

Substance of Change

With innovation or change within a learning organization comes the matter of loss, incompetence, confusion, and conflict. The way these issues present themselves within an organization, though, is directly linked to the elements of the innovation, labeled by Evans (2001) as the substance of the change. Evans (2001) describes the substance of change with four defining attributes: focus and clarity, scope and complexity, desirability, and feasibility (p. 74). My personal mastery and shared vision are discussed below in the context of these characteristics.

Focus and Clarity

In order for my personal mastery and shared vision to become a reality in my school, it is important that the purpose of this change in math curriculum be focused and clear to all components of our system. Evans (2001) theorizes, “For reform to work, everyone involved must be clear about its purposes, policies, and procedures. Communication about these subjects needs to be lucid, vigorous, and repeated” (p. 77). As I plan for implementation of this new, more meaningful math curriculum, it is essential to reflect on why this change is necessary in the first place.

Over the years, more and more of my students have started their fourth-grade year, already with negative mathematical identities, some to the point of math anxiety. With the reality of preparing students to join a workforce comprised of jobs that do not currently exist, current educational reform aims at developing students’ science, mathematics, technology, and engineering (STEM) skills. However, research shows that negative attitudes towards mathematics and mathematics anxiety are factors that may impede students’ achievement, potentially derailing college and career readiness (Foley, et al., 2017; Geist, 2010, 2015; Soni & Kumari, 2015; Tobias, 1991). With evidence that negative mathematical mindset and math anxiety can start even before

entering school (Geist, 2010, 2015), identifying ways to mitigate negative attitudes and anxiety is vital to help give every student an equal opportunity for future success. Clark & Roche (2017) cite the connection between students' attitudes about math as a discipline and about themselves as learners with the personal relevancy they find in the mathematical work they are doing. With this in mind, the purpose of my shared vision is to create mathematics curriculum that will be meaningful and relevant to the learners in our school in hopes of shifting students' mindsets about math as a discipline and about themselves as mathematicians.

This new mathematics curriculum will consist of a variety of mathematical tasks and structures that allow students to explore mathematical concepts in integrated ways and in relevant and truly real-world contexts. Students will be given the opportunity to explore problems that matter to them in collaboration with others, in the same way that problems are solved by adults in the workplace and in their personal lives. As Clark & Roche (2017) suggest, these tasks will “connect with contexts of interest to students, involve substantial student thinking, address important mathematics across a range of mathematical domains, offer a variety of solutions and solution paths, and engage students to persist, even when the task is cognitively demanding” (p. 12). An example of this type of mathematical task is related to field trips, a topic that is very motivating to elementary school students. The students would be tasked with investigating a field trip for which they are interested. They would figure out the cost of the field trip tickets or admission, the gasoline costs, bus driver pay, travel, food, and any additional costs for the grade level. With this numerical information in hand, students would then create a proposal to pitch to administration to get approval for the field trip, including all logistics. This task would pull from multiple mathematical domains and also connect to content-specific reading, research, writing, and

communication. This authentic task would come full circle when students actually go on the field trip, demonstrating the applicability of math to real situations.

Implementation of this new curriculum will come with a slow roll out in order to allow teachers to be sold on the idea. Evans (2001) finds that often practitioners get stuck in the “change as loss” stage because they aren’t clear on the relevancy of the innovation. In order to help teachers move beyond this stage, it will be important for them to have the opportunity to first be invited into making the shift so they can start small rather than a full-scale implementation all at once. Additionally, communication will be key in order to make sure this change truly becomes a shared vision for our school. As I think of what we have already accomplished as a faculty in terms of moving our practice towards student-centered mathematics instruction, I am reminded that we have a strong foundation on which to build this new curriculum. During the implementation process, teachers will have the opportunity to see this curriculum in action in my classroom and in the classrooms of my teammates and will be given time over the course of weeks and months to try on their own with feedback, support, and co-teaching opportunities. Ultimately, I am reminded that an assumption of our learning organization is that our students *deserve* whatever it takes to make them successful. As this shared vision is implemented, this assumption will be the basis of every step. We will collaborate as a school family to ensure that we are truly providing learning experiences for our students that relevant and meaningful.

Scope and Complexity

Unlike the curricular changes that often come down the pipe from the state or federal government, this change will happen over time and will not be just another immediate mandatory change in practice. From my experience in the classroom, these immediately mandatory changes lead to stress and much more resistance than those that are slowly rolled out. For this reason, our

switch to a more meaningful mathematics curriculum will be a collaborative opportunity for our faculty to work together over the course of a couple of years to make meaningful changes to the structure of our mathematics workshop. Evans (2001) states, “When such change is accompanied by changes in decision making, the overall package is truly immense” (p. 79). By working collaboratively as a faculty, hopefully the complexity of this curricular shift will be mitigated.

