

SPEAKER: Dr. Peg Dawson specializes in the assessment of children and adults with learning and attention disorders at the Center for Learning and Attention Disorders in Portsmouth. They say Peabody up there too instead of Peabody, New Hampshire. Along with her colleague, Dr. Richard Guare.

She has authored several books, including a book for professionals, *Executive Skills in Children and Adolescence*, a *Practical Guide to Assessment and Intervention*, as well as a book for parents, *Smart but Scattered*. Their most recent book is *Coaching Students with Executive Skill Deficits*.

Dr. Dawson worked as a school psychologist for 16 years in Maine and New Hampshire, and is a past president of both the National Association of School Psychologists and the International School Psychology Association. She is also the 2006 recipient of NASP's lifetime achievement award, and a 2010 recipient of the International School Psychology Association distinguished services award.

How honored we are to have her with us today. I'm sure we will learn a lot in this two-part series. If you will please join me in welcoming Dr. Dawson.

PEG DAWSON: Thank you. I am thrilled to be here, especially given the weather of the past couple of days in the Northeast. I had like three backup plans last night to get here from Boston. And actually, it was someone here in Pennsylvania who found me the one who worked so I could get here.

Let me find out a little -- actually, let me add one more piece to my bio because that focused on my professional work. And as I transitioned out of the public schools into a clinic setting, I was getting -- this is how I got interested in executive skills. I was getting a ton of referrals of kids for ADHD, the question of an attention disorder.

And as I worked with the American Psychiatric Association diagnostic criteria for ADHD, I fairly quickly realized that, you know, they have sort of two main domains: problems with attention or problems with hyperactivity/impulsivity. And I fairly quickly realized that those didn't begin to describe the problems that kids with ADHD have.

And as I started wrestling with what those issues were, time management, planning, organization, that kind of thing, I talked with my colleague and my coauthor, Dick Guare, who he and I actually both went to the University of Virginia, although at different times. But he went on to do a post-doc in neuropsychology at Children's Hospital in Boston. And he said, oh yeah, those are executive skills. Well, this was like the mid-80s and no one was talking about executive skills in those days.

So we really started zeroing in on those skills and fairly quickly realized that they helped explain a lot of the problems that the kids we were seeing were having in school. And not just kids who were identified as having some kind of educational disability, but you know, many other kids who were just sort of underachievers.

And at the same time I was doing all that, I was raising two sons of my own. And my older son at the age of 14 was diagnosed with an attention disorder, so I often say that a lot of what I've learned about ADHD and executive skills, particularly on the interventions side, I learned from my experience as a mom as much as from my experience as a psychologist.

So let me find out who's in the audience. And we'll start with your professional titles first. Are there any school psychologists in the group? Excellent, very good. Regular education teachers? Cool. Special education teachers? Very good. Regular education administrators? One or two. Special education administrators? Any speech pathologists? Any occupational therapists? Any guidance counselors? Okay, any other mental health professionals? I don't know how you would describe it. What do you do, just out of curiosity?

AUDIENCE MEMBER: Social work.

PEG DAWSON: Social work, okay. How many social workers? Any other social workers? Okay. And who have I missed altogether?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: Oh, okay, so applied behavior analysis, analyst, right. So how many ABA people are there here? Okay. And a bunch of parents, am I right? Okay. And some of you may be wearing two hats. I know when I do professional workshops, what I find is a lot of the people who came there because they got the brochure as a speech pathologist are there because they're worried about their own kid.

And so this is a pretty tight -- I usually do this workshop in seven hours, and I've condensed it into four. When I actually created your PowerPoint, I was basing it off actually a two-hour presentation, so I've expanded it a bit from what you have in front of you. But your first PowerPoint has my email address. And I've got two different ones, but they both get to me at the same one. I think you may have that comcast.net one.

If you email me and ask me for a copy of the full PowerPoint, I'll be happy to send it to you as a DropBox link. It's too big to put in an email, but you can download it from the DropBox. Because as I say, I've expanded it considerably from what you have in front of you.

And I also would just call your attention, we just launched a website, smartbutscatteredkids.com. And that has additional downloadable materials. It has like a three page description of coaching. It has a homework manual I created several years ago and couldn't find a publisher for, so that's up there. So those are other resources you may want to -- you may want to look at.

I'm going to start by getting us all on the same page in terms of our understanding of executive skills. And I'm also going to talk, and this is not in your PowerPoint, I'm going to talk about what's going on in the brain. Because here's what I've discovered. The more we understand that these truly are brain-based skills that take a long time to mature, then once we've got that stuck on our heads, then it's easier to think about, okay, so what are the interventions?

What I find when I jump to interventions is that what I get is a lot of, well, but shouldn't these kids be able to do this naturally? Or shouldn't they be able to do this by middle school? So I feel like I need to lay the groundwork to help you understand what the issue is, and that these skills really do take some time to develop, and why that's the case.

So when I do workshops for teachers after school, I'm always worried that they're going to fall asleep before the end of the workshop because they're exhausted. And so I often start out those workshops with two sort of key pieces of information about executive skills so that if they fall asleep, they'll at least go away with those two pieces. It's going to be a long day, so I'm going to give you those two pieces as well because it helps us as an advanced organizer for the day.

And here's what those pieces are. Executive skills are brain-based skills. You know, they're located in the frontal lobes of the brain. And they take 25 years to mature. So that 25-year mark is really, really important. So that's point number one, brain-based skills that take 25 years to mature.

Until they're fully mature, it's our job as parents, teachers, educators, adults who work with kids, to act as surrogate frontal lobes for our kids. Okay? So we lend them our frontal lobes. And ideally, we do that in a developmentally appropriate fashion with frontloading a lot of supports when they're young and fading those supports as they get older.

My experience in terms of the fading process is that it's a bumpy road. And sometimes it feels like there's this cliff around middle school where, you know, lots of good supports provided up until then, and then boom, suddenly the expectation is that kids can manage on their own. So one of my arguments is for a more graduated support, maybe doing more when they're younger, but also -- or less -- more to fade the supports when they're younger, but also providing longer supports when they're older. So that's sort of where I'm going with this stuff.

But I think we need to, first of all, get all on the same page in terms of what we're talking about. Now when Dick and I first started looking at executive skills, what we found was that every neuroscientist, every researcher, every creator of checklists out there had a different way of organizing and defining these skills.

And over the years, I've noticed they go one of two directions. They either lump a bunch of skills together and narrow it down to like five skills, or they expand out to -- I mean, Russ Barkley talks about 32 different executive skills. And I understand that George McCloskey is now talking about 40 different executive skills. I can't even begin to get my head around that.

So Dick and I have sort of taken a middle road on that. We've identified 11 individual executive skills which we think are most critical to school success. And so those are the ones I'm going to talk about. I'm going to give you some sense of the development of these skills, as well as giving you definitions. And the order in which I'm going to present them is the order in which we think they emerge developmentally, starting shortly after birth.

So beginning with response inhibition, that's basically impulse control, the capacity to think before you act. You can see signs of response inhibition in six month old -- six-month olds. So it emerges, it's the first skill to emerge. At that age, it's very rudimentary. It's either respond, don't respond. So if you have an infant at home, that's what you may see. You know, strangers trying to get a baby to smile and they're choosing not to smile, that's the impulse control.

Obviously it looks different as kids get older, and especially as they acquire language. In fact, with all these executive skills, the better our language skills are, the better our executive skills have the potential of being because we can use language to control behavior. So we may hear a toddler say, stop that, don't do that out loud, and then it becomes internalized as thought.

Okay. And actually, before I go onto the next one, response inhibition is the primary, most critical skill of all. If you don't have this one, you're not going to be able to develop the later ones. And

so if you can think of kids with significant impulse control problems, chances are they've got a ton of other executive skill weaknesses.

Moving onto working memory, this is -- you know, when I was in graduate school, we talked about short-term memory and long-term memory, and how you get something from short-term into long-term memory. This is sort of a more recent concept about memory. And I really like the name because it's the memory you need to work. So it's the ability to hold information in mind while you're performing a complex task.

So, and there's nothing that we ask kids to do, either at home or at school, that doesn't require working memory. You know, just sending our child to his bedroom to retrieve, you know, his dirty underwear, he still -- when he gets to the bedroom, he has to remember what he went there for.

In school, you know, even a one-step direction. But the more complex the directions, the harder it is. You know, when I work with kids and I'm doing -- I'm doing an assessment, sometimes I ask them to solve oral math problems in their head. You know, I give them the math problem, they have to solve it in their head. And if it's a multi-step problem and they do the first step and give me that answer as the answer to the problem, then my thought is, well, what's going on with working memory? Because they've only done the first step. They've forgotten what the question is asking. And maybe they were able to get that first step, right or wrong, but that just gives you some sense of how working memory impacts academic performance.

It's actually more complicated than that, though, because it also involves the ability to draw on past learning, apply it to the situation at hand, and project into the future. So if you have, you know, a 4th grade boy who sticks his foot out to trip his friend as he walks by his desk to the way to the teacher's desk, and he gets in huge trouble for it, then the next time his friend walks by his desk, if he actually stops and thinks and remembers, oh, the last time I did that, I got in huge trouble, I'm not going to do it again, that's, again, an example of working memory in action.

Those of you who work with kids with attention disorders know that that doesn't always happen. They get in trouble and then they do the same behavior again. Russ Barkley, who is probably one of the most verbally expressive people I know, calls it the curious dissociation between knowing and doing. They know what they're supposed to do, they just can't quite pull it off.

This too obviously aided by language. Because if you've got language, you can remind yourself. And you know, it becomes internalized, but I'm finding, I'm 63 now, the older I get, the more I find it

helpful to actually talk aloud. Remember to pick up milk after work on your way home. So that's how language supports that.

This one emerges around seven months of age. So this too is very early. And when I think about this, I think those of you who may have studied Piaget in college may be able to see the connection. Piaget talked about the concept of object permanence, which means if you're sitting -- the baby is sitting in a high chair and there's a toy on the high chair tray, it falls onto the floor, below seven months of age, the baby doesn't even look over the tray to see what happened to the toy. Because literally out of sight, out of mind.

