



Webinar adapted from a keynote address given at the Educators' Institute 2017
Transcription: Beyond "Lazy and Unmotivated", Why Educators Need To Know About Executive Skills
Dr. Peg Dawson

[Voiceover]

This webinar was adapted from a keynote address delivered at the LD@school Educators' Institute in 2017. The LD@school team is pleased to present the session: Beyond "Lazy and Unmotivated", Why Educators Need to Know about Executive Skills presented by Dr. Peg Dawson.

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Dr. Peg Dawson worked as a school psychologist for many years before joining her colleague and co-author in establishing the Center for Learning and Attention Disorders in Portsmouth, New Hampshire. By specializing in the assessment of children and adults with learning and attention disorders, she developed an interest in executive skills and how they impact learning. With her colleague and co-author, Dr. Richard Guare, she has written several books for parents, educators, and clinicians on executive skills, including *Executive Skills in Children and Adolescents*, *Smart but Scattered*, *Smart but Scattered Teens*, and *Coaching Students with Executive Skills Weaknesses*. Her most recent book addresses executive skills in adults and is called *The Smart but Scattered Guide to Success*.

[Dr. Peg Dawson]

Let me tell you why I chose the title "Beyond Lazy and Unmotivated." Because I hear this all the time from parents. Particularly from parents but also from some teachers and other educators that the kids that I work with are described as lazy. This was the first time I had it in writing. [LAUGHTER] This is one of the rating scales I use in my assessment process and the kid was a freshman in high school and his mom had called me after his freshman year saying, "You know, we had a terrible year. I can't do it by myself anymore." I had seen this kid initially when he was seven and he was one of the most hyperactive, impulsive kids I'd seen at that time. He also had Tourette's Syndrome so he could not take stimulant medications because they exacerbated his tics. He somehow managed to make it through elementary and middle school mostly 'cause his mom was able to stay on him and communicate very closely with his teachers.

It's a whole different ball game. Those of you who work at the secondary level know it changes at high school. So, his mom couldn't track everything anymore. And so, as part of the assessment process, I asked a teacher who knew him well to fill out this rating scale and the question she's answering is, "What concerns you most about this pupil?" And her answer is that he's lazy and not working to his potential. "Please describe the best things about this pupil." "He's sweet and has a good sense of humour." Which describes just about every kid I've ever worked with with ADHD including my own son who, by the way, we diagnosed his attention disorder when he was around 14. So, I've seen it up close and personal as well as in my professional capacity.



So, I'm gonna jump into it 'cause I have a lot to cover in a short period of time. Let's talk about what executive skills are. And the term is probably familiar to you now, although when my colleague Dick and I first started writing about it, apart from the occasional neuropsychologist, people were not familiar with the term. It refers to cognitive processes required to plan, organize, and execute activities. In fact, there's the derivation of the term. They're the skills required to execute tasks.

They're frontal lobe functions which means they're managed out of the frontal lobes of the brain. They emerge shortly after birth. They take a full 25 years to reach full maturation, and that's in typically-developing kids. So, if you've got kids with attention disorders or learning disabilities or other neurodevelopmental challenges, there's a good chance it's gonna be later than that that they reach full maturation.

When Dick and I first got interested, we went to see, you know, our thought was, "What does the literature already say about these skills? How can we come up to speed in terms of what they are, how they develop in the brain?" And what we fairly quickly discovered was that every neuropsychologist, neuroscientists, or creator of checklists out there had different ways of labelling, organising, defining, categorising executive skills.

And so our first task was to say of all the ones out there -- and people talk about five executive, actually, there are some people who say there's only one executive skill. There's a major theory within brain development that talks about three primary executive skills, but there are people like George McCloskey who talk about as many as 40 different executive skills. So, with that array of possibilities, what Dick and I said is, "Of all these skills that people are talking about, which are the ones that are most critical for school success? And can we identify them without going overboard?" because part of our message is if kids are not acquiring them naturally, then it's our job as adults who work with kids to teach them. So, we didn't wanna go overboard. I can't ask anybody to teach 40 skills. So, we basically identified 11 skills that we thought were the most critical for school success, and then our next challenge was to come up with definitions that we thought were so crystal clear that everybody would understand them because when you delve into the neuropsych literature you can get bogged down in very technical terms very quickly and we wanted to avoid that.

I've been pretty comfortable, I mean, it's probably been 25 years since we developed our definitions. We changed one of the years. We changed our definition for organization. But other than that, they're pretty much what we came up with initially. I can do one hour parent presentations and parents get it. So, I'm pretty comfortable that these skills are pretty clearly stated.

And so what I wanna do to start with is to just go through our 11 executive skills because this will give you a feel for what we're talking about. I'm gonna talk about them in the order in which we think they emerge developmentally starting from shortly after birth. This is somewhat speculative because the early research on executive functions was done on head-injured adults. That's how we figured out what the frontal lobes do. We looked at people with frontal lobe injuries and said, "What was their behaviour like before the injury? What was it like after the injury? Oh, okay. So, that must be what frontal lobes do."



So, the developmental research has been a little slower in coming, although it's been growing particularly in the last several years. I'm pretty confident that the first three skills I'm gonna talk about really are the first three to emerge shortly after birth. They come out of Russ Barkley's model, and I consider Russ the world's leading expert on ADHD and a leading expert also on executive functions, and he's a very careful theoretician. I'm also pretty confident the last three I'm gonna talk about probably are the last three to develop. It's the five in the middle that I'm not exactly sure of. But I'll sort of give you my best guess.

What I will also try to do is just give you a snapshot of okay so here's the strategy we focus on with that particular skill because as I'm going through these I'm sure you're gonna get kids in your head where you're thinking, "Oh, that's what's going on with them. So, what do I do about it?" This is by no means you're gonna be able to walk out of here and apply a fully-developed strategy, but at least you'll get a sense for how we think about each skill.

So, response inhibition is the first skill to emerge in Barkley's model. It's basically impulse control, you know, the ability to stop and think before you say or do something. Barkley maintains it's around six or seven months of age that you can see this skill in infants. It's very rudimentary at that point because what an infant has available to it is respond/don't respond. It looks different in a three year old, different in a 13 year old. Barkley maintains this is the most critical skill. If kids don't develop response inhibition, how are they ever gonna develop planning or time management or any of those later skills?

The strategy we focus on, particularly with young kids -- but I think it's applicable with any age -- is we teach wait/stop. If we can get kids to wait or get them to stop, that's response inhibition. And I've thought a lot about this. I think back to my own childhood and my mother lived and died by the kitchen timer. I mean, my father was an oceanographer. He was out to sea six months out of every year and there was my mother at home with four kids -- I had three brothers. We were all pretty close in age. And I remember her making me take a nap at a point where I thought I didn't need to take a nap anymore, you know, now I realise she just wanted time to herself. [LAUGHTER] But what she would do is set a kitchen timer and she says, "When the bell rings, you can get up." So, there it is. Teaching me to wait.

