AUTOMATICITY

>> Why do we feel things need to be brief? I think for some kids, things need to be brief because they lose focus very quickly. I think for some kids, brief doesn't cut it and you need to spend more time. So I think that when we're looking, when someone says 'would', people will say to me, 'What's the one resource', there is no one resource. What is the activity I can do? Like there is no one activity. So I think there's lots of ways that kids can develop automaticity with simple, simple numbers. But it's different for different kids. So for some kids, it is, here is an addition table, tell me every pattern you see. Tell me which ones you can explain to me and which ones are, 'where'd that come from?' And so we talk about the difference between things that are 'oh yeah, that's why that works' and like, 'oh my goodness, like I don't know!' For other kids they love computer games where they can play for a half an hour and they're happy to sit and play this game for half an hour and their developing automaticity because it's part of the gig in that particular game. So I think you, again, have to know you're kid and how to decide what's good for that kid. I think any teacher who's looking for an activity for all kids is not finding it because it will work for 17 but it won't work for the other eight. So all kinds of activities work like that. I do think game playing is pretty popular among kids and so using games to help kids do automaticity makes sense. I try to explain to parents and to teachers that we become automatic at things we do a lot, so if you do stuff a lot, you get automatic, like you don't have to work hard to realize that. So if every single day you say, you did a bunch of stuff, just very, you know, that is brief; then kids would get more automatic. But some kids really like all the games and if it makes them happier, like, then why not. So, when I have a mad minute, of course, I would not have a mad minute. Would I just casually, just like I tell parents to do, what I casually say, for per say, 'hey you're in line, 7 plus 5' like would I do that? Of course I would. And when you do it, I don't know how to say this better, but casual is everything. Casual makes it okay, it makes it inviting, it makes it fun, it makes it not scary. I think teachers get kind of formal and I think if they got a little less formal, they'd get better results.

IT’S ABOUT LEARNING

>> One of the experiences I have when I, I get to meet lots of teachers with lots of perspectives which is really nice for me. And one of the things I find is they get onto evaluation like a little faster than I would like. And so if I prose, pose a problem or ask a question, almost he first question is, "But how would you evaluate that, like how would you mark that?" And I actually often say to them, I think your job is mostly to create learning and a little bit about evaluating. And it seems to me that we have to help teachers see that their main job really is setting up learning environments, helping kids have learning opportunities, providing support to kids in learning opportunities, and there's this little piece of the action which is about evaluating kids. So of course you're assessing kids all the time in terms of assessment for learning, you're listening, you're making decisions based on what you hear, like that has to happen all the time. But you don't have to be marking things all the time, and I think our teachers are too focussed on report cards, and marks, and EQAO performance. And even though all of those things are important pieces, they're not the big game. The big game is kids learning. If
kids learn well, they should do better at EQAO, if kids learn well the report cards will take care of themselves. It's not so much about getting ready for those things, those are a little piece of the action, the big stuff is learning. So I think somehow we, as a big community, have to realize that these evaluation tools are just little checkpoints. They're not the game, so when I see a teacher focussing on, "But on EQAO they wouldn't have that kind of question so why would I ask it?", I'm saying EQAO happens once every three years, like you have a whole lot of other days. If your kids understand the math better, they will do better on EQAO anyways. So we need to get off the evaluation focus. So I do understand that we have tried hard to make kids and teachers realize that assessment and, and teaching, and instruction, go together and of course they do, but we're back to what do we value anyway. I don't think we value EQAO questions, we value that we want to take a pulse of the system and see how we're doing, and gather data to decide you know not looking good, looking good. We have to recognize that the nature of how the data is collected, prohibits certain things from happening. That anybody even at EQAO would say, should happen anyway. So we need to stop kind of focusing on, but I can't evaluate it, but I can't evaluate. So I really tell teachers mostly, you're there to help kids learn. Focus on that, let the rest sort of happen when it has to happen. Don't put your head there like nearly as much as you do. So I often will have a teacher in a session give an answer, and they'll say to me that was a level two answer, and I will say like, "I don't care what, I didn't ask you the level. Why are you levelling it?" And so we need to get off all this levelling stuff, and focus on 'is my kid learning are good things happening, is he making great connections, is he understanding math better, is he, is he liking math better?' All of those are the biggies, and this other stuff is not the biggie. I think anticipating the math does help, but I think teachers are too much just anticipating kids, what kids might say. And if they have a lot of, I call it baggage, it's very hard for them to anticipate not doing it particular ways they're used to. If they have more experience as teachers, it'll be easier for them to anticipate. Will anticipation help you? I think it will, but I'll say it's not enough, because I still need you to know why you're teaching this lesson anyway. So even if I can anticipate what kids are going to do, I still need to have, myself, figured out why I'm doing this. So, teachers are, are struggling when I'm telling them you have to figure this out, but it is pretty critical to me, that if I chose a problem, I have to be able to know, I chose this problem to make this point come out. And then when I'm listening to kids and anticipating solutions, I'm thinking about how is that point going to come out in their solutions. So I think it can be slow, but I still think you need to focus.

