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How Can Guided Math Techniques Be Integrated Into A Third Grade Multiplication Unit?

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HOW CAN GUIDED MATH TECHNIQUES BE INTEGRATED INTO A THIRD GRADE MULTIPLICATION UNIT?

By

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CHAPTER ONE

Introduction

Overview

When will I ever have to use this again? This is a question that many of us have heard our students ask, or possibly have even asked ourselves at some point. As a child, I remember questioning and wondering why it was important to for me to learn multiplication and how to find the area of a random shape. I remember questioning if I would ever use this again. As students, it is hard to see how what we are learning applies to our life now, let alone in the future. The skills that I teach to my third graders are the skills that resurface on a daily basis. Mathematics is everywhere we look. It is a constant in our daily lives. Many times it is so embedded in our daily lives that we do not even realize we are doing it. Our goal as educators should be to make learning meaningful to students so they do not ponder these questions. How do we do this? How do we make learning mathematics motivating and engaging for our students?

This should be the goal of all mathematics educators. We need to utilize instructional techniques that focus on the individual student while providing activities and lessons that are motivating and engaging; all while building their confidence. My research questions is: *How can guided math techniques be integrated into a third grade multiplication unit?* I believe that by exploring this question I will be able to help my students develop positive attitudes about math, and as a result, increase their multiplication skills.

In this chapter, I will discuss my personal experiences with mathematics as a student throughout my education. I will also discuss my experience teaching mathematics as an educator and how these experiences have shaped my instructional techniques to provide the best methods to teach my third graders multiplication.

My Experience with Mathematics

As a young girl, I really enjoyed school. I loved going to school and would be sad when Friday afternoon came around. I enjoyed school so much that I would play school at home. Subjecting my dog and stuffed animals to be my students. My earliest memories of math class were of playing math games with my friends. I remember waiting and waiting till the end of the day for those last ten minutes. As I entered junior high I remember receiving my first math book that was easily over four hundred pages long. Everyday, at the beginning of math time, we got out a sheet of notebook paper and completed the first six problems as a whole group with the teacher guiding us through the questions. When this was done, we were asked to complete the other fourteen problems and go up to the podium when we were finished to have her correct them. The monotony of it got redundant. Math started to become less enjoyable for me. As a result, I feel like I started losing myself in the process. I was not looking forward to the last ten minutes or the first forty for that matter. I started to doubt myself and my abilities.

This lack of confidence continued through junior high and high school. I continually received good grades, but lacked the enthusiasm and motivation that I once had possessed as a student. I vividly remember the first day of my freshman year of high school wondering if math would be exciting as it once was. Would that enthusiasm

return? Unfortunately, it did not. If possible, it was even worse than junior high. I disliked my classes because we strictly completed problems out of the book. We rarely had the opportunity to share ideas with others, and I felt like it had zero relevance to my life. I did not understand the purpose of these classes and quickly lost interest.

When I entered college my experiences with math started to change. I initially had every intention of becoming a pharmacist. I signed up for all the classes and was pleasantly surprised how I enjoyed my science classes that required me to use math, specifically physics. I started gaining back some of that enthusiasm that I once had. I was using these math skills and applying the same methods learned before but it was different. I felt like it was meaningful and worthwhile; I felt like it had a purpose. The math I was doing was necessary to complete the project and lab I was working on. It was similar to all those years before in elementary school when math was more than solving a problem because it was in the lesson for the day; there was a purpose and it was enjoyable to figure it out. Through these classes I ultimately determined that pharmacy was not for me. I realized it was not what I wanted to do with the rest of my life; I didn't find joy in what I was doing. Through various experiences and multiple reflections I was reminded of my early ambitions to become a teacher.

Once I realized these early aspirations were want I wanted, it was pretty straightforward from there. I decided to add a science emphasis onto my license because it combined my love of math and science.

My Experience Teaching Mathematics

Out of college I was hired as a third grade teacher at a charter school, with an environmental focus, in rural Minnesota. This school was the perfect fit for my fresh out of college self. It combined my interest of science and had a family atmosphere. Being a new teacher was scary. During student teaching I felt I had it all together, but being on my own was terrifying. I found myself following the various curriculums closely. I felt nervous and apprehensive of my own abilities and felt dependent on the curriculum guides. Looking back at my first year makes me chuckle. I was clearly in survival mode. I did what I could, all while trying to find my own two feet. As the years went by I started discovering who I was as a teacher and what I truly found to be important. Through reflection I was able to determine that the relationships I built with my students and the knowledge I learned about them was the most important. I was able to use this information to help plan and guide my lessons. I made sure to incorporate math problems, games, and activities that aligned with their interests. This helped my students develop enthusiasm for learning math. Again, I was reminded of my own experience and what made mathematics motivating for me.

In the beginning whole group instruction was comfortable for me; as a first year teacher it was all I could comfortably handle. After a few years of teaching I realized how ineffective it was. I did not feel like I was meeting the needs of every child. I felt like I was reaching my middle students; leaving the high fliers and struggling students out in the cold. In addition to not meeting the needs of all of my students, I was experiencing

many behavior issues. This was most likely due to either boredom or content that was too challenging. I realized that I could do better for my students and myself.

The school I worked at was amazing. It allowed teachers to be inventive, to try new things. With the support of my principal I wanted to try a new idea I had read about on a blog post. Little did I know, but I was implementing ideas that aligned with many of the same guiding principles of guided math. Did I do it perfectly? No, but it was a good start. I started seeing successes with all my students. Not specifically my middle group of students, but the high fliers and struggling students too. I was able to individualize my instruction to meet their unique needs while also providing activities that were motivating for them as well. I started seeing less behavior problems and more engagement in the activities. The biggest thing I noticed was the increased confidence in many of my students who exhibited hesitation and frustration. My students were enjoying themselves similar to how I had so many years prior in elementary school. I wonder if all those years ago my teachers were using the instructional technique of guided math to teach me.

The Research Question

Every year I have seen how tricky multiplication can be for third grade students. The methods used to teach these skills have changed drastically then how we were taught in elementary school. The various methods that educators are required to teach can be extremely challenging for students. Teaching using the whole-group instructional technique proves to be very challenging to ensure students fully understand the topic and are able to apply the concept. Teaching to twenty-four students at one time is extremely

challenging when the goal is to ensure that every student understands the concept and is able to apply it. This is why I have selected the research question: *How can guided math techniques be integrated into a third grade multiplication unit?*

As a teacher, I want to provide my students with the best possible instruction. Unfortunately, this looks uniquely different for each of my twenty-four students. The question then is, how am I supposed to meet the individual needs of each of my students? It is impossible to meet each of these needs through whole-group instruction. Teaching this way, I really am only teaching to a small portion of my students. The answer to the question is teaching through small group instruction, specifically using the Guided Math instructional technique.