And there's a lot of research to show that kids who have developed this skill at an early age have better life outcomes than kids who don't, and probably the best-known study -- it's a longitudinal study -- is the marshmallow test. How many are familiar with the marshmallow test? Okay, most of you are. So, I don't have to repeat the story except to say for those of you who aren't familiar with it is it was a researcher way back in the '60s -- a guy named Walter Mischel -- who got curious to know when four year olds -- 'cause his daughter was four at the time -- when four year olds develop what he called delayed gratification, and so he tempted four year olds with a marshmallow and he told them, "You can eat this now, but I have to leave the room for a few minutes. If you wait until I come back, I'll give you a second marshmallow." And so he left the room with the kid and the marshmallow, went behind a one-way mirror and watched to see what happened, and what he found was some kids popped that marshmallow in their mouths as soon as his back was turned. Other kids were actually able to wait the full 15 minutes, which was how long he stayed away. The average four year old could wait seven minutes. And he followed these kids in



high school and he followed them into adulthood and he found that they on a number of markers of self-control or self-regulation they were stronger at both those points in time.

And in 2013, "Sesame Street" hired Walter Mischel as a consultant to teach delayed gratification to four year olds. And so if you go to YouTube and type in "Sesame Street executive functions," you will come to any number of hilarious skits where they try to teach self-control to four year olds. Probably the best-known one uses Cookie Monster, and, again, it's very entertaining. If I had more time, I'd show you a clip from it. But here's the really interesting thing which is that they've used these video tapes to test can you teach delayed gratification or response inhibition to four year olds? And so they took a bunch of preschoolers and they showed half of them the Cookie Monster video over and over again, which is Cookie Monster making himself wait to eat the cookie. And then they took another group and just showed them random "Sesame Street" videos. And then they measured outcomes and they found that the kids who -- and they had them do it for several weeks. They created a DVD, sent it home, and had parents watch the videos with them as well. And when they measured the impact, what they found was kids who'd watched the Cookie Monster video were able to wait longer -- four minutes longer for whatever it was they were asking them to wait for. They also resisted the temptation to shout out character names in whatever videos they were watching, and they could remember longer number sequences. So, that's actually a link to the next executive skill which is working memory.

So, you can see how this is where it all starts. But let's go on to working memory, which is the ability to hold information in mind while you're performing a complex task. The most obvious way that I measure it in my -- although I've got a bunch of different working memory tasks but one which would be familiar to everybody. Give kids a multi-step math problem to solve. Give it to them orally. Ask them to solve it in their head and watch whether if and where the breakdown occurs. So, for instance, on a standard IQ test there's a problem that sounds something like, "Eight birds are on the ground. Four birds fly away. Two other birds land. How many birds are on the ground now?" If I ask a child that question and they perform the first step and give me that as their answer, then I'm thinking, "Hmm, wonder what's going on with working memory?" You know, have they forgotten the entire problem? Have they forgotten where they are in solving the problem? They've only done step one and there are multiple other steps. So, that's a way to measure working memory.

This one in Barkley's model emerges around seven or eight months of age in infants again. And I think of a couple of things when I think about working memory. I think of Piaget's concept of object permanence and the classic story is the babysitting with a toy on a tray in their high chair and it falls off the tray onto the floor. Until working memory is established, they don't even look over the side of the tray to find out what happened to the toy because literally out of sight, out of mind. At the point where they do that they now have what Barkley would call nonverbal working memory -- a visual representation of that toy in their head and they want to see what happened to it.

I also think about working memory in connection with the separation anxiety phase. I mean, you can leave a four or six week old off at a sitter's and they handle it fairly well. At the point where they start crying when you're taking them off of your shoulders and handing them over to a sitter's, why are they crying? 'Cause now they remember. They remember what it felt like to be abandoned yesterday. You know, luckily their working memory strengthens and they remember that you always



came back to pick them up at the end of the day and that they had a good time. But imagine the early stages of being able to draw on past experience and remember what it felt like.

There are a number of strategies that we use with working memory, but one of them is we prompt kids to access their own working memory. "Yeah, remember what you did yesterday? You had that really frustrating math problem and you didn't fall apart. You raised your hand and waited for me to come and help you or you talked to the kid sitting next to you. So, today if you get a really tough math problem, what do you think you can do?" That's just one example of a strategy for working memory.

And then moving on to emotional control, which is the ability to manage your emotions in order to accomplish tasks, achieve goals, or whatever. This one may be one of the more complicated executive skills to develop because the brain is hardwired for all of these skills to emerge, but emotional control is actually a fairly complex dance between the internal hardwiring for the brain and the environment in which the infant finds itself. So, an infant who's in the best position to develop good emotional control is one who by seven months of age at the latest has a consistent, reliable caregiver who responds to his or her physical or emotional needs in an appropriate and timely fashion, and there's an additional component to it. That caregiver's able to manager their own emotion as well. Because there's a mirroring process that goes on with this. So, kids learn to manage their emotions by watching how those around them manage theirs.

At its most extreme, I think about kids with reactive attachment disorders. The ones I see in my clinical practice are kids who enter the foster care system really early so they don't have that consistent caregiver or who spend the first six or seven years of life in a Romanian or Russian orphanage and they've been sharing multiple caregivers with multiple kids. That's a pretty extreme example, but let me bring it back to learning disabilities.

It took me the longest time to realise how important this was for kids with learning disabilities. That was my background. I did my dissertation in learning disabilities, and I'd always thought about a learning disability -- like dyslexia -- as a cognitive processing disorder. I mean, we know from the research at Yale, for instance, that there two key pieces in the left hemisphere of the brain of kids with dyslexia that don't work right. Right? There's a phonological processing piece and there's a rapid naming or word retrieval piece.

But I finally realised that emotional control is pretty critical to outcomes for kids with learning disabilities. Why? Because no matter how well-taught they are, they are gonna experience more failure going through school than typically-developing kids. And they have to have some way of managing the emotions associated with that failure -- the shame, embarrassment, humiliation, anger, irritation, frustration. So, those are things they have to grapple with almost on a daily basis. There are a lot of good strategies for teaching emotional control, but one of the ones we recommend is self-talk -- teaching kids to talk to themselves. What could you say to yourself to manage that frustration and that anger?

And there's some good brain research to show why self-talk works. When they've done functional MRI studies with people using self-talk in emotionally-charged situations, what you find is decreased



activity in the amygdala -- which is the fight or flight part of the brain -- and increased activity in the frontal lobes -- where emotional control resides. So, self-talk is the avenue to emotional control.

Moving on to flexibility. Now, I actually got interested in executive skills primarily from working with kids with attention disorders, and kids with ADD have all kinds of executive skill challenges, but flexibility is not necessarily one of their challenges 'cause they're go with the flow kinds of kids, right? What population of kids have trouble with flexibility? [MURMURS] Kids on the autism spectrum. I think that's the first one that jumps out at us when we think about that. But let me throw out a few others just so you're aware of this. A few years ago I did a workshop in Edmonton, Alberta, and it was sponsored by the Tourette's Foundation of Alberta, and when I said to that audience, "What population of kids have trouble with flexibility?" They almost yelled at me. "Kids with Tourette's." And that's not a population I work with that much, so I hadn't really thought about that, but I spent a couple of days with members of the board of that foundation and they were all volunteer moms with kids with severe Tourette's, and I listened to them describe their war stories, I realised that it inflexibility that got their kids hospitalised. You know, extreme meltdowns when things didn't go the way they expected them to go. And that's basically flexibility.

