



Transcript of episode 53 - Processing Speed: Why Some Kids Are Faster Than Others

Emily ([00:46](#)):

Hey everyone. Welcome to episode 53, I'm Emily Kircher-Morris and today we're going to be talking about processing speed. An individual's processing speed has a huge influence over how well they succeed in certain settings and especially when they're asked to complete a task rapidly or switch modes without much time to adjust. Dr Ellen Braaten from Massachusetts General Hospital and Harvard University will be with us to talk about how this impacts our gifted and 2e kids. If you haven't already joined the Mind Matters Gifted Ed and Advocacy group on Facebook, don't forget to do so. You can find me there. We are talking about all of the episodes and it is just a great mix of parents and educators there so you can just ask all of your questions. Also, quick shout out to our patrons who help fund services like episode transcripts, music royalties, and more. You can join and become a member and if you choose the \$5 level you'll get a set of Mind Matters earbuds. That's like just one more morning latte, right? You can go to patreon.com/mindmatters to join there. Finally, don't forget to connect with us on social media. You can find us on Facebook and Instagram at mind matters podcast or Twitter. We are @mindmatterspod. Today's guest is alongside. Tell us a little bit about you.

Ellen ([02:04](#)):

I'm Ellen Braaten and I am a child psychologist and the author of Straight Talk About Psychological Testing for Kids and also Bright Kids Who Can't Keep Up.

Emily ([02:14](#)):

Stay with us. (break)

Emily ([03:07](#)):

Dr Ellen Braaten is the director of the Learning and Emotional Assessment Program, also known as LEAP at Mass General in Boston and she's an assistant professor of Psychology at Harvard Medical School. She's also the coauthor of the book Bright Kids Who Can't Keep Up. Ellen, I'm really happy you're here today.

Ellen ([03:25](#)):

I'm very happy to be here.

Emily ([03:27](#)):

We're going to talk about processing speed. And I think that this is something that our audience is really going to be very interested in and curious about, I know. So I'm a clinical mental health counselor so I work a lot with kids and this is something that I see often and that I'm often helping parents and teachers, you know, support these kids. But why don't we start and just kind of, if you can describe what is processing speed and how you know, well how do we need to conceptualize that as we are thinking about our kids who struggle with it.

Ellen ([03:56](#)):

The very simplest definition of processing speed is how long it takes someone to get something done in a particular period of time. And it's, when I'm talking about it as a psychologist, what I'm really looking at is a much more kind of neuropsychological definition of that word. Looking at how someone, how quickly someone is able to do kind of the really boring, mundane things in life. So, and the way we would measure something like that is how quickly they can copy a code or how quickly they can name a certain number of words in a given period of time. But you know, one way to think about it is that there are just some kids who are naturally fast. They run, they talk, they write, they do all sorts of things that are at a rate that seems kind of appropriate or sometimes even fast for their age.

Ellen ([04:46](#)):

And then there are other kids who have more difficulty doing that. And it's, we're not talking about intelligence, what we're talking about this, we're talking about kind of your ability to just get done with all of the little tasks that you have to do in order to be a fluent in an efficient sort of person in the world. It really, information processing speed is, it's been used a lot in neuropsychology and we're using it more and more in fields like education and child development. But it really is, I'm sort of simplifying it, but in a lot of ways it's a more complex process. And so we, we define it and measure it in many different ways.

Emily ([05:28](#)):

What would be a sign that this might be what's going on with the kiddo?

Ellen ([05:32](#)):

So it's funny, most parents would say, "it takes him forever to get anything done." Or a teacher might say, "Oh Billy just can never find his papers and get them out of his backpack quickly enough or make it out to the playground in time." It's usually when parents complain or teachers might notice it. It just seems like, boy, he seems so smart, they just can't get anything done. So that's kind of the more general thing that I usually hear from parents. But when we're talking a little bit more specific, it usually relates to one or more of three different areas. One is how well we perceive information. You know, like this can be through our senses, how well we kind of take in information hear it, see it. How well we process it, meaning enact a kind of response and then sort of how well we can organize what it is that we want to say. So it can be seen in a lot of different areas of functioning, but very often when I hear again it's parents or teachers saying "it just seems just never done with anything on time." And rarely is it ever about competence of getting it done. It's not that sort of thing. We're not talking about not being able to perform the task but not being able to do whatever it is at the time that it's supposed to be done.