You know, at the point where they do that, then you know they've got working memory. You know, Barkley would call that non-verbal working memory. They have a visual representation of the toy in their head, and they want to know what happened to it.

Working memory also can trigger the separation anxiety phase, you know, with infants. So again, you know, a two-week old, you can drop them off at a babysitter and they're fine. But at the point where they develop working memory and they remember what it was like to be separated from their parents yesterday, then they cry today when you drop them off.

Now okay, so I have a bunch of cartoons. And again, if you request the full PowerPoint, you get the cartoons. I think Zits sort of captures the teenage brain better than just about anybody I know. And so Jeremy's mom is saying to him, Jeremy, please put your dishes in the dishwasher and push the start button. In the time it takes Jeremy to get over to the dishwasher, he says, run that by me again? He's lost the instructions.

But of course, poor working memory doesn't just affect -- for some -- I'm sorry, my computer has been freezing lately and I haven't figured out why that is. Let me -- I hope this isn't going to go on all day. Maybe I can get the tech people to help me over lunch. Yeah, okay.

Of course, poor working memory doesn't just affect kids. It affects parents as well. So it's late at night. Mom's already in bed. Jeremy pokes his head around the door and says, mom, I have to bring a homemade dessert for a class party tomorrow. And she says, what? She says, Jeremy, do you know what time it is? And he says, I'm sorry, I forgot. And she sighs and she says, okay, I think I might have stuff to make my seven layer cookies. At which point Jeremy delivers the zinger. It's for Spanish class. It has to be Guatemalan.

You know, I have such sympathy for high school foreign language teachers. They work so hard to make learning Spanish appealing to kids who don't think they'll ever need to use the language, but it's often parents who pay the price for that.

Okay, moving on to emotional control, the ability to manage emotions in order to achieve goals, complete tasks, control a direct behavior. This one, the window of opportunity for this to develop well is during the first 12 to 18 months of life. And this -- you know, all of these, we're hardwired to develop these skills, but certainly having a conducive environment helps. This one, as much as any, really depends on what environment the infant finds himself in.

So an environment in which an infant has a consistent, reliable, nurturing caregiver who responds to their needs appropriately and in a timely fashion, as well as one who can manage their own emotions well, they're on probably a pretty good arc to develop good emotional control. In the absence of that, this may be more challenging.

If any of you work with kids with reactive attachment disorder, it's this executive skill which is particularly impaired with that population. You know, kids who enter the foster care system early or spent the first five years of life in a Russian orphanage or on the streets of China, where they don't bond with a caregiver. And we always think about reactive attachment disorder as connected with that bonding. Well, the whole issue is emotional control.

But even at a less extreme level, I think -- you know, my background initially was learning disabilities. And working with kids with LD, you know, it slowly dawned on me that kids with LD actually need better emotional control than, you know, typically developing students. Why? Because no matter how well we teach them, they are going to encounter more failure experiences in school than typical students. And so they need to have ways to manage their failure or their feelings about that failure.

So one of the strategies we use with kids with poor emotional control is self-talk. What could you say to yourself to get over your frustration, or to channel your frustration or anger or disappointment, all of those things?

But there's a flipside to that as well. Not only do we want them to use self-talk to sort of manage and contain negative feelings, but if we can teach them to use self-talk to access positive feelings, then that's another tool that they have available to them.

And this came to me when my son with the attention disorder after he returned from his freshman year in college. And you know, I was kind of surprised he did as well as he did because we live

in New Hampshire and he went to college in Ohio. And he didn't have his mom going with him to make sure he handed in his papers on time, you know, the things I'd done for him in high school.

And so when he came home for the summer, I said, Aaron, you didn't have any incompletes. As far as I know, you met all your deadlines. You know, you got good grades. You were able to finish stuff on time. You know, those were problems for you in high school. What changed?

And he told me a number of strategies which he used, all of which I pass on from time to time. But the one that's relevant to this was he said, mom, when I'm writing a term paper -- and I actually love that name because for kids with ADD, term papers are interminable. You know, they feel like they go on forever. He says, when I'm writing a term paper and I just want to quit, I tell myself, you can't walk away from this. And so that's a way of channeling positive emotions, that mantra.

And I have to say, in the years since he told me that, the number of times I've been in the middle of writing a psychological report and I just want to quit, and I'll tell myself, you can't walk away from this. It's actually fairly powerful. It just keeps you going a little longer to get, you know, a little further along. If you can help kids come up with their own statements, you know, it doesn't have to be you can't walk away from this, but something they could say to sort of keep themselves in the game that would help.

Flexibility. Now this is -- this is an interesting one for a couple of reasons. First of all, you know, I mentioned that these skills take 25 years to mature. In fact, this one seems to -- looking at the developmental research that we have available to us, it seems to max out around age eight or nine. So it's reached maturity, whatever that is, around that age. So if you have an inflexible child who's eight or nine, that's where they're going to be.

We can teach them coping strategies, but it almost feels like a personality trait to me that you're -- that you're flexible or inflexible. We can measure it as young as age three or four. So we can discriminate between flexible and inflexible kids even as young as that. I think we could probably identify it even in some younger kids. I think some of the infants we call colicky may end up being pretty cognitively inflexible kids. Because those are kids for whom everything has to be just right. You know, the temperature in the room, what their clothes feel like, what they're tasting, the sound level, all of that. And inflexible kids have trouble adjusting to those kinds of variations.

The other reason this is interesting is I started out by saying that kids with ADD tend to have a ton of different executive skill weaknesses. This is not necessarily a weakness for them. You know, for many kids, ADD is a strength, right? I mean flexibility is a strength. They're go with the flow kinds of kids.

But which population of kids is flexibility -- inflexibility is sort of a hallmark of? Yeah, autism spectrum kids for sure. I mean, it's not technically written into the DSM IV criteria, but this is huge. A couple other populations to think about, though. I mean, kids with non-verbal learning disabilities, which are probably some kids that sort of fall along the spectrum as well.

But other -- think about kids with anxiety. If you're inflexible, you know, life doesn't go according to plan every day of the week. And every time something unexpected happens, you get anxious. And so it looks like an anxiety disorder. If you back it up, what you may see is inflexibility.

And then the other kids to think about are kids with behavior disorders. We have kids with oppositional defiant disorders. And I'm not saying that every ODD kid is inflexible, but if you -- what jumps out at us is the tantrum or the meltdown. But if you back it up and say, what was the trigger? What caused that kid to tantrum? What you often find is someone asked them to be more flexible than they were capable of being. And the only way they have of showing that inflexibility is with their behavior.

Okay. Moving on to sustained attention. There's a key phrase in this definition, the capacity to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom. Yes? Oops, what happened there?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: Okay. You know, it started -- I think it started to unplug. Let me see if I can just -- yeah, thanks for pointing that out to me because I may miss that. Okay. All right, so the key phrase is -- hopefully that will go away. Yeah. In spite of distractibility, fatigue, or boredom. You know, I still have parents in my office who say, my kid can't have ADD. They can play video games for hours. Well, video games don't involve distractibility, fatigue, or boredom.

So what I tell parents is it's not that kids with ADD can't pay attention. It's that they have trouble making themselves pay attention. And it's that making yourself do something that's sort of the hallmark of ADD.

That one, along -- oh, actually let me show you my slide about that. I have two sons. My younger son doesn't have ADD, lives in Japan. He sent me this PowerPoint slide awhile back and he said, mom, I think this has something to do with the kinds of presentations you do. And I emailed him back and said, yeah, I think so too, but there was something wrong with the transmission. Could you send it to me again? And he said, mom, that's the point.

So this kid was obviously charged with coming up with a PowerPoint that would explain how the world views ADHD kids. And he's got one picture and one label. Couldn't find a second picture and he stopped in the middle of the second label. And I just love this now that I understand it because it really does capture what ADD feels like to kids. I mean, when they run out of steam, man, they stop on a dime. They just can't pull themselves together to continue.

And who knows, it's possible this kid got stuck trying to find a picture for what society thinks about kids with ADHD and abandoned it at that point. Or maybe he lost interest. I mean, who knows? But that's what happened.

Now in terms of when sustained attention emerges, that one's difficult to say, in part because attention is really complicated. There are different kinds of attention. There's divided attention. There's the ability to shift attention. And again, sustained attention. And so different kinds of attention may emerge at different ages.

But that combined with this next one, task initiation, which is basically the opposite of procrastination, both of these I think are hard to tell when they emerge in childhood because, as parents and teachers, we make modifications to just naturally accommodate kids with short attention spans or kids who don't initiate on their own.

So there's no, you know, 1st grade teacher out there who hands out an entire folder of work to her class first thing in the morning and says, see me at lunch. Because they know that, you know, 1st graders aren't going to make it all the way through the morning without things being broken up and without teacher attention and that kind of thing.

And there's no, you know, parent of a preschooler who would say to their kid, could you clean up your bedroom sometime today? Because unless parents say, okay, it's time to clean the room, kids aren't going to start. So again, task initiation is an issue in the context of non-preferred tasks. You know, kids have no trouble initiating if it's something they want to do. It's, can they make themselves get started?

Now in terms of sort of the developmental trajectory, you know, one of the things that strikes me about task initiation is that I think this -- and we don't -- I don't have a developmental study that demonstrates this, but I think this is one of the last developing skills to mature. And actually, I have some evidence for that. You have in your packet a self-assessment you can take. If we have time, I may fit it in today. But if not, do it on your own, where you can assess your own executive skill strengths and weaknesses.

And it's basically -- it's not norm referenced. You do it and look at your three strongest skills and your three weakest skills. And then think about how you use your strengths in your daily life or managing your home, and what you do to compensate for whatever weaknesses you have.

But every once in a while, I've collected those rating scales from an audience, you know, like yourself, a professional audience. And I figure out what the average score is. And when I've done that, task initiation ends up being the weakest skill, you know, for a fairly, you know, educated, adult population.

And you know, I see that in myself. This is one of my strengths, but my memory is -- and I was a very good student in high school. But my memories of high school were of dreading Sunday nights. You know, why? Because my English papers were always due on Monday. And did I start them on Thursday or Friday? Did I even start them Sunday afternoon? No, it was Sunday night. So you know, I mastered this skill, but it was a long time in coming.