And there's an OCD -- an obsessive-compulsive component to Tourette's. So, that makes some sense. And that leads me to think about anxiety. You know, if you have trouble dealing with unexpected changes in plans, what happens when you're thrown at? Your anxiety level rises. So, what we see is the anxiety but may have started as inflexibility.

And then finally kids with oppositional defiant disorder. And I'm not arguing that every kid with ODD is inflexible. When I think of that population, I think of power struggles and control issues and the kids refusing to do what we've asked. But if we step back and say, "What was the trigger? What led that kid to refuse to do what we've asked?" What we find is very often someone was asking that kid to be more flexible than he was capable of being and all he has was his behaviour as a way of say, "I can't do that."

Luckily, there are some really good curricula out there to teach flexibility. I think Michelle Garcia Winner's social thinking curriculum is probably the best-known as she has a "Superflex" character. There's also some people who developed a programme called "Unstuck and On Target" which comes with lesson plans and handouts. It's a school-based curriculum but it also has handouts that could be sent home to parents. And it's basically a lot of the, again it comes back to self-talk or just getting kids to use language to help them become more flexible. So, in Unstuck and On Target, there are lessons like teaching kids to differentiate between a big deal or a little deal. And you first teach them to categorise. You know, a big deal is your house burning down. A little deal is the clothes you wanted to wear to school this morning are dirty or in the wash and you can't wear them. And then they use terms like, "Looks like you're stuck. How can you get unstuck?" Or, "What's plan B?" I mean, all of those are ways of teaching flexibility.

And then sustained attention is the next one. And this one really is sort of the crux of an attention disorder. We have a key phrase in our definition -- the capacity to maintain attention to a situation or a task and the key phrase is in spite of distractibility, fatigue, or boredom. You know, I still have parents who say to me -- in fact, I had a seven year old yesterday, you know, as long as he was



playing with the blocks on my office floor he was fine. And so parents would say to me -- the typical response I get is "My kid can't have ADD. He can play video games for hours." [LAUGHTER] 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 that only occurs in the context of homework, chores, boring daily routines. That's what you see at home, you know, seatwork at school. That's where the attention problems show up.

Now, I have two sons. My younger son lives in Japan and he sent me -- it's been a while, but he sent me this PowerPoint slide a while back and he said, "Mom, I think this has something to do with the kinds of workshops that you do." And I wrote back and I said, "Hey, Isaac, I think it does, too. But the slide was incomplete. There must have been something wrong with the transmission. Can you send it again?" And he wrote back and he said, "Mom, that's the point." [LAUGHTER] And that was not my kid with ADD. That was the other one. So, you can imagine. This kid was charged with coming up with a demonstration of what ADHD is all about and he's got picture. One picture, a couple little boys throwing paper airplanes. One label: "What teachers think we do." He's got half of a second label and he's missing the second picture. So, you can imagine what happened. You know, halfway through he got bored to tears and quite. Or he went off to the Internet to find just the right picture and several hyperlinks later [LAUGHTER] he realised he totally lost track of what he's doing. At any rate, I think this nicely captures that.

With sustain attention, our basic strategy is to start with where the kids are and see if you can gradually increase their attention span, and that's a particularly recommendation we make for parents around homework. You know, don't expect that you kid is gonna sit down and do 30 minutes of homework if he has an attention span of five minutes. In fact, my adult son, he's 39 now. Is he 39? No, he's 38. I forget. [LAUGHTER] Told me a couple years ago, "Mom, I have an attention span of ten minutes." I said, "Aaron, how can you hold a job with an attention span of ten minutes?" And here's what he said to me. He said, "Okay, mom. Here's what I do." He's the head of customer service for a fair trade coffee company based in Massachusetts. He said, "So, I focus really hard for ten minutes, and then I get up and take a little break, and then I focus really hard for ten minutes, and then I get up and take a little break." So, he's managed to structure his job that allows him to do that.

And when he's taking a break, since he's head of customer service and he's a real extrovert, he's out talking to team members. He's taking a break from the paperwork but still doing his job. So, I think we have to start with where is the kid at now and can we gradually increase that attention span?

Now, with sustained attention and task initiation -- which is the next one -- it's hard to know when these skills develop. Attention is actually pretty complicated. There are different kinds of attention. There's sustained attention. There's divided attention. There's focused attention. There's the ability to shift attention appropriately between tasks. And each of these skills seems to come online at a slightly different point sometime during the preschool years. But I think the other reason it's hard to tell when these skills emerge -- sustain attention/task initiation in young children -- is because parents and teachers of young kids are just adept at adjusting their expectations for kids with short attention spans or weak task initiation. You know, so, there's no first grade teacher out there who'd hand out an entire folder of work first thing in the morning and say to her class, "See me at lunch."



[LAUGHTER] 'Cause they know first graders are not gonna sustain attention that long. And there's no parent of a preschooler who would realistically say to their child, "Could you pick up your bedroom sometime today?" 'Cause what preschooler's gonna do that? That's a non-preferred task. So, as parents, we decide when it's time to clean up the bedroom, and chances are we're there working alongside our kid to get the bedroom clean.

Now, in terms of task initiation, when I wrote the book I wrote for adults, I start investigating and getting a better sense of, you know, how these skills develop. And I actually had come to the conclusion even before doing the research that task initiation may be one of the hardest and latest skills to reach full maturation. And I started with myself. You know, this is one of my strengths. But my memories of high school -- and I was a very good student in high school. My memories of high school are dreading Sunday nights. Why? 'Cause my English papers were always due on Monday. And did I start them on Thursday or Friday or even Sunday afternoon? No. It was Sunday nights. So, I know task initiation was not a strength for me at that time.

I've also created a survey which is in all of our books that you can take as adults to figure out what your own executive skills profile is. It's not norm-referenced, but every once in a while I'll give it to an audience like yourself -- a professional audience -- and collect it to figure out, "So, what is the average score for each of these skills?" Every time I've done it, task initiation is on average the weakest skill. So, that's more evidence. And then finally I ran across an article that attempted to give a developmental perspective and it was talking about procrastination which is the opposite of task initiation. If you type procrastination into an academic search engine you'll be hit with thousands of citations, so clearly it's a problem. But this one article said, "Procrastination increases until the mid-to-late 20s and decreases gradually after that." So, that, to me, was okay now someone's put it in writing and that fit my own clinical and personal experience. This is a late-developing skill. In fact, surveys of college students 83% of college students say procrastination is a problem for them, and about over 40% say it's affecting their grades. So, when I was reading all that I thought, "Man, we gotta figure out a way to teach task initiation." And I'm actually still really stuck on this 'cause I think if we can teach task initiation, man, we can decrease college dropout rates, increase college graduations rates in four years. I mean, I think it has so many implications.