Guided Math allows my students to have individualized instruction, authentic practice, and hands on activities. To me this is the best of the best. My students are getting the specific help they need through multiple methods and are motivated and engaged during the entire process. When students are motivated and engaged it is more likely that learning will occur. I want to provide this type of instruction and experience for my students so their social, emotional, and academic needs are being met. The motto of the school is to teach to the whole student. Using this method of instruction will help meet all the individual needs of each student. Another goal of our school is to improve our math scores by 7.1%. By incorporating these techniques and using specific group data to drive my instruction, I will be able to improve my students' math scores.

The school I currently teach at is very open and allows us freedom to use what instructional techniques we feel comfortable with, similar to the first school I taught at.

They want us to be creative and teach the curriculum the best we can to reach the individual needs of our students. As a result, I have the option and ability to teach math using this method. I feel very fortunate to work in an environment that allows teachers to have the ability to design instruction that incorporates their educational philosophies, teaching style, and individuality into their lessons and classroom.

Through this chapter I discussed my history with mathematics as both a student and as an educator. I discussed the importance of having motivation, engagement, and confidence when teaching math concepts. Through my research I strive to answer this research question: *How can guided math techniques be integrated into a third grade multiplication unit?*

In my research I will take a closer look at the rationale behind guided math, the components of guided math, the importance of assessment and grouping, and the role that motivation and engagement play in the acquisition of multiplication skills. Finally, I will be creating a resource for other third grade teachers to use when implementing guided math in their classrooms.

CHAPTER TWO

Literature Review

Overview

To fully understand how the instructional technique of guided math connects and relates to a third grade multiplication unit, one must first look closer at the component of guided math. First, it is important to look at the basis of what guided math is; looking at the different aspects and understanding the rationale of each group, routine, and method. From there, it will be important to look at the role assessments and data play into the creation of student groups. After discussing the basics of what guided math is and how groups are formed, it will be important to look at the role engagement and motivation play into helping build confidence in students and how that affects learning and the acquisition of skills. Finally, it will be important to understand the role of guided math in the classroom and how it intersects with a third grade multiplication unit. This literature review will help develop a thorough understanding of guided math and how it is beneficial in the classroom. This understanding will then serve as a basis for developing a research plan to answer the question: *How can guided math techniques be integrated into a third grade multiplication unit?*

Why Guided Math

As teachers, we want what is best for our students. This may look drastically different from one student to the next. Some students may need extra support and reteaching in one area; whereas, other students mastered that concept the first day. How

do we, as educators, plan a lesson to adequately meet the needs of all of these diverse learners at the same time? One possible answer is to incorporate the instructional technique of guided math.

Guided math is a form of instruction that allows the teacher to focus on the individual needs of each student. This is possible by breaking students into small groups as opposed to providing instruction to one large group. These small groups make differentiation more attainable and help students develop as competent mathematicians. "The goal of guided math is for students to become proficient mathematicians who have conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and mathematical confidence" (Newton, 2013, p. 7). Guided math helps students students become comfortable with numbers and operations so students can work independently in new and different situations. These goals are met by allowing students to operate in an interactive place where students are working independently, with peers, or with the teacher. Students are encouraged to take a more active role in the learning process (Schultz, 1990). Instead of using a teacher-centered approach, the teacher plays the role of facilitator. With the main role being to watch, observe, coach, and assess. Teachers provide instruction for students that is just right, meaning that instruction is just challenging enough for students to learn from the new mathematical experience. Instruction is not too easy or too hard. Problems are presented in their zone of proximal development. "Guided math allows you to meet students where they are so you can take them where they need to go" (Newton, 2013, p. 9).

It is obvious that not all students learn the same way. There is not a one size fits all method when it comes to instruction. This is because everyone has a different learning style. The top three intelligences found among students today are linguistic, visual-spatial, and tactile-kinesthetic. These are the same three most popular intelligences from twenty-five years ago. The difference is that the amount of students in each category has changed. No longer is linguistic the highest intelligence. Today there is a greater preponderance of visual learners. Visual learners account for over fifty percent of students, thirty-five percent are tactile-kinesthetic, and only fifteen percent are linguistic learners (Gardner, 2000). When planning instruction it is important to take these different learning styles into account. It is not relevant to rely on instructional techniques of the past because the way our student population learns has changed. In guided math planning it is important to incorporate these three most popular learning styles, but also include other learning styles like, musical, logical-mathematical, digital, interpersonal, and intrapersonal approaches (Gardner, 1983). In a classroom this may include incorporating movement, songs, chants, games, poems, manipulatives, diagrams, charts, and various other activities into instruction. However it is taught, it is important to include multiple methods to meet all learners and their learning styles. One method to reach these different learning styles is to utilize different activities and techniques that engage these different types of learners.

Components of Guided Math

When utilizing the guided math instructional approach students are not only sitting in their seats, listening to the teacher, and copying down problems in their

notebooks. They are actively engaging and participating in activities that require them to apply math skills and concepts in a variety of different ways. This is the opposite of what one would see when utilizing a whole-group instructional technique like direct instruction. When utilizing the guided math instructional technique, students engage in a number of different activities during the math block. These activities would include calendar time, problem of the day, whole-class mini-lesson, guided math groups, math strategy practice, and a math share. This list may appear overwhelming, but it is important to remember that some of these activities are happening simultaneously. It is also possible to complete these components at various times during the day. Calendar time and the problem of the day are two examples that many teachers choose to incorporate elsewhere in their day (Newton, 2013).

Many teachers choose to incorporate calendar time and the problem of the day into their morning meeting or morning routines. According to Newton (2013), it is important for all students to partake in various calendar activities. It encourages students to practice everyday skills like writing numbers, analyzing and discussing data, and creating graphs (p. 20). Depending on the grade level, the information can be made easier or more challenging. To make the process more simplistic, students could complete the day of the week, graph the weather, or count the number of days of school. To make the calendar time more challenging, students can track the weather and talk about the percentage or the fraction of days that were sunny, snowy, rainy, etc.

