

**To Be Blunt:
Too Many Students Are Being Harmed
by Our Unwarranted Compliance**

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But there is great news:

- **We have ample reason to be very angry and frustrated – there is so much that just isn't fair.**
- **But we have even greater reason to be optimistic because there are clear, reasonable and implementable ANSWERS!**

(Even in these very trying and disruptive times.)

- **After every recent social upheaval, we did things differently and things got better.**

My Motivation

We are all aware of the impact of following silly rules and misguided directives. The one-size-fits-all, top-down, we-know-best approach to running too many schools underserves our students and our professionalism.

Great educators have always earned their greatness by closing their doors, breaking some rules, and asking uncomfortable questions. That is, by erring on the side of being trouble-making subversives.

And, if they won't lessen control and give us autonomy to do our job the way we know it needs to be done, we need to just take it.

Call it assertive, subversive leadership by example and deed!

Because:

- **The effectiveness gap between classrooms only hurts our students;**
- **The professional isolation and culture of “I’m ok, you’re ok, don’t bother me and I won’t bother you” is no longer acceptable;**
- **We have clear answers and understandings that must be widely shared and implemented.**

Compliance

Going along to get along, following rules that make no sense and undermine our effectiveness, being compliant when our students are being underserved, ALL detract from our professionalism.

Opening Perspective

- Look at whom the social studies curriculum honors.
- Look at whom the science curriculum honors.
- Look at whom we name our schools after.

Martin Luther

Nelson Mandela

Rosa Parks

Bill Gates

Cesar Chavez

Martin Luther King

Galileo

Steve Jobs

Mother Teresa

Mahatma Gandhi

Jesus

Abraham Lincoln

Thomas Edison

Jane Goodall

Best teachers you ever had

Rebels All! Outliers All! Game Changers All!

What do these heroes and heroines do?

- Question
- Agitate and annoy
- Are outspoken
- Break silly rules
- Are comfortable as non-conformists
- Fearlessly explore alternatives and take risks
- Are passionate about their cause
- Rock the boat
- Challenge convention
- Make a difference

Am I holding up a mirror to you?

Alternatively.....

What do they NOT do? They tend NOT to:

- **Conform**
- **Be compliant**
- **Follow silly rules**
- **Bore to tears**
- **Go along to get along**
- **Think and act hierarchically**

And that's why they tend to make a lot of difference

No, that's how WE can make a significant difference

But let's be honest:

It's easy to TALK about bold leadership.

It's much harder to ENACT bold leadership.

**So let's look at the core structure of our
business:**

The System or Big Picture:

In our business three things matter more than almost anything else:

What?

How?

How well?

The System or Big Picture:

In our business three things matter more than almost anything else:

What?

The Curriculum

How?

The Instruction

How well?

The Assessment

The System or Big Picture:

In our business three things matter more than almost anything else:

What?

The Curriculum

Guidance

How?

The Instruction

Implementation

How well?

The Assessment

Informing

And look at the powerful guidance we have:

- **A common shared vision of effective teaching and learning**
- **K-8 Common Core Standards**
- **NCTM's 8 Mathematics Teaching Practices (Principles to Action)**
- **Daily formative assessment exit tickets**
- **High quality, balanced unit assessments toward which we teach**

Now consider how much of this is ignored.

Jo Boaler's new "Limitless Mind"

Six Keys:

- **The neuroplasticity of the brain – it is NOT fixed – every time we learn we grow our brain**
- **Mistakes and struggle**
- **Beliefs powerfully influence body and mind**
- **Multidimensionality –alternative approaches and multiple representations**
- **Depth and flexibility vs speed**
- **Collaboration**

How much of this is practiced regularly in the classrooms in your school?

So I get angry!

The status quo is no longer acceptable when it comes to ensuring that mathematics works for all students. Standard operating procedures of teaching by telling, showing and practicing fail far too many students. When it comes to **implementing** the conceptual orientation of the Common Core or its derivatives and **consistently doing** what research conclusively demonstrates about distributive practice, student and professional collaboration, alternative approaches (as opposed to the one right way) and multiple representations, all as part of a school and classroom culture of inquiry, questioning and problem solving, **we are all being asked to be non-compliant leaders and rebels on behalf of students.**

So let me turn to **WHY** and **HOW**.

To be blunt

When teachers spend $\frac{1}{2}$ a math lesson talking at students and showing HOW to get answers, it's educational malpractice and student learning is being compromised. And frankly we are complicit when we look the other way.

