

Mariale Hardiman Innovation Interview

Charles: You've spent your whole life in education. Let's talk a little bit about what you thought about school when you were a child.

Mariale: I don't know that I had positive or negative thoughts about it--it just was school. It was fine. It probably wasn't as intellectually stimulating as I would have liked but it certainly wasn't bad. I guess it was all right.

Charles: When did you find yourself first thinking that education as a field of study mattered to you more than just being a student?

Mariale: In my generation, there were not a lot of professional options available to women. And so, the options that most of us looked at were nursing, secretarial work, or teaching. I was a French major, actually, as an undergraduate, and not a French education major. Although I did actually become certified as a French teacher after I graduated, I didn't spend long as a French teacher. There were many jobs opening in the field of special education.

They were hiring in Baltimore City--at the time, anybody who had a degree and teacher certification especially in areas where there were teacher shortages in specialized subjects. I enrolled in a master's program at Loyola University of Maryland. It was a dual major in learning disabilities and developmental reading. I was teaching by day and going to school at night. Again, much like today, Teach for America teachers are doing the same thing. I got my Masters in Education while in my first few years of teaching.

Charles: Do you remember being influenced by any particular teachers?

Mariale: It was my French teacher in high school that made me want to become a French major. If I had been turned on by an English teacher, I probably would have done that! She was very vivacious in how she approached the language. I had had French teachers before who would just drone on and go through the declensions. She was very conversational, very good, and had a really good way of connecting with everyone.

As I work with teachers now, I talk a lot about their own spirit and energy and their personal connection to students. Of course, there's now a body of research that supports that it's really not the subject matter as much as it is the teacher who can turn someone on to something. I do think that teachers really can have a strong and lasting influence.

Charles: Tell me about your first experiences teaching.

Mariale: My first teaching experience was in a middle school working with severely learning-disabled kids. I worked with them in small groups of very challenging kids that nobody else wanted in their classrooms. They were an interesting group. I think I eventually studied reading difficulties for my dissertation because I was influenced by teaching middle school and even high school kids whose reading skills were so poor that they could hardly decode simple words.

Charles: That's quite a first teaching experience! Did you feel daunted by the fact that there wasn't a lot of precedent for how to do what you're supposed to do?

Mariale: There really wasn't. We were experimenting. I had learned to use the Slingerland Method, which is a multisensory approach where kids are seeing a word, saying it, and then arm swinging, using their arms to form letters. That was an adaptation from Orton-Gillingham. It wasn't really used at all or very much with older kids. It was an experiment to see whether or not they were learning decoding skills better that way. Again, mapping in to what we know about combining modalities to really imprint memory better. I was one of a small group of teachers across Baltimore City trained to do that. At that time, learning disabilities was just being recognized as a field. Before that, children were either considered normal or retarded, so if you didn't learn to read, then you thought there was something wrong with you. In the, late '60s, early '70s, learning disabilities became more known and schools began to recognize that there were indeed children who were perfectly normal cognitively, but had severe deficits in learning to acquire reading skills.

Charles: Did you have a sense that you were on a cusp of something significant?

Mariale: Being young, to me everything was new. Eventually, people from central office began to come in and record me teaching so they could use it in training for other teachers. I thought, "Well, I'm pretty new at this, but if what I'm doing is something that will help other teachers, come on in." I did have a sense then that maybe something I was doing was innovative. Later, I was invited to join central office and actually do staff development across the city, which then led me to program development and then school administration.

Charles: How many years were you actually in the classroom?

Mariale: About four years. I spent most of my time actually out of the classroom out of my 30-some years, in program development and administration.

Charles: Education in the public school system is something that a lot of people find frustrating and inspiring at the same time. Did you have this sense?

Mariale: It is both frustrating and inspiring to be a teacher. There's no question. There's a push-pull on that, and probably a lot of it depends on your context. There are many factors outside of a teacher's classroom that affect whether or not they are frustrated. For me personally, there wasn't much frustration. I was dealing with inner city youth, bringing to them reading techniques that hadn't been done before, and I was seeing success with them.

I felt that I was making a difference. That's what keeps people in teaching. When teachers feel they're not making a difference, that's when they start flocking -to other fields. Those who think that they are making a difference will likely stay.

I was offered the job of department chair at Chinquapin Middle School, which was a new-ish middle school. After I took that position, I found that I had a faculty of 40-some

teachers, and we were growing programs. It was great. We brought in programs that had never been done before, in Baltimore city. Before that time, children with moderate intellectual limitation were in special, segregated schools. We're talking about kids with IQs 50-ish, or below.

