

Mary Miele ([00:02](#)):

Yay. Okay. Hello everyone and welcome to April's edition of the Evolved Education Podcast. We are publishing this on April fool's day, but make no mistake about it, this is not going to be a foolish webinar. We are going to talk today about something very near and dear to my heart is the brain. I've invited today a guest who I've come to know professionally as someone that really delves into important work with students and families. So Neill Seltzer is here today to talk with us about his work, especially regarding an assessment that I want everyone to know about called the Mindprint Learning Assessment. Neill Seltzer, welcome to our podcast. I'm going to give you a minute to introduce yourself and your credentials to our audience.

Neill Seltzer ([00:54](#)):

Great. Well, thank you, and I am so happy to be here and I want to preface this by saying that a lot of what we're going to talk about today and the way it fits in, you guys are doing something very important in the tutoring space, and I don't want that to be lost, because I think that's an important place to start the conversation. As for me, boy, I've been doing this for a long time as you know. I think I saw my first tutoring student in 1992 in Hong Kong, going all the way back, but along the way have written, oh, I don't know, probably a dozen books on the SAT and the GRE and working with teenagers, built and run a number of different tutoring companies. But I actually, I left the tutoring space about a year and a half ago to join Mindprint.

Neill Seltzer ([01:57](#)):

One of the reasons why I did that is so much of what we've always done in tutoring is hire really smart, really intuitive people, who sit in front of a student and work with them and respond to them and try to figure out who that student is and what that student needs. A lot of that work is done by intuition, hard earned intuition but intuition nonetheless. What I found when I ran into Mindprint was that suddenly all of these things that you're sensing, guessing, slowly sort of feeling your way towards was suddenly knowable and measurable, and the ability to walk into even a first session with confidence, knowing who that student is and what that student needs and not having to figure things out through trial and error, to me, that's why I started the conversation with you guys are doing something really important in tutoring because that's what tutoring should be like.

Neill Seltzer ([03:01](#)):

The science has moved on, the world has moved on. These things are now available to us, and anyone who's doing it the old way is, I mean, they're still smart people doing good things, but they're frankly not taking advantage of the insights that are now available to people who care to go find them.

Mary Miele ([03:23](#)):

I am so excited that you brought all of this up from the get go, because I want to dive in because I think now everyone's hooked. They're like wait, wait a second. What is this? What is this that's happening? This Mindprint, how come I'm just learning about this? I will tell you it has absolutely changed everything for us as a tutoring company. It has changed everything for me as a person because I took it myself and it changed everything for my own family because I've had my children engage as well. So tell us just if we're coming in now and now everyone's going, okay, what is this Mindprint? How did it come to be and who has been involved in creating this brilliance assessment? Can you just give us some background on this test and what it is really all about?

Neill Seltzer ([04:13](#)):

Sure. So let me back up and just start with what is it? So the assessment itself is online. It takes about an hour, it's asynchronous, meaning the students can do it on their own, they don't need someone to administer it to them. It consists of, there are nine tests in the battery, and what we are measuring are the 10 cognitive skills that are most closely correlated to performance in school, to academic performance and performance on standardized tests. Well, first of all, there's no math, there's no reading comp, there's no bubble sheets.

Neill Seltzer ([04:56](#)):

What I find is actually that kids are usually pretty intrigued. It looks like a bunch of brain games. It doesn't look like anything they've on in school. It's not like a million questions in a like newsprint booklet or something. They don't need to be intimidated by it. Again, usually once they've gone through it, they're like, oh, that was kind of cool and they want to know what it was all about. The test itself, we didn't make it. It came out of Penn Medicine with a grant from the National Institute of Health. The significance of that is that it came out of what was in effect, a large research institution who set out to create what for them would be the gold standard of scalable, accurate, cognitive assessment that they could use for any large scale cognitive study.

Neill Seltzer ([05:45](#)):

So they were very well funded, they cut no corners and they really set out to create the tool that they wanted. There are other things similar to it that have come out of commercial labs, where they rushed it to market and they normed it with a much smaller set, but these guys, it was academia, they were well funded, they had all the time in the world and so they cut no corners. It is now, really for the first couple years of its life, it lived in the big research institutions. So anyone doing large scale cognitive studies of any kind, this was and continues to be the go-to battery.

