

Editorial for the mtrj V.4.N.2

We are presenting here an unusual collections of 5 essays written by different mathematics teachers in the Bronx. The teachers were asked the question: What are the main problems with teaching mathematics in the Bronx high schools and what would be your vision of the well working system? The teachers were asked to write these letters anonymously to assure the maximum sincerity in the description.

We decided not to describe the essays to allow readers the maximum of the independent judgement upon the views.



ESSAY 1

The Low Performance of Mathematics in High Schools in New York City

I am currently an Assistant Principal at a small High School in the Bronx. I have been in this position for the past three years. My previous experiences include being a mathematics teacher and a mathematics coach in the Bronx for four years. Before migrating to the United States, I taught in Jamaica for three years and tutored in a New Britain High School in Connecticut for four years while studying Mathematics Education and Instructional Technology at Central Connecticut State University. I also lectured at one of the oldest teachers college in the Western Hemisphere – The Mico College in Jamaica West Indies. Half of my life has been dedication to education and I have served at all levels.

The performance of high school students on state mathematics exams is below standards. This low performance is due to various factors. Three factors include: the restructuring of large schools to small learning communities; the grouping of students in mathematics classes; and the frequency in the changing of the curriculum.

High schools in New York City have changed drastically. For example, instead of having one large school with a mathematics department of 44 teachers, my school is now a campus of six small schools. In each small school there is an average of 5 mathematics teachers. Therefore, a small school cannot afford to have one assistant principal of mathematics only. Instead, there is an assistant principal of supervision with multiple departments. One disadvantage is that most small schools do not have an assistant



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principal whose expertise is in Mathematics. This results in a weak department and poor mathematics results. When the small schools were created, the position of math coaches was created to alleviate this problem. However, with restructuring and budget cuts the position of Math Coach is eliminated in most schools.

In my first year of teaching mathematics in New York, I taught a group of students who had failed the Math A regents. The students were unmotivated and when I tried innovative methods, the classroom environment would get chaotic. The mathematics skill levels of the class were very mixed. I had students with a high level of understanding for mathematics, but did not care about passing the regents. On the other hand, I had students who had very poor math skills and needed a much smaller class size in which they could benefit from individualized instruction. In contrast, my most rewarding experience was that same year when I had a small class size of 14 students who were classified as level 1 (lowest ability level). I was able to provide individualized instruction and improve their mathematical skills because they were a small class and they had a double period of 90 minutes each day. Unfortunately, if the administrators are not expertise in the area of mathematics, class sizes become large and unproductive, and students with various abilities are placed in the same classes. For example students who have scores of Math A ranging from 20 – 85 are placed in the same class to do Math B.

In the past ten years, the high school mathematics curriculum has undergone several changes. Students had the Sequential One to Three Curriculum until 2002, and then there was the Math A, Math B curriculum until 2010. And now the current curriculum is the Integrated Algebra, Geometry, Algebra 2/ Trigonometry curriculum which started in



2008. When the curriculum changes, the staff has to get Professional Development, new resources and new teaching strategies. It takes five years to get comfortable with a curriculum. Therefore, as soon as teachers get comfortable and competent in a curriculum they have to change to an unfamiliar curriculum.

While the scores of Mathematics on Regents exams have been increasing, the scores can be improved if math coaches are mandated in a school that does not have an assistant principal of mathematics and the curriculum does not undergo another drastic change for at least ten years.

Essay 2

I've been teaching for NYC DOE for 11 years. Although I did not start teaching immediately after college, the majority of my adult career has been in education. However, it pains me to say that with each passing year I get more and more weary of my once beloved profession and just this year I found myself saying, "I think my time teaching may be up."

Since I began teaching in 1997, I always knew there were problems; incompetence, favoritism, laziness, teaching for our (excellent) benefits, including the time off. However, I was able and more importantly willing to overlook these issues because really, what environment having 2 or more people is without problems? Besides, in my opinion, for every one 'bad seed' teacher a school had, there were plenty of dedicated, competent teachers.

However, seeing the same problems arise in school after school and hearing about similar problems from colleague after colleague, I noticed my profession becoming more



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and more challenging. For example, I've been in more than my share of schools and heard more than my share of stories from colleagues – like the practice of moving a disruptive student from one class to another because the original teacher could not handle said student. Of course, there are extreme situations where a profound difference between teacher and student can disrupt the classroom learning environment, but what I and my colleagues have found is there comes a point when no one even tries anymore and the classrooms of about 1 -3 teachers become a dumping ground. The classrooms of those teachers become a holding cell for the difficult students because somehow that teacher is able to establish and maintain some type of rapport with the student(s) which keep classroom management in check. However, as a teacher that feels dumped on, I have to say it's not fair. No matter how 'good' a teacher may be with difficult students, it takes a lot of time and energy to create an environment that fosters learning and student parameters. It has now become too easy for teachers who can't handle difficult students to just complain and have students moved into other classes. It has now become too easy for students and/or parents to dislike a teacher and/or his or her style and have another teacher absorb the extra student into what already may be an overflowing class. In fact, in the all too frequent extreme cases, teachers with no classroom management get pulled out of the classroom altogether...not for PD or some type of enrichment, but for reassignment (sometimes even nonteaching jobs). In what other work environment would this be acceptable?

