

[APPLAUSE]

>> Thank you. Thank you everyone for coming here. I would really like to know who you are and, you know, hopefully that is something that will guide our discussion. So, just by a show of hands, can we see who here is a classroom teacher, I don't care if it's elementary, secondary, general classroom teacher. Special Education teacher? An instructional specialist or a coach? Reading, math, whatever else. School psychologist? Okay. Speech language pathologist? Care professional? Administrator? There's a Principal somewhere, okay. Any position that I missed?

>> IU consultant.

>> Hum?

>> IU consultant.

>> IU consultant. Oh, great, thanks. I always hate asking that question because there's always something that I've missed.

>> Parents.

>> Hum?

>> Parents.

>> Parents. Excellent. I always forget to include parents because it's not always mutually exclusive. Great. That is a wonderful distribution. A few people from several different roles. So I'm hoping that's something you can take with questions and discussions and, you know, that that kind of guide what we're going to do for the next couple of hours. So, the basic framework for what I have, we talked about performance-based evaluation which is a specific structure and kind of approach to decision-making and, since it is, as you will see, rather systematic, rather complex in the sense that it includes a lot of different stages, it's really meant for decision-making for the most common [INAUDIBLE] or the kind of educational problems. I'm going to go a little bit more into what I mean by that, so what it is and what it isn't. But first, a quiz. What a horrible way to start something at 3:30. All right. If there are five apples and you take away three how many do you have?

>> Two.

>> Two. Anybody want to give an apple other than two?

>> Three.

>> Three.

>> Three. We have two conflicting answers. And the answer is, three. Oh. If there are five apples and you take away three, how many do you have? I have a fifth-grader at home so that's where, my humor is, like, stuck in fifth grade.

[LAUGHTER]

But, I always like to use this or something like it as an illustration of why it's important to think deeply about the problem, because the information at hand can lead you to very different solutions. The same problem can lead us to very different solutions based on the information that we have. And so looking at a problem from different perspectives, in different ways, can help us to get a more detailed and nuanced view of the problem, so we can come to a solution that is most accurate. Okay. And that's, another thing that you'll find is going to have sprinkled throughout everything that I say and do over the next couple of hours, what we like to refer to as our CBE maxims, certain things that are helpful, little reminders of the points of the process, and the main considerations to keep in mind when going through the CBE process. So, the first one goes, how we think determines what we do. Very clear with our solution to how many apples do you have. What we're thinking about, or how we're thinking about a problem in terms of solution. But before I go on, I just want to clarify how I'm going to be using a couple of terms. I'm not saying that these are the right definitions, there are different definitions and different ways that people use the terms. In particular assessment and evaluation are used to cover a lot of different ways for a lot of different things, they're used in different ways. But, for reasons that I hope will be apparent later, I use these terms in this specific way so that we can differentiate things that we do. So if measurement is a systematic process of requiring numbers to characteristics of objects or people. That's what we do when we are administering tests to children, to teachers, to anybody. It's a way of applying numbers to certain characteristics when measuring performance. Assessment then, is a large system of collecting information, measurement being one of those approaches. So measurement is part of the process of assessment, but there are plenty of other ways of collecting information. And once we have all of that information, we can process decision-making in order to apply it to solve, you know, real-world, every day kinds of problems. So, we have our measurement, our assessment, our evaluation. Anybody who's familiar with reading about curriculum-based measurement, curriculum-based assessment, curriculum-based evaluation, this is also one of the reasons why I like to differentiate the terms because they really do infer rather distinct things with distinct purposes. And I like to put all those together in what I call the CBGs. Okay.

So, a few other things. Decision-making, inference and judgment. This is also crucial to CBE. If we think of decision-making as an act, right, it's a very active kind of thing, you're making decisions. When we make decisions, we have to use inference, which is a process, or a variety of processes, of coming to a conclusion, hopefully a logical one, that's based on the evidence at hand. That's how we make our inferences. And how we know that our conclusions are logical, or sensible or whatever else, is through judgment. And judgment is the quality of inferences. So, again, there's a whole lot of ways to define these words and terms. This is how I'm going to be defining them. And, before I go any farther, I should also let you know, if you have not gathered by now, when I talk, I'm a wanderer and I'm a gesturer, so this is great that I'm not holding a mic in my hand, because I have been known to create a fade-out effect. And, I have never lost anything that I have held while talking, clickers, hammers, I used to do this demonstration in class that required a hammer. I don't do it anymore because one time I found out that one of the undergrads sitting in the front row, he was sitting there, the whole class, while I was gesturing with a hammer in hand. Okay. So, decision-making, inference and judgment, that's just to showcase my judgment.

Here's a little story. In World War II, Admiral Dortmund of the Dutch Navy had hi Fleet, 15 ships, and he encountered a section of the Japanese, a grouping of 17 ships. With his 15 ships, he decided to engage those 17 Japanese ships. Good judgment or bad judgment? Just based on the information we have at hand. I see a lot of, whoo, right? It's tough to say, we don't have a lot of information do we? I don't know, 15 versus 17. If it was 15 battleships versus 17 rowboats, yeah, good judgment. Likely not right,

it was probably a mixture of ships, armaments, we don't know what else is going on but, on its surface, 15 to 17 doesn't seem like horrible odds. Without sinking a single Japanese ship, Admiral Dortmund lost eight of his own, including the one that he was on, also losing his life. Good judgment or bad judgment?

>> Bad.

>> Kind of sounds like bad judgment now doesn't it? Conversely, let's consider another example. In 1797, Captain Horatio Nelson, of the Royal British Navy, came across a section of the Spanish Armada, of 18 ships in the Spanish Armada. He encountered them with his single British ship, and decided to engage them. On its surface, knowing the information we have, good judgment or bad judgment? Seems like pretty bad judgment. One against 18 doesn't sound like good odds. He turned the Spanish Fleet away, he captured two ships, and in the process got himself promoted to Admiral. Good judgment or bad judgment? Hum. It seems like our interpretation of judgment, right, often comes from what the outcome is. In hindsight we can look back on judgment and go, well, you know, obviously he knew something about his one ship and those 18 ships, right? Obviously Admiral Dortmund missed a key piece of information when making his decision. But too often in education we don't have, right, the advantage of hindsight, I bet Admiral Dortmund wished he did, but we need to do, is we need to maximize the probability of our making a good decision right? I mean this is true in Naval battles, this is true in education right? Everything we do is about maximizing the probability for good decisions right, a good decision being one that leads to a positive outcome, something that will justify that our judgment, leading to a logical conclusion right, bases the inference in our decision-making. So, we think about a few different components that we can do, or that we can consider, to maximize that. There are costs that are associated with being wrong, there's the quality, the quality of the evidence, and there's the alignment. All right. The cost associated with being wrong, how many people have seen or heard a kind of heuristic of assessment or decision-making with screening progress, diagnostic outcome for those four? Just, all right, a couple of people, all right. Well that's a, I decided not to subject you to the kind of memory techniques that I give the students that I work with when I talk about this because you'll notice that the first letters of those four types of decisions spell out speedo. As you can imagine you can find some great pictures on the internet that will help, you know, people remember speedo. For better or worse. But it's a good way of thinking of it. And, sometimes, some of you may have heard these referred to as assessments, screening assessments, progress assessments, diagnostic assessments. I don't like to think of them as assessments because tests aren't necessarily designed for only one purpose, but the decisions we make depends upon the information that we get right? It's about the decisions. It's not about the actual instrument for how we collect it, it's the decision.

So the different decisions have different consequences that are associated with being wrong. Screening decisions usually have somewhat minor consequences because, if we're doing this well, we have safeguards in place to correct an incorrect decision, right, to right it. We've got the ability to monitor the student's progress, we've got possibly multiple gating techniques where we're going to collect additional pieces of information. It happens more frequently than say an end of the year test. So there are other ways of doing that. But it's important to consider the costs that are associated with being wrong. When you get to outcome decisions, which usually happen at a single point in time, things like entitlement or AYP, right, it's ore important to consider the consequences because they're harder to change if we make a poor decision. That's about that. The quality of evidence. Things like reliability and validity of the processes and procedures and instruments that we're using, and the inferences of which we're making, okay? Just to kind of illustrate reliability and validity and why they're so important, this actually isn't a picture of my friend Ken's VW thing, his is yellow, but his thing was the most reliable car I have ever any day of the week, any week of the year, you put the key in the ignition, you turn it and

you get the exact same response, nothing.