So, when I first thought about, "Well, how do you teach task initiation?" I went back to my definition -- the ability to begin projects without undo procrastination in an efficient or timely fashion. I thought, "We gotta teach kids to start right away. Let's just do that." And then I had a personal experience that made me rethink that 'cause I was working in my study at one point. I was writing a book chapter or creating a PowerPoint presentation or something. My husband came into my study and he asked me to do something that was definitely on my chore list -- 'cause we divide up the tasks in our house. And he wasn't saying, "Peg, could you do this right now?" But because task initiation's a strength for me, I got up and immediately went and did it. And then I came back and sat down at my computer again and I thought, "Oh, that was a bad idea." 'Cause I had totally lost my train of thought, and I had forgotten what was that perfect paragraph I had in my head but hadn't gotten out on paper yet? Or what was the point of this PowerPoint slide? So, then I had to go back to the drawing board and I thought, okay. So, we don't teach kids necessarily to start right away, but I think the easy way to teach it or the way that gets at it most directly is teach kids to make a plan with a start time. And then at that start time your job is to make sure they start. This is one that's



more applicable to home because at school, we're prompting kids to start. At home with homework, I mean, that's an open-ended task. And so that may be something you wanna pass along to parents. Just, "When are you gonna do your homework?" You know, if they say, "Right after dinner." Right after dinner they may forget. But you say to them, "When was it you said you were gonna do your homework?" "Oh, right, after dinner." I'll tell you, when I discovered that with my older son, it ended a bunch of arguments in my house, and I've talked to others who have said that it has the same sort of miraculous effect. When kids make the plan with the start time, then they're more committed to carrying it out. So, just think about that as a way to promote that.

Okay, moving on to planning and prioritisation. And these are two somewhat distinct but linked skills. Obviously, to be able to plan you have to be able to prioritise. But of the two I think planning's the more straightforward and creating a roadmap is probably a good metaphor for planning. Prioritising interests me because like flexibility it's one of those that may be under the radar and it pops up in funny places. When I was interviewing a 15-year-old a while back -- and I have a structured interview I use with kids with learning problems -- and I just go through various aspects of school performance to get their perspective to try to figure out where the breakdown occurs. So, I was talking to this kid and I said, "Tell me about notetaking in lecture classes. How's that go for you?" He said, "I have a terrible time with that. You know, the teacher's talking on and on. I have no idea what to write down. I don't know what's important. So, I try to write down everything to make sure I got it in my notes." And then a couple minutes later I said, "Tell me about studying for tests." He said, "I have a terrible time with that, too, because I've got all this material to study. I don't know what's gonna be on the test. I don't know what the teacher thinks is important." So, those are two examples of problems with prioritising.

You also see it showing up in written expression. You know, kids who don't create a logical sequence, who go off on tangents, who don't realise that you start with the priority as the main idea, the thesis statement, or the topic sentence of a paragraph and then you build supporting details. So, it's a pretty critical one. Now, from planning and prioritising on, you know, more recently I've begun to divide executive skills into two batches.

The first ones are the ones we expect elementary age kids to begin to acquire. But from planning on, I'm thinking it's the rare elementary age kid who can do this kind of thing, and in fact, again, this is was one of those I just sort of sensed, but I started doing surveys with teachers and asking them, you know, "When do you expect kids to do things like planning long-term projects?" And I was collecting data from teachers at a bunch of different grade levels and I realised, "I got a lot of sixth, seventh, and eighth grade teachers out there who are saying no their kids aren't ready to do planning yet." So, I am thinking that it's a later skill. Now, a lot of teachers -- and rightly so -- adjust for that by doing the planning for kids. You know, they break down long-term projects into subtasks and timelines and interim deadlines and sort of spoon-feed it. Which I think is great, although the next step is I do think you can start this at a younger age is to teach them the planning process and then expect them to do it.

So, let's say you assign four long-term projects over the course of a year. You know, for the first two or three, you walk them through the process -- and we have templates so you could create your own for how to plan a long-term project. And then after you've done that for a while, then you say,



"Okay. Here's your next assignment. Here's the long-term project. Step one: give me your plan." And so now you're asking the child to produce the plan. If they have a template they can do it, but you can also see quickly do they still need support for using that template? Or can they run with it on their own?

Now, just to underscore how late I think planning develops, particular around long-term projects. Someone a few years ago sent me a picture of something they had found on Facebook which really illustrates it nicely. It's a long-term project in the form of a science project. I assume schools in Canada have science projects, like, science fairs like we have in the United States. So, this is a project for a science fair, and the topic of the science project is how much turmoil does the science project cause families? [LAUGHTER] And it's set up the way a science project is, with materials on the left-hand side and, let's see. What does it say? I gotta step down here. "At least one kid, at least one grudging parent, half-baked ideas, a very dubious merit, and procrastination." We've got a nice result section with a graph that shows yelling and crying on one axis and due date on the other axis, and the closer to the due date, the more yelling and crying. We got some nice quantitative results. 75% of kids crying. 90% of parents yell. And average of 15 hours of family time is sacrificed. Findings: everyone hates the science fair. [LAUGHTER]

Now, I have one other story that goes along with this. This is pretty funny. I've used it throughout Canada. I've used it in the Far East. I've used it throughout the United States. But a couple of years ago I was doing a workshop at an elementary school in Georgetown, which is an affluent suburb of Washington, D.C., and I was working with teachers and I showed them this poster. They thought it was hilarious. And then one of them looked really closely at the poster. You may be able to see right down there. The person's name. And she said, "Wait. Susan Messina? That's the mom of one of the kids in our school." [LAUGHTER] I thought, how can that be that I stumbled on the school where people actually know this woman. So, I got home that night, got up the next morning, checked my e-mail, and the e-mail heading was, "I'm the parent who created the science project." And she had written a blog post that got picked up by "Huffington Post." She sent me the link to it and it was great to see 'cause she was making the same point I was. Her point was in a few short words was science projects are great. They should be done at school because they are very frustrating for parents and families.

Okay. So, moving onto the next one -- organisation. This is the one I changed the definition on. The ability to create and maintain systems to keep track of information or materials. There's a key word in this definition. I'll just give it to you. Usually I ask the audience and you may be thinking, "So, what is it?" The key word is maintain. This is probably my weakest executive skill 'cause sometimes when I ask that people say ability. They say create. They say systems. And my response is, "I am great at creating systems of organisation. You know, every four weeks I have to come up with another one for keeping my study going 'cause the last one didn't work." It's the maintenance part. And if you have ever tried to turn a disorganised kid into an organised kid, you know that this is a long-term labour-intensive process. It's not just a question of creating a system and handing it off to the kid and expecting them to run with it. It's not even a system -- and this question, this would be better. Sitting down with a kid and saying, "You know what? Your backpack's a mess. You're losing stuff. You're forgetting to hand in homework. We need to come up with a way to keep your backpack organised. What would work for you? Let's put our heads together." 'Cause at least then the kid



might have some ownership. It's the maintenance part. Those systems can fall apart very fast because it's faster to not maintain a system than it is to maintain a system, and that's what kids are all about -- how quickly can I get the unpleasant stuff behind me so that I can go on with the fun stuff?