Neill Seltzer ([06:21](#)):

So it's been cited in hundreds of studies. NASA used it in their famous twin study. If you know who Mark Kelly is, he's got a twin brother. One went up to the space station, one stayed down, they measured them on physically, emotionally, and to see if there were cognitive because they were twins and this was the battery that they used, and I believe the astronauts at NASA still use the same battery that we use for our students. So it's like good enough for NASA, good enough for our tutoring students.

Neill Seltzer ([06:53](#)):

So that one hour assessment is what we have adapted to use in schools. So we're now in over 200 school districts across the country and the way I kind of think about it is there is a small subset of kids who get a full neuropsych, but it's a tight. If the student is more than two years behind grade level and it's something like 1% of the population, but the information is great. It's like who is this student and what do we need in order to support this student? So the question is, well, why wouldn't you want that same in information for all kids? It just was never possible to do that until now.

Neill Seltzer ([07:46](#)):

So now any kid, at any level in school well known by age can get the same level of insight that you used to only get with two days and \$6,000 of full neuropsych testing, which most families don't need to do

and never will do. But now that's available and accessible, and why not put that information in the hands of students in the hands of parents and in the hands of educators,

Mary Miele ([08:20](#)):

I could not agree more. I just want to get into those 10 cognitive skills because I think something that I've been teaching our families is just the value of knowing your child's brain because when you know it and your child knows it, you can start working with it as opposed to maybe without that knowledge. Then also you can devise certain tools to help you with areas that are not strong, maybe a lagging skill or something that you don't have in your skill set using your strengths. So I know just generally speaking, there's memory and there's executive functioning and there's a lot of reasoning pieces to this, but could you just tell us a little bit more about what are the details of these 10 cognitive skills and why should we care anyway about all of these.

Neill Seltzer ([09:16](#)):

Sure. So I'll run through the 10 things that we're measuring, but let's look at it through two different lenses. Let's look at how it plays out in an academic setting. How am I going to use this to help my student perform better in school? But then let's also look at it in terms of through a parent lens, and how does this change the conversation and the relationship in the home specifically around executive functions. So overall we are measuring three primary domains. We're looking at complex reasoning. So your verbal reasoning, your abstract reasoning and yours spatial reasoning. We're looking at long term memory, and that comes in two flavors, there's verbal and there's non-verbal. Then we're looking at executive functions and into that bucket we put your working memory, your short term memory, we put your flexible thinking and your attention, and then we're also extracting from this your processing speed.

Neill Seltzer ([10:17](#)):

So let's imagine in a school context. So, the phone rings, a parent calls and says, "Hey, my student needs help with reading comprehension because that's what my teacher told me." We had the parent teacher conference and they said he is struggling with his reading and that's what we need help with. Maybe this is a fourth grader who is struggling with suddenly more complex texts. Maybe this is an eighth grader who now suddenly has longer texts and a greater variety of texts, or maybe this is someone taking the SAT who is looking at reading comprehension and needs to bump up their reading score.

Neill Seltzer ([11:03](#)):

When it comes to reading the most likely culprits when a student is struggling with reading are, it could be working memory, and the working memory means that by the time they get to the fifth paragraph, they've forgotten the first paragraph or by the time they get to the questions, they've forgotten what was stated in the passage. So that would be a working memory problem. But their reasoning could be absolutely strong if they can retain that stuff, maybe it's a reasoning problem. They have no trouble with the memory. Their recall is fine. Their retention is fine, but when they read it, they have trouble just making it snap into focus.

Neill Seltzer ([11:46](#)):

You say, "Hey, what was the main idea of this text?" And the conversation comes to a halt. Or maybe what you get is some variation or some rewording of the first sentence because they're having trouble just sort of assimilating all the facts together and having that come out in a concrete picture, that would

be a reasoning problem. Maybe the memory's fine and the reasoning is fine, but it's a processing speed. So they have no trouble with the retention, no trouble making sense of it having it snap into focus, but it takes a little bit longer and you got to give them that space and time in order to do that.

Neill Seltzer ([12:29](#)):

Now, let's think about it now from a teacher or a tutor standpoint. So I know literally hundreds of tutors who love it when their students go back to the passage and underline all the facts for every question they're going to answer, and that is great advice. Smart, let's make sure that they can back up their answer choices and they go find it. But that is primarily attacking the memory problem. That's not necessarily going to help with the reasoning problem. I know if someone tried to make me do that, when I was doing a reading comp passage, frankly, I'm just going to ignore them. Not because it's bad advice, it's good advice, but it's not that I need.

