell me more about the essential questions.

S – Either they would just know it from repetition or they would see it in their book and read it to you or they would see it on the wall because we have the teacher's post what their learning targets are. So the kids know exactly what they are learning today.

Researcher – Can they explain it to me in their own terms?

S – Some- it depends upon which one you ask.

D – That is a hard concept. Especially when the little ones, some they are like, “huh”.

S – Some of them can they are more articulate one can tell you in their own words what the essential learning target is.

R – I can't even get my eight year old when he comes home and I ask “what did you learn” “nothing” (laughter)

L - The four year old tells me stuff.

R- School work

Researcher – Let's get back to the other program EDM. What was previously lacking in the districts other program that had to do with accuracy? I know you talked about the spiraling before.

L- Being competent in any area of math was lacking.

D – Yes.

S- And I found that any standard, that I had to cover with my children to take a state test, some of the topics were not covered enough.

L – The writing.

R – The writing.

S – So, I had to go out and go to the teacher store and buy my own materials to supplement what I was doing.

D – That was a general issue across the country. I think NTCM had so many standards that they wanted us to cover that it was time to consolidate and regroup (the standards). I think that we found out that this huge umbrella was too much and that we needed to narrow it down.

L – It is kind of like jack of all trades master of none.

D – And that is what happened. NTCM listened to everyone and said we had to do this, this, this and this (standards).

S- Right. We have to remember that we are teaching children and we are not creating engineers in the third grade. We need to give them basic skills, so when they get to the upper grades they can excel at some of these other things. They need to learn how to build a bridge and send someone to the moon.

L – And like math.

D – That’s right

S – We were doing a disservice by pounding them and making them cry and I still remember when I had to do 3 digit by 3 digit multiplication and they called my parents to school because they thought something was wrong. Because I got them all wrong. I didn’t want to do them so I wrote down any answer I wanted to be done.

L – I can remember.

S - I wanted to get out of there. It was too much. I wanted to go out to recess and we couldn’t leave until it was done. So I wrote down any answer and left, so I got them all wrong. My dad was an accountant, so we played with numbers all the time. The adding machine was my first toy with the strip of paper. He would bring it home and I would type, click, click, click.

D- My dad was an engineer, my first toy was a slide rule, which was my first calculator.

S- Right, but we have to remember that these are kids and that this is a child friendly series. And if we say one thing to start with that is very good.

L- And it is not overwhelming.

Researcher – So I have a questions – Comparing the two programs are kids able to apply, and I know earlier we talked about this in EDM, but are the kids able to apply their skills outside of isolation in MM? Before in EDM when they were spiraling they (the students) were forgetting the basic skills. Can you tell me a little bit about that? So can they take those facts and apply them outside of isolation? You told me earlier they can they do word problems and can they use their strategies.

L – I have seen them **make connections from reading to math**. They might say, oh we talked about that in math yesterday, or they will recognize something from math in their reading picture, or the story they are talking about. So, I have seen them make the connections. I think it is because they understand it so much better.

S- I have a fourth grade class that I went into the other day, I said I am going to tell you something and I want you to **respond to me in writing**. I said that my daughter called me the other day and said “oh my goodness, I went into the store and the bill was \$13.08 and I gave the girl a twenty dollar bill and a dime. She looked and me and said I don’t know how to do this. So she told her what the change was and I went down to the fourth grade classroom. And this is what I told them”. “Tell me if you are smarter than working at the store?” They all figured it out, they did it in their own way, but they all had it exactly. Make the change, take the 8 cents from the 10 cents and the 13 dollars from the 20 dollars you know you have done it in your head while I was talking. And she has a job.

R – Well, you know when I think of **differentiation and the workshop model in the classroom and you think of the diversity of the kids who come in your classroom** from one end of the spectrum to the other end of the spectrum, in my household, both of us our educators, so we emphasize education a lot. I am very sports minded, so we emphasize all sports. I can tell you that I tried to take when I taught at the middle school level, and this is what I try to touch on with the teachers in the classroom, that when you are differentiating in the classroom and you are using the materials in the MM or even in Journeys – whatever it is. I think that some of those everyday life experiences can be put to use. My son learned how to add and subtract because he wanted to learn how to figure out the score for a baseball game, basketball game, or football game. And at 5 we could sit down and he could say “Dad, they need to touchdowns and a field goal to win the game”. So I think with some of our kids and with the MM materials we can do some of those things (make connections to experiences). And I don’t think that we had the materials with the EDM to do those types of things.

S- The books that come with my math, that I referred to before are either science or social studies related, but there is math built into them. For example, skyscrapers and how tall they are, and at the end there would be questions that the difference between them. They are reading an interesting story, that is non-fiction, but there is math embedded in every book.

L- I like it too, because I have noticed that they are much better at reasoning. I know that is developmental but just to say, for example, we talked about inches and centimeters, and how there are more centimeters if you measure the same thing. The size isn't going to change, but that whole thing, and they really got that. It is just neat to see them thinking about what they are thinking about and making connections like you said to real life and other things.

Researcher – so when they are making connections how often do you see them model off each other, especially in your school where your kids might have experiences, or R even with your own kids who have sports experiences, how often do you see other kids learn from the experiences of their classmates or peers?

C – We do peer tutors sometimes when the kids are really good at something in the lesson or in a concept, I might say, “Does anyone else have a different way to teach this?” or I might pretend I might not know what I am doing and they might come up with a completely different way. So, then another kid will go “Oh, how did you do that?” so I let them start talking about it. Maybe you can figure it this other way. I think letting them be the teacher or letting them talk about math helps.

S- I see that in our kindergarten – talking about math or being the teacher, a lot our kids have little experiences –they would rather be the teacher or be able to talk about math instead of centers, they do partners – so there are kids getting a tub with whatever activities/manipulatives are in there. So they are talking to each other, it is something they kind of have to do together to create. So there is a little conversation. A lot of our kindergarten kids are not very conversational, so it would be difficult to refer to something in a complete sentence or thought.

L- And I think that it is something that kids aren't, well they like to talk, but, I have seen kids talk at each other or well they are both talking at that same time. I think one of the drawback so much technology, is it is me and the computer, me and the video game, and I am not out playing, and I am not out talking to other kids. I think that is so important and that is a real life skill and that (math group/centers) is a good place for them to explain things. And it is really neat to have the kids do the story problems or whatever and have the kids talk about what I drew a picture of, and I did, and then the kid who is really outside the box can talk. It is just really neat to hear them. And that is when they get to talk with each other.

D- At the bottom of the one page it says “Talk Math” – where they get time to think, pair, share and (C-talk) feed off of one another.

Researcher – one last question – What other information do you believe is relevant regarding math instruction in our district?

L- One of the things that I think, as good as this program is, I still don’t think we get enough, I don’t want to say the materials because you can get those everywhere. I still don’t think we don’t get enough of the basic facts and they aren’t covered in any program long enough.

D- Because people think we use calculators.

L – Yes

D – We have gone away from learning our math facts.

L- Memorizing (math facts).

R- It's like memorizing, it is like teaching cursive writing because it is almost not even done because everything is on the computer. Like spelling.

S – My third grade teacher sent me an e-mail because she felt like there was a big gap between the end of second grade to the beginning of third grade.

L- I have heard that (gap between second and third grade).

S – When the kids start third grade you just see it, and they (the students) realize that. One of our teachers went from second grade to third grade, so she really noticed a difference. She did not realize that when they started off grade there was this big jump. So when they started third grade they need more of a bridge type program to get them into third grade. And what you said about the math facts, I know you are a big supporter of academic awards for grades, but what about having awards for math fact fluency in the primary grades. We could agree on a set of facts we want to master, kind of like a benchmark, like we have certain benchmarks on the DRA for them to be considered on level. Adding and subtracting, I am not really sure what is appropriate, but the teachers in those grades would know. Maybe we could get a bulletin board that shows the progress on facts, where they get some recognition or a pizza lunch like they do with the academics. Just some thoughts. So um

L – And that is on up the line in our building (lack of math fact fluency).

S – So, I taught multiplication – so I have talked to my third grade teacher and we decided we would talk about this during our summer retreat. We thought we could start in

third grade and see how it goes, and then add other in the two teachers, and have teachers get together and decide what facts should be mastered.

L – Kind of like sight words.

S – Yeah, we can put up a tree somewhere and they can get a leaf as they get them, as see where it goes from there. And then next year filter it down to second grade and then so on. Sometimes we bite off more than we can chew and we really don't do a good job of doing it. Like last year, we tried data folders and it was too much. Not enough time to put it all in there. We have too many pages in there. But I like this idea, just start off.

C – Just like sight words – start off for just 5 minutes or 10 minutes (math fact practice), they get their little partner (S- they get their little wipe off board or whatever) then move on after they know it.

L- I think they get the concept of $5+3$ as 5 (count up) 6, 7, 8. I have been telling them all year, that guys if you don't know these (math facts) every other thing you do in math is going to be hard.

S- Yeah, it is like if I look at you and ask you what color is the sky, you say (L- right) blue immediately, you don't even think about it (automaticity).

D- I am from the old school where we still drill math facts and flash cards, every day they take a math fact timed test over a set of facts, they start off with the doubles, the plus zeroes, the plus ones, and then we go one from there. Then we go into subtraction.

S- I am right there with you, that is exactly what I did (math fact drills), but we have a lot of new young teachers and they get a new math program and they think this is how I am supposed to do it.

D – You have to supplement the Journeys (reading program) and we have to supplement MM with fact practice.

L- Well, I think quite honestly drill and kill has to be there. We have been told no, no, no don't do that anymore, but the kids will not have math fluency without it.

S- Sometimes we have to go back to the old ways, as they are the best ways.

L and C –yeah.

D – I got a call this year asking me why the kids could no longer count on their fingers that they had to learn their math facts. I found on a website a set of flash cards that has the math facts on them and my principal has been very kind and has sent them to our

print shop. Our kids go home with a set of addition flash cards and subtraction flash cards so they are ready.

L – Nice

D- So, they can't say that they don't have flash cards and they are ready

S- It would be nice if the district could sent them home with a set of flash cards for the summer it would be great.

D- At the beginning of the year I send the addition home first (flash cards) and then when we are ready for the subtraction, I send the subtraction (flash cards) home and all kids have them.

S – Yeah

D- And all the parents have to do is cut them apart and I even give them a baggy to put them in.

R – Or the teacher can use the divided plates to teach part, part, whole. That helps with facts because the kids can see the manipulatives be separated and put back together (addition and subtraction).

C – The plate – my kids didn't like them, they thought it was too odd. I tried it this year and last year. My concrete kids were like, oh yeah, I got this, but the others did not see the connection between the addition and subtraction.

S- That is a great center, you could use the flash cards for the students to have the problems that they need to solve in the sections.

L - You could write on it too. Have you seen the plastic ones (plates), you can write on them with dry erase marker so the kiddos can write the equations.

D- During inside recess they (the students) love to get the flash cards, and ask can I borrow your timer, they practice to see how many they can answer in a minute, how many they can answer correctly, they think that's great.

Researcher – What other information do you think would be relevant to help the districts math program? We know it has been reading, reading, reading. This year we just started rewriting our science and social studies, I haven't done math because I am not sure which way our state will go with the common core.

R – I don't necessarily think it is a math program issue or a building thing, but it would be great if we could use our tutors for math, we use ours strictly for reading.