Do you agree? What are you doing about it?

To be blunt:

When students are doing more than 4 exercises on a mindless practice worksheet without pausing to get feedback on their work and to discuss alternatives and explanations, their learning is being compromised. When we tolerate the use Mad Minute, Math Sprints, etc. we are contributing to the development of math anxiety and worse.

Do you agree? What are you doing about it?

To be blunt

When teaching is driven by rules that make no sense:

- Keep, change, change (KCC)**
- Keep, change, flip (KCF with IEP students)**
- The butterfly method (OY)**

student understanding is being undermined. And frankly we are complicit when we look the other way.

Do you agree? What are you doing about it?

To be blunt

When some students have access to calculators and Desmos and computers and others, in the same grade or course, don't, kids and their teachers the next year are being set up.

Do you agree? What are you doing about it?

To be blunt

When there are no retesting policies, we are just being lazy and mean and hurting kids...

Do you agree? What are you doing about it?

To be blunt

When math class periods are only 45 or 47 or 49 minutes, teachers are being set up.

Effective teaching of our standards requires 60 minutes per day!

Do you agree? What are you doing about it?

To be blunt

When it comes to most PD,

- **What is typical is done TO us, rarely WITH us.**
- **What is typical ignores common sense and research.**
- **What is typical hasn't worked and needs to change.**

In fact, in two major random controlled studies, even incredibly well planned and delivered PD resulted in:

- **No change in teacher knowledge;**
- **No change in teacher classroom practice; and**
- **Therefore, no change in student achievement.**

Ergo: it is not “professional” and it doesn’t “develop.”

And we all know it.

Let's be honest:

There is a lot we SEE and KNOW and fail to act on.

That's not leadership.

That's going along to get along and it's just not acceptable.

**This mathematics education work is not about being popular,
WE NEED TO BELIEVE (and act on the belief) THAT WE WORK
FOR THE KIDS – ALL THE KIDS – ALL THE KIDS IN OUR SCHOOL
AND DISTRICT!**

**So exactly what do rebellious,
subversive, non-compliant mathematics
education leaders need to be doing?**

1. We start in the classrooms of our schools and districts.

Elements of Quality:

- Clarity of goals (not Lesson 4.5 or pages 214-217)
- Context (not naked)
- Rich tasks (not exercises)
- Focused intentional questions (not punting)
- Opportunities for discourse (not just telling)
- Gradual reveal (not just a dumping)
- Multiple representations (not one way)
- Alternative approaches (not one way)
- Explanations and justifications (not just answers)
- Common errors and misconceptions (not just right correct approaches)
- Sense-making by students (not lecture)
- Evidence (not I taught it and let the chips....)

But lists like this are essentially useless crib sheets unless we help people ENVISION each of these.

Non-compliant leaders:

- **Recognize there really are research-affirmed, common sense answers.**
- **Publish non-negotiable vision statements that incorporate these elements and are widely discussed, posted and expected.**
- **Never stop talking about and modeling what quality looks like. (“That’s aligned with our vision.” “I worry that what I saw just isn’t aligned with our vision.”)**
- **Focus with laser intensity on these elements in all collegial interactions, coaching, supervision and evaluation.**
- **Work with principals to ensure they can differentiate control from engagement, passive and quiet from active and noisy, effective from traditional.**

It’s hard to believe that any of this could be considered radical.

For example:

Come with me to Grade 6 SA Harlem Central

Tues Dec 8, 2015

- Lesson 6 in the Expressions unit (6.EE standards)
- Ally and Mabubar co-teaching
- 19 Scholars
- Driven by a number strings mini-lesson, a Math Workshop task and an exit ticket
- “Our goal for today is to “identify, create and understand equivalent expressions.”
- “Zayasia, can you please repeat our learning goal?”
- “Let’s begin with our number strings.”

Number strings for today's Mini Lesson

Are they equivalent? How do you know?

1. $4(8) = 4(3 + 5)$

2. $4(8) = 4(a + 5)$

3. $4(8) = 4(3 + b)$

4. $3x + 3y = 3(x + y)$

Let's summarize: For each: Always, sometimes, never equivalent?

Math Workshop Task

Jan normally rides her bike to and from work.

Her normal route is 18 miles from home to work.