[LAUGHTER]

It was a perfectly reliable car. Perfectly. In terms of the statistics that we would look at for tests I mean it was a 1.0 reliability, it was wonderful. But how valid was it as a mode of transportation right? It wasn't, 'cause it would get you nowhere right So, the balance of reliability and validity, having something that is consistent enough in what it does, and useful enough for the purposes for which we need it right? It's that balance between reliability and validity. Making sure that the procedures and the instruments we're using to collect information to make decisions, making sure that they're valid, or validated, for those purposes, is very important right? Otherwise we can spend a whole lot of time collecting information that doesn't help us make those decisions. That's why quality's important. But something that also gets left out, now reliability and validity, when we talk about measurement, whether it's in education, psychology, all kinds of areas of measurement, reliability and validity are considered often, I mean, those are the workhorses of technical characteristics of measurement instruments. Quantity of evidence is something that we often don't stop to think about. If you have too little information, just like we did in trying to decide if Admiral Dortmund and Captain Nelson were using, or exercising, good judgment right, the probability of making an accurate decision, right, is not very good. One small piece of information, it's very difficult to make a decision. The more information you get, hopefully, the greater likelihood of making an accurate decision. However, if you get too much information, we can waste an awful lot of time right? It's possible to just keep collecting and collecting information as if it's, you know, something to hoard, without stopping and making a decision. It's possible to actually be collecting too much information when you're looking at all of the disconfirming data and it can become overwhelming. So, there's something that I like to consider that's any time I'm working with a team who has to make decisions, or individuals, there's this theoretical point called saturation. And saturation is the point when you have enough information to maximize the probability of making a good decision, and collecting more information is not going to reasonably add to that probability, right? So, and again, I have to stress, this is theoretical. As of yet I don't think we have a nice metric for measuring information, it would be nice if we could weigh it, maybe measure it in decibels, something. But, which does actually, I don't know, an office mate of mine in graduate school, her advisor was doing work on alternate assessments at the time, this was a while ago, and they measured all of these portfolios across the state and were trying to find out what the best metric was for predicting student outcomes with this portfolio approach that the state was testing. Hundreds of variables, hundreds of students, the best metric that they found was weight. How heavy the portfolio was. Because the heavier the portfolio, the more information the teacher put in, the better the student was doing, the more work samples the teacher put in. And so the weight of the portfolio was the best predictor of student outcomes. It kind of blew them away, blew us all away, like, oh my God. What an easy way to then gain the system.

But, that story aside, weight not always the best way of measuring our information. If you think about collecting information over time, right? The more time we spend collecting our information, through assessment, right, through various methods of assessment, over time we're collecting more information, it's not a perfect relation right, it's not like every minute you spend you get another unit of information. Sometimes you can get a lot of information in a short amount of time, you can get less information in more, right? So it's got a different kind of curve. I don't know what that looks like, it's theoretical. But over time, the more information we collect, the further we move along that curve. And when you start considering different points at which you might make a decision, the difference between the amount of time it takes, and the amount of information that you have gained, there's a ratio there. For some, you

can spend less time to get more information, but eventually you've past the point of diminishing returns right? You've got to spend more time, more resources, to get less information. So, the theoretical point of saturation would fall somewhere around the middle X, right? It's important to be cognizant of. But what does that point depend on? Again, the stakes of the decision. The higher the stakes of the decision, the more information they're going to need to feel equally confident in the decisions you're making, right? If it's a low stake decision, then you might not need a lot of information. Like hum, what should I eat for lunch today, right? It's typically not a high stakes decision. It's also important to consider the cost of the time, the resources. If it's going to take several hours to collect one piece of information, right, then that better be a very important piece of information. If you can collect another piece of information in say, one minute of interaction with a child, hum, it's one minute, maybe we should collect it. So, it's balancing all of these things.

The immediacy of need. The farther behind the student, the quicker we need to act, right? So that might push us a little bit less. Well, you know what, we'll make a decision with a little bit less information because we've got to act quickly. If there is a danger of harm through inaction, right, that really increases our stakes. And a student who is making less progress than they need to educationally, who's already behind, the longer we wait, the farther behind they'll be, right? That's a danger of harm through inaction. The purposes of the decision also affect that, that's related to the stakes, it's related to all kinds of things, but, ultimately, here's another one of our maxims, when in doubt, teach. If you're getting to a point of collecting more information and more information, and can't come to a decision, right, the most important thing is to teach. So, when you're collecting this information, it's important to consider how aligned it is, right? The teaching is what we want to do with students to get them to learn. Assessment is being done to kind of inform our teaching, right? But we need to make sure that we're considering the alignment of what we're collecting and how we're collecting it with what we want the student to do and how we want to teach them. Just a few things to consider, and there are a lot to consider in the alignment, but one is what the child has to do for this kind of assessment right? Is it going to take a lot of their time, is it going to take a lot of your time, do they have to just identify the correct answer or do we want them to actually produced the correct answer? You know, ultimately, I want my students to be able to produce certain things like letter sounds and, you know, completed math problems, I don't want them to just pick the right one. Is it okay for them to do it accurately, or do they need to do it accurately at rate? This is one of the areas that I've seen the most discussion about right? Why do we need to worry about kids doing things at rate, why do we need to worry about automaticity? Well consider two students. You give them each a sheet of multiplication problems. One student completes the sheet of multiplication problems, gets 100 percent accurate, and he completes the sheet in two minutes. The other student does the exact same sheet, completes the sheet with 100 percent accuracy and it takes him 15 minutes. Which of those students has mastered multiplication better than the other? The kid who performed it more quickly, right? He likely did not have to work through every problem, every step of every problem, there are some things that he could recall quickly right, he could work through them. And the last is considering types of knowledge. Now, I'm going to breeze through the next four slides because, in addition to being incredibly dry and boring, it's deeper and more different than where we want to go. But there are different frameworks for looking at types of knowledge. One is, you know, related to the Bloom's Taxonomy or the update that Anderson et al had done 20 years ago now. This different types of knowledge have to do with facts, which are pieces of information that can't be reasoned in, they have to be learned, they have to, oftentimes they have to be memorized, they're factual, they're declared. Conceptual knowledge is an organizational structure that helps us to organize facts right? Various concepts. Procedures, how to do things. And metacognitive knowledge, right, being able to think about thinking. I always struggle when I talk about metacognition because I think about, you know, metacognition and thinking about thinking, I have to look for other

analogies to go with it because it's kind of a circular description. And so, unfortunately the only one that ever comes to my mind is that metacognition is thinking about thinking, much in the same way that Metamucil is muciling about mucils.

[LAUGHTER]

It doesn't but there's no other meta that works quite in the same way. Okay, the last part about alignment. Is what you're measuring alterable or unalterable? And this is huge because, it's important to look, unalterable variables are often, sometimes things are called more distal variables, ones that are not directly relevant or changeable for student learning, whereas alterable variables are usually more proximal to learning right? The other difference between unalterable and alterable variables is that a consistent focus on unalterable variables is more likely to lead to teacher burnout than looking at alterable variables, 'cause if we're constantly trying to change things that we can't change, or worrying or thinking or discussing things that we can't change, it's incredibly frustrating. The more we focus on the things that we, as educators or as part of the learning team between us and the student, or a group of students, can change, the more we're likely to enact change. So, what are some variables, characteristics of a student that are alterable? What can we change about a student?

>> Study habits.

>> Study habits.

>> Behavior.

>> Behavior. What else? There's all kinds of stuff.

>> Reading skills.

>> Reading skills, very good, that's inter different skills, right, all of those things. I had someone ask me once, why would I want to change anything about my students? I said, because you're his teacher. I'm like, it's your job to change things about him, if he comes in at the end of the year and is exactly the same as when he started your class, nothing happened, right? All kinds of things. Obviously not a complete list. Study skills, specific content area skills, motivation, strategies for learning. Whoops, I'm doing foreshadowing. What are some alterable things that are outside the student but still related to the student, related to teaching and learning?

>> Attendance.

>> Attendance might be something. What else?

>> Discipline referrals.

>> Discipline, disciplinary practices, discipline referrals.

>> Teaching strategies.