S- So do we.

L – We use our tutors.

R – I am okay with that. That could be a huge help.

S – No, we don't have any math tutors. Our tutors are used strictly for reading. Sometimes I go into a math class and they say we haven't finished our Journeys testing, we have to finish that. So they may skip math (lack of time), or it might have to be done for only a half hour. The reading must be completed before anything else.

D – Reading, the math is just as important.

S- Oh, I agree with you, but it is not happening.

D- We need uninterrupted time and we dedicate that uninterrupted block of time to language arts. Sorry, but we need an uninterrupted block of time for math also. It can't happen due to specials schedules, I understand that, but last year, I had that uninterrupted block and it makes all the difference for math. It just worked out that way last year and oh my goodness, what a difference. I could do so much more with my guided math groups (S-right), oh my goodness I (S-right) have got a 30 minute block here and a 30 minute block here, it is hard to do a math lesson with this type of schedule. (S- They go to lunch and then they come back and they have time here), and I just think we could do more.

L- I just think if we have large, huge amounts of time doing anything with the students, we lose them. We just lose them. They get done.

Researcher – How about professional development (PD)? I have heard PD a couple of times.

S- We haven't any professional development since MM first came (L-yes) at the beginning.

L- But it (professional development) was quick because we had school starting.

R – Personally, I would love to see a workshop model PD for math.

C- I think that (workshop model PD) would be great.

R – Because they (teachers) get it for reading, they get differentiation for reading, they get workshop model for reading, but for math they (teachers) won't understand how to differentiate in math.

C- I think it would just be great for teachers, just knowing myself, I have some great ideas, at least I think they are great, but it is the time to get the centers ready, if we had a workshop (PD) on that.

L- I think it would be great if we could just talk to each other and share ideas (collaboration).

S- Make-it take-it for grade levels.

D – I think we could do that for each chapter, so I come up with my groups, green group today, this is what you are going to do today, regroup, this group could be doing geometry, this group could be doing, depending upon how it is flowing. And when I finish with my group here, you go over to your activity, and when I am finished, you go over to your activity, and when I am finished tomorrow, I am going to use the same centers, I just have to move the group and flow it that way. But it takes time and we lack that.

L – But that would be great to hear, hey this is how I did (collaboration).

D- You know the other thing is too, you don't have to do a center every day, sometimes, like last year when I had that wonderful ability to do that, I did it 3 days a week, and 2 days I did whole group review.

L- And there are some of those lessons that you can get through the "I do it, you do it, and we do it," pretty quickly. (C – Yes) and other times it takes the whole time to get through those.

D- And you won't be able to get through those. So I worked it so that it may take me two weeks to get through all the material and then two weeks later I could set up a whole other center.

R- I'll be very honest, with me being the only coach, I feel like I leave math out a lot of times, there are so many things that you have to do for the Third Grade Reading Guarantee, all the pressure is on you for reading, so that is our focus before anything. Our math teachers have made the comment "reading teachers get everything".

D – Yes.

S – Try being the math coach.

R – Yeah.

Researcher – anything else?

D- Reading is important, not to discount it, they have to be able to read to do that math, sometimes I felt that math is the red-headed step child.

S- So where are all the jobs? STEM – Science, Technology, Engineering, and Math. You have to read to do all of those things too, but if you don't introduce your kids to math early, so they go to high school with a healthy math background, you can forget about STEM. It isn't going to happen, it is going to be general math. (Global impact future careers and jobs)

D- And the problem solving and critical thinking, that is important.

Researcher – I appreciate your time today.

This following relates to the lack of planning time and collaboration time for the elementary school teachers. The arts were cut to part-time in all 10 schools. This has created a lack of time for collaboration and planning.

S – I vote for a full time music teacher back in each building. All the studies show that music enhances math and we need more music.

L – And to add on to that, they have also done studies where kids have a very physical gym right before a math test and they score higher and see this is where I think we are doing them a disservice. Out of one side of our mouth we are saying kids are really overweight and these days they are not eating right, and these days they get 15 minutes to play. That's not good thinking, that's not logical.

S- We need the arts back in elementary schools full time, just the music teacher going (clap, clap, clap) you know syllables.

L- or the sticks.

D- And the arts, there is so much math with art, because you see the patterns, and you see, that is critical.

S- I mean if our art program could be coordinated with our math program it would be even better there could be so much they could do, and bring in their standards with color and

D – It is all interrelated.

R – My wife taught K for 10 years, fourth grade for 3 years, fifth grade for a couple of years and her superintendent allowed her to go to PD, she does all her games in the gym everything, sight words, they play tic-tac-toe on the gym floor, it's crazy

S – There is so much as a reading teacher.

L – That is giving the kids enrichment.

R – She tells me all the time, I never knew what a specials teacher felt like but I am not a teacher, but just the gym teacher, and not a person who has been in the classroom.

D- The kids need this every week consistently.

S- The music teacher sees the kids only 18 times a year and only if we don't have snow days.

L – and god help you if you have it on a Monday or a Friday because it less.

C- Forget about a program, the kids don't even know the words to a song.

D –Class size is something that needs to be looked at.

L – Just to piggyback on that, just the 10 minute break in the morning and 10 minutes in the afternoon is so important for the young kids is so important, just to get up and move. I think we would see a lot fewer kids getting in trouble for bouncing all over the place.

C – When I tell my kids we are done and we can't go outside, the YouTube goes up and we pull up brain breaks, and they are up and moving

D – And the cross body things, brain gym.

C – Yeah and brain gym, cause we say ok let's do two and then we get right back to work. They love them. I let them pick the two and I say let's get all the wiggles out, and then we get right back to work. Boy are the productive after that.

D – With our kids and our population in **the district**, they are coming with less and less skills, and we need to teach more and more, I think class size of 20 or less in K-2 would be so helpful.

S – You are absolutely right – it is going to get worse before it gets better.

Legend:

Inquiry-based learning	-15
Number Sense	-24
Counting	- 13
Mathematical processes	- 43
Instructional skills/processes	-48
Professional Development	- 11
Implementation/Time	- 37
Materials/Support	- 77
Differentiated Instruction	- 45

Appendix U: Transcription of Focus Group Responses Differentiation of My Math
Verses Former Program

Focus Group Transcription
Conducted 5/22/2014 from 4:00-6:00pm
6 members

Researcher – Reviewed Statement of Purpose and Full Consent
Focus Group

Statement of Purpose and Full Consent

You are invited to participate in a focus group related to a program evaluation of My Math. The title of the project study is *A Program Evaluation of My Math: Improving Student Computational Fluency Through Inquiry-based Instruction*. This for is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part. This study is being conducted by Andrea Townsend, a doctoral student at Walden University. You may already know the researcher as a director, but this study is separate from that role.

Background Information:

The purpose of this study is to examine the various elements and materials of the My Math program in regard to usability, coherence, and teacher support. The results of this study will be used to improve mathematical instruction in the district and further implementation years of the My Math program.

Voluntary Nature of the Study:

Your participation in this program evaluation is voluntary. It is your decision regarding whether or not to participate in this study. Your participation decision in this study will be respected. No one at the district of study will treat you differently if you decide not to

be in the study. If you decide to join the study now, you can still change your mind later.

At any time during this study, you may cease to participate.

Written Assurance:

When the researcher is already known to the participant, the consent form must include written assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher or (if applicable) the participant's access to services.

Focus Group Participant Inclusion Criteria:

The participation criteria include the following:

1. K-2 math teachers in the local district who used My Math in the classroom during the pilot year of implementation.
2. District mathematics coach, teacher or administrator.

Procedures:

The focus group questions are attached for your review.

The focus group will be recorded for transcription purposes. Assumed permission to audiotape is granted through signature and return of this form.

Each of you will receive a pseudonym that will be used throughout this process. The data from the focus group will be transcribed and responses will be evaluated. The researcher will return the findings for member checking to the participants of the focus group via e-mail to check for accuracy of their own data. Each focus group participant will have an opportunity to discuss the findings with the researcher via one-on-one,

via e-mail, or phone. The e-mailed data review of the findings will take approximately 1 hour.

The data review with the researcher via one-on-one, via e-mail, or phone will take approximately 15 minutes or more based on individual participant needs. The focus group will take approximately two hours. Notes will be taken by the researcher during the focus group.

Role of the Researcher and Potential Conflict of Interest:

The role of the researcher, Andrea Townsend, is to conduct this program evaluation as partial fulfillment of the requirements of a doctoral program at Walden University. My role, as the researcher, is detached from my role in the district of study as a director.

Confidentiality of the participants through pseudonyms and their responses will prevent any potential conflicts of interest. Since your participation is voluntary and there is no identifying information collected, your identity will remain confidential, there is no monetary benefit, or punishment for your participation based on your responses.

Risk and Benefits of Being in the Study:

There is little to no risk for participation in this study. While the risks are minimal, there are potential risk factors that include psychological stress and perceived coercion based on the researcher's role and the relationship between the participants. Being in this study will not pose risk to your safety or wellbeing.

Anticipated Benefits to Participants and/or Others:

With the completion of the pilot year, there are potential benefits to the participants and

other educators who use My Math. The usability, feasibility, and accuracy of the new program will be validated or refuted. If the program is validated as a tool that benefits teachers as a tool to reach at-risk students, the benefits will help teachers and students locally as well as in other educational systems.

Compensation:

Due to your participation being voluntary, no compensation is offered.

Confidentiality:

No identifying information will be asked in the focus group; therefore your identity will remain confidential. All information regarding this focus group will be kept confidential and be used for the purposes of this study only. The researcher will not use your personal information for any purposes outside of this research project. Each of you will be assigned a pseudonym so the researcher does not need to include your name or anything else that could identify you in the study reports. Data will be kept secure by Andrea Townsend, in a locked safe box, at home. Data will be kept for a period of 5 years as required by Walden University.

Contacts and Questions:

You may ask any question regarding the study that you have now, or contact me later via e-mail or phone. Andrea Townsend, or via e-mail.

For questions regarding the rights of research participants, any complaints, or comments regarding the manner in which the study is being conducted, you may contact Dr.

Endicott of the Office of Research Ethics and Compliance at Walden University. Her phone number is 1-800-925-33681- 800-925-3368, extension 3121210. Walden

University's approval number for this study is **05-15-14-0157626** and it expires on **May 14, 2015**. You may also contact the Coordinator of Research and Accountability in the district of study. Please retain your signed copy of this form for your records.

Additionally, I will give you a copy of this form to keep during our first interview.

(Completed)

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. I understand that I am agreeing to the terms described above. By signing below, "I consent" to be a part of the study. Please sign below. The date of this focus group is 5/22/2014. Please print your name as the participant, sign as the interview and I will sign as the interviewer.

Date of consent: _____

Printed Name of Participant _____

Participant's Signature (interviewee) _____

Researcher's Signature (interviewer) _____

I will provide you with a copy of this consent form during the first interview.

Copies were received, signed by participant and researcher, and a copy was given back to each participant for their records prior to starting Focus Group.

Researcher read the following:

Consent Disclaimer

Hello and thank you for agreeing to meet with me today. My name is Andrea Townsend. I am working on collecting data as a requirement for partial completion of my doctoral program.

The purpose of this interview is to gather information about My Math through the four main attributes of an evaluation (a) utility, (b) feasibility, (c) propriety, and (d) accuracy. Your responses will help the district understand the elements of the My Math program in relationship to the students in the district of study and in a broader context.

