

Real Leadership as Bureaucratic Entrepreneurship: Assuming the Responsibility, Risk and Accountability to Move Math Far Ahead

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Way back in 1983, four years into my 22-year tenure as Mathematics Supervisor in the Connecticut State Department of Education, I was given an incredible gift by the new Commissioner of Education, Gerry Tirozzi. His first day on the job, coincidentally, was the same day as the release of *A Nation at Risk: The Imperative for Educational Reform (The National Commission on Excellence in Education, 1983)*.” The Commissioner called six or seven of us thirty-somethings into his office and informed us that he expected us to start acting as “bureaucratic entrepreneurs” instead of just bureaucrats. He explained that he wasn’t exactly sure what a bureaucratic entrepreneur was or did, but he knew it had something to do with responsibility, risk and accountability, which he explained were traits notably absent in most educational organizations. He sent us on our way telling us that we would meet again in two weeks to discuss how these themes related to how he expected us to begin doing our jobs throughout the department to better serve the 500,000+ students in the state.

We ran to our dictionaries, since there was no Google or Wikipedia back then, and read that an entrepreneur was a person who organizes and operates a business venture and assumes much of the associated risk. We read that an entrepreneur was a person who thrives on success and takes on risk by initiating his or her own venture or service. We realized, as scary as it was, that we were actually being encouraged to take risks, ignore much of the bureaucratic hierarchy, and most importantly, *hold ourselves accountable* rather than wait for others to tell us what to do or to “evaluate us.”

Two weeks later we reconvened to talk through such new initiatives as a complete overhaul of the state testing program, launching a beginning teacher support and testing program, developing new and far less conventional curriculum guidelines, and establishing new summer institutes for teachers. We were given the message that it was not the position we held that was important or would be valued, but what we did with that position to make substantive improvements. The Commissioner made it clear that he didn’t want to hear what we should have done, but what we were actually doing to make K-12 education far more effective across the state. In short, the message we were given was make a difference, take some risks, and hold yourselves accountable.

Imagine for a moment if every NCSM member were to be given such a gift. Then imagine that such a gift is really ours for the taking! Consider, regardless of whether or not we get such a message, that each of us assumes the role of bureaucratic entrepreneur with the expectation

of cutting through the all-too-familiar power plays, the pettiness, and the rules and policies driven by consistency and convenience rather than common sense and data. If only we all assumed the responsibility to better serve the mathematical needs of students and professional needs of teachers, regardless of all the noise and distractions.

I am reminded of the magnitude of this gift when I think of how empowering and anti-bureaucratic this challenge to be entrepreneurial was back in 1983 and how Tirozzi supported it for the six years he served as Commissioner. We were expected to make mistakes – and then correct them – knowing we would not be castigated for our mistakes. We were expected to take risks on behalf of doing things better. And we were expected to assume responsibility for our entrepreneurial behavior instead of blaming others or hiding behind the excuses of rules, regulations, conventions and traditions that all could be challenged and changed. I used this gift, without needing to get permission, to start a Connecticut Mathematics Study Group to overall high school mathematics. I used this gift to initiate an eventually successful lobbying effort back in 1984 to purchase 38,000 calculators – one for every 8th grader in the state – for use on half of the new Grade 8 Connecticut Mastery Test. I was allowed to seek, and then win, National Science Foundation funds for new professional development for elementary mathematics teacher leaders. And the list goes on, enabled by the freedom and empowerment of one simple idea: you are to act far more entrepreneurial than bureaucratic.

I am also reminded of this gift whenever I hear my good friend and colleague Tim Kanold talk about looking to “your North as well as to your East and West.” Tim climbed the ladder to the role of highly effective and enlightened superintendent and was mentored by a great predecessor in his position. It is therefore entirely understandable that he would ask us to look to our North – that is, up the chain of command, assuming some modicum of enlightened leadership is up there somewhere. My experiences, however, are very different and far more common I think. Looking North to the many principals or assistant superintendents who are our organizational superiors may keep us in the job, but who often hinder us from being as effective and impactful as we need to be. I am not asking any leader to be subversive or insubordinate. Rather, I am asking every leader to ask himself or herself, regardless of the bureaucratic dictates from above, “How can I become more entrepreneurial – assuming responsibility, risk and accountability – for moving the enterprise in which I work far further ahead on behalf of what is right and best for all students?”