>> Teaching strategies and their effectiveness. Okay, that's a starter in instruction, what about teachers, anything about teachers that's alterable? Sure. Our knowledge of the content, our knowledge of

instructional strategies, right? How about the quality of the curriculum that we're using, or the materials that we're using? Right, all kinds of things that, in some way or another, we as educators have some degree of control over. Now, quality of curriculum might not be something that is a decision that's made at the classroom level, right, to the same way. Implementation of the curriculum, the interaction of the curriculum and the instruction is, and those are things that we can teach, those are things that we as teacher-trainers are supposed to be showing right? But, what are the things that we often hear about when we're discussing students, particularly students who are struggling? We hear about things like, their demographic characteristics. Right, race, ethnicity, gender, birth order, disposition, health. You know, if you really wanted to take it to the extreme, there are a few of those that might be alterable, but not in any ethical kind of way. Right? And other things that are external to the student, that we have no control over, right? We can't focus on changing our teaching to improve student learning with things that we don't have control over. Because students who haven't learned in the past, right, can learn in the future. This has got to be the thing that keeps us educators going day in and day out right? It's that students who have struggled to learn can. And why? Because they can learn how to learn. And if I had skills as a cheerleader this is one of those times I should be like, you know, yeah, and who can change it, you know, we can. I had to do a workshop one time, it was me and two other people and the two other people had experience as cheerleaders and that's, so it's great because someone came out and it was really exciting, it was wonderful, and then it was me and I came and I talked and it was like that, then the last person came out and it was exciting, it was awesome, it was great. You know, it was a weird kind of sandwich situation going on.

[LAUGHTER]

But, and don't look at the doors 'cause they're not going to come running in. Why do we have to shift that focus from the unalterable to the alterable? In addition to, you know, combating burnout, in addition to affecting better outcomes? Here's one reason. Consider a skill, double digit addition with regrouping. And here's something else to watch is how many times I can say double digit addition with regrouping without messing up over the next minute. If we have two students, neither of those students is proficient right, that's NP, not proficient, at double digit addition with regrouping. That's three times. We know about those two students, that one of them has an IQ of 70, and one of them has an IQ of 100. Given the information at hand, taking that into account, which student do we think will master double digit addition with regrouping first? This is not a trick question.

>> The second one.

>> The kid with a 100 IQ. Given the information we have, sure, we anticipate that that's what, that's the student who would master it first, right? What do we need to teach the students? Do we need to teach them both double digit addition with regrouping?

>> Yeah.

>> Yeah, given the information at hand, right? But what if we started doing a bit of a task analysis and looked at some of the more, you know, foundational and prerequisite skills to double digit addition with regrouping? Right? We look at double digit addition without regrouping, column addition, the notion of place value. There are basic facts, addition. They have to have things like number sense, there's all kinds of other things even holding a pencil, right? And, we assess how each of those students does across those various skills. Well, if we look at double digit addition without regrouping, we find that the first student is proficient, and the second student is not. We look at column addition, the first student is

proficient, the second student is not. Place value, first student is proficient, second student is not. And they've both mastered addition facts and counting. Okay. So now, given the added information we've collected, which student will master double digit addition with regrouping first?

>> The first one.

>> Right, the first one. The kid with the 70 IQ. What do we need to teach that first kid?

>> Double digit addition with regrouping.

>> Double digit addition with regrouping. Right. What do we need to teach the second kid?

>> Place values.

>> Place value.

>> Place value, right? Seems like that may be one of the areas that's tripping him up right? So, it's having to back up and think about what it is we want the kids to do. We want them to master double digit addition with regrouping right? How we get them there, and how quickly they'll get there, is based on an awful lot of other factors. If we focus on the alterable ones, we'll get them there quicker, right? All right. So for anybody keeping track at home I was able to say it nine times without stumbling. I think that may be a personal best so, thank you. So, how do we collect the information? And this is a quick. We've put things into a few different heuristics right, with nice catchy acronyms. To think about different assessment procedures. Assessment is not all about testing. There's different ways of collecting information right? Reviewing. Reviewing other records, reviewing things that have gone on before, right? These kids didn't just appear out of nowhere. Sometimes, even if they come to your school without a set of records right, there's something we can find, something to review. We can interview different people right? Their teachers, the parents, the child. The child? Right, we can interview the child, right? Oh. We can observe in the relevant settings, we can actually test, because sometimes it's a really good way of gathering information. So, looking at the RIOT assessment procedures, it's also important to think about what it is we need to make decisions about. Now, this is, you know it's, the standard pat kind of answer here is, well, how come the learner isn't first? Why don't we consider the learner first? Because usually that's what we do, we consider the learner first, right? It's all, we make assumptions, that when a child is struggling, the problem resides within the child. That's not always the accurate assumption. Sometimes it is, sometimes it's not. Most likely there's a combination of things, that reside both within and outside the child, that are causing that student to struggle how to learn. Some of it has to do with the setting, the context, where the student is. Which can be all kinds of things, it can be the fact that the room is really cold and he finds that distracting. It can be the fact that, during math every day, he is sitting right next to the kid that he knows, in 20 minutes, is going to beat the snot out of him for his lunch money, that might be anxiety-producing, that may inhibit his math performance right? I mean it could be, something, people have probably, I think I have yet to find a group of educators who have never had a similar kind of experience to this one, a kid who had difficulty working in the classroom because of either the lights or the heating system, or the cooling system, and all of the wonderful noises that they make. I worked with a second grader who just could not stand to even physically be in his classroom because it has fluorescent lights, and the buzz, and they buzz horribly. Fortunately this was a school that had exterior windows and so, through a few placed, you know, incandescent lamps and the exterior windows, we were able to turn the florescent lights off and he was kind of like, wow, how come the room doesn't buzz anymore? You know, which



most other people thought, when did the room buzz? But he could hear it, it was distracting, right? But then we think of what we're teaching, how we're teaching it, and of course, who it is that we're trying to teach, right? So if you think of these in this kind of progression, these skill evaluation domains, it's starting with the board, and moving to decreasingly, you know, concentric circles coming in toward the learner, right? Where they are, what we're teaching, how we're teaching it, the learner themselves.

There are specific characteristics about each of those levels, there are things that interact between those two levels. How you teach something may depend on what it is you're trying to teach. There may be a variety of ways to teach what it is you're trying to teach, and you may have to look across different things. But, what that gives us, nicely, across four assessment procedures, and four evaluation domains, is me flashing what kind of looks like a gang sign. A four-by-four matrix of the RIOT skill evaluation domains. It's the geekiest gang ever. So that, we can think about the information that we need to collect, right? We need to know about the setting. We can review records about the setting. We can interview people about the setting. There are actually ways of testing the setting, right? I mean think of temperature and noise if nothing else. The curriculum, the instruction, there are various ways of collecting, now does this mean that, when we're trying to make a decision about a student, we need to collect information that fits into every single one of those boxes? Good grief no, that's not a checklist. It is, however, a great way of organizing the information that you have at hand, to think about what you're getting information about and where it's coming from. If you bring together all of the information that you have on a child for whom you need to make a decision, if you're in your PLC it's child study team, grade level team, whatever you want to call it, if all of that information settles down into the bottom right corner of testing the learner, right, there's a lot of information that's missing. We're getting everything that's looking at the same thing from different perspectives, right? We want to broaden that. We want different information about the learner from different sources. We want information about different things like the instruction that's gone on. Like the curriculum, or the standards.

But. That's the only time in my career that I've had to quote Peewee Hermann, Peewee Herman, Peewee Herman was fond of saying, "There's always a big but." Decision fatigue. If anybody has heard of that, anybody heard of decision fatigue? It got a little bit of press a couple of years ago, there were a few studies looking into decision fatigue. Anybody who's ever, you know, exercised, practiced an instrument, studied for long periods of time, done anything for long periods of time, right? What happens when you've done this for long periods of time? You start to get tired, you start to get exhausted, right? You're using the same muscles over and over, you're using the same skills over and over, the repetition sometimes becomes, you know, sometimes it becomes boring, sometimes it becomes confusing because you're stuck in this repetition. You get fatigued. When you're making decisions, they find the same thing happens, you get fatigued. So the more decisions you have to make, the harder it becomes to make good decisions. Because, you know, if you will, your decision-making muscles start getting exhausted, right? The same kinds of processes. It works in much the same way, I mean they've implemented this in various places. Now, if you look at, in the 1970s there was a lot of research that was done on teenagers and educators making decisions. Wildly discrepant kinds of results but really nothing that showed that a teacher makes fewer than a few thousand decisions within a regular school day. Some of them are up to, you know, ten to 15 important decisions per hour, others up at like 200 decisions an hour. When you consider how much educators have to multitask, that's no shock right? Is anybody shocked to think that you have to make hundreds if not thousands of decisions a day? You're probably all laughing at that going, is that all? Right? It's a lot of decisions. And, what the research shows is that, over time, it becomes difficult to keep making good decisions. So how can we combat decision fatigue? First off, make your complex decisions early in the day. You haven't made

a lot of decisions at that point, so you're fresh, you're energetic. You're more able to find different solutions to the same problem, even without having to bring in new information but just to consider your information from different perspectives, right?

