Algebra, the New Civil Right (1993) – With Foreword by Ben Moynihan

“Se wo were fi na wosankofa a yenkyi,” or, “it is not taboo to go back and fetch what you forgot.”  — An Akan proverb from Ghana, West Africa (1)

Consider the Sankofa bird, facing forward with its beak cherishing an egg while looking back, like an arrow which must be pulled backwards before it can fly into the future, we hold the Akan Twi word, “Sankofa”—which means literally “to retrieve”—in our hearts as we look backwards so that we may move forward imbued with Bob Moses’ liberatory passion. In this spirit, we revisit an address he made almost 30 years ago.

Moses spoke at the Strengthening Underrepresented Minority Mathematics Achievement Intervention Programs Conference II (SUMMAC II) in November 1993. Weaving together history, common sense, and empirical research, Bob sought to spark a discussion leading towards a consensus that mathematics education be pursued as a universal literacy requirement for full participation in 21st century society.

Bob posits that all K-12 students must become fluent in the language of mathematics and be prepared for credit bearing courses in college. He calls on mathematicians and mathematics educators, teachers and school systems, and all of us working with them, to take responsibility for creating structured opportunities for young people to gain the literacies they need for the Information Age. He states, “…history has played this trick on us and put mathematicians in this critical place around the question of democracy of this country, because this math/science tool is really assuming as important a place as reading and writing assumed in the old dispensation.”

Why are we pulling up Bob’s 1993 address? In this year of transition since his passing in July 2021, the Algebra Project is working with schools and teachers and students to carry on Bob’s vision. At the time of this talk, the Algebra Project was solely focused on facilitating middle school students’ transition from arithmetic to algebraic thinking. Since the 2000s we also have collaborated with high schools. All of this requires of us, Sankofa-like, to look backward and forward at the same time.

We seek to remember and respond to Bob’s call today: enabling students, teachers and school leaders to “raise the floor of mathematics literacy” remains a responsibility of mathematicians, mathematics educators and those of us concerned with empowering young people to fully participate in society so that democracy may survive.

With gratitude to Dr. Florence D. Fasaneli who transcribed his remarks back in 1993, the text of Bob’s speech was included in an Algebra Initiative Colloquium proceeding, and edited by Carole B. Lacampagne, William Blair and Jim Kaput, and published by the U.S. Dept. of Education in 1995 (2). — Ben Moynihan, Interim Executive Director (speech on page 7)
This year we have all been sicker and more tired than ever before. We are trying to push through and we aim to work with students and not merely teach AT them. They are the reason we are there, they are the integral part of our community, our family, and the school belongs to them. There’s a magic to the school and so we welcome you inside our now digital classroom, and hope that what we’ve learned, from both our successes and our struggles, can help inspire you too.

— Excerpt from South Bronx Adventures: Teaching During a Pandemic

The story is similar for teachers across the country. Reports of a novel coronavirus finds its way into niche medical news. Soon, it becomes an above-the-fold headline. And next thing you know, you’re being told school will be remote for two weeks. Just two weeks. That’s all. It’s new. But it’s manageable.

“New York City doesn’t close. We don’t get snow days.” Danielle Bassie, a high school teacher in the Bronx, describes her experience shifting into pandemic teaching. “It was obscene that they were telling us two weeks. So, at first it was a stop-gap … how do we get through two weeks?”

Yancy Sanes, a teacher at the same school, adds, “I think we had like two days with other teachers to come into the building and just plan for those two weeks. And a lot of us were just stunned, like how are we gonna teach kids online?”

Of course, what was meant to be two weeks turned into months and the Zoom classroom became, for a period, the rule rather than the exception.

Danielle and Yancy’s experience mirrors that of many teachers, yet also is extremely unique. Teachers at Fannie Lou Hamer Freedom High School in the Bronx, they are co-teachers who have found both strength in each other as well as a new pedagogical path forward. They used their experience to develop a new normal when it comes to how they approach their classrooms today, whether it be in-person or remote. They documented the experience in their book South Bronx Adventures: Teaching During a Pandemic and also sat down with me to reflect on the experience, their new outlook on teaching, and the importance of co-teachers a year later.