I will ask you some questions which I have prepared. Your responses will be recorded in order for me to transcribe our discussion and identify trends and themes. Please feel free to answer the questions openly. I simply want to know your thoughts and experiences on the subject. All your answers will be kept confidential and your name will not be identified with the information you provide. All of you will be assigned pseudonyms. I have received your signed full informed consent prior to our meeting. Do you agree to participate in this interview? All six participants gave verbal affirmation of their willingness to participate. Your participation is fully voluntary and at any time during this study, you may cease to participate.

Researcher: Interview Questions were given to the group as a reference.

Attributes of Evaluation Standards, Basis for Discussion Questions, and Possible

Focus Group Probes Attributes

Evaluation standards	Basis for discussion	Possible probes
1. Utility	How does My Math meet the needs of the students and teachers who utilize the program? What was previously lacking in the district's math program?	Why do you think...? Can you tell me more?
2. Feasibility	How do the My Math materials and activities address teacher needs and time constraints?	Why do you think...? Can you give me some examples of...?
3. Propriety	How does My Math promote the best interest of K-2 students who are exposed to the materials?	How did this happen? Can you give me some examples of...?
4. Accuracy	What My Math instructional strategies have been used in the district to improve learning for students in grades K-2? What was previously lacking in the district's math program? What other information do you believe is relevant regarding math instruction in our district?	How did this happen? What do you mean when you say...? Can you give me examples of...?

Researcher - Ready – This is an open honest discussion amongst all of us. So we are going to look at the attributes for a program review these are utility, feasibility, propriety and accuracy. These are pretty standard items looked at during a program review. We are going to start with utility. The first question for our discussion is “How does My Math meet the needs of the students and teachers who utilize the program?” feel free to discuss

S – My teachers like that the materials are provided for each child. They do not have to stand by the copying machine every day. They like that there is color coordinated type problems in the younger grades to help draw the children’s interest in. The fact that it is related to the common core and they have quick reference to know if they are teaching and covering the standards that they need. That is the plus side for the teacher.

Researcher – Can you tell me more?

S – Tell you more? Of what they like and don’t like?

Researcher - Well how does it meet the needs of the students and teachers? You discussed the teachers – can you tell me more about how it meets the student’s needs.

S – Well in my school there are re-teaching pages which are utilized and in the school where we teach we use a lot of the Triumphs pages which are Tier 3 interventions. Which aren’t necessarily all of our special education students; we have such low level children that sometimes Triumphs is a better introduction than My Math and is kind of an entree into the lesson. So it is giving the teachers a wide range.

Researcher - How about the rest of you? Can you tell me about the utility for the students and teachers?

L –I like the way in second grade, I like the way that they do the C – Yes “I do it,” “We do it,” and “You do it” and the homework, everything is right there.

L - And we do flexible grouping for math, so it is real quick for us to see if someone needs to go back and get the materials again. We just like the way that everything is set-up, the manipulatives that match the book, C – Yes, the kids especially like the color, and I especially like the “Write About Math”. The writing that they are having them do “WRITE” they have the written response has been very good this year. And I have seen the results. In fact, I am grading diagnostics right now and it has come out, I have done other things in addition, but the improvement has been big from the “Write About Math “. I really like that component.

C – The students have benefited because every lesson is hands on so especially for those tactile children, they can get in there and all of the sudden you can see that it makes sense. I like it is at different levels, while we pull small groups, others can do “on my

own” by themselves, and then I can go back and work with my little guys and then go back to reteach and enrich, I like how the program has everything there for you. I don’t have to go dig.

D – I was on the committee that selected the program, so there are other components we looked at. The fact that it did teach the common core, that it was interactive, that the children have the opportunity to put their hands on it at the start of the lesson. Then just like you said slowly “we do it together” you know, we can move away and they can be more independent to do it on their own. It also provides all the wonderful resources.

Researcher – Can you tell me more about the resources?

D- In addition to the re-teaching and the enrichment, we did get some books that go or are made to coordinate with each one of the units.

Researcher – Are they reading books?

D – Yes, they are stories that go along with it and they are leveled.

R – Yes! They are leveled.

S -There is a literacy component that goes with each chapter at each grade. It would be nice if each library could have a complete set. The books are good and that would be very nice.

C- My students love Ms. E., Ms. E. can we read the story and watch the videos. This book has a video! They love the videos.

S – And the songs.

D – The videos are another component that the kids love. And another component, that is more for the teacher, but it trickles down to them (the students), on site, any resource you need it is there. We recently finished the geometry, they give you the print out pages, some of those kids with the manipulatives. Some of my kids I have to glue it down so they can see how it fits. If they spin it around they don’t get it. I printed it off and it was right there. If I glue it down, the resource doesn’t move and it is right there.

L- I believe the resources are there to print off in Spanish.

S – Yes they are.

RS – Yes.

R – I don't know, coming from the coaching role, and not being in the classroom every day, and not being hands on with it, I see that math for me, or in general for our teachers, in the past what they were not doing, there were no center activities or small group activates. I think now they see that are seeing that math is much more than just worksheets, but they can do workshop. Sometimes they (the teachers) need to be pushed or guided to do that. They do need the facts, times tables and things like that, but they are seeing that math is more than worksheets and times tables. I think they are seeing that with math, the same, like with reading, work centers can be used in math to differentiate instruction.

D – And this program is very good to go along with the workshop model, which we implemented in language arts. It is another one of the reasons we choose this program it did that.

R – And the writing aspect which goes with writing across the curriculum, which is what we want.

D – The even the talk math you will hear conversations, even when they are to be working independently, “no this has this or this has this” as they are having conversations are really coming out.

Researcher – Tell me more about that – is that academic vocabulary – what exactly is that?

D – Yes, it is academic vocabulary – it the academic vocabulary is definitely coming out. You hear the same words across the grades “sum,” “difference” “vertices” all of those are coming out.

S – Yes, vertices goes all the way up in each grade and the same vocabulary words up the grade levels. They are using the exact mathematical word, they are using it over and over, so the kids are getting exposed to the same words at each grade level. It is nice because when they get to the next grade it is familiar.

L – I kind have done something different, so I started to us in addition to do the same things, I started using a daily math journal. A real simple math problem that went along with whatever we were doing, there was an area for them to explain what strategies they used, and it started out with “The strategy I used” – the number sentence. It really came out on the diagnostic today on a 4 pt. question was $3+3+3+3$ and I got 12 and then she wrote “the strategy I used was wrote a number sentence and drew a picture”. I thought that was incredible second grade.

R – Yes that is.

C – That is one great thing about My Math is it teaches kids how to use **more than one strategy**.

L – Yes

D – And they have a **problem of the day** every day. Every day they have that so if you want something else you can go to that, they have a **warm-up, a closing**, whatever it is it is there. You can pull one of those problems of the day.

L- In looking at the diagnostic the amount of **explaining and writing** that's and I said we did **flexible groups**. I have the kids who move quickly and even for them it was very difficult, because they are from the **concrete operational**, I got to touch it, because these kids can get an answer like that. It was very difficult for them to do explain it in **writing**. How do you **explain it**, "While I". This is where I think that even our top 20% need that practice.

D – Even give them those **projects** for the upper level kids they need that **writing**. Actually all kids' **need projects**, but those kids can take those and soar.

L – And they do

D- They will

Researcher – I have an administrator in the group – when you are doing classroom walkthroughs what are you seeing?

RS – While this administrator reserves comments when surrounded by teachers...laugh. But really, I was going to say I have seen a whole lot more of the **"I do," "We do," "and You do"** in my classes. It is because of **the structure of the program**. I have seen it on a macro level at the **centers** and on a micro level at the conference table during **small group**. It is actually more in the lesson plans than it has ever been before. I think that is a **direct relation to the program**.

Researcher – What was previously lacking in the districts previous math program?

R- I think Everyday Math (EDM) had a lot of gaps.

L – Yeah and the thing is kids would **not get something** and then it would not come up again for a long time and **they would forget**. **Never the ability to master anything**

S – They kept telling us with EDM that it **was cyclical** and it **would come back**.

C – **But they did not get it the first time**

R – Not taught every day

S – The difference is now there are building blocks and there is more and there are more time to practice, a long period of time doing the same concept. They are doing the same concepts over and over because elementary school is where you want to build your foundational skills. They aren't ready for you know.

R – I always felt that they aren't ready. As the teacher in grades one and two if you don't know your times tables and facts then you are sunk the further you get up. I felt like they did not get that repetition they needed in EDM, unless the teacher went outside the program. I feel like that the repetition is more here now than in the previous program.

D- This program gives us time to build a foundation. Where EDM did not give us the time. I liked the fact that it did loop back around, which we don't see here as much, as the kids tend to forget, and we needed to do a lot of review here, but I do believe we are building the foundation. I do think we have to as teachers touch back on the skills.

RS – when it cycles in a spiral fashion, it doesn't hit in depth the second time around. By the time they get to fifth grade if they don't have their facts they are in trouble.

S – When I was a teacher and did EDM, I was very selective in the homework I sent home. Often times I got some not so nice letters back from parents. I sent home an alternative type of practice paper as the homework was too difficult for our parents to help their children do the homework.

L – When I taught second and fourth grade – the fourth grade stuff parents did not know what to do.

R- Our parents

S – Partial question division algorithm, boom

L – Lattice multiplication

R – I can remember my first year of coaching, we were at the old Simon Kenton and we were watching a fourth grade math lesson, it is like the second week of school. I got up when we are done, because I had been teaching middle school ELA and asked the teacher “What are we doing?” because it was just a whole new way of thinking. It wasn't the way we were taught how to do things.

S – No

C – No

L – No, I think that was the **premise for that**, if you could not get two digit multiplication the way that we were taught or learned it, the problem was we taught the **alternative method first** and then the **traditional method** and they never,

R – **So parents could not help**, because they did not understand it. I couldn't get used to it

L – Exactly that was our **parent's frustration**

D – And what you need to do is teach what we consider **traditional first** and then for those kids who don't get it you **teach alternatives** for everybody, because something will click with someone.

S – What you just said reminds me of something that my first grade teacher and I had a conversation about today. She teaches the 1A class which are the children who would have been **repeat kindergarten students**, but she felt that one chapter was addition and one subtraction, one addition and one subtraction. Normally for a good math student you would teach it that way, multiplication/division, addition/subtraction as the facts complement each other. Next year she wants to teach chapter 1 and chapter 3 together and then chapter 2 and 4 to really get the addition down. Then show the **algorithm or the relationship to subtraction after they have gotten addition**. I guess what we need to do is **tweak our instructional organizers** a bit. Some of our **teachers are scared to go outside the organizers** (district made). They need to **be quarterly**. Of course then the test would have to be adjusted and recreated because the test would no longer align with the instructional order.

L – We did that at our school. In second grade we talked about that, we felt that it would make more sense to teach chapter 1 and chapter 5. It is **place value**. I can't remember the exact chapters, it makes more sense to do place value first, two digit addition, three digit addition, and then two digit subtraction and three digit subtraction. That way they get **good mastery, because switching back and forth between addition and subtraction is difficult. Even for capable students is difficult.**

S- The program **has good materials**, but we have trust our teachers and not put so many restraints on them with the pacing guide.

L- We were just talking about that – there is so much – up until March we are **doing computation all year long**. We said would it be nice to get a break from computation and teach time and then **get a break from computation** and **teach geometry**.