How many people have IEP meetings at the end of the day? Right? Happened to me all the time too, and there are very good reasons why we have to do this. Sometimes it only fits into parents' schedules, sometimes it only fits into teachers' schedules, there are a lot of reasons why we have to do that. But IEPs require some complex decision-making right? Maybe the end of the day isn't the best time to be doing that. When it's possible, it's great to schedule those earlier in the day. Data level, or, not data level, data kind of teaming, whether it's at the grade level or whether it's at a team, it's cross-grade team, having those kinds of meetings, when we're really digging into the data, having to make decisions about either specific kids or classrooms or whoever. Looking at making those decisions earlier in the day can be a very useful thing right, because people are going to be fresher. It's going to be easier to make the complex decisions. But that brings up a few other issues, when you're making decisions within team especially. One is, don't wait for perfection, right? It's easy, this is related to that notion of saturation right? How much information do I need to make an accurate decision? Like, oh if I just had one more piece I'd feel more comfortable about it. Well, at some point, you know, enough information has to be good enough to make a decision right? If you're still not comfortable making that decision on your own, then get input or feedback from other people. The old adage about, you know, meetings and groups, that none of us is as smart as all of us. Having more people look at the same information, having more people involved in the decision-making process. Obviously there's a point of diminishing returns there too. Having a couple more people involved, good. You know, ten or 20 more people involved might be a little bit too cumbersome. But, having more people involved, getting feedback. See even just someone to look at your decision and reassure you how well they are right? Because otherwise you can run into something that these same kind of researchers refer to as decision paralysis. We get stuck in a rut, collecting information, or thinking about the information without making the decision, right? Not feeling confident enough to choose an approach and to act. Getting feedback is very helpful in combating that. Another way of helping with making decisions is to have your standards for decision-making set in advance. Well we know if a student has performed below this point on this test, and below this point on this test, and below this point on this test, then that student is going to be moved into this intervention group, right? If the student meets all three criteria, great, move them in, right? Having those standards set in advance kind of heads off the possibility of stopping there and going well, you know, his performance on that one wasn't really that bad, but this other one that was more concerning, right? It sets up very clear guidelines.

Other things is starting to routinize low stakes decisions, or ones that you need to make really, really frequently. There was a push in medicine, it's been going on for a few years now, called the Checklist Manifesto. They talk about taking some of those routines and turning them into checklists. I don't know if anybody here is a pilot, or if you've watched a pilot in action, right before they get ready to go they have checklists, they have checklists upon checklists. On checklists they tell them which checklists to go through and check. Because there's a whole series of things that they need to check before taking a plane into the air, right? Before surgery, surgeons have started with all different kinds of checklists, and actually it's often less about the surgeons than it is about everybody else who's there making sure the surgeons do what they do appropriately, right? But that's what the checklists do, right? A., there's a high stake in surgery and in flying, we want to make sure that all of those things are done and they're done appropriately, right? Why risk missing a step? Have a checklist for it. And, it's getting so incredibly easy, that's a, I don't know if everybody has, I just discovered this on my phone the other day. In the Apple operating system, the notes function, like if you actually type in a list, you can turn it into a

checklist. And then you can go through and you can check things off, plus there are other apps that'll do it for you, it's awesome. You can make your own checklists. But, we still have to make complex decisions. Not every decision is simple, not every decision can be turned into a short checklist. And for making complex decisions, one of the things that helps with fatigue, one of the things that helps maximize our judgment, is by imposing a structure onto the complex decision-making tasks that we need to do. That sounds like a segue doesn't it? Boy, if only he was here to talk about some complex structure to making these types of decisions. There are others. I mean I don't want to say that there's only one kind of approach, right? There are a lot of different ways that you can structure decision-making, for educational decisions, for all kinds of decisions, right? This is one that I'll be talking about and we'll be looking at and some of the more specifics right? But we refer to it as the curriculum-based evaluation process of inquiry because it is a specific process, you are going to, looking at different inquiry routines where we're asking questions and we're trying to answer them, and the evaluation should be curriculum-based, it should be relevant to the standards and the content that we expect students to be learning.

So, here's the general structure. It flows in three different phases. Now, this is, we refer to CBE as a heuristic overlay. Why? Because it sounds like a cool term, no. Because it's a generalized system, or approach for doing something, that can be laid over different content areas. You'll notice there's nothing that's listed up there that is specific to say, reading, or math. Or a different grade level. Or a different group of students, right? It's a process. It's a systemized way of collecting, summarizing information, making decisions, and then, for me most importantly, checking our decisions, checking their implementation, and to see that we've actually done what we wanted to do. Right, very important. So, it's broken up into three different phases, you'll see the three different columns. Each phase contains four different actions that follow a fairly prescribed path, but they always end in a question, and, within any kind of problem-solving or problem analysis approach, problem validation is a vital component, and that's what the question does. Once you've gotten to that point where you've collected your information, you've done these other four actions, have you validated what you've done to that point? And if you can, then go back and try again, right? If you can, keep on moving through. Pass go, collect your 200 dollars. And so eventually you've come down through all four phases and this is one other thing that we talk about is troubleshooting. This is something that's actually missing from a lot of different problem analysis kinds of approaches, is that there's an assumption that if you work through the whole process when you get to the end, you know, everything's hunky-dory, you know the kid will live their wonderful life and we've solved all of the problems. You know but sometimes you can go through an entirely complex problem and you get to the end and, you know, all you get it sad trombone, wah, wah, wah. Kid's still having their trouble, you know, we're more frustrated because we've spent all this time and energy trying to help them, what went wrong? Right? Being able to work backwards in a sense of, you know a postmortem so to speak, is important. Okay. And this is one of the reasons why I'll also say that CBE is important for the most complex problems. Typically, if a child is in need of the highest tier of intensive instruction, whatever that is within your system, if that is a tier three, if that is a tier four, whatever the most intensive level is, that's where this kind of structured decision-making is most important.

So, in phase one. Phase one is all about fact-finding. Knowing what we know. So, as we go through those steps, our first action is to determine, or to really decide, if there's a concern about what we're learning and what that looks like, right? Now, you know, a concern about a student, that they're struggling in some area, can come from a whole variety of sources. I mean it can come from their classroom teacher, it can come from other people, it can come from the parents. Sometimes, even if the teacher and the parents are thinking, well things might be okay, we may wind up getting our

universal screening data and finding out, ooh, maybe there's more of a problem than we anticipated, right? Sometimes it's a combination of sources, right? But, somehow there's got to be a clear concern about the student's learning, that is, the student is not learning as much, or as quickly, as we would like him to. And if they're not doing that, then we need to figure out why, and we need to address it. Right? Simple problems don't require complex solutions. That is one of, you know, the problems that we can sometimes fall into right, it's the old, when you have a hammer everything looks like a nail, right? When you've got and you're practicing some complex system of problem-solving, you might be more apt to apply it when it's not necessary, right? Having the nice new, shiny assessment instrument that takes an hour and a half to administer, you might be more inclined to give it just because you can and you're trained in this, rather than this five minute one that might give you the same information, right? It's important to consider that alignment. I'll tell that story later. One of the reasons. You know, looking at simple kinds of problems, and complex problems. I worked with a school psychologist in Vegas who was working with a student who had been doing quite well and had started dropping in his academic performance, the kid's attendance was shaky, the kid's achievement was shaky, this is a kid who had been a model student, been coming to school, I mean people were worried about all kinds of things. Oh I don't know, you know, maybe there's some kind of a health problem 'cause he really isn't looking very good, he's getting gaunt, he's got bags under his eyes, maybe he's into drugs, maybe that's it. I mean there were all kinds of theories about what has been going on, because there was a clear change in this child's trajectory. The clear change in the child's trajectory happened to coincide with the date that his parents got cable for the first time and put a TV in his room. Did it require a complex solution? No, they moved the TV out of the kid's room into the living room and they enforced him going to bed at a reasonable hour rather than 2:30, three o'clock in the morning when he had been falling asleep for the past few months. Right? Simple solution to what was actually a simple problem. But they didn't have to go through a long period of collecting information when they got the right piece of information.