Neill Seltzer ([13:17](#)):

So if they have a reasoning problem and you as a tutor bring a memory solution, you're actually not making their lives easier, you're not scoring any wins, you're not getting buy-in. They're not going, "Oh my God, that was amazing. That changed everything." What's going to happen is they're going to stop listening to you because they had advice that you're bringing didn't help that student, no matter how good the advice was, it wasn't the right advice for the right student. The same thing is a true reverse. If you try to bring in a reasoning solution, but it's a memory problem, you get the same thing.

Neill Seltzer ([13:54](#)):

So what a really smart and intuitive tutor is going to do is they're going to start down one road. They're going to see how the student responds. They're going to change it up. They're going to try something different the next week, and then they're going to try something different the next week, and the really great ones will figure it out. But we're now three weeks into the relationship. We put some hours in there. We put some time in there and you have to establish that working rapport with the kid. The kid's got to feel the positive impact of these things in order to start chasing even bigger goals and to get those wins and to get that positive response.

Neill Seltzer ([14:32](#)):

So that's a sort of one example of how it could play out in an academic setting. Now, the flip side of that are the executive functions, and I got to tell you I have a 10 year old, a nine year old and a seven year old here at home. I try not to yell at my kids, but it happens and there there's any number of times when it's like, "What do you mean you forgot your backpack? Are you kidding me? I told you not to your backpack." You're here sort of tearing your hair out and you can't understand, like I told him six times, how can he possibly look at me and be like, "I have no idea what you're talking about."

Neill Seltzer ([15:23](#)):

I bring up executive functions in this context, because I think that's where parents tend to experience these cognitive skills in the most direct way. When I have students who have weaker, flexible thinking, that describes their ability to respond to novel situations and to take and apply feedback. If you have a student whose flexible thinking is weaker, it's going to take them a little bit longer to change the way they go about, to take that feedback and start responding differently.

Neill Seltzer ([16:03](#)):

What this might look like to a teacher or to a parent is, well, he's just being frustrated or he's just being stubborn. I told him and he didn't do it, he chose not to do it that's what's going on here. But the minute you understand exactly what's going on and what the source of the problem is, you can change your entire frame of reference from something that is frustrated and sometimes punitive to something that is empathetic and supportive, and you end up, the odds of you getting the positive result that you're looking for go up dramatically.

Neill Seltzer ([16:43](#)):

We all know as parents, we know as spouses, we know as employers and employees, that sometimes you got to know how the other person thinks and match that message accordingly in order to get the outcome that you're looking for. Until you have an objective way to measure that and know what that is for students who, I mean, we all know our kids, but to have it be objectively measured, to know what is age appropriate, and what I find, back to the tutoring example is there's this kind of Uber question when there's a struggle there of, is it a can't or is it a won't? If it's a can't and I treat it like a won't now there's going to be a lot of frustration there because I'm trying to push the kids somewhere where they can't go. But if it's a won't and I treat it like a can't, well, now I'm letting them off the hook and they could be doing something much better or achieving a lot more.

Neill Seltzer ([17:50](#)):

So there's all these little situations where we're having that better insight, changes our action, changes the way we read what we're seeing and ultimately helps us be more effective I think as a parent, as well as a tutor. That was kind of long-winded, did that all make sense?

Mary Miele ([18:09](#)):

Oh, it's so fabulous. I hung onto every word. It was so clear to me that, I mean, this is why we assess in general as educators to provide understanding, and there are different types of assessments. We can do diagnostic assessments, formative, summative assessments. This is taught to us as teachers and I think that this really brings an element of understanding both to parents and to educators, but in addition to the students, and I just want to share, I had a really fabulous meeting with a teenager who was really just feeling a lot of pain in her learning, and there was just this, something was off.

Mary Miele ([18:52](#)):

Very capable, had always done well in school, had always really persevered, but when it came down to it, she really just felt a lot of pain in her work as a learner. When we did the Mindprint, it did come out that the flexible thinking was very, very low and some of the reasoning was low. I think sometimes when those things are happening for a student, it can be hard, especially when you're dealing with a high level rigor of a program that's demanding a lot of reasoning. That's demanding that you do change course very quickly within even one problem set, right? There's a lot of change happening. That's going to be a difficult place to exist within as a learner.

