Values Solve Math Problem

By Guru Dorje

"I'm just not good at math" is the common mantra that we have heard over the years in regards to learning it. If it were something that was relatively benign then this would not be a critical value lens that needed to be addressed. However, as we know Math has become the gatekeeper class to graduation for the entire nation.

Federal BPS (Beginning Postsecondary Students) data from 2009 indicate that 68% of students beginning at public two-year colleges in 2003-2004 took one or more remedial courses in 6 years after their initial entry. Of the remedial math students a CCRC study of 250,00 community college students found math only 20% of students referred to developmental math go on to pass the relevant gatekeeper math course (Bailey, Jeong, and Cho).

From a fiscal side, according to the 2011 National Center for Education Statistics Digest of Education Statistics, CCRC researches estimate the annual cost of college-level remediation at community college to be nearly 4 billion (Scott Clayton & Rodriguez, 2012) and the annual cost of remediation at all colleges to be nearly 7 billion (Scott-Clayton, Crosta & Belfield, 2012)

But these fiscal numbers do not tell the toll of the cost on the individual person. They are big numbers for sure but they are all accumulated through the mistaken application of a methodology to a resource, the students. When we are data driven and try to use the same structure to serve a value driven entity-the Human, we typically fail. It fails at even higher rates the more barriers that there are to the goal we all want, in this case, the student attaining the credentials/graduation that they want (in turn serving the overall outcome numbers).

We were able to increase the class in which the student tested into by, on average, 1 class (COMPASS identified) with over 80% of students doing, at least, this, triple our math outcomes in single classes (passing with a 2.0 or higher), and support around 80% of these students to and through their gateway math class.

These were our specific targets but were arrived at by looking at our own values. When we constructed the program that engaged these students it was also with a look at our values. From this reflection we were able to craft the most effective and holistic system that supported our students to their successes.

How? Here are the basics.

Understand Your Organization's Values

We went through 20 hours of intensive training and then regular follow up trainings to reach our consensus values; Love, Compassion, and Kindness. We spent hour defining these; Love; Service to the Other, Compassion; the active agent of Love (its opposite is guilt), Kindness; the daily actions of Compassion and Love. From these we crafted our definition of an Education: The skills to find meaning in one's life. The skills were purposely non-specific. At first we wanted to put the 3 r's in there but we realized that individuals were finding meaning before there was writing so we made it non-specific. By making it non-specific we also allowed us to have wriggle room if the culture shifted and, lets say, we moved to a non-literate culture. From this definition we arrived at the statement, "all beings want to be educated, all beings can be educated, education is a natural process of Life".

Use Your Values as the "How to" for Identifying the Specific Area of Concern (AOC)

When we reached a conclusion to our specific brand of organization, "All beings want to be…" we were able to be reductive in our efforts. What this means is that we started with the question, "why aren't students acting naturally?" in regards to mathematics. Our value lens on reality disallowed, "they don't want to," or, "they can't", etc. So, in this way, we were reaching a place that we were not 'adding' but actually reducing or removing obstacles to a Natural way of being. This is paramountly important in systems development especially for programs that are, like most education systems, resource strained. There will rarely be more money, there will rarely be more workers, therefore to maximize effectiveness there has to be a reductive mind set (I must make clear here it cannot be reduced beyond a very specific target and I am not saying we should not fiscally support education).

For us this questioning, eventually, lead us from many of our initial hypothesis and landed on three core reasons why our students weren't doing well in math; the math courses were lecture based, their skill set wasn't high enough even though they tested into the class to keep up with

the pace in a lecture based class, they did not have experience or understanding on how to deal with shame of not knowing or meeting expectations in class.

Use Your AOC as Your Seed to Programming

To engage the students in this process we extended our programing to include what we called Fearless Math (FM). This was added at the end of the spectrum of academic service, after the student received or was near receiving their High School Equivalency. The Pre-Fearless Math courses were all individualized and based on the students pace. They would make their way through the curriculum with regular assessment (to determine if they were ready for the next level of skills) and nearly on-demand help. Our main goal was to build a strong, trusting, positive relationship with the student, give them access to materials to give artifacts of their learning, and then get out of the way. This methodology helped us get, on average, 80% of our HSE students to college (around 85% of our students got their HSE). We met and exceeded all of our grant goals for over a decade.

FM let us bridge the gap between our programming and the college programming which, we must admit, we did not think was ideal. However, because of our Value Lens we believed we could prepare them for it. It was a matter of preparation not "if" they could.

FM met 2 times per week as a lecture based class. Attendance and observations of engagement were monitored. Because we spent so much time building relationships this evolution was not seen with fear. After lecture conversations on what it felt like, how they were doing on the material, and assessments were conducted. The rest of the week students had 10 hours of work to maintain at any time they wanted to come into school, but it had to be at school. The total hours per week in school had to be, at least, 12 hours. Thus getting them more ready for the Math class they were going to take.