So, defining the problem is a key step. You know, if you want to get all technical, what is a problem? Well, a problem is a difference between the student's performance and the standard to which we expect them to perform, right? If we expect the child to perform up there, which is better, right, and they're performing down here, which is not as good, right, the problem is the magnitude of that difference. Less of a difference, less of a problem. Right? You know, all fine and dandy to put that into some kind of a conceptual thing but, you know, think about the difference between a standard and a student's performance. You've got a student whose performance is about one grade level behind, right? If the child is in 12th grade, you're like, well, it might not be a huge problem right? If the child is in second grade, well that's probably a larger problem right? Because it's a greater magnitude of everything the student should have done up until that point. So, looking at a good problem definition, right? Anybody who's been, you know, trained or exposed to writing good behavioral objectives, things that are observable and measurable. If you can't see it, if you can't measure it in some way, then it's probably not a good problem definition because, the approaches to collect information about the problem, in order to make the decisions, are going to be more nebulous, and it's going to be much more difficult to make those decisions, right, because there's a lot more leeway involved. And having those external standards to which you want to compare a student's performance are vital. You know, this is, especially over the past, you know, five to ten years, I imagine people have seen quite a shift in how thinking has gone about different standards right? I mean it used to be, at one point, 20-some years ago, working in school, it was difficult to find a consistent set of a curriculum much less different standards, from class to class, from school to school, from place to place, right? There's been a greater push, particularly of late, right, to look at different standards, rather than just a curriculum, of what it is the students need to learn, but a standard for not only what they should know but how they should know it, how they should perform it. It's been a very transformative focus right? And every state now,

has some set of standards, at least in the core academic areas, right, that we can point to and say, you know what, this kid in this grade should be doing or working toward those things, right? That makes our decision-making very helpful, right? Because it's clearer to be able to provide a, when students are below those standards, the target for where they should be working toward, right? If they're above the standards then, you know, we've lost the target but there are opportunities for advancement. If those are not available, they're not available in all content areas, sometimes you may not have them available at different grade levels, working early childhood or in students who are looking at an extended school year, post-secondary maybe, but, if those aren't available, if the materials you're using has some kind of a scope and sequence table, then I say that's the next best thing, because it's related to what. It's related to what the students should be learning, right, based on how you are teaching. And, as a last resort, I say use norms, right? In the absence of externally determined and, or validated standards, right, norms can provide a frame of reference, right?

When you have those other standards, then norms can serve a different purpose. But, there's a, so, in some of the states in which I've worked, there's a huge push for local norms. Is anybody familiar with what local norms would be for decision-making and assessment? Then I almost feel guilty having to describe it, I'm like I don't know, maybe I shouldn't even tell you. 'Cause this is great. You know, local norms, rather than taking a normative performance that's been developed at the national or even at a state level, it's taking it at the local level, looking at a specific school, and calculating your norms there. There's a big push, there's a lot that's going to do it, but a lot of places use local norms. In Iowa where I worked for six years local norms were huge, they were used all over the place. Every school developed their own norms and used them for decision-making. It sounds great for local control, it sounds great because you're actually being sensitive to the performance of the students who are in your school, right? However, there are some huge pitfalls that come with local norms. One is, most specifically, if your local performance is not above the national performance. Repeat, if it's not above the national performance, then your decision-making can get completely hosed up, and here's why. And, here they come. There's the distribution of the national sample on some assessment. Doesn't matter what the assessment is, but there's our nice little, you know, normal curve. Here is our local school, right? We're not performing up to the national standards, we know that we're struggling, we've got a great strategic plan in place, an improvement plan, we're going to do some great things, we're going to get things turned around. But right now we're looking at the students that we have and how we're going to be serving them. Well, if we've been using a standard of say five percent, to identify, right, the students who should be receiving the most intensive supports and services, our tier three, right, if we are using the national norms and a fifth percentile, with this size of a difference between our local group and the national group percentile, it could actually be something to, and this is not, this is a gap that's akin to a standard deviation I think so, or not even quite. A large one, but not the largest you see. 65 percent of our students may fall below that fifth percentile nationally. That's so huge I've got to emphasize it. 65 percent, right? Think about the tiered system of interventions and supports that you have in your settings. Can you serve 65 percent of your students in that third intensive tier? Holy cow, no. If you can I suggest not saying it out loud because everybody else will be very jealous. Of course not, that's taking the pyramid, it's flipping it upside down, turning it into a funnel. Right? So, from a resource allocation point, this is why people make the decision. Like, well, we can't serve 65 percent of our students in this most intensive tier, so, maybe we should focus on our local norm. We know the fifth percentile, this, you know, 80/15/5 is a good distribution of performance even though that's just heuristic too, there's no magic to those numbers, right? Fifth percentile. All right, so this way, we're identifying five percent of our kids, we're putting them in this most intensive tier, we have the resources to serve them, and that's how it's going to be. Now, if you do this, who's losing out? I hear a lot of, I assume that's starting 60 percent of your kids. Like, ah, that's over half of your kids. Who are below where they need to be

nationally, so if this kid wants to move outside of your school and, you know, compete against or perform against anybody else, that's to whom they're going to be compared, 60 percent are not getting the supports and the services that they need, right? That's a huge number. Now, if you're looking at putting the number of students into that third tier, and considering that we can only serve a certain number of students at a time, but there's some kind of a mechanism for identifying the kids with the greatest need and you can, you know, cycle them in and out as they're getting better and needing less intensive services, right, great, you can actually capitalize on that to meet more students' needs. However, if you've switched completely to local norms, where you say, oh, kids below our local fifth percentile are the ones who need us, and the kids above it don't, right, then it's painting a different picture, it's painting a very different picture, and it's painting one, you know, that's going to keep pushing down the expectations for those students, so that once they're out and interacting with people beyond the confines of the school, they're not going to fair well, because other students have been getting more intensive needs and services.

I'm going to head this one off at the pass because there's always at least one person that says, but our school's above the national norms. Okay. Again, not something you usually want to say out loud in a crowd. But good for you. And it's one case where it would actually start increasing the number of students that you serve, right? Because, if you're using the fifth percentile, a similar proportion of difference between national and local, if you're above the national norm, you might only identify half a percent of students, right? Whereas, if you used your own fifth percentile, you're going to identify five percent of students. So you'd actually be serving an additional four and a half percent. Now, in terms of the normative performance compared to other kids in the school, in the grade level, they're the ones who need the help more than the other kids right, those kids in that four and a half percent band, they need intervention more so than the kids who are out at the right hand of that distribution. Right? They need it more. However, again, it's important to consider that that doesn't mean that these kids have fallen into an absolute level of low performance. When you think about the comparison to normative standards like this, right, the lowest tail of performance is always, you know, deficient, right, so that's like a. There's, if you think about it that way, there's some proportion, you know, of astronauts who are horrible pilots and, you know, it's a, there are some proportion of Nobel Laureates who, you know, need remedial Nobel Laureating right, because they're at the lowest end of some distribution. That doesn't make that so, it's important to consider beyond the group right? It's like, if you're talking about who gets services above the norm, it makes sense for resource allocation. Below the norm, it can be difficult if it changes your thinking about who is having difficulty versus who needs services, right? The greatest degree of difficulty. Right? So that's, I always have to take a deep breath after going through that one 'cause that's like, ooh, it can get me worked up.

Defining the problem. You always want to support your problem definition with your information right? By the time a student is needing a complex system of decision-making, right, by the time they've reached that, there is information that's out there. They've already got some, in their cumulative folder, maybe in a confidential folder, there's information to be had. If the student isn't new to your school or the school isn't new to school at all, right, there's pervious years of testing, of reports. If they've gone through any other kind of staffing team, you've got the additional information. It's important to take all of that into account as we start defining the problem. Okay. But, given all the information that we have, we collect it, we bring it in, we try to define what it is that this child is having difficulty with, what if we can't? Well, then we need more information, right? That's an actually really typically straightforward solution. We need more information. And in order to determine what it is we need, first, we need to figure out what it is we have. Because we don't want to go out and collect something that's going to be redundant, and that's not going to help contribute to our decision-making right? So

it's taking stock of the information we have in order to plan to collect the information we don't have. Never, ever throw away a piece of information. It may not seem relevant at the time, but you never know when a piece of information is going to become relevant. In my very first multidisciplinary team meeting, as a brand newly-minted school psychologist, I'm sitting in my school, I'm the school psychologist, I'm shiny I'm so new. This was one of the biggest groups I'd ever worked with, I think there were 13 people. But, at our edge of the table, it was me at the corner, the parent sitting just across the corner from me and the school nurse sitting next to her, and then there was two Special Ed. teachers, a speech language pathologist, the Principal was there, there was behavioral specialists, there was the student's current classroom teacher, last year's classroom teacher, a whole bunch of people. We went through a 90-minute meeting talking about this student's performance last year versus this year. 90 minutes. That's one of those, in hindsight, wow, I would never let that go on for 90 minutes anymore, but we had, you know, uncovered every piece of information that we thought we had, we had gone over things several different times, we had left no stone unturned. And, to the chagrin of every single other person in that room, at the end of 90 minutes, I turned to the parent and I said, is there anything else you'd like to tell us? I could see every single other set of eyes roll. Like, oh man, why are you asking that? And the mother looks at me and she goes, well, she did have a portion of her brain removed. And, in my very good, calm demeanor, I sat up a little bit, looked over at the mother, who I noticed was sitting next to a nurse whose eyes were this big, and I said very calmly, oh, could you tell me more about that? Turned out they had been in a car accident at the end of the previous school year. The student, who was at the end of third grade at this point, hit her head on the dashboard, there was swelling. In order to prevent further damage, they actually performed a frontal lobectomy where they removed a portion of her frontal lobe. As you can imagine, that has implications for learning. And sure enough it did, it had huge implications, right? But that one piece of information, right, just changed everything. There were things that we had pushed out of the way because they seemed so irrelevant, until we found out that she had had a section of her brain removed. Okay then. Yep, disorganization, looks like that might not just be you know, typical ten year old kind of stuff. Right? All of a sudden the relevance for all of those pieces of information changed with that one other thing. So that's why you never want to really throw out information, you don't want to completely discard it or discredit it because you never know, right?