TECHNOLOGY AND MATHEMATICS

>> In terms of technology, I think that it has so much potential and it can also cause grief. I think that just using technology doesn't make you a better teacher. I think, I've seen teachers use technology to do things that I think are not important. So just because you did it on a Chromebook doesn't make it exciting. I was in a class room actually quite recently and it was a grade 8 class and the teacher was very into her Chromebook and children had the Chromebooks, they also had manipulative materials and they had choice of going back and forth each way. I watched them. Some of them went to the Chromebook and some of them went to the materials. So just like everything
else in the universe, it works for some kids better than for other kids, so it can obviously play a role that's good. It's not going to make math better universally, I don't think. Do I think there's some kind of technology that is more useful than others? Probably. You need to, back to what's the point of what you're doing anyway. So if you're just using technology because like that's the shiny thing to do, that probably has little function. If you're using it because now you can spend way more time talking about what's going on, instead of all the mechanics, then I see value. So I'm, at parent sessions, one of the apps that I show them is, a tool where you see a 100's chart on 1 to 100 and there's a little menu and you can count by anything and if you, it says count by 5, it automatically colours all the numbers you say when you count by 5. Then you can change the menu and say count by 3 and it will change it. I think that's fabulous because otherwise kids are wasting like 25 minutes colouring all these things and that is 25 minutes of colouring and not math. So I think from that perspective the technology is great and you can focus your questioning on the math. I see people do other things which are just flashy worksheets and then I'm sort of less impressed. So, my world couldn't exist, I need technology, so I mean we live in a world of technology but I think that you have to use it judiciously. Now the thing I find interesting is, has the curriculum caught up with technology? I would say no. So one of the things I talk to teachers about is, just as much as I believe kids need to know what we call facts, multiplication tables and addition tables. I actually think we are wasting our time having kids multiply 4 digit numbers by 2 digit numbers, I think that's silly. And so, because we live in a world of technology, so I think our curriculum hasn't caught up with technology. The other thing that I find interesting is the whole issue of calculators. I actually believe part of the role of elementary school is to build number sense. And I believe that unless you're solving an authentic problem which happens to have crazy numbers where you need a calculator, we should be asking kids to solve problems with numbers you can do in your head. So I believe fully in either mental math or calculators. I think anything else is, a dead art. So I think that's part a curriculum thing, it's part messaging, it's part like now knowing what to do. So the whole technology thing is very complicated, so it's not just about whether you use iApps, it's not about whether you just use, you know Chromebooks, it's about are you teaching the stuff that kids need in a world of technology and then are you using that technology to enhance the teaching in an appropriate way. And I truly see both. From a teacher's point of view the other thing about technology that is amazing are apps that allow you to have kids record their voices. We talk about gathering assessment data using things called observations, conversations and product. I think products could be all digital, and so we live in a world where you can have digital product. And so I think a teacher having an iPad or a teacher having an iPhone where you take a picture is an amazing thing because it allows him or her to collect really critical information, it documents what's going on. So from an assessment point of view technology is amazing and we better start getting on board with it.