And so the cartoons that sort of illustrate this is Jeremy's mom is saying, how's that big English lit project coming along, Jeremy? He says, fine. She says, when's it due? He says, Thursday. She says, this Thursday? How far along are you? Jeremy says, what day is this? She says, Monday. He says, in that case, I'm two days away from starting it. At which point Pierce says, procrastination is like kryptonite to moms.

But of course, poor task initiation has an impact on parents, so Jeremy's mom says, Jeremy, you can't procrastinate like this on your schoolwork. He says, why not? She says, it's too much pressure. He says, I work best under pressure. She says, I meant it's too much pressure on me.

And again, as a parent of a kid with an attention disorder, you know, my son's deadlines in high school were way more stressful for me than they were for him. In fact, you know, many years afterwards, it slowly dawned on me that he used my stress level to activate him. You know, once I got stressed out enough, that would sort of give him enough energy so he would get started. You know, if

I'd known that at the time, I would have gotten stressed out way earlier in the process rather than waiting until the night or two before it was due to get stressed out.

Okay, so moving on to planning and prioritization. There are two elements to this. Planning is sort of straightforward. And a roadmap is a good metaphor for that, how to get from point A to point Z, either in time or space. The prioritization piece is a little more subtle. And you sort of have to stop and think, how does this show up? And with some of these skills, you know, I've come to appreciate how important they are by working with people who don't have them.

So prioritization, for instance, I was working with a kid awhile back, and I go through a sort of structured interview to find out their perceptions of how they manage different kinds of academic tasks. So I asked this kid, so tell me about note taking in lecture class. He was 15. Tell me about note taking in lecture classes. How do you deal with that? And he said, oh, I have the hardest time with that because the teacher's talking and talking, and I don't know what to write down. You know, I don't know what's important, so I try to write down everything to make sure, you know, I've got it all.

And then a few minutes later, I said, tell me about studying for tests. How do you handle that? And he said, oh, I have such a hard time studying for tests because I don't know what's going to be on the test. You know, I don't know what to study. And so I try to study everything to make sure I've sort of got it covered.

If you work with kids with ADD, you may be able to tell that that kid I just described did not have an attention disorder. And it's not the kids with ADD are great planners or prioritizers. It's in the absence of that, they just sort of throw up their hands and say, oh well. You know, I don't know what's important when the teacher's talking, so I'll just sit and listen and hope I soak it up. Or I don't know what to study on the test, so I just, you know, hope that I soaked it in in class.

I have a questionnaire that I use. It's in one of our books, the Executive Skills in Children and Adolescents book, where I ask kids about their strengths, how they spend their spare time, their talents, what they'd like to become an expert in. My intent with that is to not just focus on problems, but to try to understand the child's strengths. But on the back, I ask some questions about how they think they learn best.

And one of the questions is, what is your preferred study environment? And I list a bunch of options. You know, study hall, resource room, library, coffee shop, bedroom, with friends, all of those

things. And then I leave a space for other. And this kid a while back had checked off other. And then in the line next to it, he wrote, don't study/wing it. I thought, man, that's as honest as they come.

So in terms of -- helping kids prioritize is not an easy task. And it's not just note taking and test taking where you see it. Even kids writing papers, you know, they may go off on tangents or they can't figure out how to start the writing assignment because they don't know what the key points they want to make are. All of that is prioritization.

In terms of the planning piece, you know, we can see signs of planning even as young as preschool. You know, a preschooler is doing a multi-piece puzzle and they're starting with the edge pieces? That's planning. A second or third grader who's saving up money to buy something that they want, you know, that's planning.

But I don't think the kind of planning that we expect kids to do in terms of long-term -- multistep, long-term projects, you know, I think they can begin to do some of that around fifth grade, but they're going to need a lot of support with that. And I mean, that's just my sort of rough guidelines. But I -- but I will say when I talk with parents of like second or third graders and those kids are being assigned those kinds of multi-step projects to do, I mean, the parents tell me how frustrated they are because their kids don't know how to do that.

And so what -- you know, if teachers are assigning those kinds of projects, they need to keep in mind that what they're -- what they're really doing is tapping into parents' planning skills, you know, rather than kids. And it may be that the final product is the parents' rather than the kids'.

Organization. This -- I used to use the Webster's definition, but this was the one that made the most sense to me. The ability to create and maintain systems to keep track of information and materials. There's a key word in this definition. Anybody know what it is? Yes, maintain. You know, organization is one of my weaknesses. And so, you know, I often say I am great at creating organizational systems. Every four weeks, I have to come up with another system for keeping my study clean because the last one didn't work.

This one I do not have developmental or longitudinal data on, so I don't know what happens with organization over time. But it strikes me as this one's similar to flexibility in that it seems to emerge pretty early in terms of being able to differentiate between organized and disorganized kids.

So let me ask you all, how many of you think of yourself as being pretty organized? How far back do you remember being that way? Always. Yeah, that's the answer I get most often is always. Those of

you who are disorganized, I won't ask you how far back you remember being disorganized, but I will say I have vivid memories of my mother getting on my case when I was like four or five about my messy bedroom. And you know, she stayed on my case from then through high school. And then when I got married, my husband took over. So if you're looking for an intervention strategy for disorganized people, getting on their case isn't going to work, at least in my personal experience.

And I will say if this is something that's important to you, it's a labor intensive process. There's no way to set up an organizational system and just hand it over to the kid. It involves -- because that system can fall apart, you know, in hours sometimes. And certainly from day to day. So if this is something that's important, keep in mind you're going to have to really sort of -- you know, maybe my mother's mistake was that once a week, I had to clean my bedroom. You know, it's possible that if every -- at the end of every day, she'd said, okay, let's pick up what's in the bed -- what's on the floor, you know, that might have worked better.

Here we go again. Sorry about this. It'll come back. The next one is time management. We're reaching the end now. I've got three skills left, at least according to the definitions that Dick and I use. What you'll notice with the ones towards the end is they're more complicated executive skills, and they actually have smaller executive skills embedded in them.

And so time management is basically task initiation, sustained attention, and planning. With one additional element to it, and that is time estimation, the ability to estimate how long it takes to do something, which is sort of unique to the time management piece.

And this is another one where, you know, if you notice someone who can't estimate time, you know how critical a component that is to time management. Because if you don't know how long it's going to take to do something, how do you know when to start that homework assignment? How do you know when to leave the house in order to get to school on time or to an appointment on time?

I actually think time estimation is something that can be taught just by having kids practice. So if you've got one of those kids who has problems with time estimation, take anything. You know, take their math homework. How long do you think this is going to take? You know, let's see. Or how long do you think it'll take you to get ready for school, or to get from here to, you know, whatever? Now that's your estimate. Let's check it out and see if that's accurate.

Now when people have poor time estimation, I find they do one of two things. More often than not, they underestimate how long it's going to take to do an effortful task. So they'll say, oh, that poster

I need to do for my health class, I can leave that till the night before it's due. That's not going to take more than half an hour. And then when they actually sit down with a poster, they realize, oh, whoa, this is going to take way longer than that. First I have to gather the materials, then I have to think of the information I want to put on the poster. And I may have to do some research with that. And then I have to think about presentation and how I want to present it, build in time for mistakes. You know, all of those things takes way longer.

On the other hand, I've also seen kids with poor time estimation who overestimate how long it's going to take to do an effortful task. And then they're overwhelmed by it, they don't want to get started on it because they think it's going to take forever. And that really came to me when I was working with I think it was an eight-year-old whose mom said, we fight about math homework every night. She said, in fact, you know, I feel like we fight longer than it would take him to do the homework.

So I finally said to my son, how long do you think this is going to take? And the kid said, oh, it's going to take at least an hour. Well, in the life of an eight-year-old, an hour is a long period of time. And the mother said, well, let's see if that's true. And they wrote down the time he started the math worksheet and the time he finished it. It took ten minutes. The kid was stumped. He had no idea he could get it done that quickly. So there are reasons for helping kids improve time estimation, you know, on both sides of that.

And another way to deal with time estimation, I had a guy in a workshop I did in Texas a few months ago. He said his daughter was in a high school class where the teacher handed out a long-term project, had a lot of experience with that particular assignment. And he said to the class right up front, this will take you two and a half hours, so build that time in. And if you think you work a little more slowly than the average, then build in more time. So that's a role teachers can do as well in terms of helping kids understand how long it's going to take to do something.

I also had this sort of flash of insight about time management recently. When it dawned on me that, you know, for the most part, we do not ask young kids to manage their own time. You know, there's no -- there's no parent of an elementary school kid who said to them, oh, you can go to bed whenever you want. Just make sure you get enough sleep. Or you can get up whenever you want in the morning. Just make sure you're ready for school on time.

No, we do that for them. We decide when bedtime is. We figure out how long it's going to take them to get ready for school in the morning. And we adjust that time based on how fast or slow our kids are. We do all that for them.

And then they hit middle school, and suddenly we expect them to do all that for themselves. And it becomes way more complicated in middle school for two reasons. First of all, they are no longer to have just one teacher. When you have one teacher, that teacher sort of parcels out the homework assignments so there's no, you know, huge night when you've got a ton of things due the next day.

When kids hit middle school, they have multiple teachers. They may have five or six different teachers assigning projects, quizzes, tests. And they may have two or three -- two or three huge things due all at the same time. You know, Thursday and Friday of one week. We don't teach them how to sort of back that up, say, you know what? You can't study for a huge test and do a long -- finish a long-term project and, you know, do those 30 math items all on Thursday night. It's not going to work that way. Yeah?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: You know what? Yeah, let me take your question, and then what I'm going to do is I'm going to build in question breaks, okay? So yeah.

AUDIENCE MEMBER: Just from a parent perspective, I'm just wondering if [inaudible]. Because they need to start developing a sense of time and awareness.

PEG DAWSON: Yeah. Yeah, and I think there are ways. It's funny, you know, I am always struck by how when I look at what people are doing, you can actually start teaching these skills fairly young. I did a workshop in a school district in New Hampshire, where they're using Reading Streets, an approach to teaching reading which I hadn't heard of.