During the morning routine it is also beneficial to lead activities that require students to solve a problem of the day or a number of the day. While completing these

activities students are building their number sense. They are developing a stronger understanding of what the number is and how the number is made (Shumway, 2011). Through conversation with their peers, students are finding and answering multiple number models. They are showing the number with manipulatives, writing the number in different ways, and determining if the number is odd, even, or prime. Students are developing a stronger understanding of numbers and how to use various methods to solve mathematical problems. It is beneficial for students to build these skills in a supportive environment like the morning meeting.

The next part of guided math is called the mini-lesson. During this part all students are gathered together. Students are given insight into what the math block will consist of for the day. "The idea of the mini-lesson is to start or continue a general discussion about the Big Ideas that students are looking at in their current unit of study" (Newton, 2013, p. 22). During the mini-lesson a new skill may be introduced or already learned skills could be reviewed. It is important to provide students the information so that they can adequately use and apply this information in the centers they will be completing during the duration of the math block. The mini-lesson models the current skill or strategy so students can independently apply it on their own. In addition to modeling the skill, it is also important to create an anchor chart or example that students can refer back to. This is especially important to ensure that students can work independently during math center time (Sammons, 2011).

The next component of the math workshop is one of the most important parts; it is center time. Students will be completing various math centers during a given amount of

time. Typically, students will participate in four centers for an average of ten to fifteen minutes a center; however, the amount of centers and time per center could vary based on student need and concepts being taught. According to Newton (2013), students should be partaking in centers that require them to apply the skill (assessment based), work on math facts (memorization of basic computations), active practice (hands-on activity), and teacher time (specific individualized instruction). The elements of center time in guided math closely models that of guided reading (Fountas & Pinnell, 2013). Students receive individualized instruction in small groups, and individually work on skills in other centers. Both also consist of students working on skills at their individual levels through various methods of instruction. These various types of centers encourage students to utilize and apply various learning styles.

When planning the activities that will be completed at the various centers it is extremely important to consider these learning styles. At the beginning of the year it would be beneficial to have students complete an inventory that would help identify the mode/modes of learning they most identify with (Sammons, 2011). Once this information is gathered, it can be used to help plan activities that will be completed at the various stations. Many students have trouble problem solving through abstract concepts (Moreno, Ozogul, & Reisslein, 2011). Therefore, it is necessary to provide students with visuals, manipulatives, and hands-on activities to help process and problem solve. Incorporating activities like games, songs, chants, rhymes, etc, encourage students to learn skills with more than one mode of learning at a time. These types of activities would be extremely beneficial to incorporate during the active practice station. Many

times this station is a favorite among the students because students are not sitting down with a paper and a pencil solving a problem. They are actively solving a problem through a mode that engages the student.

According to Shumway (2011), it is important for students to develop a strong number sense. Students need to be able to do more than just memorize the facts; it is important for students to understand the why. For example, when subtracting with regrouping, students need to understand why it is necessary to borrow. They should not only be able to recite the steps necessary to subtract with regrouping. "Number sense routines are a form of practice, but they are deep, meaningful practice" (Shumway, 2011,p. 16). When planning certain centers, like the math fact practice center, it is important do plan activities that encourage students to partake in activities that allow them to develop a deeper conceptual understanding. Students would not be using their time wisely if "busy work" was assigned. Tasks have to be more intensive than requiring students to regurgitate facts and information. It is important for students to develop automaticity in their skills (Woodward, 2006). Automaticity of basic math facts is vital when students are expected to solve complex math problems. Without this automaticity it would be very challenging and potentially frustrating for students. When planning it is important to find the balance of planning instruction that both helps students develop automaticity and provides students with meaningful practice.

Planning activities and practice that is meaningful is also important when students are working on the target skill. During one of the centers it is important for students to partake in active practice of the skill that was addressed during the mini-lesson. Students

may work on this independently, in pairs, or in cooperative groups. The work completed at this center should be done independently. Thus, work should be at the level of the student so it can be done without assistance. This is an important part because the teacher will be busy with the small group and unable to assist students during this time. Many times the work done during this center will be turned in and used for assessment purposes. Depending on the skill students could be working in interactive notebooks, on various worksheets, or on activities that would be added to their math portfolio (Sammons, 2011).

The final center rotation is teacher time. This is the most important part of the math workshop because the instruction is specific to the members of the group. The teacher utilizes assessment data to plan instruction and strategies that need to be taught or retaught. Depending on the specific needs of the group the teacher may reteach topics that students are still struggling with. The teacher may address concepts taught in the mini-lesson, or introduce new concepts for students who need to be challenged. The ability to individualize the instruction for each student is extremely beneficial. This type of instruction would not be possible when utilizing the whole-group instructional technique. With this individualized small group time, students have a high probability of growing their individual skills and developing as a mathematician (Newton, 2013).

The final part of the math workshop is the share. The main purpose of the share is to wrap up the math time and provide closure for the students. During the share, students talk about their thinking during the activities they engaged in. Concepts from the mini-lesson may be addressed and discussed. Many teachers utilize this time to conduct

some informal assessments by utilizing questions to determine student understanding. The share is a very important part of the workshop. Many times the share is skipped because of lack of time. Without the share students are left to make meaning of their own. It is important to clearly state and provide students with the takeaway for the day (Newton, 2013).

Benefits

By breaking students into small groups they not only improve their math skills, but also their social skills. Working in these small groups encourages and helps students learn how to work with others, communicate appropriately, and problem solve through challenging activities. When students have the ability to collaborate and work together, they develop a deeper level of understanding (Salk & Simonin, 2011). When collaborating students have the ability to bounce ideas off each other, talk through problems, learn from other perspectives, and discover different methods of solving problems. Working with others provides the opportunity to see and experience different viewpoints. This exposure to other ideas helps students expand their knowledge, perspectives, and viewpoints. This sharing of knowledge can be very beneficial if it is deliberate, intentional, and focused. For students this can be extremely challenging.

Classroom management is a huge part of guided math. It is important that students know what is expected of them at each center. This requires a lot of modeling and practicing. Specifically showing students how to come to a center, what supplies to bring, how to complete the center, how to pick up the center, and how to move on to the next center without direction. It is important to practice these steps multiple times so

transitions and work times are flawless and uneventful. It is necessary for students to be self-sufficient during center time because the teacher will be busy providing individualized instruction to the group of students at teacher time. When the teacher has to stop the group to redirect students and address misbehavior, it is taking away from the small group of students. When this individualized instruction time is taken away, students are not receiving the best possible instruction. Therefore, it is vital to take the extra time to practice in the beginning to ensure students understand and are aware of the expectations of every activity and event that may occur during center time so the small group with the teacher can go on uninterrupted (Kohn, 1996).