Clarifying the Challenge of Mathematics Leadership

Let me remind all of the incredible challenges faced by teachers of mathematics and thus by their coaches, department heads and supervisors. In a nutshell, we are charged with making mathematics work for a much greater proportion of students than ever before. However, we all understand that typical instructional practice of showing, telling and practicing to get “right

answers” only works, and only works superficially, for about a third of our students. To complicate matters, today’s world requires reasoning, solving problems, and constructing viable arguments (our Common Core Standards for Mathematical Practice) that must be incorporated into all mathematics instruction. Common sense and research make it clear that this can only happen when mathematics instruction reflects a different set of instructional practices – rich tasks, productive struggle, alternative approaches and multiple representations, discourse, explanations, conjectures and justifications (our Principles to Actions Mathematics Teaching Practices). Only someone with teaching experience fully understands that this agenda for change is different, difficult to do, and requires time and risk-taking. All these challenges explain the essential need, in every school and district, for *collaborative structures and coaching* that provide opportunities for teachers to envision and practice these changes and to receive constructive feedback. In addition, the glue that holds such a program together is a system of *high quality, common unit assessments* that undergird meaningful student, class, teacher, school and district accountability. I am increasingly convinced that bureaucratic inertia and bureaucratic foolishness make addressing these challenges in coherent and effective ways almost insurmountable.

In short, there is much that we *can* do. There is much that we *must* do. Enter the mathematics program leader, coach, specialist, department head, or supervisor as bureaucratic entrepreneur.

Leadership strategies for acting in more entrepreneurial ways

1. Envisioning success. We act in more entrepreneurial ways and hold ourselves accountable when we create, and widely share, a vision of success. It is a truism that if you don’t know where you are trying to get or if you only go where someone with less understanding tells you to go, it is unlikely you will get to where you need to get. For example, I have collaboratively developed a vision of conceptually-oriented mathematics (See Figure 1) that I share widely to focus attention and discussion among teachers and administrators on what needs to be happening when mathematics is taught. No one told me to develop this vision, but it’s like the late Senator Robert Byrd from Virginia carrying his copy of the United States Constitution to remind him of his role and purpose (Fertoli, 2010). When I leave a classroom or a school or a district, this vision helps me assess my success or lack thereof. I urge you to adapt such a vision, as appropriate for your particular situation.

Figure 1

Thoughts on Making Inquiry-based, Conceptually-driven, Sense-making Mathematics the Enacted Norm in Every Mathematics Class Every Day

Our shared commitment is that every student receives well-planned, well-executed mathematics instruction that consistently reflects our vision of active engagement in thought-provoking tasks, productive discussion about mathematical ideas and common misconceptions, and the individual and collective construction of understanding via problem-solving and inquiry.

This commitment implies that teachers will plan their lessons around **rich tasks** that are supported by **targeted questions** and powerful **lesson debrief discussions**. Such lessons are diametrically opposite the “I show, we practice, you do” model of direct instruction that essentially tells students what to remember and how to get right answers. For example, the “trick” to “invert and multiply” works in the short-term, but does not support mathematics as a sense-making enterprise and does not foster an inherent love of mathematics and its power and beauty.

The problem we face as a community of teachers and leaders is that our vision is **not** widely shared, **not** fully understood or even believed, **not** consistently supported and therefore **not** consistently implemented for all students every day. To begin to address this problem, Table 1 summarizes what students, teachers and leaders are and are not doing to make inquiry-based, conceptually-driven, sense-making mathematics the enacted norm in every mathematics class.

Table 1: What happens in the classroom

What students ARE doing:	What teachers ARE doing:	What leaders ARE doing:
<ul style="list-style-type: none"> Actively engaging in solving rich problems that are aligned with the Common Core Regularly engaging in productive discourse about their thinking and reasoning Grappling with mathematical ideas and making and exploring conjectures about those mathematical ideas 	<ul style="list-style-type: none"> Thoroughly studying the Common Core and other resources to develop an understanding of the key mathematical understandings across a grade, unit, or lesson Carefully selecting rich tasks that support reasoning and problem solving Anticipating students’ solutions and strategies to each task Carefully crafting and asking targeted questions that focus on the key mathematical understandings Making frequent use of the “discourse clouds:” Why? Can you explain? Who did it differently? Convince us? How did you picture that? Regularly collecting and using formal and informal evidence to assess scholar understanding of the big mathematical ideas and adjusting instruction accordingly 	<ul style="list-style-type: none"> Regularly meeting with teachers to help them think through their lesson plans, including clarifying the learning goal, the selection of rich, aligned tasks and the questions to be asked during the lesson Co-teaching the lesson in ways that support the teacher and maintain a focus on the learning goals Taking notes to support a productive debriefing and action planning session
What students are NOT doing:	What teachers are NOT doing:	What leaders are NOT doing:
<ul style="list-style-type: none"> Solving more than three naked problems from a worksheet without the chance to explain their thinking Listening to explanations by the 	<ul style="list-style-type: none"> Showing students how to solve problems and expecting them to replicate the process solely on the basis of remembering Using the phrases “this is the rule” or this is “how you solve this” or “this is what you have to remember” without including 	<ul style="list-style-type: none"> Sitting on the sidelines, not interrupting or participating in the lesson Using the co-teaching/coaching process only for evaluation Only using co-teaching