But this isn't the only challenge facing teachers. We also have the challenge of covering too much material in too little time for tests that have too much emphasis placed



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on them. I agree as much as the next person that our students need to improve their skills in all areas of academia, but should that improvement be based exclusively on a test to the exclusion of all other student achievements? For example, if we take a look at the NYS Regents exams; gen. ed. students can not graduate unless they achieve a passing score on a math regents , a science regents , an English language regents , a global history and a U.S. history regents. This will earn them a basic diploma. More regents with high scores will earn a student a more decorated diploma. Now on paper, this seems fine, but anyone familiar with the terms raw and scaled scores who have actually seen the Regents scoring “conversion” chart will understand that the word ‘passing’ as in a passing score is used loosely. And although NY is not the only state that requires students to take and pass a standardized test, no state seems to have the same requirements so a student in NY looking to go to a college/university out of state may find that what was acceptable in NY may not be acceptable elsewhere and vice versa – particularly where private colleges are concerned. For NY students, the standardized tests are often problematic for students who choose to stay local to further their education. A student may ‘pass’ a regents with an 85 or higher **but** that score is scaled. This means the students’ transcript may read 85 or 90 but the student(s) may not really know 85 -90% worth of material. That translates into remedial courses and wasted financial aid in college. It’s also no secret that student test scores and graduation rates can be used against administrators and increasingly against teachers. So more and more we’re finding ourselves teaching to and being encourage to teach to tests rather than



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teaching for student understanding because someone somewhere outside of education decided a student's portfolio is more important than his/her actual intellect.

These problems are just academic. I won't even take time to discuss behavioral problems in the school. I believe those problems are too intertwined into the fabric of society but I will say schools and specifically teachers alone can **not** be expected to correct years of poor behavior, negative influences, and environments. Schools and teachers should be utilized to reinforce foundations from home and the community and while schools are members of their respective communities, open enrollment, safety transfers and the like can comprise a school's influence on some students. Also, we all know principals seem to get reprimanded for taking action against students exhibiting poor behavior. Instead of being encouraged to exhibit swift, consistent actions to poor and/or dangerous behavior, their actions are used against them; they may be seen as leaders of poor functioning schools and that could cost them their jobs .

Teaching is not all bad though. There is a plethora of students, parents, teachers and administrators who care about the future of this country and everyone in it. Those people make the aforementioned hassles worthwhile. Students' faces when they receive college acceptance letters (especially when accompanied by scholarship award letters), parents faces during graduations, and student performances also make the hassles worthwhile as do senior trips, proms, and all **FUN**draisers. It would be great if we could somehow use the fun activities and tie them into meaningful inter-curricular lessons. But as I mentioned earlier, time constraints forced upon us won't allow. By time constraints I'm not only talking about standardized tests, I'm also talking about parents who want to



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participate but can't because they have to work ridiculous hours and/or number of jobs just to make ends meet. I'm talking about financial constraints wherein teachers, administrators and parents – some of whom may be students - have to rush to pick up small or young children because the cost of daycare is out of control.

I entered high school right when shop classes were coming to an end. In fact, my high school was one of the last that had an auto body shop in it for students interested in mechanics. Although I didn't experience these types of classes first hand, I think we would do our kinesthetic learners a great service to include them in an educational climate they can participate in. It also would hurt the analytical learners to experience education through physical work. I think both sets of students would learn more for their own well being but also learn a new type of respect for one another and each one of their strengths. I think as it is now, how we rate intellect is skewed in favor of students who can or choose to try to use analytical skills, but what good are analytical skills if they can't be applied? I'm well aware we're in the age of technology, but students of all learning types can learn on and with technology. We still need mechanics, but they don't assess and fix all by hand anymore; they use technology. Doctors no longer do all surgery by hand; when necessary and safer they use technology. There's room for every learning style in this technological age. So to say we can't bring back shop classes is wrong; we need to bring appropriate shop classes back and teach them accordingly. I also think this in itself would boost math scores tremendously - the problems they *read and solve* in math classes would be *applied and done* in an applications setting. I also think we need to align our curricula with the colleges/universities. As it is now, we have



so much breadth with little depth and enrichment with the idea we're preparing students for tests and college when in reality that's not the case. They are barely passing their high stakes tests if at all, and still taking remedial college (math) courses. I think we need to get rid of the breadth (there is so much repeated content from 7th through 9th grades), focus on depth and introduce applied mathematics into the curricula *from high school down*.