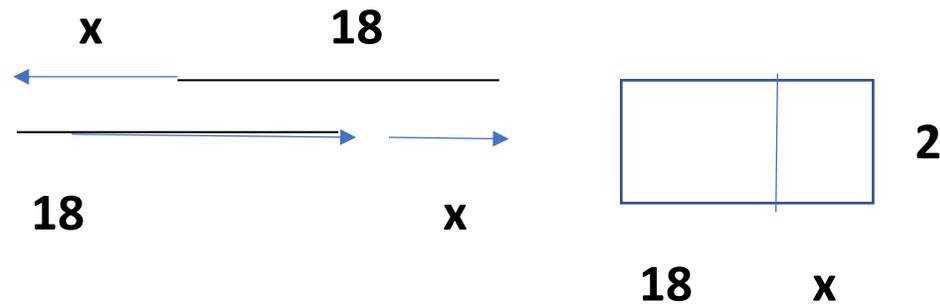
One day she goes to a coffee shop on her way to work and on her way home.

This adds x miles to her trip each way.

(“What do you notice?” “What’s the question?”)

Great: Write and show the distance Jan travels using a diagram or picture and two different, but equivalent, expressions.

Resulting in:



- $18 + x + 18 + x$
- $2(18 + x)$
- $2(x + 18)$
- $x + x + 18 + 18$
- $36 + 2x$

“Is everyone correct? Turn and tell your partner why?”

“What do the numbers and variables represent?”

“Which expression is simplest or easiest to use? Why?”

Lesson 6 Exit Ticket

Which of the following represent equivalent expressions?

Explain or show your process of determining which expressions ARE equivalent.

Select all that apply:

a. $x + x + x + x = 4x$

b. $15y + 5x = 3(5y + x)$

c. $6(2 + x) = 12 + 6$

d. $3(x + y) = 3x + y$

Principles to Actions:

Ensuring Mathematical Success for All

Mathematics Teaching Practices

- Establish mathematics goals to focus learning.
- Implement tasks that promote reasoning and problem solving.
- Use and connect mathematical representations.
- Facilitate meaningful mathematical discourse.
- Pose purposeful questions.
- Build procedural fluency from conceptual understanding.
- Support productive struggle in learning mathematics.
- Elicit and use evidence of student thinking.

Elements of Quality or Why so Effective?

- **Clarity of goals (not Lesson 4.5 or pages 214-217)**
- **Context (not naked)**
- **Rich tasks (not exercises)**
- **Focused intentional questions (not punting)**
- **Opportunities for discourse (not just telling)**
- **Gradual reveal (not just a dumping)**
- **Multiple representations (not one way)**
- **Alternative approaches (not one way)**
- **Explanations and justifications (not just answers)**
- **Common errors and misconceptions (not just right correct approaches)**
- **Sense-making by students (not lecture)**
- **Evidence (not I taught it and let the chips.....)**

And the result?