Okay. Let's move on to time management. Now, we really are reaching the end, and if you look at these later executive skills, you will find earlier executive skills embedded in them. So, time management is basically task initiation, sustained attention, and planning, with one additional element that's unique to time management and that's time estimation -- the ability to estimate how long it takes to do something. And in my experience it's the time estimation piece that really breaks down with people with poor time management. And what I've seen is more often than not if you look at kids with poor time management, they tend to underestimate how long an effortful task is gonna take, and then they leave it 'til the last minute. And if they're in high school or college, they're pulling all-nighters in order to get it in by the deadline. But I do see a subgroup of kids with poor time estimation who do just the opposite. They overestimate how long a task is gonna take and then they don't wanna start it 'cause they think it's gonna take forever.

I realised that a few years ago. I was working with a third grader whose mom said every night they fought about math homework. Long, knock-down, drag-out fights. The kid could do math. That wasn't an issue. He hated to do the homework. And it finally occurred to the mother they were spending more time fighting about the homework than it would actually take him to do it. So, she said to him, "How long do you think this worksheet's gonna take?" And the kid said, "It's gonna take at least an hour." And the mom said, "Are you sure? Let's see if that's the case." And they wrote down the time he started it, the time he finished it. They did the subtraction. It was ten minutes. The kid was stunned. He had no idea that the homework took that little time. And I do believe time estimation is a skill that can be taught. So, the mom the next night could have pulled out the next night's math homework and said, "Remember last night you thought it was gonna take an hour? It only took ten minutes. Look at this worksheet. Do you think it's about the same or a little more? A little less? Let's take a guess." And over time kids will calibrate their time estimates to become more accurate. Which I think is probably the way to go in the long run to help people with poor time management skills.

And just for your information, 'cause this is something I've discovered from working with adults. And why when I do longer workshops, I start by having everybody in the audience do their own self-assessment to figure out what their own strengths and weaknesses are because the more you understand about your own strengths and weaknesses, the more that gives you either strategies or empathy for the kids that you're working with. But here's what I've discovered. And this may be true of all executive skills, but I've particularly seen it with organisation and time management. If you are naturally good at either of those skills, it is really hard for you to understand people who are naturally bad at it. [LAUGHTER] And I say that 'cause my husband is great at organisation. You know, he just rolls his eyes when I get lunch for myself and leave foodstuff all over the counter. Or, you know, and meanwhile I'm astonished. We travel a lot. We come home from a trip, the first thing he does, he opens his suitcase and puts everything away. I can't do that. And for the longest time I used to just bring my suitcase into the middle of the living room and leave it there. Now our kids are grown out. They're out of the house. It's just my husband and I. We don't entertain much. But it



really irritated my husband. So, I've compromised. I have, like, four feet between the back of my sofa and the wall in my living room. [LAUGHTER] So, I take the suitcase. I put it behind the sofa so he doesn't see it and there it sits until the next trip. [LAUGHTER] You know, on the other hand, I'm great at time management. My husband is terrible at it. You know, so what have we fought about over the 45 years of our marriage? Him being late. And why have we fought? 'Cause I'm also low on emotional control. [LAUGHTER] I have an executive skills explanation for everything. [LAUGHTER]

Okay. So, let's go on to goal-directed persistence 'cause I do want to be able to cover what's going on on the brain here and we have to get that here first. This is a very late-developing skill. This is the bane of middle school parents. They expect kids to have this skill by middle school. You know, so they'll say to me things like, "Doesn't my kid realise that how he's doing now is gonna affect what college he gets into in four years? Or, you know, what classes he's allowed into when he's in high school?" And the short answer to that is no, he doesn't because kids don't have that kind of time horizon. Looking four years out is something they can't even conceptualise. And so -- and this is very different from having a goal. I mean, you can find a preschooler with a goal. He wants to be a policeman when he grows up. But to have goal-directed persistence means first of all you have to set a goal, and we are talking more about long-term goals here. But you can't just set it and forget about it. You have to remember it. So, there's working memory. You have to have a plan to achieve the goal, so there's planning. You have to start and finish the plan, so there's task initiation and sustained attention. And you have to resist the temptation to engage in all those other activities you'd rather be doing than working towards your long-term goal, so there's response inhibition. And if you're frustrated by that, then you've got to manage your emotions as well, so there's emotional control. So, you could probably make a case for, you know, almost every one of the executive skills being embedded into goal-directed persistence.

Now, even though this is a late-developing skill, when I'm working with middle school and high school kids, my thinking is if I can get this skill into them, they can use this skill to overcome other executive skill weaknesses. You know, they may be lousy at task initiation, but if the goal is important enough to them they'll get started. They may be terrible at sustained attention, but if the goal matters, they'll stick with it long enough to get it done. So, I think if you can see any glimmers of goal-directed persistence in a kid, you know, run with it. I think too often, though, unfortunately -- and I did this as a parent and I think we do this as teachers as well -- we only focus on goal-directed persistence in the context of school performance, and some kids aren't there yet. You know, school doesn't matter to them. But you may find other ways to work on this skill. If they want a driver's license, for instance. There are multiple steps. It's a long-term process to get your driver's license. If they wanna get a job there are multiple steps involved into getting and maintaining a job. So, there are other ways to get a goal-directed persistence with teenagers.

And then finally metacognition, which is the ability to see the big picture. You know, to connect the dots, to put the pieces of the puzzle together. It's hard to talk about metacognition without using a metaphor, which is apt because to understand metaphors requires metacognition. Very late-developing skill. And you can see it in younger kids and kids are able to, if you make it concrete enough, kids can reflect on their own behaviour, but when I think about metacognition I'm not just thinking about self-reflection and self-understanding, but I'm thinking about the metacognition required to do higher-level abstract thinking, you know, which is what we expect kids to do, you



know, in the upper grades and some of them aren't there yet. And another way I think about metacognition. It's the ability to deploy all the other executive skills at the right time and place -- to know when you need to emphasise task initiation or when you need to hang in there and stick with things with sustained attention.

So, it is a late-developing skill in part because it's dependent on a process called pruning. I'm gonna talk about two different brain processes real quickly. When we're born, we don't have too many synapsis connections. That's how the nerve cells and the brain communicate with each other. So, that rectangle on the left-hand side shows what those snap to connections look like at birth. This is from hybrid syndrome in a developing child -- and they have some great resources so I recommend checking that out. But from birth on we start growing new synaptic connections at the rate of 700 new synapses per second. So, by age six you can see we have this proliferation of synaptic connections. We can't keep doing that forever because our brains would have to be too big. So, there are a couple times in the developmental period where we discard or prune away excess neural connections. One is during the preschool years, and actually what current research has shown is that it's mostly sensory input that gets pruned away at the preschool years, and there seems to be some evidence to suggest that kids on the autism spectrum do not go through that pruning that we typical kids do, which explains that whole sensory overload piece of autism.