Emily ([06:55](#)):

I hear you talking a lot about things that sound like closely related to some executive functioning skills. Is processing speed itself a type of executive functioning or is it a separate construct?

Ellen ([07:08](#)):

So you know, executive functioning is one of those constructs that you know, it includes a lot of different things. Being able to get organized, being able to start a task, finish a task, and in the past executive functioning has always sort of included processing speed as one of them. And one of the ways that I got interested in processing speed is I evaluate a lot of kids. And I would notice that the kids with processing speed weaknesses outside of any other area of academics or executive function seem to struggle more than those who didn't have that as part of their profile. And what I think of in terms of processing speed and its relationship to executive function skills is that I see executive functioning as the car, all the different skills and all the different things that you need to drive a car to steer it, to make sure you're on the right map to know when you've got to start and plan out when you're going to finish your ride. But that processing speed is really the motor. It's, it's what allows the car to go either fast or slow. And so I kind of think of processing speed as not just another executive function, but what allows us to power our executive function skills.

Emily ([08:27](#)):

I know in my practice when I'm working with kids who struggle with processing speed, sometimes they fit very neatly into a specific diagnosis. And other times, maybe not. What are some of the common clinical diagnoses where we might see some of this slow processing and how does it fit into those diagnoses?

Ellen ([08:47](#)):

Oh, that's a great question. Well when I started researching this topic, and it's been about 12 years now that I've been researching it, and it's still ongoing, I mean we still have a lot of questions to answer, but it used to be thought of if the child had sort of this slow processing speed profile that we used to assume it was ADHD. My research shows that that's not the case. Although there's about a 60% overlap between kids with ADHD and kids with slow processing speed. So that leaves about 40% of them who don't have ADHD. And the second group of kids that I was always getting referred from, like the pediatrician or the teacher, they would say, "you know, I wonder if this kid has some kind of like Asperger's." This was in the day we still had the Asperger's diagnosis, but Asperger's or some sort of autism spectrum that just seems to be something off about their social skills.

Ellen ([09:40](#)):

But they don't seem to completely have autism or Asperger's, but I need a second opinion. Many of those kids did not have autism or Asperger's, but they had so processing speed and the problems that they were having were really interfering with their social relationships. So they are quite social but or had the ability to be social but just couldn't do it in real time. So those are the two of the bigger areas that we find kids with processing speed either fitting into the diagnosis of ADHD or seeming like they have some of the similarities of a child who might have a nonverbal learning disability. And then the other categories that we find are kids with learning disabilities. Many kids with learning disabilities will have slow processing speed as part of their profile, as many of 20 or 30% of kids with dyslexia or dyscalculia or dysgraphia also will have that.

Ellen ([10:36](#)):

And their profile is a little bit different in their trajectory, their ability to access the supports that we put into place for them are a little bit different than kids who also have dysgraphia for example, but don't have the processing speed deficits. And then another big group of kids we see who have this have

anxiety, and I think that's kind of a, you know, it's sort of a circular thing where if you're sort of wired to have slower processing speed and also wired to be sort of more, more anxious person, those two things can really feed off each other and really make life kind of difficult.

Emily ([11:15](#)):

Right. We do some cognitive assessments at the office and it's always interesting when you see those kids who do have those slower processing speed scores, and I questioned, I'm like going, okay, so is this perfectionism like I'm anxious and so I'm going back and double and triple checking and that slowing me down? Or is it like you said that kind of that circular process there that kind of holds kids back?