S – We were just talking about that today too – **geometry – kindergarten would like to teach geometry at the start of the year because they use the concepts in so many kindergarten activities**. For example here is a **triangle, let's count the sides of a triangle, 1, 2, and 3**. So many of our students come to our building and **are not ready for**

kindergarten. They don't even know how to hold a pencil, they haven't been to preschool. Just writing their numbers. You can't start with computations when you can't write letters or numbers. They need time to get ready for school.

Researcher – So let me ask you this – as far as the previous program EDM – you brought up things that need to be tweaked in My Math as far as the progression. How about the progression in EDM? Can you tell me about the things that were lacking there?

S – Oh Yeah, yeah.

L – That program was a mile wide and an inch deep

R and C - yes

L – that is the best way to describe it

S – It was very difficult to teach, navigate, I spent lots of money at the teacher store supplementing (D – me too) materials

L- It was like reading trivia – you know one question was about this and one question was about that - there was boxes and a question here and there. There was instruction but there wasn't. It was very strange.

S- I had to use post-it notes over the boxes I did not want them to use because I did not want them getting nervous because they did not know what they were talking about. I did not want the students to work on some of the things in the boxes.

L – I felt like it was confusing for them because they never could get their head wrapped around one concept enough to master it because you skipped on to the next thing.

S- MM is definitely an improvement, and now we are tweaking it to make it even better

D- That is any program. Nothing is perfect.

L- We know our kids and that is the important thing with any program.

Researcher – You mentioned boxes – Can you tell me more about the boxes

S – EDM – Oh yeah. There were six boxes in fourth grade and four boxes in second grade. The practice pages were the boxes.

D – Do you want me to draw them? There were six boxes and in each box there were different things for the students to do, one might be time with a picture of a clock, one

might be **money** and it would say count the money, **base ten**, four or five math problems, and then a **story problem**. **Missing number sentence, geometry**, it just depended. **Great for review but not for instruction**. Right now I do pull from EDM because we are at the end of the year. The kids are finding them fun. It is a great check for them to see what they know from all year.

S – My teachers did not get to use the **enrichment papers during the year in MM**. A lot of the enrichment pages are like puzzles. You get a letter and a clue and then you have to **figure it out**. They are having fun with that, their **skills are a little bit better know** so they are having fun with that. They weren't really ready for it, **enrichment pages**, in October, so, now they are really having fun with it. We are using the enrichment pages from earlier in the year, with the **skills they have learned they are really able to do it**. So, when they see the work **enrichment**, they are all **feeling good**.

Researcher – So let me ask you this, as you bring up enrichment, and you talked about skill building, can you tell me more about enrichment, do you think this program will allow our students to use the enrichment earlier?

S – At my school?

Researcher - at any of your schools.

C – There is a **difference from this year to last year**. I know that this is completely different set of students but just the end of the year testing this year versus the end of year testing from last year, many, many more of my students have **mastery of those skills**. And they had that (MM) in kindergarten.

L - I think you are going to see that in OAAs as they (students) go up.

R- I think last year a lot of my teachers were scared, not a good word, nervous (L – **unfamiliar**) with going there with the **enrichment**. But I think now that they know they have to go there with some of our students, so they have to **think outside of the box** more than they ever have. Those are the things, because the things (**materials**) are there, why not use them in this program. Whereas before, doing enrichment and even general work, we were going to have to go **everyplace else to get it**. But MM does at least have the **materials there to use**. We need to do more. I need to see more, we just have to do that. Especially with the population we have right now. But that is something we are trying to push on the teachers. Sometimes the teachers are resistant. (L, D that is everywhere).

L- but I also think, thinking back as a teacher anything you do, it takes time to get familiar (S- **Comfortable**) with what you do and if this comes up what do you do. Just like when you first begin teaching. It takes you five years before you know what you are doing, half way in my opinion. Which is the same with any program. I think we need to

have **training**. I think we need to be able to **talk like we are now**. Hey this is working, that is working. We need to **continue**.

S – that is with any program – we had **math training**.

R – I think with the Journeys and the MM program there are so many **materials it is overwhelming**. (L, D, C Yeah very **overwhelming**). It is a good problem to have because there are **so many things** there. You just have to figure out what they are and how to use them. (C, L yes)

Researcher – That leads right into my next question “How do the MM materials and activities address teacher needs and time constraints?”

S – Oh, it is a no brainer. It **tells you right in the manual** if they passed four or five of these problems, these are the problems they do, if they passed or missed these problems, these are the problems they do, if they are **enriched** they do these problems. They are all on the same page so you just have the kids circle the problems they need to doing. They are doing the **same topic but on different levels**. The same way there are **four test for each chapter**. Some teachers use the first test as a **review in class**, some send the test home to let them work on the problems at home returning them for review and correction, and then a test in class, with **reteaching and retesting**, some students have the opportunity to take the fourth test. The different test **allow children to be as successful** as they are really capable of doing. As a teacher, I did not care what grade they had, as long as they were learning. So what if they had the same **tested topic** four times in a row, it’s wonderful. We have a **rapidly growing Hispanic population**, the teachers the English pages in class, but the parents are not learning English nor do they want to learn English, especially our first grade teacher, who was an ELL tutor. She sends home the **English page and the Spanish page so the parents** can help their child. The parent letter goes home in Spanish. By the time they get to kindergarten, first and second grade the kids are on their own because they have had enough. Kindergarteners and first grade they need that crutch coming from a **non-English speaking home** as I said they don’t speak English nor do they want to speak English.

D – Another **nice component in the teacher’s manual** – it will even tell you if there is a time constraint, **skip this part and move to that part**.

L – Or another thing that I like is if **you think your students can do this then just skip right to the part**.

Researcher – So with the time constraints in the teacher’s manual – if you have a time constraint how do the activities address your time constraints to allow you to skip to go to that part in materials.

D – Some of it is – if you have time constraints and so many manipulative activities you can cut that down and move on, that is the beauty of this program, you can move to the pictorial, there is a lot of hands on – so we take that to a picture, so now we are moving on our way. You just have the ability to move to that and you are on your way. If you don't, and you know there is a time constraint, guess what you have to do the lesson in two days.

Researcher – Are these things you could use in your centers – can you give me some examples?

D – Absolutely - the 3D objects shapes in a center, count the vertices, everything they need, the faces give them the base 10 blocks.

RS – What about the smart boards – even teachers who were reluctant to use the smart board have found benefit in using with this program.

Researcher- why tell me more

RS- I think it helps them demonstrate in small groups the “I do”. I knew you were going to ask that question (laugh). When they are doing the “We do” showing them how to do it and then the kids get to come up and show them, which they love doing, and it builds the students confidence so when they go back to their seats during the work period, “you do” they feel better.

R – I know when we have our open houses or our literacy night, the first thing our kids say to their parents is, they point to the Smart Boards because they can move pictures and stuff like that. I can't even imagine, I have learned how to use a Smart Board now but I did not have one when I was teaching. It is really cool because you can do so many things with materials and things like that.

Researcher – So the materials you have with this program and the activities you have described so far. It addresses the needs of the teachers in what ways, you mentioned the smart board, manipulatives, papers, those are examples you have given. How do the materials address your needs as you are picking things for your students?

D- You have to know your kids, number one and you have to know what is going to click with them. Not all manipulatives are going to work with all kids. (R – It gives you options). It gives you options, yep. My kids this year cannot keep a manipulative, they can't they are all over the floor, school boxes, everywhere. They have absolutely no idea how to hold on to materials themselves. My goodness, last year's group I gave them each a set of whatever pieces. My goodness, this year they are all over the place. Using the smart board is better for me this year because of my kids. I still am using the same materials.

S – I bought my teachers lots of gallon zip lock baggies and that really works well if they get them out (manipulatives) in the sets of each chapter. They get a little bit, they have to close up the bag, and put them back in the little container.

C – Yes, that is what I do.

D- I don't know about you, but those vocabulary cards great.

C – They love them, they cannot wait to cut them out (vocabulary cards) and put them in their little envelope. They come with a special little envelope. They take them out and practice them. They take them home and practice them. It is a lot of fun. If it is fun for me it is fun for them.

D – We play tic-tac-toe with them

C – That's a good idea

D – I have a little tic-tac-toe board – I put the definitions in, I have an extra set of the words, the kids use the words to play tic-tac-toe and they get it – they get to put it an X or an O on the square. They love it. (Games)

R- You can put it (game) on the smart board and make it a center.

L – You can use the Elmo screen

C – Because the program teaches the kids on how to use all different kinds of manipulatives, number line, counters. I already have those things set up in baskets in the room. And when it is time to use the materials, only one person will ask can I use the materials, the students will ask if they can go and get the materials. Each student will get what they need for their needs. I let them choose after they learn how to use them all, each of the manipulatives. Whatever works for you I am not going to stop you. I think they like that independence.

D – And that is another point, it does teach them so many strategies. It could be one concept, but so many different ways to work on it, you can use a hundreds chart, a number line, you can go and get your counters. Whatever it is you need, MM has so many things that we need. That's why I like that the program gives us time and depth.

L – I makes them feel successful.

C – It's when they feel successful they really like doing it.

D – We really have to develop that.

L – The other thing that I really like is the success. Homework, I do like it which means I am not the majority on my team. I am not a big homework person because I don't think a lot of our kids have the support at home they need, you get into battles you don't need to get into battles and that stuff. I do like the homework in MM because it is 5 minutes and the other thing I really like. If they (students) come in and it is done that is great because it is a review of what we did yesterday. They are getting it again during the next 5 minutes, so it is fresh and then we can build on that again. I really like that component.

D- And the parents really like that.

L- Yes

S- And it has examples and pictures to show the parents how to do it.

L- Yes, it has examples and pictures which help the parents help their student.

S – As opposed to EDM which was a nightmare.

Researcher – That's good, that is one of the things you mentioned earlier that the parents were very frustrated. So can you tell me a little bit more about how the feedback from the parents has been?

S – I am not familiar with the feedback because I am the coach not the teacher, but I know our teachers send math homework home nightly. Occasionally, if they are still working on a skill, they may send home a skill page, and not a homework pages. You can't send homework home if you haven't mastered a skill to do. Sometimes times tables sheets or things like that go home because they want the kids to be in the habit of going home and doing their homework. Sit down do it, you know this is what we do in school. I don't think that this has been an overwhelming homework page in that a parent would say, oh my gosh, they have to sit here for 2 hours.

L- Why I always tell my parents that if in 20 minutes your kids sit down and they are frustrated and upset walk away.

C –me too

L – They are not learning and it is pointless, I don't fight about it.

C – Every homework page in this series has been very quick. A few questions, very quick, I have the "On My Own" and it's quick, if they finish with that I will send home homework. Sometimes, kids come in and say I had nobody home with me and did not get it finished. I tell them it is ok and don't worry about it. We sit down and do it together. So, if it one of those kiddos, who might not have the help (at home), they will ask if they

can do their work at school. I tell them yes you may since we have time; however, I want you to take it home and show someone how well you did.

L – It helps keep them motivated. I have never heard anything negative this year.

C – Me either. Nope.

L – Which is something new, not to have negative feedback.

D- I have parents say this was too easy. It went to fast, it was too easy, and don't you have anything more challenging for them.

C - Yeah

D- I'm glad, to me the philosophy for homework is it should be easy because it should be a review of what they learned.