But in terms of executive skills it's the second pruning phase that's important, and that is with the onset of adolescence or puberty. And so you can see they're thinned away there at age 14. And how do we decide which synaptic connections to prune away? Well, the whole use it or lose it rule applies here. The ones we're not using are the ones that get discarded. So, think about how teenagers are spending their time. You know, if they're spending hours and hours playing video games you know those synaptic connections are not getting discarded. You know if they're not spending a lot of time in deep reading comprehension activities -- it's not that they lose the capacity to do that 'cause there's not a critical period for this. But this is the ideal time to teach that kind of reading comprehension because what we know about pruning is once we've gotten rid of those excess neural networks, the ones that remain work way better. You know, they're able to transmit larger volumes of information. They transmit it more rapidly. They can connect with more distant regions of the brains. Sorry. I thought I had another slide to show that. I don't. And if you think about what metacognition is, it's all about making connections. Turns out both literally and figuratively.

Okay. So, why is it important to help kids develop executive skills? I think of executive skills as the hidden curriculum. They are the foundation for everything we ask kids to learn in school. They're required to master the content of a curriculum, but no one talks about them. I mean, when the Core Curriculum came out in the United States I pored through it looking for explicit references to executive skills. They weren't there. And if they aren't explicitly referenced in the curriculum, then who's charged with teaching them? And if no one charged with teaching them then it's sort of hit or miss whether or not kids acquire them. And not only are they critical for school success, remember those higher developing executive skills build on the lower developing executive skills. They're also required for success in life. And the cartoon I have -- it's an American cartoon, but I think you'll get it. It illustrates this. The title of the cartoon is "Dale's Fourth-Grade Education Pays Off." And the prospective employer is saying to Dale, "The job you are applying for will require you to know long division, state capitals, and cursive writing." [LAUGHTER] Now, it's maybe a little outdated. I don't



know how long I've had this cartoon. But what I like about it is, you know, for this to be realistic what would that prospective employer be saying? "The job you are applying for will require you to know planning, time management, goal-directed persistence." I mean, all those later-developing executive skills.

So, you know, I use this with high school algebra teachers who say, "Wait, you want me to teach algebra and executive skills?" I use it with teenagers to say, "The skills that you are acquiring in school are not just gonna help you in terms of algebra 'cause you may never use algebra again. But there are some underlying executive skills that go into learning algebra that you will be able to apply once you get out of school."

Okay. So, let's talk about why this is so important. This is a framework for understanding these skills within a developmental context, and knowing what's developmentally appropriate helps guide the kinds of supports kids need. And you see in uppercase I've written, "CAN WE TALK ABOUT MIDDLE SCHOOLS?" And I'm gonna show you some evidence in a bit that shows you what's going on at middle school and why that's such a challenging age. The understanding then shifts from an explanation for underachievement as misbehaviour or as a moral failing to looking at it as a skill deficit which is a much more hopeful way of looking at executive skills. And then so looking at these, it gives us access to an array of intervention strategies which we can use to reduce the impact of the weak executive skill on performance or to teach the deficient skill. So, that's my argument around all of this.

Okay. So, now we've answered the why question. Let's go on and talk about what teachers need to know. And I've already talked about executive skills located in the frontal lobes of the brain, and here's a critical piece. It's the last part of the brain to develop in utero. So, that means that if there are any problems immediately before, during, or after birth, there's a greater likelihood that executive skills would be impacted than any other aspect of cognitive functioning. This is from the March of Dimes and this is pretty stunning. A baby's brain at 35 weeks weighs 2/3rds of what it will weigh at 39 weeks. And a lot of that later development is going on in the frontal lobes. So, if you're born premature -- in fact, I just saw a percentage. I can't remember what it was. Increases by 90% the risk that you will develop an attention disorder because of that. The most common birth problem we've seen associated with executive skill challenge is the umbilical cord wrapped around the neck. If it's wrapped around long enough and tight enough so that the baby is blue at birth, that means loss of oxygen, and the first part of the brain affected by loss of oxygen is the frontal lobes. And I'm not arguing that every kid born premature or every kid born with the umbilical cord wrapped around their neck is gonna have executive skill challenges, but they are risk factors.

And then there's exposure to toxic stress. And, again, this from the Centre on the Developing Child, and this shows typical neuronal development -- synaptic connections in the left-hand side there, and on the right-hand side it shows the result of being in an environment where kids are exposed to toxic stress, and their definition of toxic stress is -- let me just remind myself. Extreme poverty and neglect, repeated abuse, or severe maternal depression. So, obviously, that can have an impact as well.



And then I mentioned pruning. Let me talk about one other brain process called myelination. Myelin is a fatty sheath that wraps itself around nerve cells, and every time a nerve cell fires a little more myelin builds up. And it gets thicker and thicker with repeated firing of the same nerve cells. And, of course, when you're engaging in the same behaviour over and over again, the same nerve cells are firing. It acts just like -- let me see if I have another. Yeah. So, this is a schematic drawing of a nerve cell. They are among the largest cells in the human body. So, you see that pink part? That's the central nucleus at the top. And then you see the long axons and dendrites stretching out to connect with other nerve cells. That yellow part is the myelin. So, it gets thicker and thicker. It acts just like insulation on electric cord. The thicker the myelin, the faster the impulse travels. The faster the impulse travels, the better the skill. All skills improve with practise, not just executive skills. And the reason I have a picture of a woman playing tennis here is I got this information initially from a Sunday "New York Times" magazine article published several years ago now where the author was a sports writer and he got curious to know why an inordinate number of top-seeded tennis players in the world at that time came out of one tennis school in Moscow. So, he travelled to that tennis school to try to figure out what's going on here that's differed from other tennis schools that he'd been in. And when he got there, he found this little 72-year-old lady teaching tennis to kids as young as four or five. He sat back and watched. He said, "What is she doing differently?" And what he noticed was she had those kids practising tennis strokes over and over and over again. You know, here's a good forehand stroke feels like. Here's how you do a backhand stroke. No ball in sight. They're just getting the perfect strokes down over and over again. So, that's what set that teacher apart from any other tennis instructor he'd ever seen. So, he then went to Johns Hopkins University, talked to the neuroscientists there. Said, "Here's what I saw. Why is this working?" And they explain myelin.

Now, he noticed something else. He noticed that no matter how talented the kids were or how skilled the instructor was, it was still taking these kids about ten years to start winning tournaments. So, he got curious about that ten year mark, and he wondered if that applied to other natural talents. So, he investigated. He looked at chess, for instance. I mean, you can find gifted chess players at the age of five or six. It still takes them about ten years to start winning tournaments, at least against adults. And, in fact, HBO did a special on Bobby Fischer a few years ago. Most experts maintain that Bobby Fischer was the most brilliant chess player who ever lived. So, I was curious and watching that special to see that Bobby Fischer started playing chess at age six. He won his first tournament at age 15. He shaved one year off that ten year mark. If you've read Malcolm Gladwell's book, "Outlier," he's popularised this information, but the original researcher was a guy named Anders Ericsson whose area of research interest was to study expertise. What does it take to become an expert? And he finally decided it takes 10,000 hours of deliberate practise to become an expert. Deliberate meaning not too easy and not too hard. How long does it take to accumulate 10,000 hours? Ten years, six days a week, three hours a day.