Also important to consider, the RIOT scale matrix. Why? Because learning problems don't always reside within the learner. I conducted a tri-annual re-evaluation of a girl, it was her three year re-eval, she had been identified as having intellectual disability, her cognitive testing was all in the high 60s and everything. Everything about this girl's performance in the classroom suggested you know? So, working with the student, we had some good rapport, gave her the tests, actually all of her cognitive assessments were coming up around the high 90s, low 100s, right, which is all perfectly average. And so, you know, so, again, I was fairly new at this point and so my thinking was okay, I have cured this girl's intellectual disability.

[LAUGHTER]

>> Like, I was feeling good. But of course I had to follow up with her and we started talking and I knew the psychologist she had worked with, I said, oh, you know, so we're doing these things, remember like you did with, you know, Mr. Cotton three years ago? She says, oh, yeah. Oh I hated him. I'm like, come again? She was like, I hated him so I just didn't answer any of his questions. I'm like, hum, yeah, your difficulties may not reside within you. Important to consider those things. And, so, here's an illustration of why it's important to consider not just, you know, who the last schmuck school psychologist was ahead of you, but other things as well. This is a classroom of students, this is actually data taken from a

classroom from a large school-wide project that we worked on. This is oral passage reading, curriculum-based measurement, on the whole class. The dotted white line is the standard for proficiency. Actually 77, I believe this is winter in third grade. At the time on these measures, 77 was the standard right? So, if you're working with student number two, is student number two proficient based on this piece of information? No, not even close right, the student is pretty far behind, that's a pretty significant need. Is the difficulty student number two is having specific to student number two? It's kind of a trick question. Maybe, maybe not, we really don't have any additional pieces of information right? But can we say that it's not a result of the classroom instruction, or the curriculum that's being used? How well is this classroom doing? Not good, right? Four out of the 20 students are above proficient. That's not, that's not good as a whole class right? Now, there's more information that we need of course so, if your default answer is, well I might need more information, good. Yes, right, we want more information. Okay, great. So, we know how Miss Allen's third grade classroom is doing, we can't really rule out that isn't an issue of instruction or the curriculum right, or it may be that Miss Allen has all of the lowest performing students in the grade, in the school, right? There are other potential, you know, hypotheses. But we have the other data. Oops, how about if we look at student seven? I already asked the questions. Let's look at the whole school. This is that same school, there were four third grade teachers who put everybody, ranked them all, there's that same standard, there it is. Is this an issue of the instruction, or the curriculum, or is this an issue of, it's a problem of all of those individuals? This is about 53 percent of the students making proficiency. Better than Miss Allen's classroom but still not good. Only half the students right? Again, we want to shoot for about 80 percent of the students being successful with no supports in addition to the classroom instruction, I mean ultimately 100 percent of students are who we want to be proficient. But, looking at this, there's something else going on. What are some other things that we can do, just with these data from the oral passage reading, what do you think we might be able to do with that, to look at it slightly differently? That might help us make a decision, if it's about the classroom, if it's about the instruction, if it's about the curriculum. What? What can we do? Well we've already aggregated it once, how about if we disaggregate it a different way? Hum. Good idea. Maybe the problem is classroom-specific. So here are the four teachers. Miss Allen, Miss Berth, Mr. Cooney and Mr. DiMaris. The black bars is their classes' performance in the fall, on the oral passage reading. The white bar is their classes' performance in the winter on the same type of measure. Now, the students weren't randomly assigned across classrooms, but there was a pretty good distribution where every classroom was running somewhere around 20 to 28 percent right, or 19 to 28 percent, proficient, right? This was not a high-performing school. And that's the reason why we were working with them, they were actually a part of a large reform initiative where, which was only for low-performing schools. So in the fall of the year everybody got their students and realized that, yeah, across all these classrooms about one in five students is proficient. By the winter benchmarks, did things change? Oh yeah, in a couple of classrooms they did. Right? Hum. So, now, thinking of Miss Allen's classroom, right, are the difficulties of student two or student seven or whichever student you want to look at, right, are those difficulties student-specific, or might there be something else at the classroom level that we need to examine? Right? And, the converse of that, because this is how we approached it working with them, is that I don't really want to know what's happening in Miss Allen or Mr. Cooney's classrooms, to find out what's going wrong, I want to be in the other two classrooms to see what's going right. Because they're doing something that's wildly successful, and I bet there's ways that we could have the other two teachers doing those things, right? So, through observations in the different classrooms, through discussions with each of the teachers, right, through additional assessment and looking at pieces of data across the students in all four classrooms, we started looking at what are those things. Now, what I can tell you is that yes, there were certainly things that Miss Berth and Mr. DiMaris were doing differently from Miss Allen and Mr. Cooney right? The main thing, because another thing we had to do was go in and do some observations of their instruction, and this



was far and away the most eye-opening thing that we found. What percentage of an instructional block do you think was dedicated to an instruction? Just think about that, so give, you know, a lot of schools try to use a 90-minute literacy block. Well, the state that this was in, they took it a little bit differently, and rather than doing a 90-minute block they actually had a three-hour block, and it encompassed everything related to literacy. It was reading instruction, it was writing instruction, this was K to three, so it was a broader perspective, this was a three-hour block.

What percentage of time do you think was dedicated to instruction out of that? Just go ahead, throw me some numbers.

>> 30 minutes.

>> Hum? 30 minutes. I can't even figure out what percentage that is.

>> Ten.

>> Hum?

>> Ten.

>> Ten? Ten percent? No it's larger than ten 'cause that's, three hours would be 180. It's one-sixth, it would be something like 15 percent. Right? What percentage dedicated to instruction? I'll give you a hint, it was a lot higher than ten or 15 percent.

>> 50.

>> 50 percent. Closer.

>> 75.

>> 90, 75. Okay, now you're hitting the range. This is great, you guys started low, I must have sold this the wrong way, usually people are like, I don't know, 90 percent, 95 percent, that's how much I spend. Well. Across not just the school but across all the schools, the average, average mind you, not the lowest part but the average percentage of time spent on instruction in those instructional blocks was 70 percent. That is over one-quarter of an instructional block being spent on things that weren't instruction. Right? Sometimes there are simple solutions. We had one Principal who liked to make an announcement over the PA about every 15 to 20 minutes. And the announcements lasted about five to seven minutes each. That's a. That school wasn't doing well. Who could have foreseen that? So we actually told the Principal, you are not allowed to use the PA except for these 15 minutes at the beginning of school, these 15 minutes at the end of the school day, and in case of emergency. And it better be a real emergency. If it doesn't involve, you know, some external municipal force like the police or the fire department then it might not be an emergency. So huge, right? Look at all the time you can gain right there. One of the other things that we've found, particularly, again to come to this school and those two teachers, is, in their classrooms, there were fewer transitions between instructional activities, and they lasted shorter, they were shorter, right? The observation system that we were using actually did, it coded minute by minute, and in these classrooms, they could have transitions from one activity to another in less than a minute so they could even code some of their transitions. It was amazing. To watch a transition, I forget, I think it was Miss Berth, to watch a transition in her classroom, now these

are third graders, and many of these classes, actually the one, Miss Allen that I show with her 20 students was the smallest by the way, many, they have 25, they have 28, they have 30 or 35 students in a classroom. Her classroom, so, stand up, okay, you know, boop, time to put your books away let's, you know, transition to, it was like a ballet, you could hear, you could almost hear the music, all of a sudden little third graders are just going across the room and they're spinning and twirling and that's a, I mean it looks like one of those models of a condensed gas because there were things moving everywhere. But nobody was bumping into each other, nothing was happening, everybody knew exactly where to go and what to do, how to do it, and it was beautiful. The transitions didn't look quite like that in the other two classrooms right? They did it more frequently, because that was the other thing, Miss Berth and Mr. DiMaris, their instructional events, when they were spending time on a task, were never shorter than 20 minutes. 25, 30 minutes, not uncommon. Third graders right, that's, and some people say you shouldn't do more than ten or 15 minutes. And, some of the other teachers were doing that. They were spending say, ten minutes on an instructional event, and then five minutes on a transition. Eight minutes on an instructional event, and then five minutes on a transition right? That adds up. So, I don't know about you but the biggest complains that I always hear and feel about education are what do we need? We need more time, and we need more resources, which includes more people. Right?