S- Exactly, it is a review

L – Part of it for me is what we were talking about earlier- longer, faster, harder. Some of them get up at 5:30 and have been in school all day. They need to go home and play.

D – Yes

L- That is where I operate and I just send it home – it is never graded, if they don't get it done at home, then they do it in class the next day.

S- My last two years in the class, which was with EDM, I stopped giving math homework because I was tired of the letters I got back – (L-this is stupid). That would have been a mild word because I had a self-contained fourth grade. I called it homework in school because they were so happy they could do their homework at school. The ones who could do, the ones who needed support got a partner, and the ones who did not know what I was talking about in the morning, sat with me at the kidney table and we taught the lesson and they did it with me. So everyone had a half hour of practice, not one was upset, and they did it with me.

L- That is because they got to go home and be done with school for the day.

S- They had to read but that was it.

L and C – yeah but that's it.

L – that is the only activity (reading) that makes a difference.

S- Nobody fooled around because they did not have to take home their math.

L- how many parents have you had come in and say – you know what we have sat there for 2 hours and he was crying and I was trying to help him when I was doing dishes. They are not learning when they are at that point. It is just frustration at that point (C – no no).

R- I think the old philosophy was that more was better too. You know if you did 50 of the same math problems or 10 of the same math problems you still have the same intent then you would if you did all.

L- That's right. Or even if you did 3 problems, five minutes tops.

RS-I have a couple of kids at home that would whole hardly agree with coming home and playing. The complaints I had in the previous years the parents would come in and say they did not get this program (EDM). That they did not understand it at all. I would be political about it, and say I understood, but it was part of the program. This year I have not had any complaints at all.

L- Me either. Positive comments.

R- I heard, finally, you are doing regular math. Finally doing math like I (parents) learned.

L – I got to tell you I have 15 of my 20 math diagnostics graded and all but one student is on track. High 40's.

Researcher – you guys have the best lead into my next question. How does MM promote the best interest of K-2 students who are exposed to the materials?

R- From my standpoint as we have already talked about, the depth of this program gives them the time and the resources to get what they need to get out of it. Well as before teachers were always in a rush and the kids were always in a rush and not being taught in depth what they needed to do.

Researcher –Why do you think they were being rushed?

R – While I just think it wasn't as in depth as what this program is. You did not spend as much time on things like you do in this program. I believe that in this (MM) program you get the math facts and multiplication, you get down to the basics, and spend time on concepts, than the EDM where in the other program you talked about it and moved on quickly.

L – And I think that is why our math scores were so low. Low on the OAA proficiencies and other test because they did not get the basic skills. Eight weeks later we would come back to a concept and they had forgotten it.

S – Yes

R – There was no memorization.

L – The teachers were frustrated because they felt like, I taught this three times.

Researcher – How about from another coaches perspective, how is MM benefiting your kids?

S – I think it is benefiting our kids because it is engaging, the videos, the music, and the use of the smart boards. Some of our younger teachers our whizzes on those smart boards, we can get manipulatives up there, the kids can go up there and move the manipulatives up there (1A class), they can move it around and do their problem. Some of our teachers have taken the things from the materials and have done great centers. The teachers are using the same routines they use in reading for center as they do in math. So even though it is a different subject, the kids are used to the routine. The only thing I find that is missing with our kids is that they go a little slower, and they may need more practice. Teachers want more practice, not necessarily the Reteach, or the Triumphs, but more practice pages because it takes our kids a little longer to retain it. Most of our kids don't have anyone at home to sit down with them and reteach or explain and go over it with them. I want some of them get picked up and the parents are on their cell phone – tell the kids to come on – they are not getting that nurturing when they are getting home. It is definitely a step in the right direction as I see much less papers coming through the copier for math because the teachers have so much in their workbooks, on their computers, online. They can go home and plan and be ready because everything is right there on the computer. They don't have to lug home books all the time as they can get everything online.

Researchers – Do the kids have access to the music and some of the components at home, you mentioned music and computer?

S – No

C – There is a section where each child can have their own login. I remember last year a sixth grade teacher set her kids up.

S- No, it is just homework.

C – I thought the music and things were on there

S – We stopped doing that because our kids don't have the resources at home, the internet, things like that, a printer, we did not go that route.

L – I had 4.

C – When they ask me can we listen to that song today, I say yes and take the time to do it because they are asking me. If they are asking me they need it. The kids know it, we are all smart in our own way. If one kid needs it we do it, I try to make that accessible to the students.

Researcher – Is that something you could put it a center?

C – Oh yeah, that could be in a listening center with the math songs.

D – I did not think we have a CD.

C – We do, it is green.

D- I don't have one.

Researcher – Tell me more about the CD.

C- I have the CD, it also has kindergarten songs on, it is the same songs we see online, every concept we teach them there is a song for it. It reviews everything from kindergarten and first grade there is a song for it. It is really the same songs online too. I know online, I don't have access to all of those items.

S – I have to find the CD.

L- As I am sitting here thinking, was it buried in the trifold with our little books.

C-I don't remember where I found it.

D- What about the games!

Researcher – Tell me more about the games.

D- Oh my goodness. The games.

Researcher-tell me more about the games and the trifolds.

D- It is just a part of what I do, because I use it I forgot about it. In fact, I have taken mine apart and use them in centers. I store them in a big container. There is a game that

goes with each unit. If you are working on addition, there is a cute dice game, subtraction, place value, it is all there.

Researcher – So if there is a math night or something, could you do a make-it take-it so the kids can have the games at home?

D – Absolutely.

L – The trifold has all the books, the games and all the things in it. I hope that is where the CD is.

D- I don't recall a CD being in there.

S- Me either, but I am going to look.

D – You might have the only one in the district.

C - I might.

S – I unpacked every bit of MM and don't recall any of that.

C-It is blue and has a handle – it opens up and clips like an easel. Everyone should have one.

R –Light blue

C and L – yes

D- And it has the books in it and hopefully the CD.

R- There was so much stuff. I unpacked it and I don't remember seeing it. That is one thing I can say – the program comes with a lot of materials – it was like here you go – teach this

L- It came in shifts

R – It was hard to keep track of – when you get a piece of shipping paper it is hard to know what everything is.

When the program is new and you don't know what it all is and 10 skids came in. Teachers are asking me R did we get in, and I don't even know what they are talking about. I go to my list and it was there, but I can't find it.

S- Tell me about it. I sat on the floor for 2 days going through it.

L and C – It is like an easel (trifold).

S – When you are talking about math night – the parent letter has games on each letter we send home. I think it would be a great resource to show parents how easy it is to reinforce what we are teaching. It is right there.

L- I was just thinking we could do that at our open house.

C- Yeah, that would be great!

R- Last year at math night we had the kids teach the parents what they were learning using the materials we have in the program.

L – I was just thinking, we have our open house the night before school that would be a great way to introduce them to the program.

S – The only books I unpacked were the science and social studies books (MM) that came with the program. I have them at every level.

L – They weren't in a carrier

S – No, a long box

D – Ours was a long box too

R – I remember getting some trifold.

S – There are six books except in grade 6

L- No, I did not get six books only 3, it is starting to sound like we all got different materials

S – Let me know if anything you have says L on it!

SCL – We should do a visit to see what each other has.

S – Our teachers use the science and social studies books in the set.

D – We have one class set to share. There are not books for Grade 6 because that is another program. While it complements it, it is different.

S – That is because they belong in middle school –even MM is telling us that.

Researcher – So is there anything else you would like to tell me about the MM materials and how it supports our K-2 students?

D - We bought the **manipulative kits to go with MM** they did not come with the program. As we looked though the materials see if they say MM. We had to find a **compliment to the program**.

C- They are blue tubs of manipulatives

D- Double check because I don't think they are MM

L- While they did a **good job because they match the program perfectly**, even the color.

D – I am pretty sure that they are an **additional program that we purchased to support the MM program**.

Researcher – So earlier you stated everything was color coded, does that included the manipulatives?

L- Taking for example, the first chapter for second grade, they have **little orange counting tiles and they are orange in the book**. You guys did a great job matching.

C – We can pick out what we need.

L- The twosided counters – they are yellow and red.

D- The only think I don't like is they are foam and they peel apart.

L – I kept my old ones too.

D – I kept my plastic ones too.

L- I wanted to tell you I am **seeing the light bulbs go one** and they are able to **extend their skills**. It has been really fun watching the kids have fun. I think they **really like it**.

Research – so I have heard that a couple of times – the extending through writing.

S – Yes, many of my teachers have a **math notebook**. They have the **vocabulary words**, they glue them in and then they **write about it**. It is definitely a good program. You know you can pick apart any program, as not one entire program has everything. But out of all the programs I have taught, and I have been doing this for a very, very long time, **this is probably the best**.

L- Me too

C – Me too

Researcher – So let's move into the accuracy of the program – What MM instructional strategies have been used in the district to improve learning for students in grades K-2? I know there are a lot of strategies you have mentioned, are there specific strategies you can speak to.

RS – I say incorporating workshop model into math, with the previous program we were trying to force our teachers to try that. I think with this program (MM) it is so much easier. The program is set-up that way with the materials and different levels.

D- Differentiated instruction is very easy

S – Vocabulary – the vocabulary is the same across the grade levels. After two years of having it, next year will be the third grade.

D – No that will be next year's second grade who will have had it all 3 years. Starting in kindergarten and moving up to second grade

Researcher – Earlier you were talking about different problem solving strategies and the way the kids would use these strategies for problem solving, manipulatives, concrete to abstract, models to paper and pencil, what instructional strategies are seeing them select as you teach them? How do you do this during the “I do,” “you do,” and “we do”?

D – What I like is it does teach them (the students) different strategies to use to solve a problem and knowing that they have some choices, for example I am not good with number sentences, but I can illustrate that for you, and we see that a lot. They have go to show their thinking. This program allows them to show their thinking in whatever way they want. Can I do it in a table? Can I do it in a number sentence? I have some kids that won't draw that picture, but can give you the number sentence. They can explain in writing what is going on and I think that is critical.

L- Well the other thing that I really like too and it is really showing up on the diagnostics and in their confidence in the 4 point answers. I am blown away by their responses and the thing that I like about this program that on the back of the “On My Own” there are 3 story problems and a write about math, so they are writing their answers again. The nice thing I like, because what is hard for them, is the story problems and what is a good place to start, let's underline what we know, that is a strategy that they teach, underline what you know, circle the question. Then we discuss what kind of strategy can we use, I can draw a picture, I can write a number sentence, you can do both. I am thinking about one

today, they drew the box and drew the apples. I suggested that they write the number 3. I am seeing them pull from different strategies to solve the problem.

S – So, it is not guided reading, but guided math. It is giving them the track of what they do, then what they do, and then what they do (step-by-step).

L – Yes, seeing the story problems over and over and the strategies, underline, what is the question. I like that they can use multiple strategies, then write the number sentences. I have seen a big improvement in that and it is showing up on the diagnostics, and I am absolutely thrilled.

D – I think sometimes we forget that math is important. I am not discounting reading, but they are the same guidelines. You have to teach the letters, you have to teach the numbers, you have to teach the concepts. It is not going to happen through osmosis.

L- Story problems are very abstract-what do I need to know? How do I begin? I have seen the development over the year. (C=yes). They are much more comfortable and don't look panic stricken like they do at the beginning.