teacher without interruption • Regurgitating procedures to get answers	reasons, explanations or a focus on WHY • Allowing students to solve problems without providing any opportunities for feedback	and coaching, with no opportunities for pre-planning or debriefing
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What is your vision of high quality common unit assessments? How about grouping and leveling? Do you have a vision for grade level and course committees – their role, their composition, their responsibilities, and how they are held accountable? Why not? Consult with colleagues, draft a statement, elicit feedback and post it on your leader’s website. That’s what a bureaucratic educational entrepreneur would do! It is also what every National Council of Supervisors of Mathematics (NCSM) member is being asked to do to accomplish in NCSM’s *Vision Statement: Support and sustain improved student achievement through the development of leadership skills* (NCSM, 2007).

2. Building Annual Plans of Action. We also act in more entrepreneurial ways and hold ourselves accountable when we create detailed annual action plans or personal to-do lists by which we monitor our accomplishments. These are not the perfunctory annual goals we are usually mandated to complete so that someone else can evaluate us; rather they represent our personal plans for what we will strive to accomplish. Certainly, these functions overlap, but the purpose is accomplishment and accountability, not evaluation.

A vision takes more than one or two years to implement. That's why every leader needs a clear, aspirational, but achievable annual plan. For years I would write little to-do notes during the annual NCTM and NCSM meetings and use the flight home to construct a draft of my annual plan for the following school year. Then upon my return, I would turn to my “bosses” and politely ask “What would you like me to do to help us meet our mathematics goals?” These suggestions can be easily incorporated into your annual plan, earning you a well-deserved reputation as a “go-getter.”

What’s in your action plan for this year or next year? Is it an initiative to change homework policy in the middle schools so that no student is ever assigned more than eight problems per night – two on the new skill, four that represent cumulative review (because of what research says about distributed practice) and two that require reasoning, problem solving and justification? Is it a long-overdue campaign to use the You Cubed “Fluency Without Fear” monograph (Boaler, 2015) to outlaw mindless, and incredibly destructive, “mad-minute” and timed drills? Is it a pilot to incorporate Desmos into the teaching of algebra in every 8th and 9th grade mathematics course? Why not? Each of these provides powerful opportunities, not only for bureaucratic entrepreneurship, but equally powerful opportunities to earn the respect of your classroom colleagues and improve the mathematical experiences of our students.

3. Questioning everything and never tolerating excuses. Entrepreneurial leaders who make a difference not only hold themselves accountable, they work to hold their colleagues and the system accountable to students as well. We do this by questioning nearly everyone and everything and push back when others make excuses instead of proposing solutions. I know this is hard and is often guaranteed to upset those who prefer leadership-by-mandate and those who don't want to be questioned, but entrepreneurs want as much data as they can get. Sure there is never enough information, and sure we sometimes need to take risks based on gut feelings and experience, but an effective leader asks, "why are we doing this and why are we doing this this way? What is the evidence for this decision or policy?" Does it not intrigue you that while we advocate for much more use of "why?" and "how do you know?" and "can you convince us?" in every mathematics classroom, those questions far too infrequently make their way into our decision-making meetings? Does it not intrigue you that at the same time our new standards increase significantly our focus on data analysis, we too often ignore the data and blithely accede to policies based on politics, fads, and simple answers to very complex problems? Don't get frustrated. Pick your battles. Ask your questions. Gather data and push back. Why else would you want to be a leader?

4. Fighting always for what is best for students. We are all aware of how easy it is to put the needs of adults ahead of the needs for students. The adults push back and students often don't know any better. But when we look the other way when students are not receiving 60 minutes of mathematics every day, or when we ignore the vicious cycle of failure in our lower level courses, or when we take the pressure off of a teacher whose students consistently underperform when compared to his or her peers' students, we're not fighting for students; we're just going along to get along! Entrepreneurs create needs others don't even realize they have and think first, second and last about the consumer. Students, not parents and not colleagues, are our customers, but do any of us really believe that their needs always come first? Consider the expense of a graphing calculator and the serious disadvantage of not having access to one throughout high school. Then consider that, in my recent surveys of 9th graders, 95% of students, across the full socio-economic spectrum, walk into class with a Smart Phone that comes with a sophisticated calculator and an easily downloadable, free, graphing application. Being entrepreneurial and putting students first would ensure that these Smart Phone substitutes for graphing calculators are allowed, and even encouraged, in every mathematics class where they could support learning.