Yancy and Danielle weren’t always co-teachers. Prior to them sharing a classroom, prior to them even knowing each other, and long before the pandemic, Danielle taught with a different teacher. “I had an ICT (Integrated Co-Teaching) class with a different teacher for two or three years, it wasn’t a great fit, and then also the students started to be, in addition to IEP (Individualized Education Program), English Language Learners. I do not speak Spanish which is the primary language our students speak. Right around that time Yancy got his teaching license, that was the hole that we needed to fill, and so that’s how we were assigned to each other.”

In many ways, this trial-and-error format for finding a perfect fit represents Danielle’s experience throughout her professional life, and she wants other teachers to know it’s okay to need to try multiple times to get things right, whether that’s in finding a co-teacher, finding the right school, or even finding a career.

Speaking about how she became a teacher, she recalls, “My mom is a high school math teacher and told me I should be the same, but I was convinced I knew better. So after college, I was an environmental activist for quite some time and it didn’t work out. I got sort of disillusioned with that world. I did the New York City Teaching Fellows to fill that time while I figured out what I really wanted to do in life, but once I started teaching I was like ‘Oh, well, once again my mom was right, this… this is what I was supposed to do.’”

Her experience finding her ideal school at Fannie Lou wasn’t so straightforward either.
“I was at two other schools before Fannie Lou. They were not good fits. The schools I was at before were Regents schools and so when I came to Fannie Lou and it was both the Algebra Project and also teaching science, it was a big shift.”

Yancy is different, however. He was a student at Fannie Lou before becoming a teacher there. “This is my fourth year teaching. I haven’t left Fannie Lou. I was a student here. I graduated here in 2014. So I basically just never left the building.” Coincidentally, Danielle and Yancy entered that building the same year, 2010, with Yancy a freshman just entering high school and Danielle on her 3rd year as a teacher, although she never had him as a student.

Just like Yancy stayed with the school he was familiar with, he was happy with his first assignment for a co-teacher as well. After Danielle put in a request to find a new co-teacher, she was assigned Yancy. “The needs started growing for the population, there were more students that were English Language Learners and also had IEPs,” Yancy reflects, “I do speak Spanish, so because I had the Special Education license and I guess because I speak Spanish, I was placed with Danielle.” The assignment worked out, and the pair have shared Room 103 ever since.

Danielle’s propensity for trial-and-error versus Yancy’s if-it-ain’t-broke approach to life marks just one of the many differences between the pair. Both headstrong and passionate individuals from different generations and with different backgrounds, the two have found that their differences have, in many ways, aided their teaching ability.

That relationship became more important than they could’ve realized when the pandemic forced all schooling to become remote.

“How do we take this classroom, which we have put so much love and care into creating this culture and community, and make it virtual?” Danielle asked herself during that two day preparation allotment. The pair saw the same struggles so many teachers went through. Kids weren’t used to the online learning environment, and standards quickly dropped. Students wouldn’t put on their cameras, or show up on time, or speak when called on. It seemed the culture and community Yancy and Danielle had fostered for so long was quickly becoming lost.

Co-teachers help make a class better. It’s two minds at work and so you can push each other to make lessons, environment, management better as well as fill in gaps in styles and pedagogies. We’re lucky in that our minds work well together despite our different backgrounds. This doesn’t mean we are always in sync or agree. We both are headstrong and very stubborn but it works for us. The fact that we are so different, but passionate, serves our kids well and has pushed us to be better versions of ourselves. We both are constantly aiming for the best for our students. We demand excellence from ourselves and each other and we both get frustrated when things flop.

— Excerpt from South Bronx Adventures: Teaching During a Pandemic

At first, they decided to take the standards they applied to the in-person classroom and apply them to the Zoom classroom. This meant keeping your camera on, being punctual, and being an active participant in class. They received push back not only from students and their parents, but also from colleagues, arguing that now was not the time to be demanding a high standard of excellence. Despite this, they stuck with their plan.