The State's Top School Districts

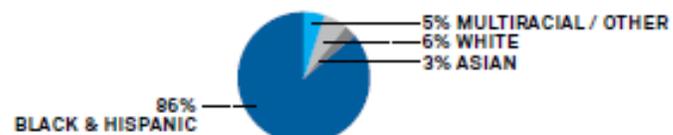
#1 Success Academy

Enrollment: 14,000*

Household Income: \$32,191

Funding per pupil: \$14,027

* 2016-17



95% Passed Math

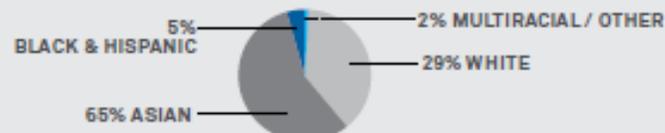
84% Passed ELA

#2 Jericho

Enrollment: 2,999

Household Income: \$151,729

Funding per pupil: \$40,832



85% Passed Math

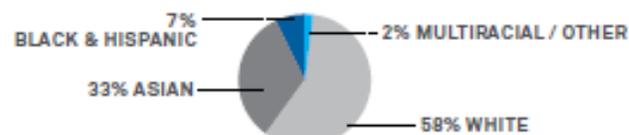
81% Passed ELA

#3 East Williston

Enrollment: 1,711

Household Income: \$161,750

Funding per pupil: \$33,650



84% Passed Math

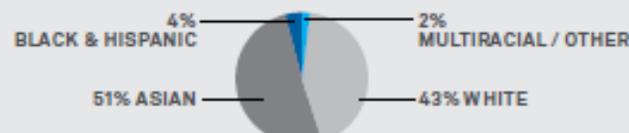
77% Passed ELA

#4 Syosset

Enrollment: 6,247

Household Income: \$165,360

Funding per pupil: \$32,962



82% Passed Math

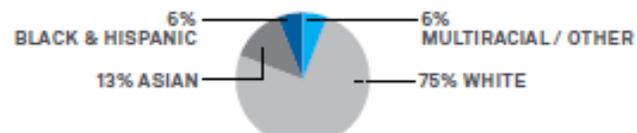
76% Passed ELA

#5 Chappaqua

Enrollment: 3,840

Household Income: \$129,375

Funding per pupil: \$29,339



82% Passed Math

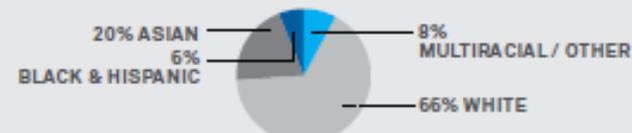
75% Passed ELA

#6 Scarsdale

Enrollment: 4,775

Household Income: \$291,542

Funding per pupil: \$29,251



82% Passed Math

74% Passed ELA

2. We target the most powerful levers

Why aren't there common high quality unit assessments for every grade and course?

Why do we let individuals create their own, often of marginal quality assessments of a common curriculum?

Non-compliant leaders focus on a system of common high quality unit assessments

We tend to let “them” keep the focus on the large scale state tests, the SAT/ACT and MAP that we have no control over and rarely have access to the items or timely actionable results.

Rebels and anyone with common sense recognizes that high accountability, high quality, open-ended, unit assessments toward which we want teachers to teach are a critical piece of an effective system.

3. We outlaw (and shame) worksheet abuse, mad-minute, math sprints

Just read Jo Boaler's YouCubed "Fluency Without Fear."

**Just look at the damage done when the focus is
exclusively on speed and right answers.**

**Just look at how much time is wasted teaching with no
feedback beyond right right wrong right wrong right.**

Non-compliant leaders:

- **Widely distribute “Fluency without Fear” and make it school and district policy.**
- **Shame teachers who ignore the policy.**
- **Model more effective forms of practice that provide feedback, limit exercises to 4 at a time, focus on alternative approaches, multiple representations and student explanations.**

4. We are adamant that 58 minutes/day for math is the absolute minimum EVER.

- Watch me: kids in rows 47 minute period**
- I rush. I get shrill. I watch the clock. I cut corners. I fail to be responsive to students.**
- Then watch me: kids in groups of 3 or 4 60 minutes**
- All the difference in the world – time for cumulative review or number talk, time for an exit ticket, time to think, time to use lesson chunks.**

Non-compliant leaders:

When asked:

“Why aren’t our math scores higher?”

“Why are do many students more being more successful?”

Non-compliant leaders respond:

“Simple. Our kids and teachers are cheated by anything less than 60 minutes given the district/state curriculum.”

And then we compromise at 58.

5. We build a system of second chances

Why are we so driven by one chance tests?

Why aren't their widespread retesting policies for all students for every unit assessment?

Non-compliant leaders:

Create systems of Form A and cloned Form B for every unit assessment and mandate that every student has a chance (on his or her own time) to retake every assessment within 10 school days.

Start with one elementary school, one middle school and one high school!!

6. We shift homework from busy work to formative assessment

There is little that wastes more time in students' lives, in class and at home, than assigning, completing and reviewing math homework.

- We spend precious minutes assigning homework and expecting our student to copy the assignment down.
- We expect students to spend between 30 and 45 minutes each school night except Friday doing homework, usually regurgitating procedures and mimicking from notes and text.
- We spend somewhere between 10 and 20 minutes “going over the homework” in class.
- A typical assignment:

<u>247</u>	<u>243</u>	<u>239</u>
1-19 odd	2-20 even	32, 34, 38

All for what real value?

The heart of the homework matter:

If the point of homework is to see if students “get it,” then 5 practice problems is enough.

If kids get it after 5 problems, and you ask them to do another 35, you’re just being mean.

And if kids don’t get it after 5 problems, and you ask them to do another 35, you’re really being mean.