But one of the things they teach kids is they build two -- three 20-minute segments into their day. You know, there's a 20-minute segment for silent reading. There's a 20-minute segment for writing. And I forget what the third one is. But they said the teachers will -- I mean, they basically say, this is what you're doing for 20 minutes. In fact, they said some teachers will actually put on a hat that shows, okay, this is don't interrupt me time. And so they're actually teaching kids as young as 2nd grade what 20 minutes is like. So yeah, I think you can start these, you know, at a young age.

Okay, the next -- the next one, goal directed persistence. Yeah, I'd rather not because I've got other stuff on my map, but okay. Yeah, okay. Yeah, and there's another one there. Oh, you've got it all. Yeah. Yeah, unfortunately I changed the PowerPoint, but thanks. Okay, yeah. You know what? Inflexibility is one of my executive skill weaknesses. Once I get used to working with something, it's really bad.

Okay, so moving on to goal directed persistence. This one, this one is a late developing skill. And it's not that young kids don't have goals. I mean, you can ask a 2nd grader, you know, what do you want to be when you grow up? And they'll tell you something.

It's the rare 2nd grader who actually follows through on that one thing, and that's because there's a huge difference between having a goal and goal directed persistence, which is have a goal, figure out what you need to do to get to that goal, and start today to get there. That's why this is a late developing skill.

The kids that I work with -- and I mean, it's late high school before I see this skill becoming -- beginning to emerge, you know, for kids with attention disorders or other kids with executive skill weaknesses. But I even think among kids in general, it's not unusual to get kids well into high school before they really sort of make the connections between what am I doing now and is that going to get me to my long-term goal.

And I really came to appreciate goal directed persistence even more a few years ago when I ran across a related psychological construct which is called future orientation. And what that refers to is -- and in fact, I ran across it through reading some articles by Laurence Steinberg, who actually is at Temple University, who testified before the U.S. Supreme Court when they were considering the issue of the death penalty for juveniles.

And he made the argument that if you think that the death penalty acts as a deterrent for teenagers, you don't understand how radically different the teen brain is from the adult brain. They don't have that concept of the future. They do not have the concept of if I engage in this behavior today, it's going to have lifelong ramifications for me and anybody else.

And you know, it was on the basis of his testimony as much as anything that a very conservative Supreme Court struck down, you know, the death penalty for teenagers. So that's how -- I mean, you know, it's not just me saying this. There's some pretty solid evidence that this is -- teenagers develop this skill late.

Now I don't work with that population, but when I read about, you know, his work and thought about future orientation, I immediately thought about homework. You know, because those are the kids that I work with. And I thought, you know, if you don't have future orientation, what would compel you to do homework? It's not particularly fun, for the most part, unfortunately. And you do it -- teachers assign it because they have some skill that they think it's important for you to learn and you need practice at. But it's not particularly appealing to kids. And they don't appreciate how important that skill is down the road.

So you know, I also thought about, you know, myself and my older brother. My older brother as an adult, we figured out he had an attention disorder. I mean, we grew up in the 50s and 60s, and no one talked about that in those days. But as an adult, we figured out he had an attention disorder as a kid. He was four years ahead of me in school. To me, he was the kid who never did homework. I always did homework.

Okay, so does that mean I had future orientation and he didn't? No. What it means is the natural rewards and punishments that were built into the school and home environment around homework worked for me and didn't work for him. And so I wanted to get good grades on report cards. I didn't want to be embarrassed by the teacher for not handing in my homework. You know, I didn't want to be asked to put a problem on the board for my homework assignment that I didn't do. You know, none of that was enough to persuade my brother to do homework.

So we really need to help understand those kids who aren't doing what, you know, we think they should be doing, you know, in the context of sort of future orientation. But that helps explain all kinds of teenage behavior which, you know, may not make sense to us. Teen suicide, for instance. You know, why do teens kill themselves? Because life is terrible right now and they think it's always going to be terrible. They can't see beyond that.

I mean, that was the -- that was the intent behind the gay lesbian transgender population, their It Gets Better project, you know, where they created videos of adults who are gays and lesbians saying, you know what? There's life beyond high school and it gets a whole lot better.

Or just one other example, which I love this because someone in a workshop I did in Minnesota last year came up at the break and said, I think this is what you're talking about. This, I don't know, people in the front might be able to see it. The headline of this article is called The Case Against

Stretching Earlobes. And there's this guy with this giant earlobe. And you're right, I mean, there's future orientation again.

So this article said this guy said, you know, his parents advised him against stretching his lobes. He says, but you're at that point in your life when everything your parents tell you is wrong. Then one day, you realize that everything your parents have been telling you is right. So not coincidentally, at the age of 24, he's decided he's going to get this surgically corrected. You know, why 24? His frontal lobes are mature now. He's better able to make decisions, good decisions.

Okay, so moving onto the last one, metacognition. And this is -- this is sort of higher order abstract thinking. So it's the ability to sort of stand back and survey the entire problem or the entire situation, and to figure out what's most important, what's not. I mean, again, it incorporates all those other executive skills. But it's that ability to sort of judge what's going on in the moment and to build in, you know, self-evaluation. How am I doing? How did I do? Am I on track? All of those things are metacognition.

And then, again, that abstract thinking, that if-then thinking. Again, I go back to Piaget and his concept of the stage of formal operations. You know, when kids are able to do cause-effect kind of thinking or if-then kind of thinking, which my recollection is around age 11 is when you first see that kind of thinking.

But even there, it's just emerging. And so it's a problem if we expect kids to have it at a high level. I ran across an article on summarizing a while back that looked at kids' ability to create a summary at various ages. And a summary requires metacognition because you have to take a long passage, condense it down to two or three sentences that capture the gist of the passage.

And so what this study found was that around 17% of 5th graders can write a good summary. Around 28% of 8th graders can, 36% of 10th graders can, only 50% of college students can. And with adults, 85% can. So what that means is there are a good 15% of adults who can't write good summaries. And so which fits, again, with that Piagetian research that suggests there's a good chunk of adults who never acquire metacognition.

And this is the skill, again, kids on the spectrum, you know, are very weak at metacognition. And this is the one where, as I'm looking at the national core curriculum, I'm worried about it. You know, do we know how to teach this skill to kids whose brains aren't naturally oriented towards this kind of thinking?

And what's going on in the brain that allows this kind of thinking to take place around, you know, age 11 beginning and then throughout adolescence is there's an important brain function called pruning that allows this to happen. We're born with more brain cells than we'll ever use. And at a couple of key points in the developmental period, we slough off extra brain cells. You know, one is during the preschool years, and the second is during adolescence.

And there are a couple things to understand about that. So whatever teenagers are spending all their time doing, you know, those are the brain cells that are getting preserved. So if they're spending hours and hours and hours playing video games, you know those brain cells are being preserved. But what are they not doing? And are they sort of shooting themselves in the foot in terms of later developing those skills like deep reading comprehension activities or things like that?

But the key piece of about pruning is when you're getting rid of all these extra brain cells, the ones that remain work much more efficiently. And when you think about abstract thinking, it's making connections. You know, connecting this idea with that idea, this idea with that past experience. What you learned in history was something you learned in science. And all of that, it's shooting between different regions of the brain as quickly as possible. And so when you're getting rid of those extra brain cells, it just makes that passageway much more smooth and efficient, so that's what's going on there.

Okay, let me just double check the time here. Okay, we have an hour. Any -- I'll take two or three questions just about my definitions here, and then I'll move on. Yeah, go ahead.

AUDIENCE MEMBER: Do you have any comments about [inaudible]?

PEG DAWSON: Okay, yeah, the question was if I have any comments about Cogmed. And actually, Cogmed, they purport to strengthen working memory. And they're pretty clear about that in terms of it's not a general executive skill development piece, but working memory.

Now that still leaves the question of, does it work for working memory? And when their -- when their research first came out, you know, they were using one study that used the ADHD rating scale as a measure of -- as an outcome measure. And what they found was I think there was improvement on teacher [inaudible] scales or not parent, or the reverse. I can't remember what. And I thought, man, that's pretty flimsy evidence.

Since then, I mean, they've done a ton more research, but I just ran into a summary article that looked at all their research and tried to draw conclusions from it. Science Daily is where I found this if you're familiar with that website. If you go to Science Daily and put Cogmed in their particular search

line, you will come to it. Because it basically says what we do know for sure is that Cogmed enhances a child's ability to do the kinds of tasks that Cogmed is training them on. They're computer games. So how does that translate into daily working memory? I think the jury is still out on that.

I did a workshop in LA last year where -- I always ask my audience when that question comes up, anybody in here have experience with it? And this one parent said, well yeah, I put my son through it. And I said, how did it work? She said, well, let me put it this way. My son's at school today. His assignment book is at home. Okay, question in the back?

AUDIENCE MEMBER: What about programs like Brain Balance, where it's purported that if you do certain movements or certain things, that the [inaudible] side of the brain is strengthened, and issues like ADHD or autism, their symptoms are lessened?

PEG DAWSON: Okay, so and you're saying it's called Brain Balance?

AUDIENCE MEMBER: Yes.

PEG DAWSON: Okay, I'm not familiar with that, and so I can't comment on that. I mean, certainly everything we do affects the brain, right? And in fact, I'm going to talk about that next to show how the brain develops skills. What I'm -- what I'm not sure of is the relationship between whatever is the outcome of those and any real world functionality to it. And as I say, the studies I've seen have been skeptical of the ability that practicing those specific skills in those training programs carries over to real life demands. So that's the issue. Any other -- I can take one more question. Yeah?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: See, yeah, and the question was talking about anxiety disorders. Is there any evidence that the kinds of interventions we're recommending around executive functioning will improve that? Well, a couple of comments. And one is that there's no psychological disorder out there that doesn't have some implications for executive functioning. Certainly emotional control and anxiety, flexibility anxiety, also working memory and anxiety. So if you're really anxious, you know, you have trouble remembering anything. Depression, task initiation. You know, those go together.