What Yancy and Danielle would soon come to find out was, there wasn’t just merit in pulling from in-person teaching experience and adapting it to Zoom, but that the lessons they learned from a Zoom classroom had a real place in the in-person classroom as well.

“There’s been a tremendously big change, it’s a new normal,” Yancy says of returning to in-person teaching. Teaching over Zoom forced both teachers to reevaluate their entire relationship to teaching in a way that has stuck with them ever since. He continues, “Before, when we first started co-teaching together, we were just like ‘this is what we’re gonna teach’, then the pandemic came and we started asking ourselves ‘what
Students show up, and then give their full potential, far more often when they trust their teacher. It’s essential to build individual and authentic relationships with your students. This will lead to them feeling comfortable in the classroom (or on Zoom), which allows them to experiment with their learning, show vulnerability, and ultimately succeed.

— Excerpt from South Bronx Adventures: Teaching During a Pandemic

are the best strategies to reach all of our students, were we actually reaching all our students prior to the pandemic?’, and now it’s like ‘are we reaching everyone’s needs, how is what we are teaching relevant, is it important, why does it matter?’”

The takeaway wasn’t just in approach, but also in how they structure their lessons, “teaching in different mediums (is another big shift). We could be in the classroom lecturing, we can have students taking the lead, or a big thing that’s shifted is that the classroom can be anywhere, it can be on Zoom, it can be in a classroom, or it can be outside.”

Danielle agrees, adding, “The pandemic teaching experience was awful, and I learned a lot and it reset me as a teacher. I was teaching ten years before the pandemic hit so at that point I thought ‘oh I got it figured out’, and then suddenly - you have to reset. When you’re on Zoom, everyone’s rectangles are the same size, but when you’re in the classroom kids take up different amounts of space, and so it can be really easy to ignore the quiet kid or to meet the needs of the loudest student. And kids fall between the cracks.”

With in-person teaching resumed, Yancy and Danielle have a renewed sense of importance in reaching every kid and preventing any from falling behind. And the strategies they employed during Zoom lessons have been paramount in reaching them in the classroom.

There’s still a lot of work to do, however, before classrooms can fully meet the needs of students. When asked what changes they’d still like to see, Yancy is quick to respond, “Equity. The South Bronx is the poorest congressional district in the country. I don’t think wealth is being distributed evenly. And you can see that in schools and kid’s education. Also, the Bronx is heavily segregated and that’s due to it being the poorest congressional district. So I’m all about equity and I think that’s the biggest thing that needs to change in schools right now all across the country.”

Danielle also emphasizes the need for equity, but tacks on, “Is it too on the nose to say everyone should be teaching the Algebra Project?”

You can read more about Danielle and Yancy’s experience and advice by purchasing their book, South Bronx Adventures: Teaching During a Pandemic here, or by following them on Instagram @AdventureHouse where they regularly post classroom tips for teachers.

Katherine Johnson Family Give Naming Permission to Emerging Math Institute by Aidan Soguero and Frank Davis

The Katherine G. Johnson Mathematics Teacher Training Institute (MTTI) planning committee, a collaborative effort between Southern Initiative Algebra Project (SIAP) and faculty and staff from the University of the District of Columbia (UDC), is excited to announce they have obtained formal permission from the family of Katherine Johnson to name their emerging Math Training Institute after her. Johnson, one of the first Black female NASA scientists whose brilliance with numbers and groundbreaking scientific achievement has often been overlooked, was the subject of the 2016 biopic Hidden Figures which helped shed national light on the severe issue of under-representation and historical whitewashing in STEM. The permission to use her name marks a symbolic victory for the Institute as it wraps up its planning phase.