THE ADMINISTRATOR'S ROLE

>> I've been given many opportunities this year to talk to administrators about their role in this whole scenario in math and we talk about push and support and we talk about
which should they push and what do they support? One of the things that worries me is that they are looking for things on the wall or things somebody does, not for how intentional was that. Of course there's some things you can see, are kids engaged or are they bored out of their minds, of course you're looking for those things too. But you're also looking for, if I said to you my teacher in my school, 'so what do you want them to walk away with today?' I want to good answer. If I said to you what are you doing about that kid who seems to be really struggling, how--what are you changing for her, I want a good answer. And I think that one of the things I try to do with principals is to talk about here to me are the big issues, is the math you're doing important math, are you paying attention to who's in the room, are each of them getting what they need? Those are the important questions to me, not so much like what it looks like, whether there's an anchor chart, all that kind of stuff, which is nice but not the big thing. Just like I believe that we focus on too much structures when we're talking to teachers, I think principals are only hearing structure messages and I think they need to hear these other messages. When I talk to them about what I want to see, I give them a list which is more about are these kids curious about math, are these kids like wanting to know stuff, are these kids asking not questions like should I use pencil or crayon but questions that are substantive. So we talk a lot about--and some of these are not about math, some of these are about what does good teaching look like anyway? Are there things about math and I think there maybe some things that are particular but I think the real issue is some of those same people who are principals are anxious themselves about math and they actually avoid getting in down and dirty with all this because they exhibit this nervousness as well. So just like I would tell a teacher, do a better job of hiding your anxiety, I would say the same thing to a principal, you have to do some of this too. Do I believe principals have to have the same kind of learning experiences as teachers do to learn the math, I actually say no because I don't think they have time. I think that they need some of those experiences but not as many of those experiences but I do think they need to know what they're looking for so I think that's important but the looking for substantive, it's not what it looks like. So I think that's a huge deal for them, I talk to them a lot about I call it social power, their social power. So I think principals in truth have very little real power but they have lots of social power, particularly in elementary schools I would suggest. And elementary school teachers by and large, not everyone do care what their principal thinks about how they are doing things. So I encourage principals to use their social power to advantage. So if you have a teacher who you see never tries anything new, I tell them your job is to ask that person every single time you see them, so what new thing did you try, so what new thing did you try, and they try something new. So I truly believe that you are the push and that you have to exert that push. I had a really interesting conversation with somebody who used to be my administrative assistant when I was a Dean, she and I happen to be really close friends as well but she was my assistant and she's now retired and she came to my home for dinner because she was visiting and she came to my home for dinner because she was visiting and she was sharing with me about the next Dean after me. And we had a conversation about that there are essentially two kinds of leaders we think, we think there are leaders who want it smooth and we think there's leaders who push for change. And the leader who pushes for change has a harder ride, but nothing changes until you have that leader. So a lot of administrators I meet are seeking for harmony and I get why they are seeking harmony, harmony really is nice, having been a leader who was the other kind, it was not always lovely. But in the end nothing changes
so I believe that a principal needs the social skills that allow you to keep people with you but still push and your job is to push and support but to push. So I spend a long time with principals talking about that and they hear that about--they like that phrase of that they have social power and for them to use their social power to the advantage of children. So if you have a teacher who you feel is not doing what really needs to be done, it is really your obligation to do something about it, not to say like, 'what am I going to do, I'm stuck.' You have to do something and you do the best you can and you can't always solve the problem but you try. So I think it's partly about learning the math but I really think the bigger issue is something else, are you going to be a leader who has your own vision of what the change is and that you're actually doing the right moves to achieve that change. There was a school board I worked in this year for many, many days, it was a big board and I had lots of opportunities to work in lots of schools. And I've told the board and their neighbour board that I could tell with the first e-mail or phone call with the principal whether I thought that was going to be a productive day. Because the principals where it felt in the end productive had purpose, had vision, knew what they wanted, knew what they were hoping the school to get toward and were pushing in that direction. So I think it's the huge leadership factor which is the biggest piece, I think the math piece is important, I think the leadership piece is really important. I've told school boards that I've had the opportunity to talk to people higher up in the chain, that your job is to decide if you want your principal to be an instructional leader or not, because if you give them too many tasks to do they can't do it. So you have to send signals about what you think is the most important job that they do and I think the signal you should be sending is the reason a person with an ED degree is doing this job is that they should be an instructional leader. So I think that's the most important part.

FOCUS ON REASONING

>> One of the things that I think teachers have been working at and fairly effectively is to create I would say better learning environments for kids. I think lots of classrooms are more risk-free than they used to be. Lots of classrooms allow kids' voice. Lots of classrooms are sort of happy places to be in. I think that's been really good and very positive. I think what we haven't mastered yet is that the math we're doing is good math. I think that we've been working on something called problem solving which is a really good thing to work on. I think we haven't been working hard enough at what I think is the most important process which is reasoning. For someone who lives in the world of math, to me math is about reasoning. That is the fundamental process, even though we often see it in support of problem solving and perhaps communication. I see it as the critical piece. I think teachers need some help in seeing how reasoning works in math especially those who've had not enough experience in math, themselves. And need to learn how to emphasize that in their work with their kids. So if a teacher were able to help kids see, oh, this is about just figuring out how this stuff works. And, oh, yeah, that makes sense and that's why it makes sense. I think we'd be a step ahead of where we are. I think teachers have to understand that the point of doing the math is getting at all that, oh, that's how it works. Not at getting answers to problems.
MATH ANXIETY