Mary Miele ([19:37](#)):

Isn't it nice just to be able to be told as a human being that your brain is built this way and the expectations that you're working within don't match that it has nothing to do with your effort or you or anything else. But what a nice conversation we had around all of this. Then we were able to make some education plans, because that's another way we're using it, which is really just to understand the students that we have and then match them appropriately to all of these options that we have within

schools these days. We don't all have to be educated the exact same way and I think it's really valuable when you're making those kinds of decisions based on concrete understanding of child's brain. Right?

Neill Seltzer ([20:30](#)):

Yeah.

Mary Miele ([20:30](#)):

So hey, that's great, right?

Neill Seltzer ([20:34](#)):

Sometimes just the awareness is half the battle and just the awareness can open some doors. I spent a lot of years tutoring GRE students, and I can't tell you the number of, so these are adult students. They've graduated from college and they're looking at grad school, and I can't tell you the number of them that would come in and they'd look at me and they would say, "Well, I suck at math." That was the phrase, if I had a dollar for everyone who told me, I suck at math, that was half of them. That's why they were there for tutoring.

Neill Seltzer ([21:08](#)):

So the first challenge was I can't fix the math problem until I fix the, I suck at math problem, to the extent that they believed that they suck at math, which was not true. But to the extent that they believed it, there's no point in talking about fractions and algebra, I had to first give them another way into the math that worked for them. The reason they ended up saying, oh, I suck at math is because somewhere along the line, early on in math class, they got all this negative feedback that accumulates and internalized, and they had people giving them maybe algebra class was hard for maybe it was a flexible thinking issue. Maybe it was a spacial perception issue. I'm sure there was a solution there, but all they heard was negative feedback, bad grades, and they started saying, "Well, maybe I'm not good at this."

Neill Seltzer ([22:07](#)):

Had we been able to figure out a way to access that material that worked for them way back when then I wouldn't have had to spend weeks working with them to fix the I suck at math problem when they suddenly they need it for the GRE to get into the professional program that they were dying to go to, and yet they saw this insurmountable hurdle. I mean, that awareness can change everything and they really do accumulate and internalize often misplace negative feedback that they get when they're struggling and then they start to believe it, and the doesn't doesn't have to be that way.

Mary Miele ([22:51](#)):

That's the thing. It just doesn't have to be that way. I think that's another message I would just want to give all the parents listening is just that our field in education has benefited from science and from assessments, and we have access to new ways of assessing and thinking about kids and learning, and why not jump in as I always like to say, God for modern medicine. Not to just sort of continue to go blindly into some of the teaching and things of that kind. So, gosh, thank you for this all because it really, like you said in the beginning, listen, it's absolutely changed so much for us as a company that really does pride ourselves on supporting the whole child.

Mary Miele ([23:39](#)):

I feel like this is a tool that's allowed us to save everyone so much time. We're able to be more efficient. We're able to deliver, as you said, as a tutor, we can come in and we look like the superstars coming in saying, "Well, I think we should use this strategy because guess what, it's going to work with your brain and guess what it does." So that's been really, really quite fun and our team members have done it. So that's also so allowed us to learn a little bit about each other in just the ways that we think, and that way I know that somebody needs a little extra time to process something or somebody needs a little extra way of listing out their tasks in a more precise manner. Or there's the leader of among them who has a really good way having flexible thinking. But sometimes that's not such a great thing when everyone just needs to row the boat in the same way for a little while, Mary, we don't need to change everything.

Mary Miele ([24:34](#)):

So I think it's really interesting when you also start to learn about yourself and just know that this might be really easy for me, but is it really what this group needs right now? Or, even just that kind of knowledge is I think really important. So adults can do it too and I've certainly opened that option up too, so thank you.

Neill Seltzer ([24:56](#)):

It's still a relatively new thing. This is not common yet. I mean, we're trying and we're getting it there. So a lot of people just aren't aware that a tool like this exists and, or are a little bit intimidated by because of the cognitive science language and talking about things like complex reasoning and executive functions is not part of our common parlance yet, but it's there and I think of it sort of, it's almost like an X-ray machine. Before X-ray machines, the kid would come in and say, "My arm hurts" and you'd squeeze it, and if they scream loud enough, you'd go, "Oh, it's probably broken we should set it."

