Reflection Paper

Subject: Differentiation and Mathematics Instruction **Grade:** Kindergarten

Module 3: Instruction for Active Learning : Teacher implements instruction in order to engage students in rigorous and relevant learning and to promote their curiosity about the world at large by:

Selected Indicator: Using differentiated instruction and supplemental interventions to support students with learning difficulties, disabilities and/or particular gifts and talents. Note: differentiated instruction applies to all students (tier one) and supplemental instruction applies to students in tiers two and three.

Goal:

I will learn about and apply strategies for using differentiated math instruction and suppplemental intervention, and as a result, student math achievement will be enhanced.

Initial Summary:

While reflecting on the current practices for differentiated instruction and supplemental intervention during math instruction, I feel as though the majority of students are participating through a gradual release model. The district wide program in place entails the method of moving from whole to small group instruction as the concepts are explored and understanding is deepened. Within my classroom, there is a wide variety of learners that have ranging academic capabilities. I am currently struggling with ensuring that all students are receiving individualized instruction, for one of my students has a hearing impairment, three students are English Language Learners, two students receive services through Special Education, one student receives Occupational Therapy and four students receive Speech and Language services. Due to this vast range, I have tried differentiating the work when possible through utilizing manipulatives for students requiring additional tactile modeling. I have also used a highlighter to provide a guideline for tracing for those students struggling with fine motor skills. With these current interventions I feel as though these students\\' participation is still mediocre at best, and I am not able to act as a facilitator of the learning experience. With twenty-one diverse learners within my classroom, I am challenged on a daily basis ensuring that all students are reaching their zone of proximal development through mathematics instruction. For the purpose of this professional growth opportunity, I chose a group of five students to monitor and track the effects of my adjusted teaching practices.

Reflection:

As I reviewed the information provided on the Continuum of Effective Teaching, I began to reflect on my current practices as an educator.

Based on the vast diversity within my classroom, my mentor and I felt as though differentiation may be the most significant indicator of need. As I identified my placement on the continuum, I noticed that I have been providing supplemental intervention occasionally to the five students within my target group (on average two to three times per week) during mathematics instruction. Although I have previously learned about utilizing targeted levels of assignments and modified materials addressing students' interests or needs, I feared that I would not be able to support all twenty-one students effectively. While I have been collaborating with the Special Education Department on supporting the identified students within my classroom, I felt as though my other students were not receiving enough differentiated instruction through mathematics. Several students had been making remarks while participating in instruction such as "This is so easy," while others appeared frustrated and stated "I don't get this, it's too hard." In taking notice of the students' remarks, I immediately began mapping out a plan of action striving to better my instruction and provide all students with varied differentiation supporting all levels of academic achievement.

In devising a plan for professional growth, my mentor had directed me towards a plethora of resources which included her own professional experiences, texts, and articles which highlighted the topic of differentiation within the classroom. While reading the text Learning Targets: Helping Students Aim for Understanding in Today's Lesson by Connie M. Moss and Susan M. Brookhart, I realized the importance of planning my differentiated instruction through identifying the learning target. Moss and Brookhart suggest assessing students through both formal and informal methods prior to beginning the instruction. I found their text helpful in identifying the importance of assessing students' interests along with academic readiness for the authors state, "when teachers understand students as learners, they are better able to give diverse learners access to learning targets" (Moss & Brookhart 99). In understanding the importance of knowing the students within my classroom not only on an academic level, but on a more personal level, I have come to find through Moss and Brookhart's findings that addressing students' interests may impact their overall connection to the learning target/objective.