Okay. So, I am not arguing that we want kids to get so good at executive skills that they could win tournaments if we could design one, but cut that in half. Ten years, six days a week, and hour and a half a day. It takes a long time to get really good at anything, and so we need to keep that in mind.

So, I'm gonna show you a series of MRI scans that's gonna take you pretty quickly from age four to age 21, and I want you to see how late in the process the frontal lobes -- which on the right-hand



brain there is the very top -- how late that turns blue because the key to understanding these MRI scans is the colour. And immature brain is red-orange-yellow. A mature brain is blue or purple. So, you can see at age four there's nothing that's purple and there's not much that's blue. What is blue is mostly related to sensory input like vision or touch. Okay. So, now the other thing. I didn't tell you this about brain development is the brain matures from back to front. So, you don't actually see this 'cause it's gonna move pretty quickly, but you will see the blue starting at the bottom of the right-hand brain there and moving up to the top. I only have it to age 21, so I don't have it all the way to age 25, but I think it'll give you a sense. So, here goes. Okay. So, there we are. And this says, "The 21-year-old brain is mostly mature, but the areas of green show that even at the threshold of legal adulthood there's still room for increases in emotional maturity and decision-making skills which will come in the next few years."

All right. So, hopefully this isn't overkill, but I want to make one more point about middle school. So, this asks, "What can the 13-year-old brain do?" You know, when I look at blue at age 13, I'm not seeing a whole lot more blue than I saw at age four. Okay. Right? [LAUGHTER] Luckily, there's less orange and red. So, there is some progress, but think of what we're asking middle school kids to be able to keep track of -- organise, remember, plan. I mean, they're changing classes now and that's a whole new experience for them. They've got more afterschool activities going on. They have multiple schedules they're having to juggle. They may be living between two houses. And that's what we're asking them to do at a point where their brains really aren't where we would want them to be, which is least what it looks like at age 21.

Okay? So, let's at least understand why some of the things we're asking middle school kids to do is so challenging for them. And at least with kids with attention disorders, Russ Barkley maintain these kids lag about 30% behind typically-developing peers. I don't know whether you can apply that same rule to neurodevelopmental disabilities in general, but certainly with respect to ADHD. So, you know, a 12-year-old is more like a nine-year-old. A 15-year-old with ADHD is more like a ten-year-old. So, think of what we're asking them to do. Okay. Couple other graphs and then we're done. This shows executive skill development across the lifespan. Just need to see something here. Yeah. Okay. So, this was from a summary article that looked at six different executive skills and tracked them. When can we measure them? When do they reach maturation? And actually this is where I got the information about flex. Oh, I didn't tell you this.

Flexibility seems to max out around age eight or nine. And that's the one on the very left-hand side. The number one there is flexibility. So, we can measure at age four. Maxes out around age eight or nine, which is why, you know, that needing to teach kids to be flexible becomes so important for some kids.

Number four, which is the furthest one to the right there in terms of development. They calling it goal setting and problem solving. I would equate it to goal-directed persistent and metacognition using our terminology develops much more gradually. Maxes out around age 25. Now, some of you may be looking at the right-hand side of this graph. [LAUGHTER] So, here's the sad truth about that.

Cognitive decline begins in the late 20s. 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." This is actually looking at other cognitive skills besides executive skills. I won't go through the whole thing, but I find fascinating. The first one to go: processing speed. Processing speed peaks around 22, begins to slow, declines starting around age 27. Now, let me share one more graph with you and then I think we'll be done. This, again, comes from the Centre on the Developing Child at Harvard, and it explains neuroplasticity in, to me, a very clear way. Neuroplasticity -- the idea that the brain is plastic and can change -- is a relatively recent concept. I mean, until recently, neuroscientists thought once you reached adulthood your brain stopped changing. No new neurons. No growth. No change. And then the technology we used to measure what's going on in the brain became way more sophisticated, and so we could do a much more fine grain analysis of what was going on in the brain and we realised of course the brain changes. You know, every experience changes the brain and we change until the way we die.

However, [LAUGHTER] the second piece of this whole neuroplasticity thing is the brain changes a whole lot easier when you're young than when you're old. And, in fact, this is measuring, too. You see a dark red line and a light red line, and it's measuring two different functions. The dark red line, which is high on the left-hand side, measures normal brain malleability based on exposure or experience. And that basically says how easily does the brain change just on exposure? And what that tells us you can see there during the first couple years of life the brain changes incredibly easily. You know, babies have an experience, it changes the brain. You'd want it to change easily. Think of what's going on the first two years of life -- language development, motor development, social development, and the interaction of all of those. So, luckily, the brain changes very easily just putting kids in an environment where they have the opportunity to develop those. But as kids get older, experience alone doesn't have quite the dramatic impact as it has during the first two years of life.

Now, that light pink line measures the physiological effort required to change the brain. You know, how hard do you have to work to change the brain? And what that shows you is throughout childhood you don't have to work very hard. But starting somewhere around mid-adolescence and then increasingly, you know, into your 20s and beyond it takes much more effort for the brain to change. And the way we measure physiological effort is glucose consumption. You know, that's what the brain burns for energy. And so, we find that when young kids are learning stuff they're not burning a whole lot of glucose, but the older we get, the more glucose we're burning, the harder it is we have to work. I use this with teenagers a lot. I'm not sure they get it 'cause they don't have what we call future orientation. They can't project into the future. But I show them where they are on that light pink line on that graph and I said, "Look at this. You may think that learning Spanish vocabulary words or acquiring good study habits is incredibly painful and difficult for you. It is never gonna be easier than it is right now." [LAUGHTER] "So, take advantage of it."

And even with the executive skill stuff that I've been doing working with kids at different ages, the feedback I'm getting from elementary school teachers is they can instill habits easier than high school teachers can. And, yeah, I realise they have all day to do that and they have a different orientation, but I'm beginning to think we are seeing differences in the younger we start with these kids -- as long as it's developmentally appropriate -- the better.

Okay. So, this is what executive skill weaknesses look like in kids. I've given you the technical definitions and I've divided them into two categories sort of the way the BRIEF does. The BRIEF -- the



Behaviour Rating Inventory of Executive Function, which is my favourite rating scale for executive skills -- talks about problems with behaviour regulation, emotion regulation, and cognitive regulation. These are behaviour and emotion regulation ones. You know, acts without thinking, that's response inhibition. Interrupts others, response inhibition. Overreacts to small problems. That would be emotion regulation or emotional control. Upset by changes in plans, there's flexibility. These are the problems with cognitive regulation. They're less visible, but they can be pretty debilitating, particularly in terms of academic performance. This is what gets kids in trouble by the time they hit middle school, high school. And it's problems with organisation planning, time management, and working memory.