Ellen ([11:37](#)):

Absolutely. It's, it is one of those things where it's hard to tease apart, is it, yeah, what's the chicken and the egg here? My sense is that for the most part it's usually some of both. It's usually a child who comes who's a very cautious and I like to sometimes say deep thinker, you know, cautious thinker and breaking that cycle of the anxiety and the processing speed means kind of addressing both of those and not just the anxiety cause it's because if you've got the tendency to be a slow processor, even if you control the anxiety, you still have to deal with the fact that you might be feeling anxious a lot of your life because you're not getting the things done that you're supposed to be getting done.

Emily ([12:18](#)):

You know, it was interesting too, you were talking about some of those other, you know, learning disabilities with the reading or the writing and I actually just finished writing a book that's going to be released later this year about teaching twice. Exceptional kids.

Ellen ([12:29](#)):

Oh I can't wait to get it.

Emily ([12:30](#)):

Well thank you. Yeah. And I'm, I'm excited though because I come from a clinical background, but I was also a teacher but I taught in gifted ed programming. So I kind of come from that angle with a lot of things. But when I was really doing that research about the dyslexia and those types of things, thinking about how a student is, is reading, if they have poor working memory or processing speed, and then they also have this phonological issue with with recognizing the letters and getting the sounds. You're asking them to sound out these words and so let's say there are four sounds in a word, and by the time they get to that last letter of that word, they have to remember what that first, that first sound was to be able to string it all together. There's a lot of processes that are going on with that.

Ellen ([13:10](#)):

That's exactly right. That's such a great example because what I would find, and one reason why I became interested in this group of kids is that I would find that even very bright kids like even say gifted kids with dyslexia didn't always respond in the same way I would have expected them to, to the tutoring that we would recommend for their dyslexia, because they had the slower processing speed. So even though they might've had terrific language skills and usually kids with terrific language skills who have dyslexia make very good progress. The kids with slow processing did not. And you bring up another good point too about twice exceptional kids. We know that there is an inverse correlation between general intelligence, what we call kind of G, that the essence of our intellect, our vocabulary and problem

solving skills versus our processing speed. So that in many ways very bright people tend to have lower processing speed anyway.

Ellen ([14:11](#)):

That it's somebody who's thinking very deeply, oftentimes thinks a bit on the slower side. And so what I have found in my research is that kids who have either even no other disability but who are very bright but who have a very significant weakness in processing speed, their processing speed might even be average compared to the population, but because their intellects might be at the 98th percentile, but their processing speed is average, we're finding that those kids are almost as high risk for other kinds of emotional problems as kids who have very weak processing speed but more average in terms of their intellect. So it's this discrepancy between your ability and your ability to actually complete the task takes a much greater toll on somebody's emotional health than we ever realized in the past.

Emily ([15:04](#)):

I think that's one of the things that is so confusing about intelligence testing in general. You know, I think a lot of people are familiar with the general ability index that is used to get a better picture of where a child's cognitive skills are without necessarily having it influenced by that working memory and processing speed. But when you look at those scores and they look like they're in the average range, that's just a very confusing thing for people to put into perspective that it's the discrepancy. It's kind of like the difference between the ability and where that is versus you know, Oh, well this is still where it should be for, for this particular child's age.

Ellen ([15:42](#)):

It's really tough. We've even in in my own lab, just the last in the last week we wanted to look again at some of the risk factors and and the resiliency, what you know, what, what kids would slow processing speed, which ones tend to do better over time, which ones have less anxiety, are there other things that we could look at in their profile that would help us explain risk and resiliency factors and it's hard for us even to figure out where to cut the data, like where is it, what, how big of a discrepancy between intellect and processing speed is a significant one and it's a question we don't know yet, but it is difficult when you're looking at those scores on the Wisk to know is this something we need to be concerned about or is it something that is just sort of, you know, within the normal range for most people.

Emily ([16:36](#)):

So you're looking into it, but what's your gut say? Like what do you, what do you think, like is there some signal in those numbers that it's like, Oh okay. Or is it more about observations of what, how the child is performing and like how their emotional ability to kind of get through some of those things. What do you think or suspect?