My general response to -- I'm not advocating any sort of general training programs for anything. I'm much more of an advocate for let's look at the specific child and the specific behaviors of concern, and create an intervention that may -- I mean, we may want to focus on executive skills. And we may want to -- certainly the strategies I'm going to talk about this afternoon apply to anxiety. And I'll give you

examples of how that might work, but I'm much more let's look at the individual child rather than a broad program based on that.

Okay, so let me go -- actually, let me just -- I love this cartoon because it sort of wraps up the point I've tried to make so far. You know, why is it important to help kids develop executive skills? The title of this cartoon is Dale's Fourth Grade Education Pays Off. And the prospective employer is saying to Dale, the job you're applying for will require you to know long division, state capitols, and cursive writing.

So if we're only focusing on narrow curriculum standards, we're not going to get kids ready for an adult life. Obviously this would be much more accurate or realistic if you were saying the job you're applying for will require you to know planning and prioritization, organization, time management, those kinds of things. Which is, you know, why I'm as passionate as I am about executive skills, because I think these really are the outcome skills that we want kids to develop.

Okay. The next thing I'm going to talk about is what's going on in the brain. Yeah, I know, I did it on purpose because my brain froze. So when you see that happening, you'll know that that's what I'm doing. Now I just need to find where I stick this back in again. There we go.

So I just want to give you some information about the brain. Executive skills I already said are located in the frontal lobes of the brain. The derivation of the term because people get confused about that. Dick and I coauthored a couple books for a corporate audience and our editors -- our publisher said, you can't put executive skills in the title. That'll really throw people because they'll think you're talking about the skills executives need, CEOs need. There's some overlap, obviously.

But the derivation of the term is these are the skills that are required to execute tasks. So that's where that comes from. It's output rather than input. You know, when we think about a processing disorder, those of you who work with kids with learning disabilities may think about, you know, the two parts of the left hemisphere of the brain that don't work right in kids who are dyslexia -- dyslexic. You know, there's a phonological processing piece and a word retrieval piece.

We know that right hemisphere functioning seems to be particularly involved in math reasoning. But this is all output. This is, can you produce? It's the last part of the brain to develop in utero. So if there are any problems immediately before, during, or after birth, executive skills are going to be impacted, or likely to be impacted.

We've known for some time that being born premature puts you at greater risk for an attention disorder. I ran into a study a while back that actually narrowed that down even more. If you're born eight weeks premature, that puts you at greater risk for ADD than if you're born two weeks premature. If you're born two weeks premature, you're at greater risk than if you're born at term.

So the umbilical cord wrapped around your neck at birth, loss of oxygen, it's going to be the frontal lobes that are most likely impacted. It's also the part of the brain that's susceptible to some of the most common types of head injuries. And I'm talking even closed head injuries. You don't need to crack the skull open. You can be wearing your seatbelt in a car, but if the car stops short, the seatbelt holds your body in place, but the grey matter of your brain is still smashing up against the hard part of your skull. And the damage can be temporary or permanent, mild or severe, and we have no way of knowing at the time of the accident.

And obviously then there's sports related injuries. I mean, the NFL has 3,000 lawsuits against it right now in terms of the dementia associated with football. But it's not just professional football players. We're now finding that even high school athletes are at risk.

There's some people at Boston University who have estimated that high school linemen, you know, on a football team suffer between 1,000 and 1,500 sub-concussive blows per season. And it's not just football. It's soccer. It's lacrosse. It's hockey. And so heading the soccer ball can cause concussions. And as soon as you've had one, that puts you at greater risk for subsequent concussions.

The frontal lobes are also the last part of the brain to mature because the brain matures from back to front. So that's why we're talking that 25-year span. How many in here, you know, work with kids with attention disorders in particular? Okay, not that many. How many -- how many work with kids on the spectrum or live with kids on the spectrum? Okay, so there are more related to that.

I'm going to skip through some of my presentation on ADD then, but just to make -- okay, let me go back to this because I have to tell you what I talk about in terms of ADD, Barkley -- and I'll just give you a capsule description of this. Barkley talks about two different kinds of attention. He talks about goal directed persistence and context-dependent, sustained attention. And he said kids with ADD have one of those without any problem, and they're really missing the other.

So they have -- they have context-dependent, sustained attention, which means the more -- their ability to attend depends on what's happening right here and right now. So the more novel a task

is, how interesting it is to them, maybe if they're extrinsically provided consequences. And you don't have this in your handout packet because this is the piece I added in.

So if the task is fun, interesting, or immediately rewarding, kids with ADD can attend without any trouble. That's why they play video games for hours. You know, when I talk with teachers, you know, these are kids who love hands on, who love the science labs, who can't write up the lab report. At the high school level, you know, they're great, engaged in class discussions, and then they don't do their homework. Because that's goal directed persistence.

So my brother, ironically, the one I described as having ADD and never did homework, grew up to be a teacher. So I said to him at one point, okay Mike, I know you have ADD. What do you do to keep the attention of kids in your class? He teaches high school history and government. And so this is a quote from him. He said, it's my job to be the most exciting thing happening in that classroom.

And here's a picture of my brother. He was 62 when I took this picture. He's now 66. He's still teaching. He will stand on his head literally in the classroom. Obviously not every day, but if he needs to grab his class' attention, that's what he does. Obviously that doesn't work for everybody. And my strategies this afternoon will get more, if you don't have this kind of personality or these kinds of motor skills, what do you do?

But let me just give you two other pieces of information about what's going on in the brain of kids with ADD because it really helps me understand why things like homework are so difficult for them. We've known for some time that dopamine is the neurotransmitter involved in ADHD. There's reduced blood flow in the frontal lobes of the brain, which means reduced dopamine levels, and therefore problems with focus and self-control.

We've also found, though, that dopamine is the neurotransmitter involved in the reward center in the brain. And so what that means is if kids with ADD are producing dopamine at a reduced level, because dopamine enhances the level of interest you attach to a stimulus, if you're releasing dopamine at a lower rate, you find it more difficult to sort of work up the enthusiasm to do something that you don't find naturally appealing. That's why kids with ADD have trouble doing homework. Not enough dopamine. It's basically not enough gas in the tank.

And then one other piece of information. This is another disadvantage that kids with ADD have is that they have a fault off switch for mind wandering. There's a technical term for that as well. But

what this study shows is that when the brain is at rest, it wanders. And it's just picking up whatever is out there in the environment.

From an evolutionary perspective, that makes sense. Okay, back in the days when we were hunters and gatherers, if we were taking a break and sitting with our back up against a tree, we still needed to scan the environment at all times so that we would see very quickly if there was danger appearing, or dinner for that matter. At the point where danger or dinner appears on the horizon, the typical brain turns off the mind wandering and hyper focuses so we can escape from the danger or approach the dinner.

Kids with ADD also want to focus on whatever the danger is, but they can't turn off the mind wandering, so they're still taking in tons of information from their environment. You know, when I read this, it really helped me understand my son and the experience we had when he was in high school. We were having this major argument. I think he was trying to convince me he should be allowed to do something, which I didn't think was something I wanted him to do. He was pacing back and forth in the living room and gesticulating wildly, and coming up with a very cogent verbal argument for why he should be allowed to do whatever it was.

And on the bookcase of the side of the living room, I had purchased something recently and I put it there. It was a vase or something. It wasn't particularly interesting, but it was new. And right in the middle of this argument, he looks over and he goes, oh, look at that. And I remember at the time thinking, where did that come from? Because he'd been -- you know, this emotional argument he was fully engaged in, and suddenly the motion disappeared and now it was curiosity.

So when I read this, you know, then I appreciated it. He's a -- he's a manager at a fair trade coffee company. His employees love him, but they gave him this little squirrel for a gift. If any of you saw the movie Up, where the dog is running around and goes, oh, squirrel. So apparently my son still has this problem at the age of 33.

Okay. Let me talk about what's going on with the brain. You know, I've already mentioned pruning, but another critical skill, and this happens, you know, from birth on is myelination. And what you see there is an electron microscope picture of nerve cells. And there's a dark core and a lighter piece on the outside. And that's myelin. And the darker core is the nerve cell. Or here's another picture of it. Nerve cells are the largest cells in the body.

And every time a nerve cell fires, it's yellow in this picture, this fatty sheath called myelin wraps itself around the nerve cell. And the more the nerve cell fires, the thicker the myelin gets. And it acts just like insulation on an electric cord. So the thicker the myelin, the faster the impulse travels. The faster the impulse travels, the better the skill.

And obviously that doesn't just apply to -- sorry, I'm going to have to change this again. That doesn't just apply to executive skills, but applies to all skills. So all skills improve with practice. The more you practice, the better the skill.

And the reason I have a picture of a woman playing tennis here is I got this information from a New York Times Sunday magazine article written by a sports writer, who got curious to know why an inordinate number of top seeded tennis players in the world came out of one tennis school in Moscow. So he traveled to that tennis school to try to figure out what's going on here that's different.

And he found when he got there, he found this little 72-year-old lady teaching tennis to kids as young as four or five. And he watched her to see what she was doing different. And what she found was -- what he found was that she was having those tennis players spend a lot of time just practicing strokes: forehand strokes, backhand, overhand, serves, whatever, without the ball. Just over and over again.

And so then he went to Johns Hopkins and said, why does this work? Because no other tennis instructor he'd seen was doing that. And they explained myelin. So they're getting the perfect stroke down. And obviously with tennis, it makes sense that you want it to be automatic. So the better you develop it, the faster you're going to be able to respond to the ball as it appears.

But interestingly enough, he noticed that no matter how skilled the teacher was and how talented the tennis players were, you know, kids as young as four or five, it was still taking them ten years to start winning tournaments. And so then he looked at that ten-year mark and he said, you know, is that important? And sure enough, he looked at other talents.

He looked at chess, for instance. You can find very gifted chess players at age five or six. They don't start winning tournaments against adults, you know, for about ten years. In fact, if you saw the -- if any of you saw the HBO special on Bobby Fischer a few years ago, you know, most chess experts maintain he was absolutely the most brilliant chess player who has ever lived. He was also a fairly disturbed guy, which is why HBO did a special on him. But I was interested to see in that special, Bobby Fischer started playing chess at age six. He won his first tournament at age 15. So the most brilliant chess player who ever lived shaved one year off that ten-year mark.