I was in charge of the entire Special Education unit. We brought together two groups of students who had been in special schools probably most of their lives, segregated schools, and made them a part of Chinquapin Middle School. Then we expanded it to children with autism, and then to children who were deaf or hard of hearing. Then children with specific learning disabilities. We built five different programs of for children with disabilities.

Charles: Those seem like some pretty bold initiatives!

Mariale: This would have been in the early '80s, well before the whole "inclusion" movement of bringing children from segregated environments into regular public schools. But we knew we were onto something. A great story that I have is that one little guy, Herman, got in trouble with his teachers quite a bit. By then I had become Assistant Principal and handled disciplinary issues. Herman was sitting in my office because the teacher had told him to come and "visit" me.

The Principal of the school came by and said, "Herman, here you are again, in the Assistant Principal's office. I don't know. I may have to send you back to your old school." Herman looked at him, and he said, "Sir, you can't do that, because I'm not retarded anymore." For that child, he was now in a regular school. He wasn't in a school for children who were "retarded". That was so telling to me--no matter what the IQ levels of the children were, they had this meta-cognitive sense of what was going on with themselves. He wasn't "retarded" anymore, in his own eyes because he now attended a regular school.

Charles: How controversial was your approach at the time?

Mariale: There were not a lot of schools, at that time, -that were willing to do what we were doing then. However, it later became legislated, so inclusion became very much part of what all schools did. More and more segregated schools closed and students were brought into general-ed facilities. It was really interesting to be on the forefront of this transition--to help make it and shape it, and then watch others imitate it with their own programs. I think we all felt very good about what we were doing there.

Charles: There must have been some sort of philosophy, passion or maybe some combination of both, that was driving you to want to make these changes.

Mariale: I was personally driven by the fact that children who were labeled as needing special education were being segregated in ways that were not appropriate. I have to come back to my own family. I had five younger brothers, and about four of them had learning disabilities. High IQs, poor reading. One in particular had always been in segregated classes, and he didn't want to be. He was in classes with kids with multiple -

kinds of disabilities, because at the time no-one knew how to program for someone who was gifted in IQ but couldn't read or write very well.

I told him, "Sit down and write a letter to the Assistant Superintendent," and he did. A week later, he was put in a regular classroom. Maybe that influenced me too, knowing that he could do that, but there were so many children who wanted to be included with their peers, who did not have the wherewithal to sit down and write a letter to the Assistant Superintendent. I think it became a passion of mine to really break down barriers that had been occurring in education.

Another example is that we worked with a science teacher who was teaching the gifted and talented seventh grade sciences, and we had the children with autism in her class, working with them. I'll never forget this--the kids would dissect the owl pellets, the regurgitation of the owl, and find what they had eaten. - They would find, in these little structures, bones of animals. The kids then would piece together the bones and determine what animal the owl may have eaten, and actually it was the children with autism who excelled in that, because they were so meticulous about the work.

We started to break through barriers that were pretty astounding. We had a program with Maryland School for the Blind. A student was in that same class. was interviewed by Oprah Winfrey, who was a reporter in Baltimore at the time. He had made a clay model of an ear, just from feeling a model of one. He was on camera, labeling the different parts of the ear, yet he was totally blind. We began to see children really excelling when they were given opportunities that they hadn't been given in the past.

Charles: That's really remarkable. It was after this period that you then became a school principal?

Mariale: Yes, the first school I was principal for was a school for emotionally disturbed children in South Baltimore. Once again, we broke through some barriers. It could take a year and a half to get some of the children into our programs, because of the length it took to get all the diagnostic testing done. The kids had to go through different levels, so if they were in a regular class they'd put them in a smaller class in the general school, before they finally came to the specialized school. I got grant money and opened a diagnostic center where, rather than waiting that length of time, if a child was in crisis, we could bring the child to our facility, which was all set up with behavior modification programs. Our group of specialists would make the diagnosis. Then we'd have a committee meeting, and determine whether or not the child needed to stay, what facility the child would need, or what services the child would need. That center is still in existence, and I'm very proud that we started thinking differently that way.

Charles: Seems that you had a strong desire and willingness to fix things.

Mariale: I definitely had a strong desire to fix things, I think. Not only fix things, but to try new things, innovations that nobody thought of before. Whether it was my teaching, or my first experience as an administrator at Chinquapin, and then on to being a principal, it was always fun to be doing something different that no-one had tried before. When I became principal at Roland Park from 1993 to 2006, there were many innovations that

we did. During my first year there, I changed the entire structure of the school. We adopted a core knowledge curriculum that hadn't been in place, and connected it with our city school system standards. We began to write performance tasks that mirrored the state tests.

When I first got there, the community was petitioning to get rid of the school and the state was threatening to put the school on a “watch list” because the test scores had been declining. From there, we went to being a blue ribbon school of excellence a few years later. Eight continuous years of improvement on MSPAP, which was the state test then. When the MSAs came out, we got our baseline and from there went to continuous improvement. Now scores are pretty much at ceiling at Roland Park.