- Matt Cwalina, Discovery Education

Non-compliant leaders advocate for sensible

2-4-2 HW

- 2 problems on the new skill (which is usually enough to determine understanding and avoids such much practice of mistakes that it is hard to unlearn them);
 - 4 cumulative review problems roughly drawn from the day before, the week before, last month and perhaps a diagnostic readiness check for the next lesson - all of which honor distributive practice; and
 - 2 problems that require showing work or explanation and support problem solving and reasoning and justification.
-
- After beginning mathematics the next day, teachers can easily post the answers to these 8 exercises or problems on the white board and provide students with 5 minutes to review their work in pairs or triads with particular attention to the last two problems. Classroom policy can then be that correct work for any problems that are still causing trouble can be easily displayed with a document camera and discussed before homework is collected, only to be recorded as completed.

7. We recognize technology as a right and an essential learning tool

- The lack of access, the inequity, the unfairness and the variations from classroom to classroom when it comes to technology is a scar on all of us – and we know it.**
- Technology is a great place to explore access, or lack of access, and its often highly inequitable distribution.**

Non-compliant leaders:

Take SMP #5 seriously: Use appropriate tools strategically.

- **Notes and slides on an accessible site for students**
- **Computer delivered assessments**
- **Cell phones**
- **Three-act lessons**
- **Programs like Illustrative Math**

8. We demand a focus on real Professional Development

Common sense, research-affirmed PD practices that :

- help us envision the shifts**
- address beliefs and mindsets**
- link opportunities for practice and feedback**
- involve collaborative work**

As opposed to after-school, one-shot, fragmented, not relevant to real needs, imposed PD that rarely focuses on teaching and learning.

Non-compliant leaders don't accept professional isolation, they insist upon collegial visits with respectful debriefs

- **The answers to nearly all of our challenges reside to one degree or another within our schools.**
- **No one knows all and no one is perfect – we're teachers – but someone knows and does things that we don't.**
- **Why do we act as though there were dragon-infested moats around our classrooms?**
- **The best schools I know have a system of at least one collegial classroom visit every other week.**
- **Prep periods, test periods with coverage, substitute enabled, during specials – don't tell me you go non-stop from 8 to 3 M-F.**
- **Followed up ASAP with a truly collegial and professional discussion...**

I have visited your math class earlier today.

- **What really impressed me (and why)...was...**
- **The questions I have about what you/I did are... (let's talk and consider these things you might want to consider)**
- **The two things that I will consider doing differently starting tomorrow are... (BOTH the observer and the one being observed)**

Non-compliant leaders subversively expand the use of video, they use videotape

- **Have you ever videotaped yourself teaching?**
- **Have you critically reviewed the video by yourself?**
- **Have you done it with others?**
- **Have you considered the power of building a video library of powerful teaching?**
- **Have you considered the difference between an observation and capturing the observation on start-pause-go back video?**

Why not?

Westport, CT many years ago

- **Staples HS, Bedford MS, Coleytown MS**
- **“We’re good, even very good. But we are not great. Help us get there.”**
- **Why don’t each of us videotape one lesson each month?**
- **Observe oneself and write up a few paragraphs on “What I learned, what amazed me, and what changes will I make?”**
- **Upload all videos and select one for collegial viewing and discussion during a department meeting.**

For the video we are watching:

- What really impressed me (and why) was...**
- The questions I have about what you did are...
(let's talk and consider these things you might want to consider)**
- The two things that I will consider doing differently starting tomorrow are...**

Non-compliant leaders build collaborative learning structures, they organize seminars

- **Think about your last grade level, grade band or department meeting.**
- **What was the balance between teaching and learning on the one hand and administrivia on the other?**
- **When did you last engage in a collegial seminar about a critical topic or issue?**
- **When was one person assigned the responsibility to orchestrate such a seminar on such topics or issues as:**

Potential topics or issues

- **Desmos apps**
- **Equivalent fractions grades 3-4**
- **Re-testing**
- **Emergent math**
- **Grade 7 statistics**
- **Graham Fletcher's 3-act lessons**
- **Readings, articles, e.g. Fluency without Fear**

And where does all this leave us?

Finally:

As non-compliant teachers and leaders, our mindsets must be that we are no longer just cogs in a monolithic, change-only-from-the-top institutions. Rather, we are integral parts of the shared leadership found in all effective organizations.

That is teacher/leader as rebel, change agent, difference maker!!

Revealing my Age

As Bobby Kennedy said:

“Some people see things are they are and ask why; I [and fellow rebels] dream things that never were and ask why not?”

I ask you: Why not?

Thank you!