And what does that mean, ten years? What does that translate into? 10,000 hours of deliberate practice, which means it has to be practiced at the right difficulty level: not too easy, not too hard. And 10,000 hours, what will that take you to get there? Ten years, six days a week, three hours a day.

Okay, now I'm not arguing that we should, you know, train kids to win executive skills tournaments if you could design one. But even cut that in half. You know, ten years, six days a week, an hour and a half a day. These skills take time to develop.

And so -- and on top of that, there's the brain development piece as well. So the cartoon that sort of addresses this is scientific studies show that the decision making areas of the human brain aren't fully developed until the age of 25, Pierce is saying. And Jeremy says, so then we have an excuse for this. And Pierce says, factory installed. And you may be able to tell they built a skateboard ramp that goes from the upper floor of that house, down to the ground, and back up again. And they think this is perfectly fine.

There's a development psychologist named Abby Beard who's done some research on decision making that this cartoon reminds me of. It's very interesting, elegant research where she compares how teenagers make decisions compared to adults. And so what she does is she uses functional MRIs. So she hooks people up to electrodes on their brain and asks group of 13 and 14-year-olds to discuss, you know, certain activities. And again, she studies it around risky behavior. And does the same thing with adults.

So she would say, so what do you think about swimming with sharks? Does that sound like a good idea? Or what do you think about, you know, being at the top of a tall set of stairs? You know, I picture the Lincoln Memorial. Imagine you're at the top of the Lincoln Memorial and you have a mountain bike with you. What do you think about riding that mountain bike down those stairs?

So she asks 13 and 14-year-olds that question and watches to see what part of the brain lights up. Does the same thing with adults. And what she found -- I mean, when I first heard her tell this story, her findings were counterintuitive to me.

When she looks at the brains of 13 and 14-year-olds, their frontal lobes are lighting up all over the place. When she looks at adults, their frontal lobes aren't lighting up at all. Why's that? Because by the time you reach adulthood, that question is almost literally a no-brainer. You don't have to ask yourself. You don't have to stop and think. Whereas 13 and 14-year-olds actually do.

Imagine what they're thinking. Wow, that sounds like fun. I bet you could go really fast. But would you get hurt? And how badly would you get hurt? Would you wreck your bike? Would you wreck your knee? Would you get in trouble? So those are the things that they're debating, which is they're using their frontal lobes to do that.

Now the sad truth is if you took two kids with mountain bikes and put them at the top of the Lincoln Memorial and one said to the other, let's go, their frontal lobes wouldn't be lighting up either. They would be on that bike and down those stairs. Why? Because there's another set of research that shows that teenagers in the company of other teenagers are more likely to engage in risky behavior than if they're by themselves.

That's one of the reasons that a lot of states, New Hampshire included, has a graduated license law, where when you get your driver's license, for the first six months or so, you cannot drive with a friend alone without an adult in the car because of the concern about what's going to happen there.

And the other sort of complicating factor, as I said, the frontal lobes are the last part of the brain to mature after birth. But within the frontal lobes, the parts of the brain mature at different rates. So the part of the brain responsible for -- responsible for making good decisions actually matures faster than the part of the brain responsible for impulse control.

So unfortunately, what that means is as parents are teachers, you can sit around the kitchen table or sit around the classroom and have very good discussions with kids about what's risky and what's not, and how you don't drink and drive, and how you always wear your seatbelt. But in the heat of the moment, you know, all that goes out the window and they're sort of taken over by their impulses.

In part because emotions are managed by the limbic system and the self-control is managed more by the frontal lobes. And you need -- those two pieces need to connect. And in early adolescence, they're sort of on their own separate pathways, which is why you get so much emotionality with early teens. You know, their limbic system is plowing ahead, but they don't -- it hasn't hooked, linked in well to the frontal lobes to sort of put the damper on all that emotion.

And it's even more of a problem because, for some reason, probably evolutionary in nature, teenagers are drawn to taking risks more so than any time before or after. You know, so if you ask a 10 or 11-year-old about risky behavior or risk preference, they're pretty cautious. Sometime in the next two or three years, though, they're going to throw caution to the winds and they're drawn to taking risks. And then late adolescence into late 20s, that maturity kicks in and they become more cautious again.

So this is my favorite quote. It was from a Parade Magazine article. The teenage brain is like a Ferrari. It's sleek, shiny, sexy, and fast, and it corners really well. But it also has really crappy brakes.

Now I just want to show you one more piece here about brain development because I think this -- oh good, I can do that now. I think this sort of sums it up nicely. I'm going to show you actually a series of MRI scans of the brain all the way from age four to age 21. And the key for this is that an immature brain is colored yellow, orange, or red. Mature brain is deep blue or purple.

So you can see at the age of four, there's no deep -- there's no purple and there's only a couple blue areas related to vision and sensation. What I really want you to watch for, if you can see my cursor here, is the frontal lobes. And I'm going to quickly move from age four to age 21. And I want you to watch how long it takes for this part of the brain to reach -- it won't get to -- it won't get to purple, but it will get to deep blue by age 21. Okay, so watch.

Okay, so there we are. And basically it says, you know, even at the threshold of legal adulthood, you can see some areas of green here. There's still room for development. There may be a little purple there, but for the most part, even at 21, there's still room for increased self-control, increased -- better decision making, all of that.

Now just I want to take you back to age 13. This is my argument for why middle school is so challenging. I think part of the reason is we're expecting the middle school brain to look like this. You know, and it doesn't. It's just not there yet. And so we have to be thinking about how can we modify either expectations or supports or how we train executive skills to better match brain development around middle school.

Okay, so let me go back to the PowerPoint. And just one other piece, and that is gender differences. Here's the cartoon that sort of illustrates that. Jeremy's saying to his friend Viral, you're into a lot of stuff, aren't you, Viral? She says, well, I'm a high achiever if that's what you mean. She said, I can't help it. I just feel better when I'm accomplishing things. And Jeremy says, like filling out your college applications while you're still in the 8th grade? And says, I hate putting things off till the last minute.

Okay, so you know enough about our definitions of executive skills. You can probably peg Viral. You know, she's got good task initiation. She's got planning. She's even got goal directed persistence. She is a complete mystery to Jeremy.

So when I saw that, I thought, okay, so that's conventional wisdom that girls mature faster than boys, but is that actually true? I need data. So I started looking at the literature. And actually, the first thing I did was I picked up the manual for the behavior rating inventory of executive function, the BRIEF. How many are familiar with the BRIEF? Okay, most of you are.

It's probably at this point -- I mean, there are a number of different rating scales assessing executive skills. It's my -- it's the one I like the best because I really like the way the items are worded. It may not be the best psychometrically, but it was also pretty much the first one that came out, so I've had a lot of experience using it.

So I went to the BRIEF. And the first thing you notice when you pick up the manual for the BRIEF is that there are norms for boys and norms for girls. Well, that tells you something right there. When you give an IQ test, you don't have male IQ norms and female IQ norms. When you give achievement tests, you don't break it down by gender. So if they're breaking down executive skills by gender, you know, that tells you something.

And then I looked to see what the cutoff scores. You know, a cutoff score is above that cutoff score, you're in the danger zone. You know, that's the clinical range. And what I found was that the cutoff score for girls was lower than the cutoff score for boys because the overall level of functioning for girls is higher, so it took less for them to enter into the problem range. So if you're comparing girls to other girls, what you find is, you know, they can be at a higher level overall, but they look -- they look impaired compared to other girls. Whereas boys, it takes more for them to look impaired compared to other boys.

I did a workshop in western Illinois back in the fall and I had a lot of teachers in the audience. And one raised her hand when I talked about gender differences. I think she taught like middle school special ed. And what she said was, you know, in my class, I assign every boy a girl. And she used the term secretary. I was a little offended by that because I don't want to, you know, put kids on a career track where they're going to end up being secretaries, but her intention was great.

And you know, I applaud her for her efforts because she recognized girls have more of these skills than boys do. And a lot of boys would probably rather learn those skills from the girls -- a cute girl sitting next to him than from the teacher. So you know, think about that. And again, it won't necessarily be gender divided perfectly. You may have boys with good executive skills you could pair with, you

know, another kid with weaker. But I do like that idea of taking kids with strengths and having them work with kids who are not quite as strong on that.

And then finally, just to sort of close off this piece of it, this is -- this is from a longitudinal -- actually, it's a summary article that looked at all the research at the time this book came out on executive skills in terms of development across the age span. So you can see they looked at six different executive skills to see when they came online, when they peaked.

And what they found was a different trajectory for each one. So number one there, which is over towards the left-hand side of that graph, that's flexibility. So you can see we can measure at age four. You know, by age eight or nine, it's maxed out. Whereas number four, which is the one on the right there, they call that goal setting and problem solving. That's probably our goal directed persistence and metacognition. It comes on much more gradually and doesn't peak until around age 25.

Some of you may be looking at the right-hand side of that. And here's the sad truth there. Cognitive decline begins in the late 20s, studies suggest. So when I saw this, I thought, oh man, there's like a 20-minute gap between the time your executive skills are at their peak and when they start going downhill.

Now the article does say that different skills hang on longer than others. Some go sooner than others. Processing speed is one of the first to go. That's not necessarily an executive skill, but that's -- I mean, kids in their 20s, you know, just pick up and respond much more quickly, and that declines with age.

Whereas things like stored knowledge, vocabulary development, that kind of thing, that can continue to grow into your 60s. So there's some hope for us who are over 60. Working memory declines can be detected around age 37, you know, which explains why I've not learned a new phone number since I turned 40.

What is helpful out of all this, so again, as I've watched my own executive skills change with the ages, or with age, is that, I mean, working memory always was a strength for me. I do see the natural decline that goes with age. And it's had me -- it's made me think about, okay, what are the supports I need to support my weaker working memory?

I have become a, and I'll talk about this this afternoon, a huge believer in checklists as a memory aide just to remind me of everything I have to do. And interestingly enough, it dawned on me you were asking about anxiety earlier. Checklists are anxiety reducers. You know, I have this like two-column

checklist for everything I need to bring on a trip like this to make sure I remember things like that funny little connection between my Mac and an LCD projector, which if I don't have that, I'm in big trouble.