Charles: How did the teachers respond to those widespread changes?

Mariale: The teachers responded in very different ways, as you would imagine. Some embraced them and said, "This is so wonderful and innovative, I can't believe we're doing all these wonderful things here." Others, of course, resisted. They were doing something one way, and for them it worked, and changing it was not anything that they cherished. I have to tell you that when I left Roland Park I got the sweetest letter from a teacher, who said to me, "When you first came to this school you brought so many ideas and changes that at first I was wary. But now I see, and when I compare myself to my colleagues in other schools, and even other school districts, I see how much more we've done here, than other teachers have elsewhere. I cherish every innovation you've brought to the school."

That was really exciting for me, to see that. He was one of the early naysayers that said, "This shouldn't be done," and so to be able to reflect like that, and put that in writing to me, was really very special.

Charles: That would have been around the time you decided to come to Hopkins.

Mariale: Yes.

Charles: After so many years in the schools, what led to your transition to academia?

Mariale: Perhaps it was because I grew up in academia. My father was Chief Financial Officer and Vice President of Administration at Loyola University in Maryland. I had grown up on college campuses. We always lived on or near the campus, so it wasn't so strange for me to come to a university. Something else also drove me. I had refused Assistant Superintendent positions in Baltimore city schools four times. I had been asked to join central office, and that just didn't appeal to me. I really liked school leadership, and I loved what I was doing, working with kids and parents and teachers.

Coming to Hopkins, it was the same thing. I had completed my doctorate here at the School of Education, and was approached by the Dean to take on a number of roles. One, I did my dissertation on reading, so he offered me a position -in that department. Two, I had been a school leader for quite some time, was certified in leadership, and had been a

principal mentor, so I could do the leadership development. My doctorate was in special education. So there were a number of departments that I could have fit into.

I looked at him and I said, "You're so siloed. As the school principal, I have to know all of that, and school law to boot, and community development. To me, the university seems rather fragmented, and I don't think I'd be happy pigeon-holing myself in any one area." He said, "Interdisciplinary work is what I'd like to foster in this school of education, and I think if you came here you could bring that." When I came here, I became chair of a new department, Interdisciplinary Studies, and the Dean encouraged me to work across not just the School of Education, but across the whole university.

The first project that was interdisciplinary was the Neuro-Education Initiative, and my interest in bringing two very different fields together. The field of brain science, as large and complex as that is, and the field of education. Before I came to Hopkins, during my doctoral program, we were asked to find a body of research and apply it to practice. Knowing that in education there's a huge gulf between what the researchers are finding and what actually occurs every day in classrooms, part of our assignment was to target a journal. I said to the professor, " This is the decade of the brain, the '90s. I'm really interested in this body of research that has emerged, and what we, as educators, should know about it." That was my topic, and lo and behold, I was eventually published in *Educational Leadership*. Two days after that, I was offered a book contract, largely because the convergence of these two fields was very new.

I was still a principal at the time and crafted the brain targeted teaching model as a way to bring these two areas of research together. One area is to identify the knowledge gained from the neurocognitive psychological sciences that is relevant to what we do in teaching and learning. And then, secondly, what are the educational research-based best practices and how do they fit together? I found they fit together pretty well in the brain targeted teaching model, which is built upon thinking skills frameworks, dimensions of learning, multiple intelligences, Bloom's taxonomy. So, it's built upon thinking skills frameworks, research based best practices, and then informed by the science of learning.

I have to tell you a funny story about the name. I was talking to one of the professors here, actually, at Hopkins. He knew about my interest and he said to me, "Brain based learning." He said, "That's the stupidest idea I've ever heard.", "Why would anybody call learning brain based? After all, isn't all learning brain based? We don't think with our feet."

I -responded, "You're right. Brain based is a really silly way to describe learning." That was the term being used largely at the time. It still is, a bit. I said, "You know, while learning takes place in the brain, all teaching, though, does not result in learning. We might think about this... " While all learning is brain based, all teaching is not. Therefore, I'd like to promote strategies where teaching is targeted to what we know about how children think and learn. Therefore, the brain targeted teaching model was born. At Roland Park, we designed learning units around the six tenets of brain targeted teaching. I started with just a few teachers. It was not a top down initiative at all. I trained the

teachers in the model as a faculty and then I invited teachers who wanted to work with me to actually develop units using this model.

I got a grant and I paid teachers all of \$200 to write the unit, field test it, do a PowerPoint presentation showing the children learning in these different ways, and then presenting it to the faculty. More and more teachers then came to me because they watched what their colleagues were doing and they were motivated by it. Some teachers actually were motivated because the children would come into their classroom talking about what they had just learned in someone else's room and challenging their teacher, "Why aren't you teaching us this way, too?"