D- I think they could give the kids a few more story problems to help them become more confident. Just to make sure we have that down. It is very difficult to manage. So much emphasis has been placed on the reading that I do believe we forget to focus on the math. With the developmental stages.

S- I know a few of my teachers have switched the schedule around because the kids were starting to lose interest and they started doing math in the morning. Huge difference. Wow! They could not believe the difference. I think we need to shake things up. They taught ELA in the afternoon. I know reading is the focus, but we have to remember math is just as important.

L- Most of us do our better thinking at the beginning of the day. I found this poster with math response sentence starters. I know there is 10 of them. Just ways they can start explaining and thinking. That is abstract. You have to back up and say explain that. Really bright kids can give you the answer but can't tell you how. I don't know I just knew it. You have to back up.

C – I added.

D – You have to get down and explain this stuff. This program gives us the time to do that.

Researcher – I want to go back to something you said earlier, tell me more about the strategies you used in the beginning of the year, numbers, adding, counting.

S – My kindergarten teachers would love to have a whole month to teach the kids how to count, what is a number, what is a letter, how do you hold a pencil, maybe use an easel, how do you make a 1 or 2, tracing over things before they get into the workbook because they are scribbling and are not sure on what they need to do. It starts out too soon. Your students may be more inept as they have been to preschool. We just don't have that type of population.

L – Ours has been changing

R – Ours too

S – Ours is what it is, but we are hoping it is going to get better. We have large classes across the city, we need smaller classes.

Researcher- We have a very transient population and a high mobility rate. Let's go back to what happens with the constant growth in our population as students are arriving from out of state? How are you introducing them or using the strategies that our MM to catch them up and are they the same as we use with our current students?

C – A lot of guided groups

D – Yes, guided groups

C – Yes, a lot of small guided groups and centers. Those who, might come beyond where are kids are, again guided group so I can push them harder, I can differentiate the centers for them.

L – I love the centers

S – Centers is where it is. People are still trying to fight them. You are only going to get 1/10 of the kids attention at time not 25 kids for the entire class. You are never going to get 25 kids on and listening. You get 6 of them at the table and you teach them and then they go on to the centers and they have independent work or partner work. The kids love working in the centers on those skills.

Researcher – You were just talking about our population, guided groups, and centers and the kids that are coming in – how does MM allow you to select the centers if they are way behind or way ahead.

S – While you give them a little assessment, and you find out where they are at with a formative assessment

C – There is the Are you Ready chapter test, and our book assessments.

D – A whole book of other assessments.

S – We have all kinds of ways to find out where they are at, what level they are on and slide them right into a group. You know there are so many materials to use and the thing I like is our teachers are being trained on the formative assessments and we don't have to spend lots of time with long test. You can quickly find out, two sentences a quick check, more time for practice.

R- It is funny you bring up formative assessment, I was having a conversation with a colleague regarding formative assessments. I think we do need data, but I think we get caught up in data. We always here we need data from test when really I can check quickly with formative assessments. Thumbs up, thumbs down, I can figure out they are beyond this or move along quicker. I think this is the hardest things to get them to understand we don't need to take a big long assessment to get that data. Some of those kids are here, some here, and some here.

L – This is why we have flexible grouping. For example, we have a student who is ELL and she did not do well in money. She was able to come to my class because we were working at a faster pace so she went back and got it a second time. Then the tutor came and worked with her. That is why we like our flexible grouping because she was able to get coins 3 times. We are able to move our kids around.

D – Even to know you can differentiate your centers – we have one center on (previous skills) where we have to know what they did the year before. You can't just throw the kids in there. Once I know, I code the groups and then break it down again. I will have something with geometry, computation, place value, so I hit all the strands. At the beginning of the year I will do a very simple geometry center with shape blocks, one activity is simple where they can just match the shapes, ones that are more complicated that they make pictures (tangrams) and then others who make their own pictures. Ok now I have the three groups, I have one-to-one correspondence, I am in the middle and can make a picture, or I am ahead and can make my own picture. It's all pattern blocks, but you go from here to there.

L- It is amazing, today one of the other math classes was finishing up diagnostics, so we used their tile blocks. This child made this picture that looked like Italian tile in a piazza, it was beautiful. It blew me away. What the other kids did with 3D.

C – We do that with our blocks. I give them a piece of paper and ask them to trace – is it the shape book – I couldn't find it – so I find it, on YouTube – A square is just a square until you add something more, you know, some added a triangle and made it into a house. They then had to explain it in their writing and finish the picture. It is just neat how you can see how all of the skills have built up. I worked with my little guys and they get to talking and teaching during my small group.

D – Yes, and I like to have the higher kids trace their pictures, so I can put them in a box. The kids the following year get to try to make their pictures. I don't want them to say "oh that is my picture". This is something they can do outside of the book. The kids like to do this as they take ownership of their work.

Researcher – Student ownership is key. Tomorrow we will have our last formative assessment training and it is on student ownership. R you just mentioned that. Tomorrow we will talk about the importance of that and how students need to set goals. Can you tell me how MM helps students set their own goals and take ownership in their work?

S- I have a teacher who has taken off with Formative Instructional Practices (FIP) already – she has a bulletin board that is from that module that states "I've got it," "I think I've got it," "or "I don't know what you are talking". At the start of each new concept the kids fill out a 3x5 card and they put their name where they believe they believe were they are at. They are very honest. From there she forms her groups for that week. The kids are right on the money they know if they know it or if they don't know what language she is speaking. It is what she does and it is working great.

D – I have done something similar with the two-sided counters – I gave them the two-sided color tile – red they did not have it and yellow was they were ok. I slide the cup over so only I could see it. I formed my groups from this the next day we did it again. (S- they know exactly what they know and don't know (C –Yes)). I liked it because it was private under the cup. Some of the kids did not want to say they did not know.

S – I have to tell you my favorite story, was when I had a classroom teaching math and a concept, the kids would go back to their seat to work with a partner and those who did not understand came back and worked with me. While here comes my one little boy who was my GT student - the kids were all looking and snickering – like what is he doing here. He sat down and said "what I am GT in Reading and Writing! I can't do math. I am not GT in math". The other kids all went whew. So if he can be here we can be here. He was tall so there was the ostrich in the middle with all these other little kids. He would come up for extra help in math. It's ok to get help when you don't know it. There he was leaving one time a week with Elena for GT and here he was getting help in math.

L – I kind of do the same thing with how we got it to task – got it, kind of, not got it (thumbs up, sideways, down). I make sure I always say to the kids "I am so glad you asked that question" so they got comfortable asking if they are not sure with the process. It is that group of kids and if they are comfortable.

S – The other things I like about MM is that the statement of what they are learning, the essential question, and what the standard is. The kids get used to reading them, seeing them, seeing the vocabulary, so if the words show up on a test they know how to handle

them. It is a little bit more sophisticated and grown up then other math programs, even though it is child like looking. You know, it sneaks it in there.

Researcher – So if I was going to do a walkthrough and I ask a child the essential question how would they be able to answer that? Tell me more about the essential questions.

S – Either they would just know it from repetition or they would see it in their book and read it to you or they would see it on the wall because we have the teacher’s post what their learning targets are. So the kids know exactly what they are learning today.

Researcher – Can they explain it to me in their own terms?

S – Some- it depends upon which one you ask.

D – That is a hard concept. Especially when the little ones, some they are like, “huh”.

S – Some of them can they are more articulate one can tell you in their own words what the essential learning target is.

R – I can’t even get my eight year old when he comes home and I ask “what did you learn” “nothing” (laughter)

L - The four year old tells me stuff.

R- School work

Researcher – Let’s get back to the other program EDM. What was previously lacking in the districts other program that had to do with accuracy? I know you talked about the spiraling before.

L- Being competent in any area of math was lacking

D – Yes.

S- And I found that any standard, that I had to cover with my children to take a state test, some of the topics were not covered enough

L – The writing.

R – The writing.

S – So, I had to go out and go to the teacher store and buy my own materials to supplement what I was doing.

D – That was a general issue across the country. I think NTCM had **so many standards** that they wanted us to cover that it was time to consolidate and regroup (the standards). I think that we found out that this huge umbrella was too much and that we needed to narrow it down.

L – It is kind of like jack of all trades master of none.

D – And that is what happened. NTCM listened to everyone and said we had to do this, this, this and this (standards).

S- Right. We have to remember that we are teaching children and we are not creating engineers in the third grade. We need to give them **basic skills**, so when they get to the upper grades they can excel at some of these other things. They need to learn how to build a bridge and send someone to the moon.

L – And like math.

D – That’s right

S – We were **doing a disservice by pounding them and making them cry** and I still remember when I had to do 3 digit by 3 digit multiplication and they called my parents to school because they thought something was wrong. Because I got them all wrong. I didn’t want to do them so I wrote down any answer I wanted to be done.

L – I can remember.

S - I wanted to get out of there. It was too much. I wanted to go out to recess and we couldn’t leave until it was done. So I wrote down any answer and left, so I got them all wrong. My dad was an accountant, so we played with numbers all the time. The adding machine was my first toy with the strip of paper. He would bring it home and I would type, click, click, click.

D- My dad was an engineer, my first toy was a slide rule, which was my first calculator.

S- Right, but we have to remember that **these are kids** and that this is a **child friendly series**. And if we say one thing to start with that is very good.

L- And it is **not overwhelming**.

Researcher – So I have a questions – Comparing the two programs are kids able to apply, and I know earlier we talked about this in EDM, but are the kids able to apply their skills outside of isolation in MM? Before in EDM when they were spiraling they (the students) were forgetting the basic skills. Can you tell me a little bit about that? So can they take

those facts and apply them outside of isolation? You told me earlier they can they do word problems and can they use their strategies.

L – I have seen them **make connections from reading to math**. They might say, oh we talked about that in math yesterday, or they will recognize something from math in their reading picture, or the story they are talking about. So, I have seen them **make the connections**. I think it is because they understand it so much better.

S- I have a fourth grade class that I went into the other day, I said I am going to tell you something and I want you to respond to me **in writing**. I said that my daughter called me the other day and said “oh my goodness, I went into the store and the bill was \$13.08 and I gave the girl a twenty dollar bill and a dime. She looked at me and said I don’t know how to do this. So she told her what the change was and I went down to the fourth grade class room. And this is what I told them”. “Tell me if you are smarter than working at the store?” They all figured it out, they did it in their own way, but they all had it exactly. Make the change, take the 8 cents from the 10 cents and the 13 dollars from the 20 dollars you know you have done it in your head while I was talking. And she has a job.

R – Well, you know when I think of **differentiation and the workshop model** in the classroom and you think of the **diversity of the kids** who come in your classroom from one end of the spectrum to the other end of the spectrum, in my household, both of us our educators, so we emphasize education a lot. I am very sports minded, so we emphasize all sports. I can tell you that I tried to take when I taught at the middle school level, and this is what I try to touch on with the teachers in the classroom, that when you are **differentiating** in the classroom and you are using the materials in the MM or even in Journeys – whatever it is. I think that some of those everyday life experiences can be put to use. My son learned how to add and subtract because he wanted to learn how to figure out the score for a baseball game, basketball game, or football game. And at 5 we could sit down and he could say “Dad, they need to touch downs and a field goal to win the game”. So I think with some of our kids and with the MM materials we can do some of those things (make connections to experiences). And **I don’t think that we had the materials with the EDM to do those types of things**.