Ellen ([16:52](#)):

You know, I think it's a little bit of all of the above that you just mentioned, but I also think what plays a huge role is the environment. So you might have a child. So I think you know, something that's, that's more than a 20 point discrepancy on the whisk is something that is concerning to me. Especially if they've come to clinical attention to somebody like you or me, it means that there's something that's causing them some distress. But I also think that there are plenty of kids who could have an I, you know, verbal and perceptual reasoning IQ of one 35 and a processing speed factor of a hundred but are in the right kind of school environment where that's not an issue at all. And the same profile, the same exact

child in a different educational environment, that discrepancy might be huge for them. So it depends on what the workload is, what the environment is asking them to do. So it's, it's kind of a sort of environmental and child centered question. It's, it's not just one or the other I think.

Emily ([18:05](#)):

What I hear you saying is something that I feel like I really strongly agree with and that is there's not anything inherent about that discrepancy or that ability that is going to cause struggles just in and of itself. It's about whether or not the child feels able to take risks or if they're, you know, supported and if they have accommodations that are necessary that are really going to help them achieve what they can.

Ellen ([18:29](#)):

Absolutely. And I think, you know, this is not a new phenomenon in terms of how these sorts of traits are distributed along a continuum of the normal population, there have always been very bright people who have not been as good at doing the sorts of tasks that would make you a good factory worker, for example. Like the processing speed things that we measure on our tests are very much the sorts of things that are, that make you a very good checker or very good a person who could, you know, work on a factory line and having to process the same thing over and over again very quickly. So those are good skills for the right kind of job. The problem is that now that discrepancy in our world has become a liability. So it used to be that if you were sort of a person who might think about deep, I don't know, ideas or be more of an engineering major or a scientist, that you had a lot of time to spend just percolating on ideas, whether you were, you know, a child of eight who had these ideas floating around in your head or someone at 18 there isn't time for that anymore. That's not how our environment, not our school, not our society acts. So that person that has that natural tendency to think deeply but slowly doesn't have the time to do either one of those things. They don't have the time to think or even think slowly.

Emily ([20:04](#)):

Yeah. Let me ask you this, I'm curious, what are your thoughts about math time tests at like the elementary level where they're looking for fluency and how many problems can you solve in a minute? Can you get this many done?

Ellen ([20:15](#)):

So I have no idea what that really is supposed to measure and I find in a lot of school, I agree. It is. So what it's kind of like, so what it's good for us to know that if the child is required to do math, that's very quick. We know that, Oh, that will be hard for them at, so as a diagnostic tool for me, I find it helpful. It is not a learning tool. And I am always baffled by the fact that many teachers seem to think that kids are learning when they're doing these time tests. And so it's, you know, I'll have teachers say, well, you know, we do, we, you know, we were practicing the multiplication facts and he's just really slow. I'm like, well, making somebody do something fast that they're not competent in doing is not teaching them anything other than I'm not very good at this. So yeah.

Emily ([21:09](#)):

No, I, I admit I was kind of leading the witness there I think because, because I had a feeling that that was how you're going to respond. The are just these things in the schools that we do without really critically thinking about it. Like what difference does it make if there's a child who processes slowly and

needs more time to solve that math, but they can solve very complex, you know, mathematical equations. They're not going to be 30 counting on their fingers, although sometimes I still do.

Ellen ([21:33](#)):

Oh yeah.

Emily ([21:34](#)):

I think we just need to look at ourselves a little bit more for educators or for parents. Like what are we really asking here and is this necessary or realistic?

Ellen ([21:41](#)):

Yeah, it, it, it's not teaching anyone anything. It's giving, you know, people say, well, it's giving them practice in doing that, but the problem is that, they may never be the quickest with a paper and pencil. And it's also for the kids who actually do struggle in math, especially sort of simple computational math. The good kids are just getting much, much faster at it while the other kids aren't learning anything from it. Because if you're really good at something, you're practicing it, you're going to get better at it. But if you're not good at something, you know, if there's something that I can't do well and you're asking me to do it over and over again, but not giving me the tools to know how to do it well, then it's not going to be beneficial to me whatsoever other than to make me feel discouraged.