>> I think the anxiety really comes from the adults around them, whether the adult is their mother or their father or someone else in their family or whether it's the teacher. So I think teachers sometimes inadvertently, sometimes subconsciously, communicate bits of anxiety to their own students about math. And I think kids are very intuitive. They pick it up. And when your adult that you trust is a little nervous, you get a lot nervous. So whether the kid hears it from his mother or father or whether she hears it from her teacher, or whether she sees it from her teacher, I think that that anxiety is observed by kids. And even if nobody talks about it, they feel it. So part of it I think is that. So when I talk to parents, I ask them, so politely, but so hard, "Like please don't tell your kids that you find math hard. Please don't tell your kids that math makes you nervous." Because then they'll believe it and it's hard to get past that. The other part, and I tell this to parents as well, is for some bizarre reason which I don't understand, we have decided you have to be fast if you're good at math. And fast is absurd. There are fast people in the world and there are slow people in the world, and making a kid feel you need to be fast, I think, increases anxiety. So if we could get over the speed thing, and if we could get kids not to feel the anxiety of the people around them, I think we'd be in a whole lot better place. You could take acting lessons and decide how to act like you're more confident, but that's part of a joke, but partly not. Sometimes we do have to playact. If you're nervous about something, you have to tell yourself, "I can't show it. What am I going to do with my own body, with my own face, to make sure I don't show it?" So part of it is being very conscious of your own behaviours, realizing that some of these things are very subtle, very intuitive and you have to really watch yourself on those things. I think that we live in a day and age where communication information is freely available. If I were nervous about teaching a particular topic, I would go home and learn about it. And so I think part of it is don't use your nervousness as a reason to not do something. Use your nervousness as a reason to do something, to learn a little more, to ask other people. And, if you have to do it, to playact. Because I think it's that important not to show that nervousness. I believe kids will not be successful in math until we build their confidence, but I also think teachers won't be successful in teaching math until we build their confidence. So for me I think confidence building trumps everything. If I have a student who's struggling, will I ask a softer question that still feels okay, that builds their confidence? You bet I will. When I'm working with a teacher, will I listen to what they're doing and find a way to only gently move them and not make them feel like a fool? I will. If I'm talking to a parent who's telling me, "But you should do it this way," will I find a way to incorporate what they're doing, but push them a little? I will. I think our mission is to create confidence because it is out of confidence that you get anything. We had an interesting experience yesterday. I used a question somewhere and I had an easier answer and I had some harder answers. And some of the teachers wanted me to take the easier answer possibility off the table because it wasn't challenging. And so my response was, "But I need the kids who needs his confidence built to have an answer. I'm not taking it off." And I think we have to go that place, that we don't get to a better place by making it harder. We get to a better place by giving you a place to start. But I think it's equally true of teachers as it is of children and parents. So confidence building is a huge part of our game, I believe.
One of the interesting discussions I've had with parents when I have parent sessions, is to talk to them. I do talk to them about what they shouldn't do, but I also talk to them about what they should do. So one of the activities we do is we do stuff that we call number play. And what I tell parents, and I, I pretty sincerely believe this, is that when you're interacting with your kids with math, be casual, not serious. When you get too like, 'let's sit down and do your math', I think it puts a wall up. If you're standing at the sink peeling carrots and you say, "So pick a number and do this and do this and I wonder if you're going to get this." It feels super different. So I often show parents how to be more casual, and how to get kids into casual places in math. Sometimes it's games. Sometimes it's little you're chatting about it. Sometimes I'll talk to them about how you pique their curiosity about things like, "I read that all oranges have the same number of sections. It doesn't matter if they're little, it doesn't matter if they're big. I think they all have the same number of sections. What do you think?" My whole life is about casual is the way to go. So I think intentional but casual. So I explain to parents that you're, you're kind of making it fun and not, not something to worry about. But at the same time you're pretty intentional about what you're doing. I asked a group of parents the other night, I said one of the things I'd say to kids is if you're in a house, how many steps do you think it takes to get from the first floor to the basement. Do you think it'll be the same in everybody's house? Everybody wants to know now. And everybody was in their home and count their steps. So I chat with them about you make it like curious stuff. If you open a Smarties box do you think it's going to be more like 20 or more like 40 Smarties in that box? And not like let's sit down and do math homework. It's not like you'll never say let's sit down and do math homework, but I think the way to invite math into kids' lives is the other way. So many parents do ask me about is it important for kids to learn they call it the times table and we call it multiplication of single digit numbers. Do, do I think it's important, and my answer is yes. Do I think it's important, the answer is yes. If kids don't know those things they will be debilitated. If they don't know what four plus five is they will be debilitated. So I do actually think it's important. I explain to them that the main reason it's important is that even with big numbers you can't estimate unless you know this little number stuff. So they're actually quite relaxed when I say yep, I think it's important. I said the only difference between maybe what you're thinking and what I'm thinking is how you learn them. And so we talk a lot about how different kids take two different methods. So are there kids in the world who love fast, fast, fast. Give it to me faster, give it to me faster. And the answer is yes. And if those kids love it, like go for it, like make them happy. If your kid learns facts better by looking at patterns in tables and looking at how relationships work, like do it that way. If your kid learns it better by playing games with you and not even being aware that they're doing it, then play it that way. So I think the message for parents is that there is no single right way to do anything. Are these things important? The answer is yes. Your job is to take your cues from your kid to decide what's the right way to do it with her or him, and not to feel there's only one way, the way you learned.