S- The **books** that come with my math, that I referred to before are either **science or social studies related**, but there **is math built into them**. For example, skyscrapers and how tall they are, and at the end there would be **questions that the difference between them**. They are reading and interesting story, that is non-fiction, but there is **math embedded in every book**.

L- I like it too, because I have noticed that they are much better at **reasoning**. I know that is **developmental** but just to say, for example, we talked about **inches and centimeters**, and how there are more centimeters if you measure the same thing. The size isn’t going to change, but that whole thing, and they really got that. It is just neat to see them

thinking about what they are thinking about and making connections like you said to real life and other things.

Researcher – so when they are making connections how often do you see them model off each other, especially in your school where your kids might have experiences, or R even with your own kids who have sports experiences, how often do you see other kids learn from the experiences of their classmates or peers?

C – We do peer tutors sometimes when the kids are really good at something in the lesson or in a concept, I might say, “Does anyone else have a different way to teach this?” or I might pretend I might now know what I am doing and they might come up with a completely different way. So, then another kid will go “Oh, how did you do that” so I let them start talking about it. Maybe you can figure it this other way. I think letting them be the teacher or letting them talk about math helps.

S- I see that in our kindergarten – talking about math or being the teacher, a lot our kids have little experiences –they would rather be the teacher or be able to talk about math instead of centers, they do partners – so there are kids getting a tub with whatever activities/manipulatives are in there. So they are talking to each other, it is something they kind of have to do together to create. So there is a little conversation. A lot of our kindergarten kids are not very conversational, so it would be difficult to refer to something in a complete sentence or thought.

L- And I think that it is something that kids aren’t, well they like to talk, but, I have seen kids talk at each other or well they are both talking at that same time. I think one of the drawback so much technology, is it is me and the computer, me and the video game, and I am not out playing, and I am not out talking to other kids. I think that is so important and that is a real life skill and that (math group/centers) is a good place for them to explain things. And it is really neat to have the kids do the story problems or whatever and have the kids talk about what I drew a picture of, and I did, and then the kid who is really outside the box can talk. It is just really neat to hear them. And that is when they get to talk with each other.

D- At the bottom of the one page it says “Talk Math” – where they get time to think, pair, share and (C-talk) feed off of one another.

Researcher – one last question – What other information do you believe is relevant regarding math instruction in our district?

L- One of the things that I think, as good as this program is, I still don’t think we get enough, I don’t want to say the materials because you can get those everywhere. I still don’t think we don’t get enough of the basic facts and they aren’t covered in any program long enough.

D- Because people think we use calculators.

L – Yes

D – We have gone away from learning our math facts.

L- Memorizing (math facts).

R- It's like memorizing, it is like teaching cursive writing because it is almost not even done because everything is on the computer. Like spelling.

S – My third grade teacher sent me an e-mail because she felt like there was a big gap between the end of second grade to the beginning of third grade.

L- I have heard that (gap between second and third grade).

S – When the kids start third grade you just see it, and they (the students) realize that. One of our teachers went from second grade to third grade, so she really noticed a difference. She did not realize that when they started off third grade there was this big jump. So when they started third grade they need more of a bridge type program to get them into third grade. And what you said about the math facts, I know you are a big supporter of academic awards for grades, but what about having awards for math fact fluency in the primary grades. We could agree on a set of facts we want to master, kind of like a benchmark, like we have certain benchmarks on the DRA for them to be considered on level. Adding and subtracting, I am not really sure what is appropriate, but the teachers in those grades would know. Maybe we could get a bulletin board that shows the progress on facts, where they get some recognition or a pizza lunch like they do with the academics. Just some thoughts. So um

L – And that is on up the line in our building (lack of math fact fluency).

S – So, I taught multiplication – so I have talked to my third grade teacher and we decided we would talk about this during our summer retreat. We thought we could start in third grade and see how it goes, and then add other in the two teachers, and have teachers get together and decide what facts should be mastered.

L – Kind of like sight words.

S – Yeah, we can put up a tree somewhere and they can get a leaf as they get them, as see where it goes from there. And then next year filter it down to second grade and then so on. Sometimes we bite off more than we can chew and we really don't do a good job of doing it. Like last year, we tried data folders and it was too much. Not enough time to put it all in there. We have too many pages in there. But I like this idea, just start off.

C – Just like sight words – start off for just 5 minutes or 10 minutes (math fact practice), they get their little partner (S- they get their little wipe off board or whatever) then move on after they know it.

L- I think they get the concept of $5+3$ as 5 (count up) 6, 7, 8. I have been telling them all year, that guys if you don't know these (math facts) every other thing you do in math is going to be hard.

S- Yeah, it is like if I look at you and ask you what color is the sky, you say (L- right) blue immediately, you don't even think about it (automaticity).

D- I am from the old school where we still drill math facts and flash cards, every day they take a math fact timed test over a set of facts, they start off with the doubles, the plus zeroes, the plus ones, and then we go one from there. Then we go into subtraction.

S- I am right there with you, that is exactly what I did (math fact drills), but we have a lot of new young teachers and they get a new math program and they think this is how I am supposed to do it.

D – You have to supplement the Journeys (reading program) and we have to supplement MM with fact practice.

L- Well, I think quite honestly drill and kill has to be there. We have been told no, no, no don't do that anymore, but the kids will not have math fluency without it.

S- Sometimes we have to go back to the old ways, as they are the best ways.

L and C –yeah.

D – I got a call this year asking me why the kids could no longer count on their fingers that they had to learn their math facts. I found on a website a set of flash cards that has the math facts on them and my principal has been very kind and has sent them to our print shop. Our kids go home with a set of addition flash cards and subtraction flash cards so they are ready.

L – Nice

D- So, they can't say that they don't have flash cards and they are ready

S- It would be nice if the district could sent them home with a set of flash cards for the summer it would be great.

D- At the beginning of the year I send the addition home first (flash cards) and then when we are ready for the subtraction, I send the subtraction (flash cards) home and all kids have them.

S – Yeah

D- And all the parents have to do is cut them apart and I even give them a baggy to put them in.

R – Or the teacher can use the divided plates to teach part, part, whole. That helps with facts because the kids can see the manipulatives be separated and put back together (addition and subtraction).

C – The plate – my kids didn't like them, they thought it was too odd. I tried it this year and last year. My concrete kids were like, oh yeah, I got this, but the others did not see the connection between the addition and subtraction.

S- That is a great center, you could use the flash cards for the students to have the problems that they need to solve in the sections.

L - You could write on it too. Have you seen the plastic ones (plates), you can write on them with dry erase marker so the kiddos can write the equations.

D- During inside recess they (the students) love to get the flash cards, and ask can I borrow your timer, they practice to see how many they can answer in a minute, how many they can answer correctly, they think that's great.

Researcher – What other information do you think would be relevant to help the districts math program? We know it has been reading, reading, reading. This year we just started rewriting our science and social studies, I haven't done math because I am not sure which way our state will go with the common core.

R – I don't necessarily think it is a math program issue or a building thing, but it would be great if we could use our tutors for math, we use ours strictly for reading.

S- So do we.

L – We use our tutors.

R – I am okay with that. That could be a huge help.

S – No, we don't have any math tutors. Our tutors are used strictly for reading. Sometimes I go into a math class and they say we haven't finished our Journeys testing,

we have to finish that. So they may skip math (lack of time), or it might have to be done for only a half hour. The reading must be completed before anything else.

D – Reading, the math is just as important.

S- Oh, I agree with you, but it is not happening.

D- We need uninterrupted time and we dedicate that uninterrupted block of time to language arts. Sorry, but we need an uninterrupted block of time for math also. It can't happen due to specials schedules, I understand that, but last year, I had that uninterrupted block and it makes all the difference for math. It just worked out that way last year and oh my goodness, what a difference. I could do so much more with my guided math groups (S-right), oh my goodness I (S-right) have got a 30 minute block here and a 30 minute block here, it is hard to do a math lesson with this type of schedule. (S- They go to lunch and then they come back and they have time here), and I just think we could do more.

L- I just think if we have large, huge amounts of time doing anything with the students, we lose them. We just lose them. They get done.

Researcher – How about professional development (PD)? I have heard PD a couple of times.

S- We haven't any professional development since MM first came (L-yes) at the beginning.

L- But it (professional development) was quick because we had school starting.

R – Personally, I would love to see a workshop model PD for math.

C- I think that (workshop model PD) would be great.

R – Because they (teachers) get it for reading, they get differentiation for reading, they get workshop model for reading, but for math they (teachers) won't understand how to differentiate in math.

C- I think it would just be great for teachers, just knowing myself, I have some great ideas, at least I think they are great, but it is the time to get the centers ready, if we had a workshop (PD) on that.

L- I think it would be great if we could just talk to each other and share ideas (collaboration).

S- Make-it take-it for grade levels.

D – I think we could do that for each chapter, so I come up with my groups, green group today, this is what you are going to do today, regroup, this group could be doing geometry, this group could be doing, depending upon how it is flowing. And when I finish with my group here, you go over to your activity, and when I am finished, you go over to your activity, and when I am finished tomorrow, I am going to use the same centers, I just have to move the group and flow it that way. But it takes time and we lack that.

L – But that would be great to hear, hey this is how I did (collaboration).

D- You know the other thing is too, you don't have to do a center every day, sometimes, like last year when I had that wonderful ability to do that, I did it 3 days a week, and 2 days I did whole group review.

L- And there are some of those lessons that you can get through the “I do it, you do it, and we do it,” pretty quickly. (C – Yes) and other times it takes the whole time to get through those.

D- And you won't be able to get through those. So I worked it so that it may take me two weeks to get through all the material and then two weeks later I could set up a whole other center.

R- I'll be very honest, with me being the only coach, I feel like I leave math out a lot of times, there are so many things that you have to do for the Third Grade Reading Guarantee, all the pressure is on you for reading, so that is our focus before anything. Our math teachers have made the comment “reading teachers get everything”.

D – Yes.

S – Try being the math coach.

R – Yeah.

Researcher – anything else?

D- Reading is important, not to discount it, they have to be able to read to do that math, sometimes I felt that math is the red-headed step child.

S- So where are all the jobs? STEM – Science, Technology, Engineering, and Math. You have to read to do all of those things too, but if you don't introduce your kids to math early, so they go to high school with a healthy math background, you can forget about

STEM. It isn't going to happen, it is going to be general math. (Global impact future careers and jobs)

D- And the problem solving and critical thinking, that is important.

Researcher – I appreciate your time today.

This following relates to the lack of planning time and collaboration time for the elementary school teachers. The arts were cut to part-time in all 10 schools. This has created a lack of time for collaboration and planning.

S – I vote for a full time music teacher back in each building. All the studies show that music enhances math and we need more music.

L – And to add on to that, they have also done studies where kids have a very physical gym right before a math test and they score higher and see this is where I think we are doing them a disservice. Out of one side of our mouth we are saying kids are really overweight and these days they are not eating right, and these days they get 15 minutes to play. That's not good thinking, that's not logical.

S- We need the arts back in elementary schools full time, just the music teacher going (clap, clap, clap) you know syllables.

L- or the sticks.

D- And the arts, there is so much math with art, because you see the patterns, and you see, that is critical.

S- I mean if our art program could be coordinated with our math program it would be even better there could be so much they could do, and bring in their standards with color and

D – It is all interrelated.