There are many methods and acronyms available to help support students with these rotations. Since the teacher will be busy providing instruction to the small group, it is important that expectations and routines are established. If implemented correctly, the rotations and centers should run smoothly (Sammons, 2011). It is imperative to provide students with a visual so they know what the assignment or activity is at each station. Verbally providing this information during the mini-lesson is not enough. Many students forget this information or only hear a portion. This lack of direction then may cause many problems during the center that would take away from the learning that could have taken place. By providing a visual, students have the ability to refer back to it as needed. In addition to providing the directions and activities, it is important to provide the sequence of rotations and the names of the students in each group. Again, it seems obvious but the reiterating of expectations and directions is key to prevent any problems

that could occur during the math time to ensure that the small group time is uninterrupted (Newton, 2013).

Using Assessment Data to Form Math Groups

As described earlier, small group instruction is an important part of guided math and the math workshop. The most important part, individualized instruction, is taught during center time in these small groups. Since small groups play such an important part, it is imperative to create groups that will be effective and successful. How does one create this type of group? How should students be arranged to create a group that will allow and encourage every student to grow? What tools are available to assist in the creation of groups?

These are all very important and essential questions. There is a lot of pressure to create the most effective group because there is a lot at stake. If students are not correctly placed, a lot of valuable learning and time could be lost. Time is short and needs to be utilized as best as possible. "As practitioners, we experience tremendous pressure to "cover" the curriculum in a timely manner. Unfortunately, this sometimes translates to a practice of teaching *curriculum* rather than teaching *children*" (Oberdorf & Taylor-Cox, 2013, p. 4). This is true for many educators. Sometimes the pressures of reaching all the standards and finishing the curriculum before the state tests trump the needs of our students. Educators need to listen to the students and plan instruction around their needs, not necessarily considering only the requirements of the district and state.

Assessments are a constant in every school. They are required to be given from the district and state levels. Assessments can be beneficial for the teacher in many ways.

Assessments play an important role in this process. Teachers administer many different types of assessments that provide a complete profile of each child (Newton, 2013). Assessments may be given before the unit to assess prior knowledge, during the unit to assess growth and determine any misunderstandings, and finally after the unit to assess the level of understanding of topics. These assessments can be more formal or informal in nature. "Effective formative assessment occurs simultaneously with instruction for the purpose of improving students' knowledge and performance in mathematics" (Oberdorf & Taylor-Cox, 2013, p. 3). Observation, exit quizzes, written work, interviews, conferencing, and portfolios are a few of the many forms of assessment. Much of this information is gathered during instruction time. Assessment gathering does not have to be an official paper and pencil test; it can, and should, be done daily because a lot of important information is determined that is used to help guide instruction. This data is gold! Trends, patterns, and areas of concern can be determined from looking at this data. It is used to help plan for small group time. We should use this data to provide feedback to our students. Using this data to drive our instruction is one of the most powerful factors in enhancing student achievement (Oberdorf & Taylor-Cox, 2013).

With all this data it can be challenging to know exactly where to start. To better help understand the data Newton (2013) suggests grouping students into four different categories: novice learners, apprentice learners, practitioners, and expert learners. Novice learners are those who do not have a basic understanding of the concepts. Many times these learners need extra support and reteaching of topics. Apprentice learners have a basic understanding of the topics but need specific, concentrated work to reach a

deeper level of understanding. Practitioners are those students who are working on grade level. Expert learners are those students who are working above the grade level standards and need to have the topic extended (Tomlinson, 1999). Using this data helps to create these different categories of learners and gives the teacher a starting point for forming groups. It allows the teacher to work intensively with each group on the specific needs and goals that were identified in the various assessments.

The grouping of the students is an integral part of guided math. Guided math groups are organized by the specific needs of the students at a certain time. There are two main types of grouping: ability grouping and flexible grouping. Ability grouping has been a popular type of grouping in education for many years. It groups and labels students based on their achievement levels. Many people have mixed feelings about ability grouping. Proponents of ability grouping argue that by grouping like students together, it allows the teacher to work more closely with the specific learning needs and styles. It allows teachers to pace instruction according to a smaller group of student needs. It is also said that because students are grouped with other students of the same ability level, that it will prevent students from comparing themselves to other students of a higher level and thus not lose confidence and self-esteem (Bygren, 2016). Evidence also shows that ability grouping can be beneficial to students of different backgrounds when it comes to areas such as achievement, attendance, and discipline (Tomlinson, 2015). Ideally this type of grouping makes sense, group students according to their needs and ability. However, it can be detrimental because students know the difference between the groups. These labels can communicate the idea of students being less than

their classmates and communicate the idea of lower expectations. This can than become self-fulfilling. "Furthermore, this kind of sorting places racial and ethnic-minority students and children from working-class homes into low-achievement tracks, contributing to the social reproduction of elite and underclass groups in society" (Bygren, 2016, p. 119). Students pick up on these discrepancies and are able to internalize them. This can then lead to students feeling differently and decrease their confidence and motivation (Newton, 2013). Many times students in these lower groups are not challenged to the level that students in the upper groups are. The level of questioning and problem solving is decreased. It is important to expose all students to higher levels of thinking and problem solving (Vann, 1999).

Flexible grouping is another method used to form math groups. In flexible grouping students are placed into small groups based on specific instructional goals. The main distinction between ability and flexible grouping is that flexible grouping is flexible. This means that they change over time. As students excel and achieve specific knowledge and skills, they move to a different group. The groups are fluid and change frequently over time. (Newton, 2013). Students can be placed in certain groups based on specific skills or content strands. In some situations students may be placed in the novice group for number facts but the expert group during the fractions unit. This is why ongoing assessment is essential to ensure effective implementation of guided math groups. This ongoing assessment could take place in the form of quizzes, math running records, observations, teacher records, and teacher conferences. During teacher conferences students sit down with the teacher and discuss their progress and plans for

the future. Teachers may also give oral assessments on particular skills during a conference (Sammons, 2011).