I wrote the Atlanta curriculum many, many years ago. And one of the things that I did when I wrote the Atlanta curriculum, and they're still kind of following my path, is to share much more information than we do with teachers about what the point of everything is anyway. So right now an Ontario teacher gets a document, she reads these words, and it's like I don't know what you're doing, like okay, sure I'll do it. And she doesn't know what the point was. She doesn't know why we're doing it. She doesn't know what the big points are to raise. She just sees a lot of words. I think part of our mission is to much more clearly clarify to teachers what is the point of all this stuff we're providing for you. So part of the curriculum isn't so much about what the expectations are, but like why are they there, what matters about them, what is not important. The other part of the curriculum is the, well it's really the same thing. If I say it should be organized around important ideas, I'm really telling you why you're doing it. So deep, deep, deep, the only issue is why are we doing these things. And if the teacher who is delivering this curriculum doesn't know why he or she is doing it, it's not going to come out as well as it could. So the mission, I believe, is to clarify much more deeply why we're doing what we're doing. What are the big issues that we're confronting. And it can't just be a word, like algebraic reasoning. It has to be an idea, that a teacher can read and say oh that's what I want them to understand. It can't be a word. So until we get off words and into ideas, I think teachers will continue to struggle. I think being purposeful is one of the most important things in education. So one of the things that we've been advised to do as teachers is to prepare learning goals. The reason you prepare a learning goal for a class is you want to be purposeful. Like you want kids to know this is our goal today. This is why we're doing this. This is what we're trying to achieve. I think teachers need to be even more purposeful about their thinking. So when I choose which tools to use, or which tools to layout from which students select, why am I doing this. Is there a purpose? When I ask, if I ask kids to work in pairs or in groups, why did I pick pairs or groups? Like why is that useful? If I say you have to write it on this chart paper and you can't just say it me, I should be purposeful. Like what am I getting out of having them write it on the chart paper instead of just saying it me? I think everything's about purpose. So when you allow a kid to represent something that representation should be purposeful for him or her. It shouldn't be because you told them to. So I had an interesting experience this year. I was working in a school, and they've been working really hard on their problem solving, and they had a part of their school improvement plan was involving having kids, in a math problem, identifying the important parts of the problem by using certain colour highlighters and whatever. So we talked about all this stuff. And so this is how I started the session with them. I'm a little naughty. The day started by my saying here's a problem that I might give your kids to do. I'm asking you to do it, but I want you to do it the way you want your kids to do it. I want you to do everything you would want your students to do. And in the course of doing their problem like nobody highlighted anything. So I asked them, so why do you want kids to highlight if none of you highlighted? And they explained to me you know, they're adults and they don't need to whatever it is. So I said back to them that your purpose was really making sure kids notice the problem. Surely there's not one way to do that. Surely there's lots of ways to do it. So you don't make everybody use a four part template where there's a this box and a this box and a this box and a this box. You make a decision about what your real purpose is and you find different ways that
different people could meet that purpose. So when you just do something because it looks good, it's not, it's not purposeful. You have to think why am I doing this anyway. So if you're doing this to keep kids grounded, be upfront. There's lots of ways to be grounded. Let's talk about what would ground you and what would ground you and what would ground you. And when we had the discussion it was a good discussion. And so I think teachers have to do things, not because this is it. It's because what's the purpose, am I accomplishing my purpose. It's been interesting because I had a meeting at the ministry and we talked about what I called myths, the numbers, pictures and words which really has not sat on EQAO for a while in that sort of format, still rests in teachers' minds as that is the deal. Teachers will tell me that unless a kid does it in all three formats they're not going to get a high enough level or whatever it is. And I say why. And they say because you're supposed to. And I say well like why are you supposed to. And then we go back to why did people say that in the first place. It wasn't about having numbers, pictures and words. It was about saying there's different ways to say things. And we're just telling kids there's different ways to say things, find a way. And that's what purpose, so it wasn't said whimsically, it was said for purpose. But what got transmitted was what I call the structure of the purpose. So I have said to ministries, and I have said to board leaders, that your job is to stop transmitting structures to start transmitting purpose. Like why are we doing this. Don't tell me what to do, tell me why we're doing it.