And as long as it's on the checklist and I don't check it off until it's actually in the suitcase, I know I don't have to worry. And it just makes it so much easier than when I was trying to pull that stuff out of my head and thinking, oh, did I remember to do this? Did I remember that? So okay, any questions at this point about brain development? Yeah? Or anything, yeah?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: So you're asking about kids from an Asian culture compared to an American culture. Yeah, my guess is it's environmental. I don't think there's anything about Asian brains. But if you look at the cultural expectations in Asian or Asian-American families, huge differences. And you know, I've read some of that about that. That's why these kids tend to do better in school.

I remember reading one article a few years ago because one of my interests is homework, so I just sort of track the homework research. And this article show that -- you know, they were looking at how do Asian families, Asian-American families, handle homework compared to Americans. Very typical for an Asian-American family to have a homework time. Everybody sits around the dining room table after dinner, they all do their homework. Parents are doing something related, paying bills or whatever. So that just builds in that culture.

But here's another interesting thing. And I don't think this would be as applicable to Asian-Americans as opposed to Asian cultures in Asia. They stress effort and American culture stresses intelligence. So that they praise kids for working hard and trying and sticking with. We praise kids for being smart. And there is a huge difference.

You know, if you play that out -- NPR did a story on this several months ago. And I actually tracked down the original -- or I tracked down the article that went along with this story. They had an American visiting Japan and sitting in on a Japanese classroom. And all the kids, it was like a 3rd or 4th grade class, and the class instruction was draw a three-dimensional cube, which is really pretty tough for kids that age. And everybody -- so it took a long time.

And the teacher was wandering around the room and he found a kid who was really struggling with it. And he sent him to the board and said, you do that on the board. And this American teacher was like shocked. You know, they picked this poor kid who was failing at this and sent him to the board to display for the entire class how bad he was at creating a three-dimensional cube.

And you know, the class just kept working on drawing this cube. And every once in a while, the teacher would say to the class, okay, how's he doing? Has he got it yet? And they'd look up and see what he was doing on the board, and they'd shake their head. No, he wasn't. And said, okay, let's keep working at it.

By the end of the -- and this teacher said he was sweating. He thought this kid was going to burst into tears, that he would have, you know, the spotlight on him and how bad he was. By the end of the class, this kid figured it out. And so the teacher said, okay, so class, how did he do? And did he get it? The class nodded and they burst into applause for this kid.

And the whole -- what the point they made with that was that it's common for Japanese schools to build lessons around a task that's a little hard, that's beyond the immediate reach of the class so that everybody has to work at it. And they equate having to work hard with ability. You know, whereas in this country, we say, you know, if you have to work hard at something, that must not mean you're smart. If you're smart, you get it right away, and that's what we praise kids for.

I think that's a really hard thing to try to turn around, but in my work, I'm always praising kids for sticking with it, trying hard, figuring it out. Man, you figured that out. That was a hard puzzle and you figured it out. Or wow, you stuck with that even though it was -- I use those words all the time. And you know, luckily, you know, I don't work in the schools anymore, so I can get away with messing with standardized tests. And I'm always looking for ways to use their performance on the standardized test to reinforce them for the kinds of qualities we really want to look for. Yeah?

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: Oh, great question. Yeah, I'll briefly -- and I only talk about medication when people ask. And the question was medication to treat executive skills. Because my focus is mostly on what else can we do besides medication. That doesn't mean I'm not a proponent of medication when appropriate. Because to be honest, if you look at the research on ADHD, what you'll find is that the single most effective intervention for kids with attention disorders is medication. Saw a hand's down.

Yes, and the second part was, what does that do for brain development? And that's really interesting. I ran across one study. Actually, my son emailed it, a CNN story many years ago. But I've heard Russ Barkley refer to the same study, so it wasn't just something reported on CNN.

Here's the study they did with kids -- they compared kids with ADD to kids without. They had two populations of ADD kids, ones who had been on medication for at least three years at the time of

the study, kids with ADD who had never been on medication, and then a normal population. At the time of the study, and they were using functional MRIs as well, so they were giving kids attention tasks and looking to see blood flow in the frontal lobes of the brain basically. Because that's a measure of efficiency.

And at the time of the study, nobody was on medication. But what they found was in the context of performing whatever task that was, the kids who had been on meds for three years, their brains looked much more like the normal population than they looked like the ADD population.

So what that -- and it's not that the drugs are rewiring the brain, but what that -- what the medication enables kids to do is practice. So they can practice the skills they need, whether -- you know, whether it's attention or focus or self-control or all of those things.

So that's -- that's what I think is the benefit. Now from personal experience working -- living with, you know, a son who took stimulant medications, to me, the biggest drawback of stimulants are the side effects. We've not solved that problem yet. We've gotten a whole lot better. I mean, when my kid, who's now 33, was in school, it was Ritalin or nothing. And in my experience, Ritalin is riddled with side effects. Funny name.

You know, we've gotten better about that, but it's still not foolproof. And I think if anything drives parents to discontinue medications, it's the side effects. What drives them not to try medication is more often than not misunderstandings about medication, unfortunately. So I try to correct their misperceptions.

AUDIENCE MEMBER: Which side effects?

PEG DAWSON: Well, again, the most common ones, but these are actually the more benign ones. They're appetite suppression and sleep disturbance. But the ones that are more distressing to people are the ones my son experienced. It made him feel agitated. You know, all I can think is it must have made him feel like he'd just drunk 20 cups of coffee.

And also he felt like it damped -- it tamped down his social spirit. He was a real extrovert and he just -- he felt like it flattened him. And he was a teenager when he was taking them. And so, you know, once I saw that with him, I really started listening as parents and kids talked about side effects. Because prior to that, I'd say, oh, you know, live with the side effects. Do a cost-benefit analysis. You know, does the benefit of medication outweigh the side effects?

But you know, there are some kids -- and the compromise that I did with my son was he took medication to get through homework and didn't take it during the school day. You know, he can come home from school and he'd call a friend to say, so what was that homework assignment? So I know he was still having trouble paying attention in school, but school for him was social. You know, homework he recognized, not social, I do it by myself. And so he was willing to take medication for that. Yeah, back there.

AUDIENCE MEMBER: Can you touch upon the relationship between perfectionism and ADHD or ADD?

PEG DAWSON: Ooh, perfectionism. The relationship between perfection -- actually, there are two different issues. I mean, but to be honest, that's a bad combination, perfectionism plus ADHD. Because ADHD means you're making a ton of mistakes, and perfection means -- perfectionism means you're getting down on yourself because of that.

You know, at least, you know, my son didn't have the perfectionism, so he'd make mistakes and be able to blow it off. But yeah, that's hard. And then that leads -- that just enhances the procrastination. You know, kids who are perfectionists keep putting stuff off because they have this standard for performance that's way up here and they know they're not going to meet it. And so every task you give them to do they know they're going to fail at, you know, right off the bat.

And then throw in an attention disorder on top of that. And then that's one of the other side effects associated with a stimulant is it can sometimes increase anxiety. And so perfectionism is a kind of anxiety, so it's tough. I mean, when I think of -- I worked with a very bright girl in the past five years or so. She probably had more trouble getting through high school than anyone else I can ever think of. And it was that combination of ADHD and perfectionism. It was a huge problem. Yeah?

AUDIENCE MEMBER: Are there any studies linking [inaudible]?

PEG DAWSON: Again, those are going to be two separate conditions. Certainly you -- but you can have both. When I see -- and one of my other areas of specialization is learning disabilities. When I see kids referred, sometimes that's the question. Does this child have a reading disability or dyslexia, or does he have ADHD? To me, it's -- this is an imperfect science. It's -- I'm looking at qualitative stuff. I'm listening to the kid read. And if they're just breezing over or misreading little words in order to get through the passage quickly, that's more an ADD kind of behavior.

This is a gross overgeneralization. With dyslexia, I'm looking for problems with phonological processing, problems with word retrieval or rapid naming, and then the third is really impaired working memory so that they have trouble learning sight words.

What you see with kids with ADHD is if they don't have a reading disability, their acquisition of reading in the early stages tends to be okay. But the more they have to focus and the more they encounter longer passages so that their goal is to get through it as fast as possible. Or they have trouble remembering what they're reading because they're really not paying attention. I mean, that's going on too.

They may be able to read fluently, but then you ask them comprehension questions and they don't remember anything because all they were doing is reading the words and thinking about something else. So it's a complicated relationship. Yeah?

AUDIENCE MEMBER: As a parent of a gifted but extremely inflexible child, should I try to structure her life to be [inaudible]. So is it better for me to create things to build flexibility into [inaudible]?

PEG DAWSON: Yeah. So the question was, with a gifted -- ADD as well or no? Okay, so gifted, inflexible kid. You know, to what extent do you structure her life so that the inflexibility doesn't make her crash, yeah, or -- I mean, to be honest, you do both.

And I'm going to talk about this this afternoon, this sort of developmental progression. At the younger ages, you focus much more on environmental modification. So you reduce the triggers. You try to -- you prepare her in advance. As they get older, I think the transition is letting them know, here's what I'm doing for you and here's why. I know that you get upset when X, Y, Z happens, so we're going to try to structure your environment. Sooner or later, you're going to have to take this on yourself. So that they can begin to say, okay, I know I always get upset by this. What's my plan B or something like that?

That's a good question. Okay, let me take one more question and then I want to do one more piece before lunch. Yeah, you had something.

AUDIENCE MEMBER: [inaudible]

PEG DAWSON: Yeah, very good question. And the question was -- it was around myelination. If we're micromanaging kids, are we not giving them the opportunity to practice the skills and therefore building

up that myelin? There are sort of two ways of looking at that. On the one hand, yes, I think we are. And you're right.

I mean, you know, two or three generations back, I mean, the expectation was -- I talked with a mom last -- a couple of years ago. She said -- she was an older woman. She was probably about my age, so her kids were well into adulthood. She said, you know what? I raised five children. There was no way I could micromanage them. You know, I taught them very early on how to pack for a vacation. You know, that's just one example of how you use those skills in real life.