I'm also not opposed to tracking students. Somewhere along the way it became synonymous with intelligence (or a lack thereof) when all it really does when used correctly, is meet a child where his/her learning needs are and teaches them the same material accordingly.

I think our system needs to be totally revamped and I know that's much easier said than done, but our kids, their futures and ours are worth more than the band-aids we keep putting over open, salt-filled wounds.

Essay 3

I have been teaching Mathematics for over 8 years. I have taught levels 5 through 12 and am currently teaching at a new small high school in the Bronx. I teach Integrated Algebra, Geometry, Algebra 2 / Trigonometry and I also teach Finance at an evening school. The most difficult teaching challenge is getting students with poor attendance to learn. If a child is absent in a mathematics class, s/he is set back two lessons because of the pre-requisite knowledge needed to learn the current material.



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There are many rewarding aspects to teaching but the most rewarding is a child telling you how much of a positive influence your teachings in and out of the classroom are and how you have influenced them to do better with themselves.

The administration in my school does a good job of getting resources and materials for the teachers. This allows the teachers to teach the students with appropriate resources. Another strength of administration is giving a thorough observation and critiquing the teachers during their observations. This allows teachers to improve on their pedagogical style. A weakness of the administration is coming in unannounced to do observations because this causes teachers to feel insecure about their teachings. My colleagues' strengths include being very prepared, content knowledge and genuinely caring for the students. My colleagues' weaknesses include not being able to relate to students, class room management and the inability to deliver an effective lesson. These weaknesses come from lack of experience and being new to the teaching field.

The students' strengths include the ability to think "outside the box" when solving problems and the ability to explain to peers the content that their peers might have difficulty with. The students' weaknesses include remembering content taught throughout the semester or throughout the year. Another weakness is a lack of practicing problems at home and a lack of studying. The parents' strengths is having immediate talks with students when they are contacted about the lack of work productivity from the child. The parents' weaknesses include lack of involvement in education, not attending parent /teacher conferences. Another issue is the inability to get in contact with parents because of changing or incorrect telephone numbers and mailing addresses.



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My ideal learning community would involve constant parent involvement, communication among staff, and students genuinely caring about learning and doing better. Constant parent involvement helps students stay focused and on task. Communication among staff is important because the staff should always know what's going on in the school and what decisions are being made.

What surprised me most about the school that I currently teach in is that the teachers were not given pre-observations before being observed. The support that would be useful is having Lead teachers and Assistant Principals who have thorough content knowledge in their area of expertise.

Many students are unprepared for high school and college because many teachers are unwilling to do spiral review before a lesson and spiral review during the year. Many students are not willing to go home and practice math problems and they do not review notes, tests, quizzes and examples.



Essay 4

I am a third year mathematics teacher in a Bronx high school since the start of my teaching career. I have always wanted to teach in a lower performing high school. I have found it most rewarding when I can make learning of mathematics accessible to students who are at a disadvantage. I remember during this past school year, a student started in my class not doing any homework or class work and performing poorly on class exams. After a time, that student wanted to stay with me after school on a regular basis eager to learn about mathematics. I found it extremely worthwhile - everything I had done and the sacrifice that I had to make to help him in this process. I believe this would not have been possible if his parent was not supportive at home.

As they are the first caretakers of my students, I believe parents plays the most important role in helping children succeed in school. For instance, I was successful in helping the student mentioned earlier mainly because of the support of his parent. Though I had never met this student's parent, through our numerous phone conversations I believe that the mother helped greatly in reinforcing what I would like any parent to do at home. Of course, the student must want to improve in order for any learning to take place. My point here is, without parents' support and positive reinforcement at home, the job for teachers and for school communities is nearly impossible.

In my school, some parents promote positive reinforcement that the non-academic skills teachers teach in school. Unfortunately, a good amount of our parents may try to help, but can make situations worse than they actually are. As an educator, I have come to realize that many times it is not that parents are not involved with their child's



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learning; it is a matter of how appropriately they are doing it. Realizing this concern places me in a dilemma when it comes to calling or not calling a parent at certain times. To help promote effective parenting techniques, it would be quite helpful if these parents were offered something like parenting workshops.

I am fortunate that I teach in a school where administrators want their teachers to work collaboratively to make decisions to a presented problem, and allow us to apply it. On the other hand, I would like to see more unity among the administrators and principal. It is understandable that everyone should have their opinions, but they should reach a final decision in the end. This way, a sense of greater school community can be at its place.