The one thing, so we came and we told them, you know what we can give you, we can give you the gift of time. Because, you know we're losing, I mean, over a quarter, so that's, you know, 180 minutes, that's 45 minutes of instruction every day. 45 minutes a day of instruction that was being lost to transitions. Now, they have to have transitions. If you get too much above 95 percent to 98 percent, then you really got to look at what's going on because, wow, how is this happening? You know, are kids really engaged and are they really transitioning? But, 45 minutes a day, 45 minutes a day over the course of a five-day week gets you, what, how much? Four, five, close to five hours. No, close to four hours, three 45. It gives you all kinds of extra bits, three hours and 45 minutes a week, that's half a school day. You add up half a school day every week across 40 weeks, you've got an extra several weeks of school, right? So, I know I'm beating that one into the ground but, that is the importance, right, of thinking beyond the students. Now what if we had just looked at, you know, not even Miss Allen's data as a whole class, but just looked at little number seven there and said, oh, he's not doing well, better put him into this special group, right? No, look at the whole class, maybe there are things we could be doing differently, right? That's going to be more effective to intervene at the whole class level. And so, again, when we started looking at things that were more class-specific. My last slide disappeared that showed the outcomes, snort. So, to look at the spring data, what we found was, after working with all four teachers about transitions, and the time on task, Miss Allen and Mr. Cooney actually, they had some strategies and some other materials that the other two teachers weren't familiar with so they were all sharing and that's a, obviously this was a great environment in the school that was a collaborative one, looking for solutions, there was no blame going around, but everybody's performance, the lowest of the four classes, was somewhere around 57 percent in the spring, right? Some of the others even crept up a little bit higher so that most of them were above 80 percent proficient by the spring. That's a quick turnaround. But when you're gathering an extra three hours a week of instructional time, it's easier to make those types of changes. Hum? Go ahead.

>> As the evaluator for that teacher, Mr. or Miss Allen, I would be doing something very specific with that teacher because she only had four of her passing students proficient in the fall and now her class is going down. So I'd be looking very specifically at what's going on...

>> Yeah.

>> ...in that classroom.

>> Yeah. From the fall to winter here. Yeah, she was saying, as the evaluator she'd look very specifically at, you know, this teacher. Well, and that one too right, 'cause there's not a lot of good things going on in the third one right? And that was and, you know, that's why we're looking at specifically how much time they were spending on instructional time. The strategies that they were using, and the materials, were not significantly different from the others, it was a consistent set of materials. They were implementing the same strategies. They were actually implementing them with pretty similar fidelity, but the way that they had structured their organization is they were running shorter events with more transitions, the transitions were more chaotic, and so there was just a, less instruction going on, you know? Now again, that was a pretty simple solution to a problem, once we knew where to look. Once we got the data at the right level of evaluation and with the right focus, it was a pretty obvious solution. You need more instructional time and here's where we can find it. But, some of the things, so now back to beating my, how do you routinize some of those sets of decisions? Well, one is to have checklists, that's one of the things. You can create a checklist that's very specific to the materials and the sources of information that you have in your own school or district, or across your IU, right? This is a generic set of materials. When you are summarizing the information, consider all of these sources, student's cumulative folder, universal screening data, possibly any progress monitoring data, right? Interviews, classroom observations, any other, work samples, report cards, things that may be, and, this is the other important piece, if you don't review the information, why not? Was it not possible to interview the former teacher because the teacher left, because the student is new? Right? Is it not possible to look at previous report cards because the student came to you from a school where they didn't use report cards. Right, there are very good reasons for not reviewing some of these things but, it's important to document that. Why? Because eventually, down the road, in some meeting, in some interview, when someone says something else that makes you think, ooh, we really need to examine those report cards, or that cumulative folder, or the, if you haven't, now you know why you didn't. Right? At the time it's like, well, we just reviewed what was there. But, why didn't you review it? 'Cause it wasn't there or you didn't, you decided that it wasn't relevant? After pulling from all of those sources, it's good to organize all of that, you literally could be summarizing piles of information right? Summarizing it. What has to do with the setting, and how did we get that information? Was it reviewed from prior materials, did we have to interview somebody to find out about the setting? Right, it's a pretty easy task, they ask the teacher. How did we get the information about instruction? Did we observe the classroom instruction, did we interview? Right, that's a, where did the information come from? One of the reasons it's important to consider what the information is about, those evaluation domains, the skill, one of the reasons that's important is because you can't make decisions about things that you don't have information right? We wouldn't have known about the classroom instruction and the time management if we didn't have observational data, if we weren't aggregating the student performance data to a classroom level, right? And it's also important to consider the different sources because, again, if everything's come from an interview, there could be some additional source of bias from that interview. I'm not saying any kind of malicious bias but it's one perspective. If everything's come from testing, right, then there's a possible bias in that all of it's coming from a certain perspective, right? Maybe it's all using similar methods. So, not having everything come from the same source is good.

>> Testing in the setting domain, how does that interrelate? I can understand review, how do you test a setting?

>> Right, right. So, you know, I love things like, yeah, how do you test a setting? You know a lot of times observation is what we typically have over setting characteristics, but sometimes it might be possible to

actually measure some, and it may be considered. There are some systematic approaches to evaluating classroom environments, the one, they used to call it the FAB, Functional Analysis of Academic Behavior. But there are a few other ways of assessing academic environments and going on, it has to do with classroom structure, how much is on the walls, is it distracting, is it inviting, is it, you know, what is the lighting, is it natural, is it? A lot of those are actually done through a rating scale which is some kind of a hybrid of a, like a testing versus observation. But there are ways of maybe measuring some of those characteristics. With the curriculum, with instruction, there are other ways of actually, especially with instruction, there are more ways of testing or observing, right? Different ways of measuring the instruction that's going on, what it looks like, various characteristics, there are all kinds of different, you know, theories and methods of qualities of instruction, and the quality of instruction we're looking at, within different content areas.

So, you know, important coming in and to consider those different perspectives. You know, one of the other things, when you're especially looking at the instruction and the setting, is that it's important for whoever might be coming in to assist with that kind of data collection, right, to have a good and open and collegial relationship with the teacher, or the coach or the specialist or whoever is helping to provide that instruction, right? Because, particularly when frustrations run high, and a student is struggling, or a bunch of students are struggling, right, it's too easy to fall into a kind of dynamic where it's evaluative of the individual, not evaluative of the setting or the instruction, in terms of, you know, trying to make changes and supports for the better. So, I mean, that's something people spend lifetimes and careers discussing and trying to figure out, but, hugely important. So, you have the different evaluation domains, you have different assessment procedures, right? It's good to take all of the information that you have and organize it. So why don't we do a little bit of that? With Willard. So that's, okay, if you can, with the people at your table, I just want you to look at the details of Willard. I know you don't have a copy of the form, you don't need something formalized. Make notes, you know, skill, evaluation domains, setting, curriculum, instruction, learner. Think about which one of those each piece of information describes. Each piece of information, and how do we know the information, did it come from a test, did it come from an observation, did it come from a report, right? Just think about those. So, for the next, we're going to go two, three minutes, discuss the pieces of information about Willard on this screen and put those in that kind of a framework right, however you want to jot them down.

Okay, so, what are a few of the pieces of information that you gleaned from this quick description of Willard?

>> Fourth grader.

>> What? Fourth grader. Yeah, he's a ten-year-old fourth grader, okay. Is that information about the setting, curriculum, instruction or learner?

>> Learner.

>> Learner. We know that's about Willard, okay. What's another piece of information?

>> Continuous [INAUDIBLE] . He stayed in one school, he didn't.