With this acquired knowledge, I decided to apply my learning in devising a pretest to assess students' understanding of the numbers zero to thirty, for this is a required skill for Kindergarten students to master prior to being promoted to first grade. I also identified this as my overarching learning objective through the mathematics unit due to the fact that this is directly linked to the Common Core State Standards. After assessing students' number sense, I sat down with my mentor and reviewed the data in order to select and classify a target group for this particular unit of study. In doing so, I identified the five students requiring additional intervention during mathematics instruction. These students were able to identify an average of sixteen out of thirty-one numbers ranging from zero to thirty. With this acquired formative information regarding my students' academic achievement, my mentor suggested that I should set a reasonable goal by the end of the eight week period identified as my professional growth experience. Before selecting the desired goal, I decided to continue my research through referencing Moss and Brookhart. The authors state that "distal and proximal goals serve different but equally important purposes. Students benefit from the motivational pull of long-term goals...to increase their interest in tackling short-term goals and to sustain their resolve as they deal with set-backs along the way..." (Moss & Brookhart 23). With this in mind, I decided that I would provide my students with the long-term goal of identifying all thirty-one numbers ranging from zero to thirty but would also provide them with the short-term goal of recognizing and identifying twenty out of thirty-one numbers. I felt as though identifying both the short and long-term goals for students would enable them to formulate a better understanding of my learning expectations but also give students a target to strive for that is realistic and closer to reach for this particular study group.

As a result of the goal setting and identified learning outcome, students were immediately able to see the end result of the mathematics unit but were not overwhelmed because of the short term goal which had been set. Students seemed to be more aware of their learning and a few students even began pointing out numbers outside of mathematics instruction while either walking in the hallway, reading a text, or participating in our calendar activities. Although it was unclear if the students' behaviors were altered by motivation to strive toward meeting their goals or the identification of the learning outcome, I was determined to continue my learning in furthering differentiation within my classroom.

In preparing for implementing differentiated instruction, I also decided to create an interest survey in order to better understand my students as both learners and members of the classroom community. This idea was driven from Carol Ann Tomlinson's text Leading and Managing a Differentiated Classroom. In discussing the importance in comprehending the students within a classroom, Tomlinson states that "student interest is tied directly to student motivation to learn (Collins & Amabile, 1999; Csikszentmihalyi, 1990). When student interest is engaged, motivation to learn is heightened, and learning is enhanced" (Tomlinson 16-17). As I began reflecting on my current rapport with students, I realized that although I have built a foundation of relationships with each individual student within my classroom, I have yet to utilize my knowledge of students' particular interests as Tomlinson suggests enhances student motivation. I believed this information to be extremely beneficial in increasing student engagement and overall interest in the learning material being explored. With my students being unable to read or write formal sentences yet, I decided that the best way to perform this assessment would be through informal conversation. I formulated two open ended response questions, in which, I asked each student to gain knowledge of their particular interests. The two questions read: "What are your favorite things to do/play with at home?" and "What do you like about school?" I jotted down the responses of each of my students and reviewed them during the creation of the differentiated lessons. As I carried out this activity, I realized that many of my students shared similar interests, and the majority of students stated that they enjoyed gym class. This led me to believe that these students may benefit from kinesthetic activities integrated through utilizing tactile modes of learning mathematics.

After the pre-assessments and interest surveys were completed and analyzed, I began altering my lessons to incorporate the students' individual interests. One of the five students responded that she enjoyed playing with dolls, another student responded that he enjoyed cars, two students said that they liked sports, and another female student enjoyed stuffed animals. Rather than utilizing the accompanying worksheet that coincides with the district's math program, I decided to utilize print-out manipulatives/counters that paired with each of the five students' interests. While keeping the objective the same for this particular group of students as with the whole class, I altered the performance task to intrigue this group of learners and target their specific needs in terms of number identification. I provided choice materials to complete the task of making number sets. For example, some students chose car counters and some chose teddy bear counters. When provided with choice materials, in which the students individually selected, the students were more engaged. This resulted in more on-task behavior during math instruction involving number identification. This change in student productivity showed a positive movement across the continuum as I began to routinely provide modified content/materials during flexible group math instruction. This knowledge paired with their pre-assessment data, allowed me to target the numbers each student was struggling with. With this, I began to notice that the student interruptions slightly decreased from the five students I selected to monitor during mathematics instruction and behavioral redirections began to decrease as well. I also noted that the majority of students remained actively engaged in the content. One student that typically acted out and refused to complete any work during mathematics told me that "This is kinda fun." Although students seemed to be interested in the subject matter, I still needed to implement more differentiation strategies that

I had been discussing with my mentor.