As a new teacher, I have been disappointed in the boundary that exists between new and veteran teachers. In my “ideal” learning community, I envision more experienced teachers acting as mentors to guide their relatively inexperienced colleagues. Further, I envision everyone open to effective teaching technique even if they are introduced by a newer teacher. In order for a learning community to be most beneficial and meaningful to our students, there should be only one agenda – that we are here for the students. This would imply that teachers put aside their selfishness, veteran teachers put aside their relatively “superior” status, etc. All the members in the entire school community need to work collaboratively with one another to ensure our students’ success in their school years.

I believe many students are underprepared for high school mathematics because they were underprepared when they were in middle school. I guess I can also say for the



middle school teachers, that their students are underprepared because their elementary teachers are not doing their jobs effectively. As you can see, it would be just a chain of blame on those teachers in the grade levels below theirs. Unfortunately, no problem is solved yet. I believe one of the core issues of our mathematics in the school system is the type of curricula that are already in place. Should anyone expect any further changes, I believe we should let the changes start with changes in our current math curricula across the entire school system.

There has been much research done on the math curricula and their structures in Asian countries, such as that of Taiwan. The sequences of mathematics concepts taught in these countries are meant to teach students until they learn. Instead of teaching a wide range of concepts in a short amount of time, curricula in these more successful countries focus on a small trunk at a time. Our current mathematics curricula lead to students' failure, specifically the lower performing students. I believe our students are not any less intelligent than their peers in other countries when it comes to math. Our students are performing poorly as a result of our poor school system.

Essay 5

I am a teacher of Mathematics who was born, raised and educated outside the United States. I've taught 6 years in my country before taking the opportunity offered by Uncle Sam and it's been 3 years since I joined the New York City Public Schools.

Coming from a different country with a different background, the most challenging part is adapting to US classroom culture. Students' diversity, how to motivate them and keep their attention counts a lot. As a teacher I have to be prepared to adapt to each class



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and use creativity and intuition to help the students learn; to find a way to make difficult concepts into something that students can digest and understand. Despite these challenges, teaching is still rewarding because no other profession will exist without a teacher. Seeing students succeed, helping them to gain confidence and self-esteem and knowing that I've touched their lives in a simple way, make my day. The sweetest word that any teacher could hear would be a simple "thank you" from a student or a student telling you that I would like to be a teacher because of you.

Administrators and teachers in my school respect each other, treat everyone as a family and believe in their colleagues' expertise. We use data as our basis of instruction, set up high expectations for everyone including students and consider students' achievement as our top priority and how to help kids and let them graduate on time. Administrators do observations and give out helpful feedback to the teachers as well as teachers to their students. Though there are times administrators are not effective communicators in terms of what's going on in some critical cases that should be shared with teachers. One of the major concerns is how to discipline students and how to find a more effective way of using suspension and detention. Teachers need to exert more effort on how to provide consistent feedback to parents and students about the students' performance in school aside from just calling and sending quarterly reports home.

Students try their best to be at school to get an education and get things done on time. They always try to see the connection of what they are learning in real life and how they can use it in the future. Despite these efforts, they don't know how to balance work (for



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those who are working) school, family and other demands. This results in poor retention, short attention span and poor motivation. Parents cooperate once you address these problems and relay the message to the students, but the effect doesn't last long. Parents need to be more visible during parent-teacher conference nights and monitor their kids' at home because everything begins at home.

School must be a place where education takes place and develops a child as a whole. This could be achieved with good leadership, harmonious relationship between parents, teachers, students, staff and administrators and by showing respect to one another. Classrooms should be caring places, thought-provoking, challenging and successful. Once you enter a classroom you should see that there is work being done, students are accountable and have a sense of ownership and pride in their works, teachers are prepared, materials are ready and abundant, students feel safe inside and outside the classroom, and there is a shared leadership and discipline everywhere and parents share the success and failure of their kids.

It is surprising that it's not the ideal world. Going back as a new teacher in the school, discipline and classroom management amazed me. I can't imagine myself repeating and reminding students what to expect from them though they are adults already. It is not teaching them what they currently know but teaching those behaviors they don't currently practice. I also realized that you learn a lot from your students most of the time. There's a saying that it takes two to tango and it really applies to teaching and learning. However, when you are prepared and the students don't cooperate it leads to frustration.

I realized that most students are under- prepared for high school math simply because



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they don't know what they're doing. They lack knowledge of the basic skills that they should know therefore they won't be able to see the connection to the next lessons because they are really lost right from the start. It's not only the concept of math but also how to interpret problems and their comprehension as well. This might be because they are not guided properly, their lack of study habits and their reluctance to challenge themselves.