FM used old textbooks from the developmental classes because they were cheaper, we used online resources such as Khan Academy but coupled with a teacher most of the time during class. We used a worksheet generator to be able to build out repetition in skill areas that students needed it in. And, we were able to continue our conversations and engagement authentically with what was to come for them. To reiterate that they were more than welcomed to come back for help and to use us as a resource center during their college career (we are co-located on campus).

Our Goal was to have our more than half of our students increase their placement tests by 1 class, to have them self identify how to react in specific shameful experiences (like not doing your homework, many students said if they didn't do their homework they wouldn't go to class, or if they didn't know 1 question they would spend almost all their time trying to figure it out on a test), to be ready for a lecture based class. We would know if these things were true, if more than half of them passed the class.

As I said above we reached that and more. The average GPA was a 2.9.

Continued Analysis and Development: Evolving Excellence

As the years went on our outcomes became greater and greater. Currently our students test into higher math classes, on average, than the general population students. With our shift to Fearless Math five years ago we were able to address issues that were barriers to our students success. Systemically, we have found, success is not emulated but looked on with critique. We were told the methodology would not work with adults, high-barrier adults, or non-traditional adult students. On smaller scale we worked with TANF grant students, adults through our workforce program, and Veterans. All of whom exhibited similar or greater numbers than our youths. Our analysis was that a value driven model works across the board. Therefore it reifies the value driven aspect and allows us the space to be creative in attaining it.

An example of Evolving Excellence that lent itself to this programming was a drastic change in our HSE testing. The difficulty of the Math increased many fold. But, through our systems we had in place, we just made our FM programming a part of of our HSE programming. We were able to switch over quickly. Now HSE programming is enough to test into high developmental math, or, like most of our students now, test into college level math...and pass.

Looking at our Data, our tools, were are able to ascertain AOC (from our values) and continuously search out better ways to serve our students. Sometimes they must go into our 'advocacy' folder to be addressed at a later date when more or different resources are available, but they will be addressed. By looking at our AOC through our values we are able to deepen our analysis because we are committed to serving our students, all of them, and deepening our analysis of who is not being served and why not, does this.

Tips!

1. Don't fall into the trap of privilege (creating what worked for You is not necessarily what works for Us)
   a. Have a self analysis of who is making policy and through who is 'not' here
   b. Diversity into getting this input in a real and honest way
      i. Don't do it if they are only a checkmark
2. Use your highest ideal and values you use for what you care about the most to move you
   a. There is no system without individuals, the individuals are the system, their communal values will be the grit/strength that pushes through change
3. Start with Values first even through struggle to do it
4. Look to reduce barriers not add to programing
5. Identify the methodology of creation and then create-do not replicate!-communities are microcosms that change in distance and time-even a different year will have different needs within the same school-program to this reality
6. Use Data as a tool to determine what works and not what is right and wrong (values do this). Imbed in your practice
   a. It frees staff and administration from excessive fear of failing
   b. removes shame from working or not working
   c. supports creativity
7. Create definable and achievable goals that can be measured (from immeasurables to measurables)
8. Evolving Excellence is constant and perpetual like the process of Biological Evolution-remember this to not get trapped in a 'conceptual system'
9. Try, Try, Try, experiment, experiment, experiment
10. Relationship, Relationship, Relationship-this is the key ingredient to any community

Bio

My name is Guru Dorje, yes it's my real name, I am of Tibetan Refugee and Immigrant stock and have lived through the public education process. This process, for me, was a traumatic one but one that allowed me, through much fortune, the ability to maneuver socioeconomically. What I learned in this process was, a great deal of what 'not' to do in public education ranging from preschool to graduate school. I saw school as a ticket out of where I had been, and it has

been, in many ways, but now I see it was only possible because of where I had been and the grit, generosity, and kindness that so many were able to give me.

I have been in Education going on 20 years and have spent the last 15 at a dropout re-engagement program supporting 16-21 year olds to and through college. We have, at most recently, received information that our program is 1100% greater than the average similar program throughout the nation. A random sampling of a 100 of our student showed 55 out of 100 were still in college 2 years and 9 months after first contact. The national average is 5. This does not include many of our students who, in this time frame, are working which typically is about 20+% of our students. Many of them come back to school at a later date. We have recently built out our services to support students to 30. All of this funding is from, on a state level, the same that goes to High Schools. We have additional grant funding through Work Investment Act funds as well.

When asked how this is possible people typically ask about the curriculum. It is not the curriculum. It is a firm belief in the goodness, the natural, innate, creative ability of individuals that makes this work. We use the same curriculum, the old text books, of other programs. The difference is being Value based we are able to nimbly change our programming, to meet the changing demand of our students, while being engaged in our best selves. This encourages and builds trust, engagement of staff, and happiness amongst them. This is a productive, engaging, and successful environment.

This is a Value Based System that is applicable to any organization or structure of individuals. It is a very specific methodology that can morph into different service structures, and has, over the years done this successfully.