Flexible grouping is also important because groups are not created solely on ability. Thus, not all novice students will be in the same group at the same time. They may at some points, but not all the time. It is encouraged to create groups that are heterogeneous, meaning that there is a mixture of the four different groups of learners. This is beneficial for students because it helps dissolve the divide that is created by ability groups and it encourages learners to work and learn from learners who are diverse (Newton, 2013).

In addition to considering the academic aspects when forming groups, it is also vital to look at the social and emotional aspects when creating groups. Much of the center time will be completed without the direction of the teacher. Students will be expected to work and be self-sufficient for three of the four stations. To help encourage positive performance it is necessary to consider the personalities of the students. The goal during the centers is for students to be actively engaged through authentic learning tasks. If students are distracted by members of the group this will not happen. As a result, it is important to get to know each student and what would make learning best for each of them. Looking at the individual behaviors and personalities would be an important consideration when creating effective small groups (Sammons, 2011).

An important part of the small group time is record keeping. It is important for teachers to keep track of data and topics covered for each student and group. These records will help to analyze student growth and plan for the future. It helps to gather

information to lead discussions with students. Record keeping helps one to juggle everything that is happening. There are many possible ways to keep track of information. It is important to find the one that works best (Newton, 2013). Being organized will help keep the flow of math workshop going and ensure everyone to have success.

As stated in this section it is clear that there is a lot of thought and meticulous consideration in the forming and implementation of small groups. These considerations are important to create groups that will be effective and successful because the ultimate goal is to increase student achievement. Another important factor of student achievement is incorporating activities that are engaging and motivating.

The Role of Engagement and Motivation in Learning Math Concepts

Too often many students have a negative attitude towards math. Many students/people list math as one of their least favorite subjects because of lack of interest or lack of success (Willis, 2010). This is a depressing statistic because our society is changing in a way that is requiring citizens to utilize more and more math skills. These jobs and tasks are going to continue to require people in the workforce to exhibit these higher order thinking skills and problem solving skills that are taught and perfected in mathematics classes. The question is, how do we as educators change these perceptions and thoughts?

As educators, it is our goal to not only help our students develop math skills, but also develop confidence in their ability to apply these skills. Motivation is key factor of success. In a survey, seventy-four percent of students said they would drop out of school because it was boring and the material was not interesting to them. Only twenty-seven

percent stated they would drop out because the content was too challenging (Willis, 2010). This statistic shows the important role motivation plays in student learning. By incorporating the ideas of guided math, we are teaching the necessary skills in addition to providing motivating and engaging experiences that help build confidence in our students. In addition, motivation also plays other roles in building confident students. "Motivated students are the most responsive and least likely to be "behavior problems" because math negativity is associated with the reactive fight/flight/freeze behavior. With your intervention, students' attention and positive attitude can replace negativity" (Willis, 2010). When boredom and misbehavior are taken out of the equation authentic learning can occur.

In the initial planning stages it is important to take the time to get to know each student. It is important to determine their interests, motivations, and learn about their personal experiences. These personal factors are an important tool to not only build a relationship with the students, but also design activities and lessons that are motivating and engaging for them. According to Willis (2010), students work harder and persevere through difficult challenges when they have concrete personal goals and motivation for mastering the skill/concept. Teachers need to set up interventions to help students overcome these negative attitudes and reach for success. Some of these interventions include evaluating and planning so each student is working at material at his/her individual level, building foundational skills, teaching to students' strengths with their interests in mind, recognizing the link between effort and goal achievement, and teaching mathematical strategies to minimize negative responses to mistakes (Willis, 2010).

Teachers who utilize these strategies to differentiate instruction and adapt activities according to the individual needs of their students, will likely see an increase in student understanding and retention of concepts.

When academics are taught in a way that is lively and engaging, students learn content; they also develop a love of learning. In order to do this, it is important to make learning active. Students should be "doing" things. They should be thinking, exploring, and applying things they have learned as opposed to watching or listening. Playing a video or lecturing in front of the class is easy for the teacher, but not as beneficial for student. Learning should also be interactive. Students should be working with partners. They should be talking though ideas, trying things out, and honing their thinking, all while developing social-emotional skills. Learning should be appropriately challenging for students. It should be built upon what each student already knows, utilizing data to help drive instruction. Learning should be purposeful. Students should understand how the lesson connects to a larger body of knowledge and how it can help them study concepts in their classroom. When possible real life, authentic experiences should be incorporated. Students should have the opportunity to solve problems that have relevance to their lives. It should be meaningful for them. There is little motivation and engagement to solve problems that have zero importance to them. Learning should also be connected to all students' strengths and interests. The teacher should be able to identify the strenghts of the students and provide opportunities for students to utilize them. Finally, learning should be designed to give students some autonomy and control. Students should have the ability to choose which aspects to explore, and they should have

the ability to figure out strategies to best solve each question or activity. The more students have the ability to approach learning in a spirit of play and exploration, the more committed they will be, even with challenging tasks (Responsive Classroom, 2016)

As mentioned above, choice plays a large role in student motivation. In many situations curriculum, lessons, and activities are dictated by the district. There is little freedom and individuality. For many students and teachers the monotony takes away for the overall goal of the lesson. Wash, rinse, and repeat for one hundred and seventy-two days of instruction. This lack of variety takes out the fun and inhibits learning. The method of instruction needs to be engaging for students. There needs to be some level of interest. If students are enjoying what they are doing they are more likely to try their hardest. During the math centers it would be beneficial to allow students some choice in their centers. Let students have the option of what math game they are playing. Allow students to use various manipulatives to solve the problem. Teach students multiple ways to solve a problem so they can choose which method they like best. The math workshop format offers opportunities for teachers to provide choices for their students (Sammons, 2011).

Another factor that affects student motivation is teacher support. Students need to feel encouraged and supported both academically and emotionally. It is important for teachers to create a positive rapport with students. Teachers need to build a relationship with each student so the student feels valued and cared for. Building a strong rapport with each student creates a caring classroom climate where students feel safe and secure to explore and engage (Liu, et al, 2017). When teachers provide encouragement through

supportive message and conversations, it has shown that students' effort and self-confidence growth. This is especially true when this is incorporated into lesson (Usher & Pajares, 2006). When students feel valued, cared for, and supported they are more likely to accept challenges and have higher levels of learning.

There are many factors that affect student engagement, motivation, and confidence. As educators, it is important to incorporate as many of these factors as possible to best help students in their learning and understanding. How would the implementation of all these ideas look in a classroom and specifically in a grade-level mathematics unit?