Or in the case of the special education "sacred cow," too many of us sit silently when special education, learning support, and remedial instruction are little more than worksheet heaven, telling students rules that make no sense for getting answers, and mindless drill at a computer terminal. Taking risks and responsibility means an experiment folding special education resource rooms and pull-out programs into mainstream classrooms, gathering data and proving that there are better and more effective ways to serve our students than the typical pull-out resource room.

And most of all, I am simply fed up with how many teachers are set up by a system that says implement the Common Core in 45 minutes per day. “Try it” I scream at the principals. I challenge the central office and the Board of Education with “You do it.” Putting our students first, means that we all become demanding, nagging advocates for “NO LESS THAN AN HOUR A DAY FOR MATH!” That’s how entrepreneurial business ventures eventually succeed.

5. Gathering data and using it as ammunition. We also know that despite all the testing and all the so-called accountability measures, it is pathetic how many decisions are made without any sense of what the data might tell us. We adopt a critical function of bureaucratic entrepreneurship when we demand to see the data before venturing off on another fad or when we gather the data to make our case for change or when we challenge the bogus data often presented as justification. We all have stories to tell about how a block schedule is adopted because it is the “in thing” to do or because our two competitor high schools have moved that way or because it is how the new principal reorganized his or her last school. But where are the data? When do we ask to see how the scores improved after the schedule change? Where are teacher testimonials about how the block schedule helped make their classes more engaging and more effective? Where are the data to support the decisions about new curriculum materials or the push toward integration of content or our new flavor of the month: project-based learning? To be clear, I believe in the many advantages of a block schedule and much prefer 90 minutes blocks every other day to 45-minute periods daily. I am a firm proponent of project-based learning and would love to see more integration. But, our job is to ask, “just how much can we take on?” Where are the data that show that this initiative or program is worth our financial and time commitment? And most important of all, as we are all aware, what support and professional development is required to ensure the success of the new initiative?

Just as important as being the bull in the china shop is modeling the appropriate use of data to support all of our own initiatives. When we advocate for cell phone use for their calculators in all math classes, it is incumbent upon us to gather data on how many 7th and 8th graders have a Smart Phone, how many do not really have access to a graphing calculator, and how many standards could be better taught when students all had access to this technology.

When our critics ask why students who get the right answer need to explain their understanding or when ignorance about the Common Core results in foolish policies that only undermine teachers’ efforts to best serve their students, we need to be ready with cogent arguments and compelling data.

6. Creating and disseminating annual reports. Finally, every corporation and foundation and most associations and organizations issue annual reports. As bureaucratic entrepreneurs we

share the responsibility to publically present our accomplishment and challenges for public scrutiny. I am well aware that this is not standard operating practice in our schools, but think about something as simple and ground-breaking as an annual State of Mathematics report distributed to those with whom, and for whom, you work. Consider an honest appraisal of improvements and stalemates, challenges addressed and remaining. Just as annual corporate reports provide key data and encourage stockholders to keep, and even grow, their investments, our annual, entrepreneurial reports celebrate accomplishments and progress and lay out next steps to take our successes even further.

Don't expect to be popular.

Early on, I learned that bureaucratic entrepreneurs were not particularly popular. Our colleagues and superiors don't appreciate being questioned at every turn. They don't like being shown up by our policy statements and action plans. But most of all, bureaucratic inertia despises our success. Our answer in Connecticut was to find a colleague and remember that it's about the kids, not the adults. My best advice is to team up with another bureaucratic outlier. Share a beer or a glass of wine every other Friday or a lunch every other Thursday and laugh, cry and commiserate. But then, say goodbye, recommitted to your vision of success and the implementation of the initiatives that support that vision. Keeping your focus on the mathematical success of our students minimizes the slings and arrows of the jealous naysayers and misguided bureaucrats we all encounter.

An Advocate, not a Cog

The overarching message that I have sought to convey as we celebrate 50 years as an empowering organization is that, as NCSM members and as school, district and state mathematics leaders, we must be advocates – squeaky wheels and consciences if you will – for great math for all students. Squeaky wheel advocates push back. They walk into the principal's office to argue for changes in school schedules that undermine mathematics. They gather the data no one wants to see that show that students who are tracked into lower-level, lower-expectations courses actually do worse each year. They plead with the assistant superintendent to fund document cameras in every classroom where mathematics is taught. They stand up at school board meetings, often at great risk, and urge policies that support course committees, time for collaborative structures and coaches. These department heads, coaches and supervisors are no longer just cogs in a monolithic, change-only-from-the-top institutions. Rather, they are integral parts of the shared leadership found in all effective organizations. In the end, while holding themselves accountable for positive changes, these leaders are first to give the credit to others and quickly move on to the next critical initiative to ensure that mathematics works for every student.

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