Through a National Science Foundation planning grant, a design team consisting of SIAP staff, UDC administrative staff and faculty, D.C. Public Schools and D.C. Charter Schools representatives, as well as teachers from Anacostia and Woodrow Wilson High Schools have planned the initial proposal for MTTI. MTTI is part Developing America’s Workforce Nucleus (DAWN), strategy in UDC’s strategic plan, Equity Imperative.

The stated goal of MTTI is to “train in-service and pre-service teachers, university and community college faculty, and student mentors to accelerate mathematics achievement of PK-16 students who score in the bottom quartile on standardized...
mathematics tests, or whose prior mathematics attainment hinders their success in higher-level STEM coursework and careers.”

The planning stage saw the use of SIAP’s PK-16 Model for education that includes four anchor components—Professional Development for Educators; Youth Leadership Development; Community Engagement/Ecosystem Transformation; and Capacity Building. A fifth component was added for Research, recognizing the importance of engaging and supporting HBCU faculty in exploring, investigating, and developing new practices that open the STEM enterprise to currently underserved students. The research pillar aims to provide residency opportunities to HBCU faculty so that they may take a sabbatical for research purposes, thus enabling a greater range of voices to impact current structures within the research community.

As part of the initiative, the planning work relied on SIAP’s help in piloting programs—such as teacher professional development work—utilizing previous successful PD work across the country. This previous PD work used a mathematics learning pedagogy that embraced the cultural and social experiences of the target students of the initiative and will become part of the design and structure of MTTI.

The planning committee encountered its first major obstacle when the COVID-19 pandemic forced all work on MTTI to become virtual. It is noted that, without much experience or notice, SIAP was able to shift from piloting in-person programs to virtual ones. Despite this obstacle, the piloted programs, as well as the planning and design committee work, is largely considered to be a success. This is just the first step, however, for the Katherine G. Johnson Mathematics Teacher Training Institute as they hope to secure more funding devoted to actually building the program.

SIAP’s work with 5 HBCUs including UDC will also provide an opportunity for the MTTI to be a model for similar institutes in other HBCU communities facing similar problems of students not having the necessary support and resources to learn the mathematics that would allow them to participate in STEM careers.

Of the work, UDC president Ronald Mason, Jr., J.D., said, “The SIAP based MTTI model understands that an ecosystem supportive of learning, and the voices of practitioners, are essential elements of developing an Institute to train future mathematics teachers and producing STEM graduates.”

A press release will come from the planning team at a later date, and in the meantime, you can learn more about the initiative from their project overview document here.

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**Piloting a Pre-Service Course to Produce More Algebra Project Teachers**

by Mary West

How can the nation produce more math teachers able to reach students in underserved schools? To address this question, Dr. Nell Cobb and two experienced Algebra Project teachers from Florida are partnering with Broward College and Broward County, Florida, Public Schools (BCPS) to develop a preservice course for secondary math teachers. Broward College produces the majority of teachers for BCPS, the sixth largest school system in the country. The two-part course will provide students a microcredential in Algebra Project teaching as part of their program. The course content and pedagogy will serve as an initial framework for secondary math education in Broward County, and is also a model for other schools of education across the country that serve students of color and low income communities.

The course embodies the two elements that National Science Foundation-funded research found to underlie student engagement and learning in Algebra Project sites: the five-step Algebra Project pedagogy, and a model of social competencies for teaching: accurate empathy, cultural sensitivity and cognitive flexibility. Although these two features were developed in the late 80s, they reflect, and instantiate for the
target population, elements that are now widely advocated: learning of “big ideas”; learning that is “active”, “student-centered” and “culturally responsive.” Where these were well implemented, students were engaged and confident in their learning, went on to higher level math courses, and performed better on state tests than comparison groups of non-Algebra Project students in the same sites.

In the course, students use the five-step pedagogy to explore what to teach, how to teach, how to assess what is learned, and to create safe and productive learning environments.

The weekly class begins with “circling up” for a grounding conversation about math education, continues with a math “warm-up” activity, guest speaker from the Alliance and/or discussion of readings, small group work, and ends with student reflection and feedback. All are conducted to embody the three social competencies of the “model of excellence.” So far students have given positive feedback on the structure, facilitation, readings, and learning gained from each class session.