>> Yeah, he's been in the same, he's been in the same school his entire educational career to this point. All right, great, is that characteristic of...

>> The setting.

>> ...the setting, the curriculum, it's kind of the setting, it's the setting, he's had the same setting. So there's.

>> I also put it with instruction because it was, you know, I don't know.

>> Yeah.

>> They would have the same philosophy.

>> Right. It may have implications for the instruction, it may have implications for the curriculum if he's using something that they have, you know, scaled across the grades, right? It also gives us some insight about Willard himself and his family too right? Yeah, well it sounds like they haven't moved. And of course if they have moved it hasn't been far. Okay. What else? One more piece of information.

>> He's well-liked.

>> Hum? He's well-liked. Ah, nice little Willard. So, and what's that about, setting, curriculum, instruction, learner? Learner, I mean it's about Willard. It gives us a little insight into his personality possibly right, his intrapersonal skills, but the thing about him he is, he's well-liked. Okay. Here's a little bit more information about Willard, okay? So, go ahead, read that, come up with one or two more pieces that you would want to put into that matrix.

>> All right, so what's one piece of information that you would want to?

>> He's having trouble seeing things on the board because he's not wearing his glasses.

>> Yeah, he's having trouble seeing things on the board, could be that he's not wearing his glasses. So, not being able to see things on the board, is that an issue of the setting, the curriculum, the instruction or the Willard? It's the Willard, it's a characteristic of him right, it's more of a behavior at this point if he's not wearing his glasses but that's, it could be, it could be visual acuity, maybe there's a change. Okay. What else, what's another piece of information?

>> Not completing reading assignments in the allotted time?

>> Hum? Not completing reading assignments in the allotted time. Okay. So again, is that about the setting, the curriculum, the instruction or Willard?

>> Willard.

>> Yeah, learner, it's Willard right? It's something he's not doing, something that he should be doing. There's a difference in his performance and the standard, a difference between his performance and the standard right? That's another learner-based, did you have a different one? I thought somebody was going to.

>> [INAUDIBLE]

>> Oh, yeah.

>> [INAUDIBLE]

>> Yeah, right. We might want to do that, right, yeah that's good. Again, simple solution. If we can find a simple solution, don't bother with the complex problem. Anything else in here that's not about Willard, that's potentially relevant information?

>> Well, yeah.

>> Incoming. Right? Directions and clarifications about class assignments. Which are clearly stated and written on the front of the, what is it? On the front of each assignment or on the board, right? So there's something we know about the instruction, the instructional actually includes clear directions. Willard's not getting them, whether they're on the board or on a written copy for the assignment, right? But that's a characteristic about the instruction. Because, if that wasn't there, right, our first response might be, well he isn't wearing his glasses. It turns out he's wearing his glasses, hum. Okay, is this an issue, so is this an issue of, you know, his visual acuity has changed? Well the nurse can scream pretty quickly, no, looks pretty good, his visual acuity's just fine. Okay. But he's having difficulty with directions. Are they clear? Yes, they're written on the board and the assignment every single time. Okay. So, there's all the different pieces of information as we can move to rule out some of the more simple issues right? But if we didn't have the information about the instruction, right, if we only had information about Willard, you know, which, when we're focusing on the difficulties that a student is having, it's too easy to focus on the student right, and their characteristics, when there are other things we need to look at. Okay. I left the rest of Willard out. So, when we're summarizing information, we kind of want to, you don't necessarily have to do this explicitly but you kind of want to ask yourself a few questions. Does the information align with the purpose for which you're making the decision, right? Is it about alterable variable, or something that can be accommodated at least? You know, technical visual acuity is not something we alter, but we can accommodate differences in visual acuity. And does it have an explicit link to intervention or instruction? We should be able to say yes to all of those. So if we can do that, think about, within each of the evaluation domains, what are, you know, three of the most important relevant pieces of information that help summarize Willard and the difficulties he's having. That should lead us to our questions. What is it that we don't yet know, right? If there wasn't a statement about the clarify of directions in the classroom, one of our questions might be, well, does the teacher provide clear directions? Is Willard wearing his glasses, right? Does he have glasses, are they appropriate, right? All kind of questions that we can start asking. Yeah.

So, this is the stuff of problem validation right, looking at, can I confirm the problem? If you can't, there are a few different reasons, you know? If the student's performance is actually above the standard after we thought it wasn't, we've got to wonder why that happened right? Like ooh, hum, why did we think the student was struggling, or why is this student appearing to struggle when they may know how to do what it is they can do? If the student doesn't really have difficulty, then we may not need to go through a whole problem analysis kind of approach. Maybe our definition wasn't appropriate. Maybe the standards were inappropriate. Maybe the data we collected weren't appropriate right? All things to stop and think about. It's not that they automatically weren't, it's not that they automatically were, it's time to step back and think, oh, maybe we needed more information about Willard, we had an awful lot of information about him personally but we didn't really have too much about the classroom, about the instruction going on, about the peers in the classroom and the interactions, right? There's a lot that we

didn't have information on. Maybe we needed more. Okay So if we can confirm the problem that's, okay, not necessarily a cause for celebration because that means there's a problem. But, it's good in that now we have an idea that we can start looking more toward the solutions, right? So, that's finishing up our fact-finding, and moving on to the summative decision-making. Okay. When trying to make big decisions, sometimes the biggest barrier to learning is prior knowledge. There's a theory that people are talking about now of the notion of unlearning, that, you know, before real learning can take place you actually have to unlearn some previous things that you've known. If they conflict. In summative decision-making that's where that can be an issue. Whoop, come back, there we go. So, this is one of the biggest things, now that we've summarized what we know about the student, we have to be able to generate assumed causes, right, generate our hypotheses of why the student is struggling, and therefore what we can do about it. Really important to access the standards, to access to the levels of proficiency and the things that you want the student to be able to do, right? Important to look at what they've mastered, what they still need. Oh man. Time flies when you don't have a watch.

[LAUGHTER]

Okay. All right, so I'm going to talk very quickly about generating assumed causes, and wrap things up. Because, if you can't generate an appropriate assumed cause, then you're stuck going all the way back to the beginning. It's a difficult thing. If you focus on alterable variables, stick to the essential tasks, and pick the most likely first, you will be good. Do not say your answer to this question but if I were to say to you, I am thinking of a four-legged mammal with hooves and a tail, what is it? Think of your answer. What would you guess I'm thinking of. Now you can say it.

>> Horse.

>> Horse. A lot of horse, any others?

>> Zebra.

>> Zebra, cow. Right? Right, yeah. How many people said an addax? Addax Nasomaculatus, that's, actually that's a, I had to go searching for this on the internet, it's one of the most rare four-legged mammals in the world because of its epic horns. But, you're not going to guess that my thought was an addax. Just knowing things like the fact that we're in central Pennsylvania, right? Probably not a lot of addaxes running around seeing this is a sub-Saharan animal. However, if you know that I had just come back from a trip to sub-Saharan Africa, you might think, you know what, he may have the addax on his mind. At which point I would have been incredibly impressed. This totally backfired on me one time as I was using it as an example of prior knowledge, and I actually had a woman who had just come back from a trip from Africa and had seen an addax and, sitting just outside of Harford, Connecticut with 300 people, someone was like, it's an addax, and I just wanted to curl up and go home and die.

[LAUGHTER]

But you want to make good assumed causes, you want to figure those things out. All right, this is the quick. Like really? He didn't need to talk about any of that stuff? No. This is the parting thought that I want to leave you with 'cause this is the important thing. Again, this is not the only structured system for making decisions right, there are others. Having one is what's important. And a lot of times, when you're looking at navigating a complex system, when you're looking at implementing all of these specific steps, it can feel like you're herding cats, right? And I love that herding cats is the kind of, you know,

saying for all things difficult to do because, as Jen Hightower says, "Anyone who says you can't herd cats has never tried a can opener." It's about having the right tool for the job. If you have the right tool, and if you use it correctly, you can get the job done. That's the important takeaway, that's. If you would like a copy of the slides you can, feel free to email me, my email I don't think is in my contact information but my email is johnhosp, all one word, at umass.edu. Also, if you do a Google search, I come up very highly on the Google searches because I've only ever met, well I've only ever met one other John Hosp in my life and that was my father. So, and he has no internet presence so. So it will probably send you to me and a whole bunch of St. John's Hospitals. But, thank you very much for the opportunity to be here, like I said, feel free to contact me, I can make, you know, those available and I'm happy to answer any other kinds of questions like how come your time management is so bad, okay.

[LAUGHTER]

>> Okay, thanks.

[APPLAUSE]