R – My wife taught K for 10 years, fourth grade for 3 years, fifth grade for a couple of years and her superintendent allowed her to go to PD, she does all her games in the gym everything, sight words, they play tic-tac-toe on the gym floor, it's crazy

S – There is so much as a reading teacher.

L – That is giving the kids enrichment.

R – She tells me all the time, I never knew what a specials teacher felt like but I am not a teacher, but just the gym teacher, and not a person who has been in the classroom.

D- The kids need this every week consistently.

S- The music teacher sees the kids only 18 times a year and only if we don't have snow days.

L – and God help you if you have it on a Monday or a Friday because it less.

C- Forget about a program, the kids don't even know the words to a song.

D –Class size is something that needs to be looked at.

L – Just to piggyback on that, just the 10 minute break in the morning and 10 minutes in the afternoon is so important for the young kids is so important, just to get up and move. I think we would see a lot fewer kids getting in trouble for bouncing all over the place.

C – When I tell my kids we are done and we can't go outside, the YouTube goes up and we pull up brain breaks, and they are up and moving

D – And the cross body things, brain gym.

C – Yeah and brain gym, cause we say ok let's do two and then we get right back to work. They love them. I let them pick the two and I say let's get all the wiggles out, and then we get right back to work. Boy are the productive after that.

D – With our kids and our population in the district, they are coming with less and less skills, and we need to teach more and more, I think class size of 20 or less in K-2 would be so helpful.

S – You are absolutely right – it is going to get worse before it gets better.

Font Legend:

Every Day Math

My Math

Curriculum Vitae

ANDREA TOWNSEND**CAREER PROFILE**

- 12 years experience as a Pre-K-12 school administrator
- Director of Education and Board Member
- Support restructuring efforts through data driven decision making
- Technology support and application development
- Curriculum and program development
- Understand and manage district funding, grants, and school budgets
- Efficiently builds relationships and encourages stakeholder participation
- Effective community relations
- Human Resources
- Crisis Management
- Supervision and Staff Development – At local and state levels

EDUCATION

Doctorate in Education, Administration and Teacher Leadership
Walden University, Minneapolis, MN, Expected Graduation – July 2015

PROFESSIONAL EXPERIENCES

School District of Study, July 2012-present

Director of Student Services, Elementary, Online learning-Grades PK-6, senior level district management that oversees 10 elementary buildings and the district PK building with 6000 students. Manage faculty, oversee building leadership, district instructional coaches, and data driven decisions to improve instructional practices in all 11 buildings. Implemented our first K-12 assessment program as a method to use data to drive instructional practice and increase student achievement. Constantly analyzes current practices for continuous improvement and strategic planning. Oversee the Student service department which includes registration, nurses, security and safety. Implemented the district's online program which is now accessed by other local educational agency for a blended learning model, online learning, or enrichment and advancement. Oversee budgets for all programs. Work with community partners, parents, and other local agencies to celebrate successes, collaborate and communicate to improve the community and the educational system.

- Lead a K-12 group of teachers to revise the curriculum standards, write new district level curriculum, vertically align all of our guides, and create problem-based learning opportunities for the students.
- Team member of our 1:1 multimillion dollar initiative with Apple Computers including strategic plan development, training guidelines, expectations implementation at the building level
- Development and implementation of problem-based learning staff development. Training staff on the utilization of the state standards
- Implemented the new on-line program and revamped Alternative Education
- Work collaboratively with multiple districts and agencies to improve the community and the district as a whole
- Developed a district wide behavior plan and the guidelines for suspensions/expulsions and a K-12 vertically aligned code of conduct

North Dayton School of Discovery, Dayton, Ohio, July 2010-June 2012

Principal/Superintendent– Grades K-8 - Manage faculty, professional development, Title I budget, school budget, grant and fundraising, curriculum development, data management, supervising students and staff, data driven leadership, Implemented Response to Intervention. Involved in several changes related to curriculum, differentiated instruction using data, instructional pedagogy, and school improvement. Worked with a cadre of teachers to develop curriculum calendars, model lessons, parent information, and instructional material. SPED and EMIS compliance. Implemented an after school program that includes transportation to meet the needs of our high-risk students.

- Implement changes that resulted in increases in student scores on benchmark assessments with a school average of 150% of our students showing growth
- Implemented a new school wide discipline plan that has decreased referrals by 90%
- Increased the use of technology in all classrooms, providing teachers with a new computer lab, ELMOS, laptops, and computerized software
- Implemented a system and provided staff development on data driven decision instruction in order to differentiate instruction.
- Trained teachers in a standard teaching model in order for them to understand the necessary parts of a lesson and how to deliver effective whole group instruction
- Trained teachers in 6 Trait Writing and ECR/BCR responses

Coquina Elementary School, Titusville, Florida, June 2007 to July 2010

Principal -Manage faculty, professional development, Title I budget, school budget, grants, fund raising curriculum development, data management, supervising students and staff, data driven leadership, PLC and RtI district committee member. Involved in several

district teams related to curriculum and instruction, the District RtI model, and school improvement. Worked with a cadre of teachers to develop curriculum calendars, model lessons, parent information, and instructional materials in all content areas on Blackboard. Worked with several computer development companies to create the districts RtI data collection system. Conducted district level trainings on new software and data collection processes.

- Implement changes that resulted in increases in student scores on assessments as well as FCAT
- Nationally recognized Professional Learning Community school
- National Honors Society school

Catonsville Educational Career Center (CTC), Baltimore, Maryland, May 2006-June 2007

Principal /Executive Board Member/Director of Education- Grades 6-12 - Managed faculty, professional development, grants and fundraising, Title I budget, school budget, created various Career programs, curriculum development, data management, supervising students and staff, IEP/504 chair. Networked computer systems and integrated new student information system, electronic grade book, high school scheduling, and IEPs into one system. Ran a program with students that taught them how to refurbish computers and donated them to community.

- Implemented the school's first School Improvement Team
- Developed a new Positive Behavior Intervention Model
- Created a new vocational program to meet the needs of the students
- Chaired the IEP/504 team that brought the entire school into legal compliance

Carroll County Public Schools, Westminster, Maryland, October 2002-May 2006

Assistant Principal – Grades K-8 - Evaluating assigned staff, all technology upgrades, support, webpage and repairs, staff development, compile and evaluate data to drive quality instruction-developed a school, grade level based school improvement plan that directed impacted instructional improvement at the specific grade level.

- Conducted staff development county wide in technology, web page design, 6 Trait Writing, Science, Mathematics and reading which was delivered through various professional development activities for all 26 schools

Carroll County Public Schools, Westminster, Maryland, August 2001-February 2002

Science Teacher, East Middle School - Developed digitized science curriculum grades 6-12 and assisted with the curriculum development in Pre-K-fifth

- Phoenix Grant – obtained grant and networked all the science classrooms in the district.
- Provided training and staff development with Smart boards, Ecologgers, and digitized curriculum
- Staff development new curriculum and technology integration – wrote grants to supply technology in all science classrooms

Howard County Public Schools, Columbia, Maryland, June 2000-2001, ESY 1998-2002

Elementary, ESY teacher - Curriculum development in reading, writing, social studies, Principal Advisory Committee and School Improvement Team, and mentor teacher for Professional Development School.

- Developed county wide benchmark assessments and the template for students in need of interventions
- Provided staff development in the benchmark assessments as well as Gardner's Multiple Intelligence

BALTIMORE CITY PUBLIC SCHOOLS, Baltimore, Maryland, August 1998- June 2000

Teacher -Plan, develop and utilize detailed multicultural lessons in all subject areas, curriculum advisory group for the content areas of science, social studies, and math, textbook selection committee

- Students showed a 45% increase in test scores in 1 year

PROFESSIONAL DEVELOPMENT ACTIVITIES

- ***Apple Leadership Training and Apple Foundations Training:*** Creating the vision and utilizing the technology to roll out a 1:1 initiative and implement it at the district, building, and classroom level.
- ***SPDG Conference:*** Multiple sessions on increasing student achievement, RtI, Curriculum and instruction, SLO, Teacher and Principal evaluations
- ***PD360:*** Trained staff on utilizing PD360 for resources, walkthroughs, and collaboration groups
- ***RttT State Conference:*** Multiple sessions on CCSS, the New Ohio Learning Standards, Reading and writing in all content areas, PARCC assessments, SLO's, Increased rigor and text complexity
- ***Problem-Based Learning:*** I developed a regional training curriculum with Wright State University in order to conduct PBL training for our regional STEM schools, GISA, and our district schools

- **RtI:** Response to Intervention seminar on implementation and suggestions for RtI in the district
- **CCSS the Why and How:** Wrote and conducted PD on the CCSS and the implementation process we will be utilizing to update our curriculum and assessment protocol
- **Straight A Grant Training:** The webinar for writing the new Ohio Straight A Grants for \$5 million dollars. Grant written and submitted to improve student achievement through state wide collaboration utilizing a format similar to CPALMS
- **FIP Formative Instructional Practice:** Utilizing ongoing formative instructional practices, learning targets, assessments, student ownership, curriculum mapping
- **Assessment Literacy:** Using standards to backwards map curriculum and write assessments with the understanding of quality questions, distractors, and rubrics
- **21st Century Leadership:** Developing curriculum and utilizing technology in an educational setting to improve student learning
- **Common Core Standards:** Train the Trainer model on the new state standards
- **Facilitative Leadership:** Developing practical skills and tools for tapping the creativity, experience, and commitment of people with whom they work.
- **Ethical Leadership:** Understanding and committing to the ethical standards of a school system
- **Interaction Management:** Learning and practicing strategies for building commitment, facilitating improved performance, and following-up to support continued improvement.
- **Six Sigma for Educators:** Understanding and implementing the goals of the district which include: Performance management; the DMAIC Method; Process Management; Performance Management; and Analytical and Decision Making Tools
- **ESL:** Role of the administrator with educational strategies to support ESL students
- **A+:** Instructional strategies to support learning ESL student with different models to include total emersion and bilingual classroom instruction
- **Seven Habits:** Understand the underlying principles, paradigms, and processes for developing habits of personal and interpersonal effectiveness
- **FPMS:** Utilizing the Florida Performance Measurement System (FPMS) summative instrument for observations and evaluations
- **Professional Learning Communities:** Develop frameworks that can be used to create cultures of time, feeling, focus, and persistence aimed at ensuring that all children will succeed
- **Creating a High Performance Learning Culture:** Explore the concepts of core beliefs (ability and achievement, efficacy and effort) and learning ways to implement them as a team in schools to develop a high-performance learning culture

- **Targeted Selection:** Provide training for individuals in the targeted selection process which is used in interviewing and selecting school-based administration
- **Classroom Walkthroughs:** Provide recommended strategies for focused classroom visits to guide staff development and curriculum decisions
- **Budget Management:** Effectively managing site based budgets as well as program budgets
- **Effective School Improvement:** How to utilize your school improvement plan to drive improvement and instruction at the school and district level
- **PROMISE:** Member of the PROMISE grant for the development of mathematics and science administrative leaders

PROFESSIONAL AFFILIATIONS

- NAESP-National Association of Elementary School Principals
- FAEMSP-Florida Association of Elementary and Middle School Principals
- ASCD- Association for Supervision and Curriculum Development
- NEA-National Education Association
- NSDC-National Staff Development Council
- CTQ-Center for Teacher Quality
- PROMISE-Leaders of Math and Science Education