MENTAL MATH

>> Well, some teachers in Ontario, following the lead of people in the U.S., are doing things called Number Talks. And that is a way to develop mental math. But the truth is, you should be developing mental math, no matter what you're doing, pretty much all the time. If I were doing a measurement unit, and I were asking kids to find perimeters and areas of rectangles, I am never going to give them a 37 by 17 rectangle, ever. I'm going to give them a 30 by 20, and ask them about-to talk about that one. Because I'm developing the ideas, but I'm making them think about it. And no calculators in the room. In your head, I want a perimeter. I want an area. So I want us to use numbers, we call them friendly, but I want them to use numbers where they use their heads to think about answers. It is really hard to do without learning those little number facts, and that is why they are so important. I believe that most people can only handle a certain size of number in their heads, so I'm not going to ask them big number things. I'm going to ask them little number things. If there is a big number thing, I'm going to ask them to estimate an answer, and use powers of time, like 300 times 20 is about how much, guys, and then we'll do the actual calculations on some technological device. But it seems to me that if you don't have mental math skills, we don't develop good number sense, and if we don't develop good number sense, I think we've missed the boat on part of our mission.

SUBTANCE NOTE STRUCTURE

>> I guess my hobby horse these days is substance, not structure. It seems to me that
teachers are talking about being told to talk about structures and not substance. And I think that as long as that continues we will see trends that are not good. That we'll see somebody pretending they're doing something that looks like what we call three part lesson, but they don't know why they're doing it. They don't know what matters in the three part lessons. So there's parts, but that's all. So I think one of the trends is we're still on the structure horse and we need to get off that horse and get in to substance. Substance isn't only content knowledge. It's really why are we doing things, and really understanding that. So we really need to get nitty-gritty. The education system, like any organization, is a big organization. And so people just hear bits and pieces and they try to like do the right things. So it seems to me that people -- It's easier to talk black and white, even though the world is grey. So I see too much black and white. So you should never do this, you should always do this. And there is no such animal. So I was in a school actually last week and it -- I was invited to speak to parents. And part of the -- Part of it was really cool. I talked for a little while. The parents went in to their kids' classrooms as they were working on some problems I sent in for them to work on. And then we came back and talked some more. So a lot of parents cornered me when nobody was around and asked me questions. And one of them told me, in her estimation, what was happening in the classroom was a teacher would say to her child -- Like the child would do an addition and the teacher would say, "How would you do it?" And the child would just say, "Well, that's the answer." And the teacher would persist, like, "How would you do it?" And so she's on the horse that you have to justify. And the kid was like starting to hate math and the parent didn't know what to do. And what do you say? Whatever. So what I'm thinking is that people are doing this black and white thing. Of course you have to justify, but not like every breath you take. Of course you have to explain things, but like not absolutely everything. You have to make judicious decisions. So I think teachers have been led to believe I'm kind of a bad girl or boy if I don't blah, blah, blah. And they're feeling insecure. So I actually was with a bunch of teachers yesterday and I said, "Think about what you think matters. Make a reflective decision on what you think matters. And don't think about what they tell you to do. Be ready to defend your position." So I believe the education system needs people. I think education is about that different people have different opinions. And they respectfully talk about their opinions and there's room for disagreement, but it's a thoughtful disagreement. It's not a, "You're right. I'm wrong," kind of disagreement. And so for me I think we've gotten a little too black and white for me. I'm looking for grey.