And when you have large families, you either -- either the kids pick up those skills on their own or, you know, the older kids help the younger kids. So I think that's definitely true. Here's the complicating factor. Life is way more complicated today than it was, you know, two or three generations back. And so we sometimes demand kids to do more than we would have ever asked, you know, two generations back to do.

And so I think there's a middle road in there. I think we need to stop doing as much micromanaging and we need to be more thoughtful about how are we helping kids practice. At one point, I remember telling my father about what I did for work and worked with kids with attention disorders. And he said to me, man, I bet that was my problem when I was in school. And I said, dad, you graduated from high school fine. You went to college. You got a master's degree.

He said, yeah, but you know what? And he told me -- my father grew up in White Plains, New York. You know, an affluent suburb, at least at the time he was growing up. They were an affluent suburb of New York City. And he said, when I got home from school in the afternoon, I had three things I could do. You know, I could play in the woods behind my house, I could read a book, or I could do my homework.

You know, think of kids who grow up in White Plains today. They got a gazillion things to do. You know, they've got five different video game systems. They've got 100 cable channels. They've got multiple after-school activities they can engage in. So in a sense, we ask kids to make choices today that are far harder than the choices, you know, my father had to make. He grew up in the Depression. Or even that I had to make, you know, growing up in the 60s.

And so we put temptations out there for these kids and then we say, you know, why aren't they choosing to set aside their video games and do their homework? That's a really tough, tough thing to

ask them. Okay, let me go onto one other bit of -- piece of conversation before lunch. And the entire afternoon will be spent on interventions. I just want to reassure people about that.

You know, I've given you all the definitions, but this is what executive skills look like in kids. And you've got actually three different slides there. That's the reason -- just a sec. The first -- and I've organized them based on how the BRIEF organizes them. So the first ones are problems with behavior regulation: emotional control, flexibility, impulse control. And then the next slide are more metacognitive problems. The BRIEF uses that term as an umbrella term. But it's task initiation, sustained attention, planning, organization, time management. I mean, they're more internal thought kinds of skills.

And then the third slide is actually, you know, what do executive skills weaknesses look like in younger kids. And I use this because this operationalizes it. But I also use it just to have a brief discussion about, so is this a disability or is it just a pattern of strengths and weaknesses that we all have? And if it's a disability, does that mean these kids need special education? Or do they just need accommodations and supports like through a 504 plan?

So here's my quick and dirty and unsatisfying answer to that question. It's a disability when a child is failing classes or grades due to impaired executive functioning. I mean, to me, the hallmark of progress through school is if they are failing classes or grades and you can say it's because they have lousy executive skills, that's a disability.

Now do they need specialized instruction or special education, or do they need accommodations and supports? You know, and typically we start with the accommodations and supports. And that's a reasonable -- and accommodations and supports are things like maybe a quick check in at the end of the day to make sure he's got his backpack, everything he needs to bring home with him. Maybe it's getting him the chance to get up and walk around in the middle of a test because he can't sit still forever. You know, obviously the preferential seating one, those kinds of things.

I have a good friend who's a 504 coordinator for our high school. And she finally made the distinction for me, which totally made sense. If anytime you're describing an accommodation and a support, but there's a goal involved, that's special education. An accommodation or a support is something that you expect to remain in place forever because the kid needs it.

You know, in the same way that we have wheelchair ramps. You know, we don't expect the kid to ultimately learn how to walk if, you know, if they're a paraplegic. So we just put in the wheelchair

ramp. In the same way with accommodations and supports. You know, if this kid's working memory is so bad that they need -- that they need an extra prompt, a reminder, you know, and we don't expect them to get better at that, then that's a 504 plan.

If we have a goal in the back of our mind that we want them to get better at something in order to not fail classes or grades, that's special education. And for the longest time, I was hung up on specialized instruction because of my background in learning disabilities. I had thought, okay, specialized instruction means reading instruction, math instruction, social studies. You know, whatever. Written language, whatever the area of disability, that's what they need specialized instruction in.

What finally occurred to me is if these kids are failing classes and grades due to lousy executive skills, they need specialized instruction in executive skills. They need to be taught how to plan. They need to be taught how to get organized. They need to be taught how to develop memory systems so they don't forget everything. All of those. And they can't learn that on their own. So that's the rationale.

And then, of course, the next question is, what do you call it? Is it a learning disability? I mean, if it's ADD, it's easy. It's other health impaired. I call it a learning disability otherwise. You know, kids with significant planning problems or organization problems that don't have ADD, if it's causing them to fail classes or grades, it's an output problem. Why do we restrict learning disability to be a problem with input? It's output. It's production and it's a brain-based problem, so it's information processing.

Again, I've not had a whole lot of luck convincing schools that it should be a learning disability. And then I know there's a significant portion in the audience here because of kids -- of parents of kids who are -- who fall in the gifted category. And those are the other kids. Well, there are two sets of kids whom those definitions that I've just described for you don't suit real well.

One is those kids who are not failing classes or grades because their parents are working so hard to keep them, you know, passing classes and grades. And I haven't yet met a parent who said, okay, I'm going to stop doing this so that my kid will fail and so he'll get the help he needs.

No, because no parent -- because failure has a whole other set of issues associated with it. Then they start feeling bad about themselves, and then they've got low self-esteem, and then they start hanging out with other kids with low self-esteem. And then the next thing you know -- I mean, I'm creating a sort of negative spiral that's an overgeneralization, but that's what parents worry about. That's why they don't want them to experience failure.

So that's a tough sell to convince the school that these kids need help and if parents weren't propping them up, they would be in significant -- and parents can't prop them up forever. And then it's those gifted kids who are passing classes and grades, but their potential is up here and their performance is down here. There's a huge -- and you knew if you could give them help with the executive skills, they could raise their performance.

You know, which is one of my arguments for trying to make this a more pervasive let's have schools focus on teaching these skills so that everybody benefits and it won't keep those kids out of AP classes or honors classes, which is what's happening now and, you know, which I think is tragic. These kids who have no problem mastering the material for AP or honors classes, but they have trouble producing the work, and so they get excluded from that.

Okay, let me -- yeah, we've got about ten minutes. Let me just talk. One other point I want to make. This is -- this is a teacher rating scale filled out on a kid I saw. I saw him twice over the course of his school career, once when he was six or seven. He was probably one of the most hyperactive, impulsive kids I remembered working with at that time. But he also had Tourette's syndrome, so he could not take stimulants because they exacerbated his tics.

He somehow managed to get through elementary and middle school not on medication successfully, but his mom called me after his freshman year in high school, at which point he'd gotten two F's and two D's. And the one A he got was in ROTC. This high school offered ROTC, which was perfect for him. You know, it's active, it's structured. He wanted to join the military. It couldn't have been better.

But the mom said, you know, I can't do it anymore. This trying to keep track of everything he has to do, it's a moving target for me now. When he tells me, oh no, the teacher said we didn't have to do that homework assignment, how do I know? Or the deadline was changed till Friday, how do I know?

So she was looking for a little more support in school. So I did an evaluation of him over the summer and mostly I just want to call your attention to the language used here. You know, what concerns you most about this pupil? It was filled out by a teacher who knew him well. That he's lazy and not working to his potential. What's the best thing about this pupil? He's sweet and has a good sense of humor. You know, which describes almost every ADD kid I've ever worked with, including my own son.

And the humor part, let me show -- oh, I knew I was afraid this was going to happen. Well, let me show you this cartoon that was a kid just a couple of weeks ago. His dad brought it in to show me and it just sort of captured the sense of humor of these kids. Isn't this great? I got your back.

So you know, I thought if I need to explain to anybody why I love working with these kids, this cartoon says it all. Okay, so that's the positive side. But let's look at the language we're using here to describe these kids. Lazy and not working to potential.

You know, particularly the lazy piece. And you know, I have a really personal reaction to this because that's how I diagnosed my brother's attention disorder. You know, he would say things to me like, oh, I couldn't become a school principal. I'm lazy. I couldn't go to law school. I'm lazy. And you know, I started cringing as he said this. And I finally said, Mike, I don't think you're lazy. I think you have an attention disorder. I think that's always been the issue.

And you know, my parents were great parents. They were both college educated. My mom was the world's best kindergarten teacher. But they didn't know what to do with my brother. You know, and I've read my mother's high school diaries. She graduated valedictorian of her high school class. Her sophomore year in high school, her mother and her English teacher, who was my mother's favorite teacher, sat down together with my mother and said, Elizabeth, you have to stop working so hard. You are pushing yourself way too hard.

So then along comes my older brother, her first child, and he doesn't do homework. You know, I'm sure my mother had no idea what to do. And I'm sure the word lazy escaped her lips, escaped my dad's lips, escaped his teacher's lips. And pretty soon, no one else had to be calling my brother lazy because he was calling himself lazy. And then what was he doing? He was closing doors.

You know, and it worked out for the best because he really is a good teacher. He was one of the ten finalists for the teacher in space contest if you remember that. So you know, he's very good and he's very creative and he's very clever. And he really is -- teaching is his -- and he recognizes that now. He doesn't have the executive skills to be a principal. All worked out. But that -- you know, he's, you know, a positive example. I think we can think of others for whom, you know, they got boxed in by lazy and then, you know, things went downhill from there.

And the other one, I mean, I still use not working to potential all the time. And you know, when you give IQ tests, you think in those terms. But I got an email this long from a dad in Connecticut a couple of years ago after I'd done a parent seminar on this topic. And he said even at the age of 45, he

still had a visceral reaction anytime anybody used that expression not working to potential, because he felt like he'd been hit over the head by that, you know, his entire childhood. And I'm sure he was now seeing those same things said about his own son. So I think we have to be careful.

And on top of that, what's the intervention for lazy? Well, I did have someone recently say they thought the military was the intervention for lazy. Which ironically enough, after my brother barely graduated from college, he joined the military. So maybe that was. And this kid I was talking about earlier who got an A in ROTC, you know, maybe that was his cure too.

But you know, we have interventions for task initiation and sustained attention and planning and time management and all those things. And that's what we'll talk about this afternoon. So why don't we break here for lunch? You guys can get a head start on the lunch line and we'll meet back here at 2:15, I think.