Guided Math and Multiplication

Multiplication plays an important role in the third grade curriculum. Third grade is the first year that students are officially introduced to multiplication concepts. In second grade students are introduced to arrays and begin to find the area of shapes; however, they are not aware they are actually doing multiplication. These basic concepts allow students to start developing a foundation for when students reach third grade and are thrown head first into the concept of multiplication.

Multiplication is covered in a variety of ways and multitudes in third grade. Initially, students review the foundational skills they learned in second grade. They review arrays and counting the number of squares inside a given shape. From there, teachers introduce the concept of multiplication and explain how the activities students have already been doing are actually multiplication. Once students develop this basic knowledge of what multiplication is, students are introduced to the various times tables.

The initial tables that are taught are the ones, twos, fives, and tens. These are introduced first because students have practiced skip counting by ones, twos, fives, and tens. Many times, hand motions and songs are used to make the connection between skip counting and multiplication (Leach, 2016). After these initial facts are taught the other times tables are introduced as students are ready. Once students have been introduced to these various facts, the facts are presented in a variety of ways. The main way is through word problems. Word problems require the students to read a situation, determine the important information, figure out how to solve, and then finally solve the problem. As a result of the multiple steps these problems can be challenging for students. One benefit of word problems is many of them replicate authentic experiences. Authentic experiences provide students the opportunity to practice math problems that are relevant to their lives (Sammons, 2011). Students are able to make connections to their own lives which help with motivation, engagement, confidence, and determining understanding. Authentic experiences also allows students to use prior knowledge to develop a deeper understanding of the situation and topic which helps students to begin to develop conceptual understanding of how multiplication works.

When initially introduced and throughout the learning process, it is important for students to develop a conceptual understanding of multiplication. They need to know the why. Students need to develop an understanding of what multiplication means (Shumway, 2011). It is not enough for students to compute the problems. They need to understand each step of the process and how the final answer makes sense. It is, however, not enough to only have conceptual understanding to be considered proficient

in mathematics; it is necessary to also have procedural fluency that is underpinned by conceptual understanding (Leach, 2016).

Number fluency is built on the knowledge of conceptual understanding. It is developed on the knowledge of links and connections. It is important to provide students a lot of practice to develop a strong understanding of these basic facts. Practice should occur in multiple formats that meet the specific learning styles of each student. Fact fluency is an important part of the process. Students need to develop automaticity in their facts. Automaticity prevents students from stalling, trying to remember the answer to a fact, when solving larger, more complex problems (Hurst & Hurrell, 2016). For students to be successful mathematics, it is imperative that they have both conceptual knowledge and fact fluency. How do educators help make these connections between conceptual knowledge and fact fluency? One answer to this problem is by incorporating the instructional technique of guided math.

Guided math encourages the development of both conceptual understanding and fact fluency. The various centers and methods associated with guided math encourage students to develop a deep understanding of both the why behind the various concepts and it provides opportunities of active practice that aid in developing necessary skills like fact fluency. Guided math provides a framework for educators to follow. It provides a template for educators to follow to ensure that the individual needs of every student is being met when it comes to conceptual understanding and fact fluency (Newton, 2013). Guided math supports both the student and the educator in the acquisition of

multiplication skills in a method that meets the needs of every student in a way that is engaging and motivating for each student.

Summary

Throughout this chapter I shared information about what is guided math. Specifically I shared the rationale and goals behind guided math, the various components of guided math, benefits and possible obstacles of guided math. I emphasized the importance of using assessment data to drive instruction to form groups and to best meet the needs of each individual student. The importance of motivation, engagement, and confidence were addressed. Finally, I shared how the ideas of guided math and multiplication come together.

Implementing guided math is not an easy feat. It requires a lot of careful, thoughtful planning and modeling to be effective. However, if implemented correctly the results will be astounding. Students will develop a strong understanding of concepts and skills that will help them be successful after they leave our classroom. In the next chapter I will begin to explain, in detail, the project I will create to address the research question: *How can guided math techniques be integrated into a third grade multiplication unit?*

CHAPTER THREE

Project Description

Overview

In chapter two, many aspects were discussed to provide a more thorough understanding of guided math. Detailed descriptions were given to provide an overview of guided math, how to use assessments to help form instruction, and the role motivation plays in the process of learning. Using the knowledge gained from this research and the various explanations given, I plan to answer the following question: *How can guided math techniques be integrated into a third grade multiplication unit?* Throughout this chapter I will provide a rationale for my topic, the frameworks that were utilized, the intended audience, and a description of my intended project.

Rationale

One of the most important parts of the job of an educator is reflection. Educators should reflect on what went well during the year, what was okay, and what could go better next time (Kurzman, 1998). Reflection is a huge part of my daily practice. To some extent, I reflect on every part of my job because I want to be the best teacher I can for my students. A few years ago I noticed a trend in my math instruction that I was unhappy with. I noticed how I was unhappy with how I was teaching math and meeting the needs of each student. As a result, I decided to look for different methods of instruction that would be beneficial for my students. After looking at various blogs and reading numerous articles, I stumbled across the idea of guided math. After doing even more research, I realized that this idea may be the answer to some of my frustrations.

After a few weeks of implementation, I noticed how my students seemed to be more engaged and motivated during math time. They actually wanted to do math for the entire time; there were little behavior problems and best of all, students were understanding the topics! It was a win for all involved. Their needs were being met, and I felt like I was reaching every individual student and addressing their individual needs. One day I had the realization that there are probably others that are feeling the same way I was about math instruction before I implemented guided math. If they knew about guided math, maybe their math instruction would be more successful and help their students develop a deeper understanding.

When thinking about the third grade curriculum and the third grade math standards, one of the largest and most challenging topics for third graders is multiplication. Multiplication is a basic skill that needs to be mastered in third grade because other math techniques are built upon a basic understanding of multiplication after students leave third grade. Knowing that many students struggle with multiplication, I decided to focus on how these struggling skills can be taught through an instructional technique that is beneficial for every student. What would this instruction look like in a third grade classroom? How would the educator teach and relay this information to students? Multiplication is an important topic for students and is challenging for educators to teach at each individual need.