It was really grass-roots. It still is. It's probably one of the few programs, when I go out and speak about this and I tell participants "This was not a university thought-up program, brought to a school and teachers told to do it. In fact, it's the opposite. It started in a school and now we make it part of our instructional program here in the Mind-Brain teaching program."

Today I do professional development. I'm starting my third series of professional development for Baltimore city school teachers. They'll get 30 hours of training in the model. Teachers all over the world are using this. I just got an email from a kindergarten teacher in London. She's chronicling how her classroom has changed, using the Brain-Targeted Teaching Model.

Charles: Maybe coming to Hopkins was a logical extension of the work you began in the schools? Here's a way for you to really do the research yourself, to try to figure out what's next.

Mariale: One of the interesting things that was said to me by a colleague, is that, "You really don't need to research brain-targeted teaching because it's based on research, it's built from research." That said, having the various components researched in a deeper way has been something that's been a privilege for me to be able to do at Johns Hopkins. For one example, is the integration of the arts into content instruction, with the idea that arts integration can do several things. It can help with memory through repeated rehearsals. A teacher could teach something in a traditional way, but use some kind of an art form to have the children manipulate that content again in a different way. Another way is through elaboration and production. We know through 30 or more years of cognitive science and experimental psychology that when we produce information or we generate information, we're going to remember that information better in the long run.

We're testing that now. It's the first time arts integration has been tested in a randomized trial. We have a grant from IES, US Department of Education, and we did a preliminary study last year with four classrooms where we wrote treatment and control units comparing arts integration and traditional teaching methods for the same content and timeframe. We found differences in long-term retention. Testing children about –two months later, those that learned the arts seemed to produce better results. So, we're now looking to go into 16 classrooms in Baltimore through our grant and test it on a wider scale.

Our idea is that there's a lot of anecdotal data and stories that people remember better when they're learning something by using an art form to learn it. Probably we could sit here today and talk about how we remember things because we have a little poem in our head. You know, '30 days have September, April, June, and November'. Or, some people still sing the alphabet in order to remember it. It seems that we have embedded music and visual arts into our world, so if you're very purposeful about that, does it help children to remember the content we want them to know down the road?

Charles: One of the impressive things to me is that you've told me that you don't consider yourself to be very artistic, yet you really recognize that art has deep value for students.

Mariale: Yes, I have absolutely no artistic ability at all! [laughs] None. It's just from watching it. I've been in classrooms where the instruction was rather traditional and kids had various levels of engagement. Some attending, some with heads on the desk, some talking to other kids, others fiddling with something that they want to fiddle with. But as soon as an art activity is introduced, whether it's a role play children would do, or they're asked to draw something, just watching the class come alive with their engagement and just hearing children talk about it—it is gratifying watching how much more they enjoyed learning a subject area when they were able to combine it with art. If we listen to children and watch them, they'll guide us as to how they learn best. But if we can put empirical research behind that, it makes that strategy all the more powerful.

Charles: So you're coming full circle, back to the classroom.

Mariale: It is coming full circle. And for me, it brings me right back into schools and classrooms that I never wanted to leave in the beginning.

Charles: You've already done so much in the previous thirty years. Where do you see yourself heading next?

Mariale: My hope in the years to come is that the field of neuro-education--that is, the space between cognitive science, experimental psychology, and education--is seamless. That we aren't struggling to figure out how these fields work together, but we have a new generation of neuro-educators who are deeply trained in science and the methodology of science and yet also understand the contexts of schools and know how to communicate with teachers. My hope is that we continue to move this field forward, know that it's not going to be perfect, accept that it will be a little messy, but not to let that get in the way.

This whole new field is really starting to take root. You see it in the growing amount of literature and the appetite teachers have to learn this knowledge. When my professional development course was offered to Baltimore city teachers, I was hoping I'd get about 10 teachers, across the whole city, interested in this work. Ninety teachers signed up in one week! Again, the same thing this year. There is a waiting list. Teachers are really eager to learn this information, and I feel really honored to be able to be here at Johns Hopkins and to offer teachers knowledge that is solidly grounded in science and yet helps them to be better teachers.

I guess the bottom line that I feel really, really good about now is that we're doing more than just giving teachers knowledge and skills. Almost anything can do that. Any good professional development can help teachers with knowledge and skills, but if learning about how the brain thinks and learns, concepts like neuroplasticity or neurogenesis... If teachers understand that the brain changes with experience and that they can, through their strategies, actually affect biology, how much more powerful does that make teachers feel in terms of what they do every day for children?