This semester, students are reading Bob Moses’ book *Radical Equations*, describing how a method for teaching Algebra, and for ensuring that all students can succeed at this gatekeeper course, grew out of Moses’ work in Mississippi with the Civil Rights Movement. The course interweaves this reading and others with practice in Algebra Project instructional modules. Next semester, students will read *The Movement Built Us*, by David Dennis Jr and David Dennis Sr, addressing the social dimensions of development of agency in underserved communities. In their third semester – the practicum – students will practice teach in the classroom of a local Algebra Project teacher.

Dr. Cobb brings a wealth of experience to the course development. She began work as a math teacher in Chicago Public Schools and led the Chicago Algebra Project. In addition to receiving her doctorate from Illinois State, she was certified as a Professional Development Specialist under McBer, Inc in Boston, MA. This group followed the research and development methods of David C. McClelland of Harvard’s Dept. of Psychology and Social Relations, which identified the competencies of excellent performers in various fields. The course also grows out of her ten-year experience using Algebra Project pedagogy in a summer camp for girls: InSTEM. She is also a specialist in Lesson Study, a widely-used teacher-centered approach to professional development.

As Bob Moses stated in his posthumously published op-ed last summer, returning to ‘normal’ in education after the COVID-19 pandemic is not good enough. Students of color and students from low-income communities continue to receive math instruction that does not engage their potential as learners. This collaborative pre-service pilot responds to the critical current need for pathways to increase the numbers of well-prepared mathematics teachers in our schools.
FEATURED

In Other News...

• We the People Math Literacy for All Alliance (WTP-ML4A) in collaboration with the Algebra Project, Inc is excited to announce a July 2022 planning and working conference celebrating and seeking to steward the vision and work of Bob Moses, with the engagement of the WTP-ML4A Alliance participants, allies, and the public. We are seeking proposals for workshops, interactive discussions and presentations. Find the flyer here, and submit proposals here. Find more info on www.Algebra.org.

• The University of Pittsburgh Center for Urban Education honored the life and legacy of Robert “Bob” Parris Moses through an online panel discussion on January 27, 2022. Panelists included Maisha Moses, daughter and Executive Director, Young People’s Project; Cliff Freeman, Director of STEM Programs, Young People’s Project; and Albert Sykes, Executive Director, Institute for Democratic Education in America. You can watch the panel discussion here.

• The Bob Moses Speaker Series Conference will be April 9th - 10th. Register yourself and up to 10 guests at www.BobMosesConference.com. Registration is free, with optional donation to the Bob Moses Fund % Cambridge Community Foundation.

Algebra, The New Civil Right
Bob Moses
Cambridge, Massachusetts

I would like to put out some ideas which face us, face the country, and also, of course, face this group. I find it ironic that mathematicians should be so centrally placed in a national issue. It seems that history has done you a disservice. It has put to you a task for which you are not prepared. Mathematicians would be the last people that I would turn to to organize the country. And yet, that's what it seems you have to do.

One way I think about the situation we're in is that we have this kind of moving of the plates which is associated with earthquakes. These plates move and sometimes they lead to these earthquakes and houses fall down and people get dislocated. So it seems that we are living in a time when two technological plates are rubbing up against each other, living through some of the earthquake-type phenomenon which has resulted from this-the movement from industrial technology into a new information age based upon computer technology.

There is a lot of social dislocation which is happening because of this kind of earthquake-like phenomenon. At least, that is how I see it. So, it's again ironic that the new technology puts mathematics and science into front and center and, therefore, requires that mathematicians play a role in stemming this social dislocation for which they were not prepared. How shall we characterize this? One way that I think about it is that there is a literacy issue for citizenship. I view myself as working in a tradition in the Civil Rights Movement which is not really well known. How many people here saw "Eyes On the Prize" or some segment.