While striving to reach my goal on the Continuum of Effective Teaching of routinely providing supplemental intervention during math instruction, I began to research about the benefits of incorporating flexible groupings. In referring back to Tomlinson's text, she states that "a nonnegotiable aspect of effective differentiation is that teachers plan a consistent flow of varied student groupings within a unit of study based on the nature of the work and the individual needs of the students" (Tomlinson 90). Although I had established these groupings for literacy, I had not yet done so with math. Once I reviewed my pre-assessment data, I placed students homogeneously in such groups that would be adjusted as needed based on the ongoing assessment of students' mathematic achievement. Prior to having students partake in mathematic activities within these groupings, I modeled appropriate use of various high interest manipulatives. I also ensured that students would receive positive reinforcement for satisfactory behaviors while participating in the completion of the math activity. During flexible groupings, student achievement was bolstered through this use of positive reinforcement as evidenced by overall student enthusiasm. As students counted using one-to-one correspondence, or correctly identified/represented a number, I provided appropriate, constructive feedback. This resulted in students being more eager to participate in math centers, for they valued the individualized attention and thoroughly enjoyed utilizing the chosen materials. In reflecting on the overall success of the implementation of this learned strategy, I realized that at first, students were very noisy in their flexible groups, and some redirection was required for students that appeared off-task. As students settled into the consistent routine of this new form of instruction, their overall noise volume decreased and instead the majority of students began demonstrating academic growth and confidence in utilizing math vocabulary in talking to one another about their tasks. Students now require less redirection and are focused on the learning. In addition to reading texts supporting the use of flexible groupings, I have also learned of the importance of incorporating tiered instruction while facilitating math groups. Moss and Brookhart state that "just implementing different types of activities is not in itself differentiating instruction" (Moss and Brookhart 102) and instead suggest that tiered assignments be used to "...tier the complexity and challenge of an assignment to accommodate students at varying levels of readiness" (Moss & Brookhart 102). In creating a classroom environment with homogenous groupings and tiered assignments targeting students individual interests, differentiation is ensured and students are able to connect to the learning targets/identified objectives. In addition, I was able to participate in a Mathematics Professional Development day with my math coach. In talking about creating meaningful, differentiated activities, my math coach elaborated on the importance of teaching students at their ability level. She also discussed the importance of allowing students enough time for oral practice prior to moving into concrete, representational, and then finally abstract models of mathematics. In furthering my research in regards to this, I read an article in Instructor Magazine entitled "Common Core: Solve Math Problems," which emphasizes the use of stations/tiered activities at the concrete, representational, and abstract level. I felt as though this format may lend itself to my tiered instruction and would also enable me to target the individual students' interests based on the type of learners within my group.

After attending the Professional Development opportunity and reading a variety of texts pertaining to the importance of routinely providing students with tiered instruction, I decided to formulate three tiers of instruction based on the academic need within my group of students. Based on my learning, I provided students requiring the most intervention with multisensory tactile counters. I then provided students beginning to demonstrate progress towards the short-term goal of identifying the numbers zero to twenty with representational activities. This enabled the students to represent the quantity of each number through the use of pictorial representations. Lastly, the third tier of instruction provided students progressing towards mastery a more challenging task in utilizing abstract numerals. The impact of this new practice on student achievement makes

me realize how crucial it is to use differentiation strategies in my daily math instruction. Implementing tiered instruction reinforced the previous positive outcomes that were seen earlier in other new practices. Students were more engaged, enthusiastic, and more successful in their mathematic achievement.

Over the course of this module, I have learned a great deal in regards to providing enriched instruction through differentiated practices. Prior to beginning my research and professional growth, I was only providing students with occasional supplemental intervention and mainly conducted lessons through whole group instruction. After reflecting on the new learning that has been presented through this professional growth opportunity, I am now providing routine supplemental intervention on a daily basis to students requiring additional supports. I am also continuing to help students with tiered instruction within the flexible groupings and have been noticing great gains through providing choice with high interest activities. Students are now able to identify an average of twenty-five out of thirty-one numbers and I have seen a huge impact on students' overall morale and interest in participating through the learning process. In furthering my learning and improving my teaching practice, I plan to create a rotating schedule that would enable me to attend to each flexible group and ensure that all students' mathematic growth is monitored through continuous data tracking.