Framework

This project that I created incorporates the ideas of multiple different frameworks. I incorporated much of the guided math framework and pieces of Understanding by

Design (UbD). To create the best project, it is important to combine these two ideas. The framework associated with guided math provides a model for my project. I incorporated the rationale, goals, and components of the instructional technique into my project. These pieces provide a comprehensive summary of this instructional technique. The emphasis placed on meeting individual needs, differentiating instruction, and providing engaged activities is beneficial for both educators and students. It allows educators to really individualize instruction for all learners, and it provides specific instruction for all students that is motivating and engaging. As Sammons (2011) states, "Guided math can provide a structured, practical way to teach differentiated math using small-group instruction, problem solving, and idea sharing while also encouraging students to become confident, deep thinkings" (p. 4). In addition to individualizing instruction, it is important that this technique allows students to become problem solvers who have the ability to analyze information. This is the ultimate goal for our students. We want them to become critical thinkers that can problem solve through tough situations and problems. By incorporating the guided math framework we are teaching our students these skills in addition to the many other important skills.

Differentiated instruction is an important part of instruction. It focuses on the who, where, and how we teach. However, when it is combined with Understanding by Design it can be extremely beneficial. Understanding by Design focuses on what we teach and what assessment evidence should be collected (Tomlinson & McTighe, 2006). When implementing guided math these are important aspects to ensure success. According to Newton (2013), educators should be collecting data through various

assessments to determine what content should be taught, and then how it should be taught during differentiated instruction. This assessment data is then used to help form instructional groups and the various center activities that students will complete during rotation time. Since the instructional technique of guided math does not have an "instruction manual" of step by step directions, it is imperative that educators are utilizing Understanding by Design.

Educators need to first determine what skills are necessary for each grade level by looking at the grade level standards. It is then important to determine the current needs of every student through various assessments. Finally, educators need to use this data to plan for instruction to meet these individual needs (Sammons, 2011). It is clear to see the close correlation between differentiated instruction and Understanding by Design. Both of these ideas are key factors and necessary when implementing guided math in the classroom.

Project

When first implementing guided math it can be challenging to figure out how to incorporate all the components and understand the rationale behind each aspect. Before implementing guided math, it is important for educators to understand what it is and the research that supports it. As a result, I wanted to create a project that would explain what guided math is and how these different frameworks support this instructional technique.

My project provides a detailed overview of the instructional technique guided math so educators are familiar with the instructional technique and how it looks, sounds, and feel like in a classroom. I used key pieces of the research outlined in chapter two to

help provide educators a thorough understanding of the rationale, goals, the importance of motivation and engagement, the role assessment plays, and the various components of guided math. I want educators to feel comfortable and confident so they can incorporate some or all of these ideas into their classroom. In addition to an overview of guided math, I plan to create a sample unit on multiplication. My goal for the sample unit is for educators to see how a math block would operate utilizing the various components of guided math. I provided specific lesson plans that will give examples of what to do during every part of a guided math lesson on the topic of multiplication. These lesson can then be altered to fit the needs of a specific group of learners.

Participants and Setting

With class sizes growing at an alarming rate it is extremely challenging to teach students using the traditional method of whole-group instruction; however, by implementing the technique of guided math it is possible.

The resource I created is intended for educators and will be beneficial for a diverse group of third grade learners; however, this resource can also be altered and changed to meet the needs of a wide range of grade levels. This resource provides a deep understanding of the instructional technique and gives a detailed sample unit of a third grade multiplication unit. For third grade teachers it provides a clear step-by-step process that could be directly implemented in the classroom. For educators of other grade levels it provides a guide that could be altered to meet the individual needs of their specific grade level. I plan on sharing the components of guided math and the sample unit to other educators in a presentation on a Professional Development Day. The information

provided in this project is beneficial to provide the educators at my school a method to meet the requests of the school and the needs of the individual students. I hope the project provides some guidance and support to educators who struggle to balance the needs of all students like I have in the past.

Timeline

Balancing everything that goes into teaching can be extremely challenging. With my project, I hope to alleviate some of this stress for other educators. My goal is to complete my project this summer. The presentation was created to present to my colleagues at the back to school workshops in August. My goal was to provide a resource that will help educators wrap their heads around this idea of instruction. I do not expect that they implement every part exactly as outlined, but that they find what works for them and their students. I hope they are able to identify a few ideas and slowly incorporate them into their instruction; eventually integrating more and more of these ideas into their daily math block.

Summary

In this chapter I have provided a rationale for my project, a detailed description, what framework was incorporated, the intended audience, and the timeline. All these aspects help answer my research question: *How can guided math techniques be integrated into a third grade multiplication unit?* Ultimately, I hope my project will be a resource for other educators, who like myself, want what is best for their students.

In the next chapter I will discuss what I learned through this project, possible limitations and implications of my project, and how this project is beneficial to others. I

will also share how this project has positively affected myself, and how it could be beneficial to others.

CHAPTER FOUR

CONCLUSION

Overview

In the fourth and final chapter of my capstone paper, I will provide personal reflections about my findings, project, and experience throughout the development of my capstone project. My project aimed to answer the question: *How can guided math techniques be integrated into a third grade multiplication unit?*

In the coming pages I will first discuss and provide an explanation of the new insights and major findings I gained through the process of creating my capstone project. I will also refer back to the research I conducted that provided me with important concepts that helped guide and shape the unit plan that was created to help guide teachers when implementing this instructional technique. Next, I will provide specific examples of the implications and limitations that may be associated with this capstone project. Finally, I will share how the results will be communicated with others, how the project is beneficial to other professionals in this field, and how this project has impacted me and my teaching.

New Understandings

When in certain situations, people are asked to describe themselves in a few words. When thinking about this task one of the words that would describe me is curious. I am always looking up information, researching, and asking questions about everything. At times this can be overwhelming. However, when it comes to school and

learning, being curious is a great trait. I feel my curiosity has been beneficial during this capstone process. It has pushed me to ask questions and dig deeper within my research.

Prior to starting my research I thought I had a decent understanding of the topic of guided math; now I know how basic my initial understanding was. My knowledge of guided math has grown exponentially. Prior to this research I had a proficient understanding of the how. For example, how should guided math be implemented in the classroom, what are the components, what does guided math look like for a student, how do teachers manage the different components? While these are all important aspects of the technique they do not create a complete picture of what guided math is and should be. Through this process I have learned that the why is just as important as the how. Through my research I have learned the reasoning, goals, and ideals of guided math. Knowing this information has really shaped and created a more detailed understanding of guided math for me. These understandings have provided meaning and depth to the process and framework I already knew. It has given me more confidence in my abilities, and justifies the various steps I take with my students. The learnings and understandings that I have developed through this process are the same goals that I have for my students, the same things that I wanted as an elementary student. The idea of students developing confidence through meaningful and purposeful methods.