Emily ([22:25](#)):

Right. And I think, you know, there's a big push right now with supporting twice exceptional kids and really focusing on strengths-based instruction. How do we take their strengths and capitalize on those instead of this constant remediation and in drilling on, you know, these areas of perceived weakness. Let's take that example of the student with the math. If you take their strengths and they really have those strong math analytical skills and build on those, those fluency skills are going to gradually come up appropriately rather than just like the drill and kill.

Ellen ([22:55](#)):

Exactly. And if they don't come up, then that's something to work around. Not something to drill in anymore. So by the time they're in eighth grade, they're like, you know, like I'll never be good at my multiplication facts. I'll always get mixed up, but move on. Like that's not the important part of math. The important part is solving problems in new and different ways and we're holding kids back when our standard is what you just described. Quickness in math. And and you know, I, I'm going to digress here for a minute, but also the idea that kids, especially kids with slower processing speed who are good at math, have to like for example, show all of their work or you know, sometimes these are kids who are very quick in their head and can figure out the answer to a problem. But when they have to put it on paper with every step mapped out, they aren't able to solve the problem quickly. And that's just one example of how learning really does need to be somewhat individualized, especially when we're talking about kids who are very bright.

Emily ([23:57](#)):

Definitely. What are some ways that we can accommodate kids who have slower processing speed to help them be successful academically or in things that they have to do at home.

Ellen ([24:08](#)):

One of the things that is so obvious, but I have to say it is to give them more time to get things done. That's a given for kids. I think we're talking about having more time is also teaching them how to manage their time. And what I do find with a lot of these kids, I mean a lot of these kids, is that they are very poor at time perception. Meaning that that time generally doesn't mean the same thing to them as it does to us. In fact, I've done some research on this in regard to ADHD and there is a growing body of research that shows that people with ADHD actually have more time perception, meaning that people with good time perception know what 10 minutes feels like and therefore know what they can do in 10 minutes.

Ellen ([24:57](#)):

So you think about it, how hard is it when you're trying to teach a child with ADHD to manage their time better, and they really don't even have a concept of what they're trying to manage? And the same goes for kids with slower processing speed. I feel like they have a tendency to have a poor awareness of time. And so teaching them to tell time to use an analog clock so they can see time passing by I think is very, very helpful. The other sorts of things that can be helpful in terms of accommodations are to figure out how to make the environment more efficient for them. So little things are hard for kids and adolescents with this issue. Getting their things out of their locker, remembering, "what's my locker code again and wait a minute, what do I need to get out of my locker?"

Ellen ([25:47](#)):

So making anything in their world that can be more efficient is good. Keeping a second set of textbooks at home so they don't have to carry those around. Having models of the finished product of assignments so that they know, here's what the start looks like, here's what the middle, here's what the end looks like, can be very helpful in, in organizing because we know that the better organized we are at something, the quicker we generally are at something. And then I think using technology in a wise way is also a good thing. Sometimes I find that technology can be a hindrance. So it's not always the best thing. You know, we can't just say technology is always good, but using in a way that makes things much quicker for them I think is important.

Emily ([26:34](#)):

Going back to what we were talking about earlier, where it's like we do things the way that we've always done them for parents and teachers too with the accommodations. I always feel like I have to talk to families. It's like it's not enabling.

Ellen ([26:46](#)):

Yeah.

Emily ([26:46](#)):

Like I feel like they think that sometimes it's gonna create more of a problem or make it worse or it's not going to get better. And I just try to encourage them and say, listen, what's more important, letting your child struggle so much that they have that learned helplessness or teaching them that there are tools that they can utilize to improve and to build the structure around them that'll help them be successful?

Ellen ([27:09](#)):

That's right. And I think the key there is using the things that they need to be successful and then also teaching them self awareness. Self awareness is something that we do and try to improve on throughout

our entire life. So in some ways these kids can be ahead of the game knowing that, you know what, Oh boy, this kind of situation is just not my cup of tea. It's not something that I can do well in. So I either need to have accommodations or I need to find other areas where I can excel. So it's, it's, I think approaching it from a, a standpoint of we need to get your child to adolescence and through adolescence and into adulthood so that they find the right kind of environment that is right for them. Parents are right, they won't always need these accommodations cause they won't always be in school. They will be in a job that meets their needs, that is right for them in a way that doesn't leave them feeling discouraged and anxious and poor self esteem.

