The Lack of Progress in Foundational Mathematics Skills in Grades 4-5

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Area of Research Interest

The Issue

Elementary math can be one of the toughest parts of school. Grasping these skills are also crucial for student success. Studies show that children who are behind in math in the fourth and fifth grades only have a 33% chance of being ready for college math years later (Sparks, 2012). Although discouraging, these findings should encourage teachers. If a student is struggling with elementary math, do not, fret there are some proven ways to boost math skills in a short period of time.

Mann Learning Community School is an elementary school located on the west side of Detroit inner city. This school receives 98% free and reduced lunch and state assistance is the primary source of income for the student families. An identifiable issue that is affecting this site is the lack of progress in foundational mathematics skills in grades 4-5. At present, this school district is 100% virtual learning. During this new way of learning, student engagement is vital part of online learning and academic success. Many students are struggling academically because of many factors such as: not attending mandatory online learning meetings, multiple distractions within their home while attending school, students logging into class while keeping their cameras off to sleep, and/or playing other non-school related games while attending virtual learning classes.

Students are not taking mathematics seriously in that virtual classes do not count toward their academic grade progression for the next school year. With the continuous state of this country concerning the Covid-19 pandemic, many students are failing grade level expectations and are falling through the cracks of the educational system by lacking in academic performance. Mathematics is a subject that builds. Much like a house, it has a foundation. Students cannot just learn by looking at a board or listening to a lecture (Salomon, 2003). However, many kids need

hands-on experiences to understand elementary math concepts truly. One-way teachers can facilitate this process is by using math manipulatives.

Justification

During a recent Instructional Leadership Meeting (ILT), it was revealed that our school sites I-Ready district-wide assessment scores is below the scores with other schools with similar demographics of our work site. The staff is mandated to use a curriculum that is designed for face-to-face instruction. The interventions for the district are 90% geared toward Reading and ELA. The staff agrees that the district mandated curriculum is inappropriate for the population of students that we serve. It is most difficult to instruct virtually. The mathematics curriculum relies on higher level math skills and group activities for the comprehension skills to be successful.

Educators are told of new innovations through multiple emails (sometimes up to ten overnight) and are expected to accurately implement into their instruction into their virtual courses without training. Teachers are concerned the curriculum is ineffective for small group instruction and too higher order for whole group instruction, but the district mandates that it must be followed with full fidelity. It also does not address the foundational skills necessary to help our students learn to the basic mathematical operations. Educators must adhere to a strict curriculum pacing allowing little time to reteach or support struggling students adequately. All mathematics curriculum with a Tier 2 and Tier 3 intervention system is delivered as whole group instruction online.

Application of Skillset by Conducting a Gap Analysis

The Role of a Gap Analysis

A well-conducted skills gap analysis can serve as a way to evaluate if the current professional development programs in our school district is meeting the intended goals for mathematics being taught virtually. The Instructional leadership Team (ILT) of our school needs to have a discussion that focuses on Foundational Skills in math and mastery because it is important. Continuous math practice a primary important skills— you do not stop practicing because one knows how to do it (Lemov, Woolway, & Yezzi, 2012). There must be a focus so that our students become great at the most important skills learned during this online instruction. This is how we will get students definitively back on track after the disruptions caused by COVID-19. Educators must instruct the necessary math skills that will be used in the future for our students in high school, and college. This will prepare online student learners for what is yet to come.

Developing a Problem of Practice

There are crucial skills needed in math and with the huge disruptions caused by the worldwide COVID-19 Pandemic, many educators are facing instructional strategies that they have not dealt with before from counseling needs through technical device and Wi-Fi issues. So, how can educators best monitor the mathematical success of online learning activities? Are students really learning grade level math "must know", even when students are being tossed back and forth from face-to-face to not being physically in school? How can educators properly monitor the effectiveness of math interventions? When closing a gap, there are measurable factors, called variables, to consider. The variables have an influence on the occurrence of the opportunities that teachers are given to improve their teaching online through professional development (Pyrczak & Oh, 2018).

There are many elements that contribute to the lack of teacher professional development at my organization that are a part of this gap. To further develop this issue, a gap analysis would

enhance and fine tune this very important stated issue. Is mastery for 4-5 grade levels a realistic goal for the 2020–2021 school year, given that the school district continues to evaluate educators by including high stakes test scores as 35% of teacher evaluations, even after this spring's lengthened school closures? In response to this question, envision a 4th grade student having an "ah ha" moment after guiding classmates to finally "get" adding and subtracting fractions and then it can be understood why this issue is very important. This is also aligned with research that displays the importance of constructive feedback (Marzano, 2001).

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