I've got a set of cognitive regulation weaknesses in younger kids there as well 'cause it's not quite the extensive list you see with older kids. And then finally, you know, what can we do to help kids with weaker, immature executive skills? That's what I'll be talking about this afternoon, but basically if you don't come that's fine. It's basically this. We change the environment to reduce the impact of weak executive skills. We teach skills, we use incentives, and we mix and match as best we can.

Okay. So, I think we have time to take some questions.

[Delegate 1]

I'm in the school psychology [STATIC] team, so--oh, my.

[Peg Dawson]

I think that was me.

[Delegate 1]

So, if we have a child, you know, whose primary diagnosis is not ADD or ADHD and let's say they have a brain injury but their difficulties range in the executive functioning skills how much can we teach these children? I know it's a case-by-case thing, but.

[Peg Dawson]

Yeah. So, you're saying that a child with a brain injury, can we really expect them maybe to make the same amount of progress?

[Delegate 1]

Because we'll have the same comments from the school personnel, you know, about these kids.

[Peg Dawson]

Right.

[Delegate 1]

They're lazy. They're not trying. [INAUDIBLE]

[Peg Dawson]

Right. Right. Boy, all the more reason to help them under the impact of a head injury because that's another one that often looks like a hidden injury. The kid looks normal after the head injury. It can



have profound consequences. So, my colleague Dick is a neuropsychologist. He's worked with that population way more than I have. So, when you ask a question like that I sort of channel his answer, and his answer would be the same strategies work but you probably have to be more patient. You may have to break them down into tinier step-by-step processes, but the same strategies will be effective. And, again, the nice thing about kid brains is that they are more malleable and so they can recover from a head injury better than adults, but, you know, if I could strike one word from the English language it would be the word lazy because I just hate it when people look at a set of behaviours and they draw that conclusion.

[Delegate 1]

Thank you.

[Peg Dawson]

Yeah. Okay. Other questions? Oh, good.

[Delegate 1]

Thank you so much so far. This has been wonderful. I'm wondering if you've noticed maybe some scaffolding or maybe some of the skills that you might tackle first and make it easier to build on other skills later when you're working with students?

[Peg Dawson]

Yeah. And that's just something I've started thinking about recently, and that's partly why I divided them into sort of two clusters. I think those earlier-developing skills -- it can really make an impact on those -- then we can use those to help scaffold the later-developing skills. Whenever we've done work with elementary teachers, because Dick and I have both gone into schools where we say, "Okay. We can't tackle all 11 skills. Where do you wanna start?" And I'll tell you the two skills that most elementary teachers wanna start with: task initiation. No. Sustained attention and response inhibition. Those are the two skills that they wanna start with, and I think in some ways they're really complimentary skills. So, we if we can get kids to stop and think and we can get them to persist, then I think we're building towards all those later-developing skills.

[Delegate 1]

Thank you.

[Peg Dawson]

Yeah. Good question. Any other questions?

[Delegate 2]

I find it's not actually the children that are challenging or the behaviours or things like that. It's the parents and getting them to understand what they're dealing with. So, I often have to sit down and explain the reports. And I don't mean report cards. I mean the reports from, you know, our developmental paediatrician, the psychologist. They don't understand. "Well, what is working memory? Well, on paper it looks like my child's only behind, like, two years. They'll catch up." And then you also know that they're maybe in denial. They're still grieving the loss of the child that they didn't get that weren't--



[Peg Dawson]

I'm sorry. Say that last part again? Can you speak a little louder?

[Delegate 2]

Oh, sorry.

[Peg Dawson]

Yeah.

[Delegate 2]

Oh, usually I'm loud. That's why I'm trying to turn it down.

[Peg Dawson]

Yeah, yeah.

[Delegate 2]

[LAUGHTER] I also am aware of the fact that we're dealing with parents that are possibly in denial, have anxieties of their own, as well as probably still grieving the loss of the child that they were anticipating that they were going to have and raise and love.

[Peg Dawson]

Yeah.

[Delegate 2]

So, my question is what is the best way or what are some key words or phrases to share with parents one: to help them understand developmentally how their child is growing and progressing. And not to give them, I mean, I know some of them are very afraid to hope as well and be happy with even a little bit of progress because they can't see the forest for the trees. They can't see the big picture.

[Peg Dawson]

Right. Right.

[Delegate 2]

So, what are some key words or phrases to extend to parents so they can understand and see their child for who they are and be able to deal with and look past what they have?

[Peg Dawson]

Yeah. That's a great question. There are really sort of two pieces to it depending on the age of the child. When I do parent presentations -- and I do a lot of them. When a school invites me in to do a professional training I offer to do a parent presentation at no additional cost 'cause I love connecting with parents, and the first thing I say to them in my introduction is I say, "You know, I have one of these kids myself. The nice thing about having your own kid with some executive skill challenges is you get the longitudinal perspective. You get to see what they look like when they grow up." And



then I say, "Most of these kids turn out fine." And so that reassures probably 90% of the audience. Now, there are kids who don't turn out fine because of the greater degree of impairment. But when I say most of these kids turn out fine, especially if you use some of the strategies that I'm gonna talk about. I've had any number of parents -- and I think of several in Canada in particular -- who've come up to me who read "Smart But Scattered," and who've said to me, "That book was transformational. It changed the way I looked at my kid." So, I'm not saying that to sell my book, [LAUGHTER] but I am saying that, I mean, I never expected, 'cause the whole time I was writing the book I'm thinking, "Can parents really understand this? Or do you need a doctorate in school psychology to understand what I'm saying?" So, when parents come to me and say, "Yeah, that made a whole lot of sense," and it does describe those strategies and it describes them with common, everyday routines that all parents need to work with their kid.

And then that's the other thing you say to them. You don't have to leave it to the school to teach these skills. You can teach these skills around cleaning your bedroom or getting ready for school in the morning or getting ready for bed. I mean, there is so many ways you can wrap in instruction into what you are doing with a kid every day. [LAUGHTER] At the same, letting the kid be a kid 'cause that's the other thing. You're worried they're gonna go overboard and they're gonna over regiment this kid and they're gonna have checklists for every possible, you know, weakness. But the other thing you're saying which at some point -- and I, you know, I grappled with it with my kids around high school.

But, you know, they were bright kids with no serious problems, but I had to sort of separate my hopes and dreams from their hopes and dreams. And that's the way to talk about it, I think, in terms of hopes and dreams. And maybe even start with that -- talking with them about, "So, what are your hopes and dreams for your kid?" But, again, with teenagers -- or if you see a kid going off. You see a kid who loves working with his hands and, you know, dad wants him to become a lawyer, you may want to start that conversation even earlier because I truly believe every kid has inside them who they're gonna be, and if we help them discover that as opposed to imposing our hopes and dreams on them, these kids'll do way better. But that barely scratches the surface, but you asked some really profound questions there.

[Delegate 2]

Thank you.

[Peg Dawson]

Okay. Another question?

Guess we're done. All right. Thank you very much. And, again, [APPLAUSE] I'll be around, so, come up to me and ask your questions.

[MUSIC]