Emily ([28:13](#)):

Are there any ideas that you have about helping kids learn to self advocate? Maybe their parents are pretty aware and can kind of, you know, help them at home, but they really need some skills to be able to talk to their teachers about what they need. You know, whether they're in high school or elementary school.

Ellen ([28:27](#)):

Well, first of all, most kids know this, like this is, if a child is evaluated and we find so processing speed, this is one of those things that kids don't tend to say, "Oh yeah, you're wrong about that." I mean I have had kids argue about, "no, no, I'm a good reader," even though they're, you know, they need support in reading, or, "no, no, I'm not anxious at all. I'm fine." But when you talk to a child about, you feel like it takes you a long time to get some of these kinds of things done that most of the time kids are pretty aware of the fact that they're the last one done in class. So it, it's good to start with what they know and what they think. And then to sort of talk about the strengths of that. What I usually talk to kids about is that there are some people that really deep think very deeply about things and that usually takes a little bit longer for us to do.

Ellen ([29:19](#)):

When we're thinking deeply, it takes us, it takes a while for us to think through some of these problems and that tends to be your way of thinking and problem solving. So you are in school and school doesn't allow that, you know, and I'll kind of talk to them about the fact that in the future, in their lives they'll have lots of time to do a lot of thinking. They're going to find the right kind of job and the right kind of friends that, that encourage them to do that kind of thinking. But for right now we've got to figure out how to be a better match between your style of thinking and what the school requires or teacher requires. So then I will really brainstorm with them on how, what do you think would be most helpful? And it's surprising that so many of them do have an idea about what would be most helpful.

Ellen ([30:07](#)):

And then the next step is to really say, "well how do we make sure this happens for you? I'm not going to be there with you, your therapist, your parents or whoever isn't going to be there. So how do we make sure that your teacher knows when you need more time?" And so then teaching them, you know, advocacy isn't always having an appointment with the teacher to say, you know, I need this or that. It's sort of being able to feel confident raising your hand and saying, "can you repeat that?" Or even in your peer group to be aware of the fact that when things are going fast to say, "Hey, you guys, you know what? I didn't get all that. Can you just say that again?" Those sorts of small ways of advocating for oneself, but the whole key to that is understanding oneself and to have a really good sense of what one needs.

Emily ([30:56](#)):

Dr Ellen Braaten, author of Bright Kids Who Can't Keep Up. Thanks so much for joining us on Mind Matters.

Ellen ([31:00](#)):

Oh, it's been a pleasure. Thank you so much for having me.

Emily ([31:04](#)):

There are many reasons why a gifted kiddo might struggle with processing speed. Perhaps they have an attention deficit or maybe another diagnosis. Maybe their bandwidth is just being used by all of the information that they're trying to take in. It could be that they are seeing all of the possibilities and contemplating a decision or worrying about doing something just right. Our world is go, go, go all the time. We have information coming at us a million miles a minute and for those of us who take a little bit longer to process, we can get left in the dust. It doesn't mean someone isn't smart and it doesn't mean they need to modify themselves to keep up. If a flower doesn't bloom, we don't try to change the flower. We change the environment. A flower might need a little more sun or maybe a little bit less water. A child might just need some time, or a different routine, and maybe sometimes we should all just slow down a bit ourselves. I'm Emily Kircher-Morris. I'll see you next time on Mind Matters. (music)

Dave ([32:16](#)):

Big thanks to Ellen Braaten, we're grateful she took time to be with us today. Thanks to our social media friends who keep the conversation going between episodes. Find us at Facebook and Instagram at Mind Matters Podcast, and tweet us @mindmatterspod as well. Thanks to our Patreon members who help us keep the lights on. And if you'd like a transcript of today's episode, it's available on the episode page at MindMattersPodcast.com. For Emily and our staff of writers and producers - as if - I'm executive producer Dave Morris. Thank you for listening. (music End)