After my initial inquiry in my own classroom and then collaboratively with my grade level team, this curriculum will be developed grade level by grade level and vertically through the work of our Math Vertical PLC team. In this PLC, I will present what I have learned through my own implementation process and from the experiences of those on my grade level team and then will invite the representatives of each of the other grade levels to share thoughts, brainstorm, and add to the collective work done to that point. Over the course of several months, these representatives will have the opportunity to pilot lessons and units in their classrooms and brainstorm with their own grade level teams to take current lessons and/or units and determine how they fit (or don’t fit) in with the structure of meaningful mathematics tasks. This is also where the input of students will come into play on a more school-wide basis. Students will be invited into the process by sharing ideas of real problems they want to solve that they think may involve mathematics. These ideas will all be shared in grade level meetings and the Math Vertical PLC, monitoring and adjusting along the way based on the collaborative work and feedback of administration, teachers, and students. With these thoughts in mind, school wide professional learning opportunities will be designed for our summer professional development time and back to school professional development time for the following year.

During these professional learning opportunities, teachers will have the chance to be immersed in tasks that support the meaningful learning of relevant mathematics that aligns with

our state curricular standards. They will also have the opportunity to work together, with the support of those who have already implemented, to construct sample tasks that can be executed immediately in their classrooms with their first units of study. Following these summer and beginning of the year learning opportunities, I will provide supplemental materials and resources on Google Drive and will have weekly check-ins with grade level representatives. This feedback will drive the quarterly half day professional learning sessions. In these sessions, teams will be encouraged to share what is working and what isn't working in their classrooms. This will allow us to work as a faculty to collectively brainstorm, troubleshoot, and share ideas. Sessions will always incorporate opportunities to celebrate the positive shifts in students' mathematical mindsets to consistently draw our attention back to the ultimate goal of the shared vision. Between these sessions, observations and co-teaching opportunities will be available for teachers who desire further development.

Just as with my own students, the scope of this curricular shift will depend on the specific needs of those implementing the changes within their classrooms. Continued support and professional learning opportunities will be provided as often as is necessary in order to fully communicate and give teachers and students the opportunity to find success with this model. I envision this process taking 1-2 years after my own initial implementation.

Desirability

Evans (2001) reports that for people to be willing to make a change, they have to find the change relevant and see that the results will address an issue or need in a positive way.

Each week during our planning period, grade level teams meet in Student Growth Meetings to discuss student data, what is working and what isn't working in our classrooms. One week each month is focused on mathematics. Through collaboration with our school numeracy coach and

from what I have observed in my own grade level's meetings, I am aware the student attitude towards mathematics and lack of interest in the subject is a concern across grade levels. This is a perceived need in our learning organization. In order to make this curricular change desirable to the teachers in my school, it is important that shift appeals to a perceived need. This particular shared vision certainly addresses an important concern of our faculty as it directly focuses on a strategy to shift students' mathematical mindsets. As a school family committed to doing whatever it takes to help our students find success, this shared vision will appeal to teachers' desire to solve this problem. The creation of a relevant and meaningful math curriculum that will engage students in work that is important to them and integrated with real-world contexts will work to directly shift students' mindsets and help them find the relevancy of mathematics.

However, Evans (2001) also recognizes that often organizational changes in education put significant emphasis on flaws of teachers and blames them, leaving educators to feel that their performance is the sole antecedent of the proposed change. This is quite the opposite in my learning organization. I am fully aware that the teachers in my school are working hard every single day to help our students find success. Over the past several years, we have worked together to make significant changes to our math instructional practices already and have found much success. It is very important to me that my approach to this shared vision celebrates the dedication of our teachers and acknowledges the progress we have already made. In order for this curricular change to be desirable to our teachers, they will need to understand that it is not a reflection of their competence, but instead a response to the needs of our students and their math mental health. It is my hope that because I am also a known and trusted colleague and local practitioner, this shift in practice will be perceived as credible. Evans (2001) suggests that successful innovations are usually constructed by local practitioners because the proposed changes are based on contextually

relevant experiences and judgements. It is my hope that my role as an insider to our learning organization will aid in the desirability of this shared vision.

Feasibility

Feasibility is arguably the most important aspect to consider when assessing the substance of the proposed change. If those responsible for initiating the change in their own classrooms clearly understand the focus of the innovation, grasp the complexity and scope of the change, and have a desire to make the change, but don't believe that it is feasible for them to effect the change, none of other aspects will matter. Evans (2001) asserts, "Practicality is essential. So, too, is security." In order to ensure this shared vision comes to fruition, it will be essential for teachers to find the change efforts practical and to feel safe to try and fail. By providing a slow and supported development and implementation of the proposed curriculum as well as situating the perceived need in the context of research and our student data, the practicality of this change will be clear to teachers.

Security will be established through developed professional learning communities. By sharing what is working and what isn't in a safe space to brainstorm and troubleshoot together, teachers will see the collaborative nature of this change and will realize that they aren't tasked with singlehandedly changing every aspect of their instruction or making huge changes without support and the grace to make mistakes. Just as we scaffold and support our students, I will work with the leadership team within my school to provide this safety net for teachers. It will be important for me to be transparent with my colleagues so that they will feel comfortable coming to me with their failures and successes. I want them to understand that their shortcomings will be part of the process and won't come with punitive actions, but instead with support and assistance to problem solve through challenges. Risk-taking will be celebrated in order to give teachers the confidence

to try again after less than successful experiences. Our professional learning opportunities will continually reiterate the ultimate goal of this change, remind teachers of their capacity to effect positive change in the lives of their students, and refocus our collective attention to the goal of supporting the learning of our students through our hallmark whatever it takes attitude.

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