Literature Review

During this process my understanding of guided math has deepened. I feel many of the ideas that I already knew were validated and expanded upon. One of the main areas of growth was in regards to the goals of guided math. “The goal of guided math is

for students to become proficient mathematicians who have conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and mathematical confidence" (Newton, 2013, p. 7). This goal is pretty straightforward and makes a lot of sense. When thinking about these goals and the framework/set-up of guided math it comes back full circle. The reason calendar time, number of the day, the mini-lesson, stations, and share time are incorporated is to create learners that proficient in all these areas. It would be extremely challenging to create a lesson that encourages every student to achieve these goals in the confines of the whole-group instructional technique. We incorporate these components to allow students to meet and exceed these goals. "Guided math allows you to meet students where they are so you can take them where they need to go" (Newton, 2013, p. 9).

During my time writing the literature review, I kept seeing and coming back to research conducted by Dr. Nicki Newton and Laney Sammons. These two researchers have published many resources for teachers that are new or established in the guided math technique. Both Newton and Sammons had their own spin on the topic, but ultimately they were advocating for the same things. They both focused on meeting the individual needs of the student and how this may look different for every single student. When thinking back to my experience as a student and what I see from my current students one of the huge issues is choice. Students want to feel like they are in control of and are able to make decisions in their own learning. The math workshop format offers opportunities for teachers to provide choices for their students (Sammons, 2011). Providing choice for students could be something as simple as choice in materials,

games, strategies, etc. If we want our students to have high achievement we have to set them up for success. When students have choice in what they are learning, they are more likely to have higher engagement which in turn encourages learning (Newton, 2013).

Implications and Limitations

Two of the biggest challenges when incorporating guided math is time and management. To adequately address each component of guided math it takes at least seventy minutes. This is large chunk of the school day when there are so many things that need to be incorporated into the day. There are many ideas to help combat the issue of time, but it still is a problem. The technique of guided math is also not something that is quickly implemented. It takes a lot of time for the educator to fully understand the instructional technique and how to apply it in the classroom. In addition it takes a lot of time for students to get use to this new type of instruction. For many students, they are use to sitting at their seats listening to teacher led instruction. This type of instruction is much different. It takes a lot of time for the educator to model and explain what every component looks, sounds, and feels like. Students have to learn how to handle this new responsibility during the independent work times. Overall, it takes time to fully implement this form of instruction which unfortunately is at a premium.

Another important piece is teacher buy-in. If this instructional technique is going to be implemented effectively the teacher needs to put in one hundred percent. This is not something that can be done half-way. If we are only putting half the effort in, it will fall apart and unfortunately our students will suffer the most. We will let them down.

Teachers have to be willing to put in extra time in the beginning to fully understand the framework, prepare the many parts of the daily lesson, plan assessments, and determine how the assessment data is going to be used. It is important for teachers to be able to look past all the extra work and see, how in the long run, this instructional technique is extremely beneficial for our students.

Sharing Results

Every year our school has specific goals in reading and math. Usually these goals focus on overall student growth on the NWEA test scores from fall to spring. As a staff we have individually been asked to come up with solutions that would help our students and as a result help us achieve our goal. When tasked with this assignment my initial thought was to implement guided math because I have seen the effects and benefits in my own classroom. As a result myself and a coworker of mine have been asked to present information on guided math during a Professional Development Day. The project I created would be beneficial for my coworkers and provide them with the basics of what guided math is and how it can easily be implemented in the classroom with tweaks to fit the intended grade level and students.

Future Projects

One of the most important parts of effectively implementing guided math is knowing how to use assessment data to plan for future groups and lessons. In the future I think it would be extremely beneficial to do more research and learn more about the different assessment techniques. Much of my research focused on the teacher conducting the research and then analyzing the data to be used for future lessons and group

formations. While researching for this project I read some information about incorporating student self-assessment. I'm curious as to how this can be implemented and incorporated into guided math and if the data gathered would be as useful and beneficial as teacher assessment.

In addition to learning about the different types of assessment it would be interesting to do more research on the formation of the small groups and how these different groups would operate during center time. Specifically, I am curious how the number of groups would change the setup and flow of center time. In my project I had four different groups; with each group taking two days to complete all of the centers. Newton (2013) shared information about having three groups of students and having a "flex" block where you can individually conference with specific students or allow time for the unknown because there is nothing planned during that time. I am wondering what this would look like in the classroom. Would it be beneficial to have less groups with more students in them to take advantage of "flex" time?

Benefits to the Profession

Prior to the start of this project I had conducted some research and implemented ideas of guided math into my classroom. After some trial and error, things started to run more smoothly and flow better. The process to achieve this level of success was rocky. Looking back, I now realize that I did not have enough background information and support from others to fully implement this instructional technique in way that was truly beneficial for my students. If provided with more resources, support, and guidance I feel like the road traveled would have been less rocky and less stressful. My basic

understanding of the goals, ideals, and framework is now very evident. I thought I was implementing guided math, but really I was essentially using the whole-group instructional technique with a few tweaks. I was simply going through the process and steps blindly because that is all I knew. I was not letting the needs of the students guide me. At the time this was the best I could do. I, however, do not want other teachers to experience this. While the ups and downs were great learning experience, it was not the most beneficial for my students and myself. One of the goals of my project was to provide a condensed guide for other educators to help guide them down a straighter path, as opposed to the curvy, bumpy road that I took. After completing my capstone project I feel like I achieved this. This project provides a guide for educators when initially implementing guided math in the classroom. It will hopefully provide some knowledge and key steps to consider when first trying guided math in the classroom.While I'm sure there will still be bumps in the road, hopefully this project will serve as guide to help navigate through the rough patches.

Conclusion

Throughout my time of reading and researching to complete my capstone and project, I have learned many new ideas about guided math and how to implement it in the classroom. I have discovered many quality resources that provided me with knowledge to help answer my research question: *How can guided math techniques be integrated into a third grade multiplication unit?* I developed a curriculum based on the instructional technique of guided math that focused on a third grade multiplication unit. I created this resource to benefit other educators when implementing this instructional

technique by providing a unit of lesson plans that show what guided math would look, sound, and feel like in the classroom. Most importantly, I created this project to best help and meet the needs of our students. I want students to be excited, engaged, and motivated to learn math concepts. With the incorporation of guided math I know that these all of these ideals can be achieved.

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