Well, "Eyes On the Prize" is a documentary of the Civil Rights Movement. It was a 6-hour documentary dealing with the Civil Rights Movement in the early sixties put on PBS about 3 or 4 years ago and is replayed every year. You really need to see it. It usually comes on in February, Black History Month time, but other stations do it at different times around the year. So you need to keep an eye out for it.

"Eyes On the Prize" puts forth a certain myth about the civil rights history. I think of it as our first visual history book. It's a product of the new technology. It puts forward the idea that we might have different kinds of people being historians; that the person with the camera will also be an historian of the future; that the new technology allows us to record enormous amounts of visual data in small spaces, and opens up the issue of "Well, what is a history book?".

I mention it because I took issue with Henry Hampton who developed "Eyes On the Prize." I said, "Look, Henry, there is a part of the history that you are not telling. Henry's point of view was that if someone didn't capture it on film at the time in which it happened, then it didn't happen That is, you couldn't tell about it. You couldn't put it in an interesting way on film to a mass audience. So, the "Eyes On the Prize" visual history book tells one myth about civil rights history. And it is a myth which deals with the history of great campaigns, March On Washington; Birmingham; the Voting Rights March in Selma, Alabama; Albany, Georgia; Freedom Summer-big campaigns of the Civil Rights Movement-and the person who came to symbolize such campaigns, Dr. Martin Luther King.
There is another myth about that history, and I consider myself to be a part of a legacy of that myth. That's a myth dealing with the organizing aspect. The part that did not get on film. Remember in the 1960s the nation was cutting its teeth with its TV programs. So, you had three major networks, and they were learning how to do TV. They learned using the Civil Rights Movement and its campaigns. But they did not pick up the organizing efforts which undergird those campaigns, and that's the tradition that I came out of.

Ella Baker, who was the person who helped found Dr. King's organization, sort of provided the model for us. The idea that leadership could be found in and among what we call grassroots people. That it was important to keep working with grassroots people to help develop the leadership from among them. That is the tradition that I came out of in the Rights Movement. It's an organizing tradition. It's a tradition which tries to stake out some problem around which there is consensus and builds to see if there is a way to find a solution to the problem.

In those days the issue was the Right to Vote, the question was Political Access, and associated with both of these was a literacy question around reading and writing. In these days there is another issue which is math and science literacy. It is associated with, not political access, but economic access. At the center of it as it is constituted in our society are you folks, mathematicians, and the question about algebra. Look at the work I am doing today as a continuation of the work that we did in the sixties. That is, certain people in Mississippi were serfs, people who were living in serfdom on plantations. They basically had no control over their lives-their political lives, their economic lives, their educational lives. So, within our industrial society we had this sort of microcosm of serfdom that we permitted to thrive, and the movement used the vote and political access to try to break it up.

It seems to me that we are growing these serf-like entities or neighborhoods within our cities today. We have within our midst, I think, a process of criminalization of our neighborhoods. I find an analogy to that with what we found in the Mississippi Delta plantations. We learned some things that we could do to change Mississippi. One of the things we learned was that if somehow there was a consensus that everyone agreed that we should do item "A," this consensus provided some base for strategy and action to try to work our way out of the problem. What everyone agreed to in Mississippi was that the vote would help.

So for a short period of time, all of the people who were acting to try to change Mississippi agreed to work together on a common program to get the vote. That enabled us to get resources from around the country to come and work with us, because they could all work on the same program.

Now, it seems to me there is a similar type of agreement today around math. That is, everyone agrees that if we can teach these children this mathematics, and let's suppose we agree about what the mathematics is, but if we can teach these children this mathematics, then we ought to do. There seems to be universal agreement about this, that if we can do it, we ought to do it. (Read the full speech at www.Algebra.org)

ACKNOWLEDGMENTS

We thank our many contributors and are grateful for your continued support as we steward Bob Moses’ vision of raising the floor of mathematics literacy for all children in America! Please contact us c/o ben@algebra.org or call 1-617-491-0200 with any questions.

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