Neill Seltzer ([25:39](#)):

Now, you just send them to the X-ray and you get an X-ray and then we know, and then you move forward with the correct diagnosis, good to go and it takes five minutes and everyone's happy. We're getting to, it's not quite that cut and dried, we still need really, really smart, talented carrying tutors. But within one hour you can put the information in the hands of that tutor that they need to be effective for each and every student and each and every student is different. We know this.

Mary Miele ([26:15](#)):

For sure. For sure. Well, thank you for that obviously. I can see why you went right into this after tutoring, because it makes really good sense to celebrate a tool that helps on such a larger scale. So I would love just to know, I guess, I mean, I know you as someone who's very passionate about education. I know you as a parent, I know that you have spent years tutoring and really making many, many, many relationships with students happen, and I know you have many projects in the works as somebody that works in this area. So I just kind of wanted to give you time also if you could share with everyone just about what other things you do have going on, where they can find more information about Mindprint, where can we find some of your work? Why don't you speak about that a little bit?

Neill Seltzer ([27:07](#)):

Sure. Well, thank you for that. For Mindprint, the best thing to do is go to mindprintlearning.com. We work predominantly through professional educators and through schools. So while you can go on the

website and learn about it, you could even go on the website and purchase a Mindprint directly. It's really intended to be used with, for, and by folks like you, professional educators. So you're much better off getting it through Evolved, than you are going to the Mindprint, to the website itself. But it's Mindprint Learning and you can go, and a lot of the research is posted there and a deeper dive into what the different cognitive skills are, what they mean, how they play out.

Neill Seltzer ([28:02](#)):

The other thing that's a big piece of it is we've got the Mindprint assessment itself, that's going to measure. We've got the reports that is descriptive, who is this student? But then the other piece of it is the evidence based strategies mapped to the cognitive skill set, and that gets to the now what? Now I've got this information about who my student is, but what do I do about it? How do I use this information in order to make their lives better, make them more effective, help them learn how they themselves learn. That's what the strategies are all about, and those are also readily accessible. They won't be mapped until you have a Mindprint, but you can dig and poke around and see what those strategies are all about. They're all organized first by best fit for an individual student, but then also by whatever the task happens to be.

Neill Seltzer ([29:00](#)):

So there's one set of strategies that are appropriate for learning math. Another one for memorizing. Another one for time management, for example, because there's no one size fits all either for students or across all subjects. Then I guess some of the things that are exciting coming down the road is that what we found is that the cognitive skills that we are measuring map with remarkable consistency to SAT and ACT scores to NWEA map scores, and we're also exploring what other kind of data sets that we can match those to, and already starting to look down the road so I know that there's a new SAT coming out. That's going to change, it's becoming adaptive.

Neill Seltzer ([29:48](#)):

So how does that play out at a cognitive level? In this decision of, should I test in a test optional world or not test, and what's going to be the better test for me? I know, I've heard lots of people saying, "Well, we're just going to go ACT. We're going to set the SAT out this year until we've got better information." For some kids, that'll be fine for some kids that is not the right advice. For some kids that ACT is not a good fit for them from a cognitive standpoint. I actually think that the new test is going to is going to widen that gulf, that divide between students for whom one test for whom they have a stronger cognitive affinity for one test than for the other.

Neill Seltzer ([30:31](#)):

So the education landscape is ever in flux, but what we now have is a common through line from second grade all the way up through college, because at the end of the day, it is our job to teach kids how to be self-directed learners and know what they need in order to be successful. Especially when we pack them off to college and then we're not there and the tutor's not there, and they got to figure out how to do it on their own. We've got this window now before they leave in order to install those skills so that they can be successful as adults and as employees and parents themselves, and it sort of the ripple all the way through.

Mary Miele ([31:25](#)):

All the way through, that's so, so true. I just thank you so much again, because it's really been brilliant to be able to learn about so many student's brains. I think that's the end game that we're all looking for is the human that can perform in different kinds of settings, who really is self assured, who understands themselves, who knows, and is resourceful enough to get things done despite whatever's coming our way. I think if anything, the last couple of years have really punctuated that goal for all of us.

Mary Miele ([31:57](#)):

I know this is just a tool that will continue to use, and yes, for sure anyone listening can find this as a standalone offering on our website, and it's under assessments in our main menu. You can go on, you can book and get it all set up right there on the website, and then one of our teachers will actually debrief with you afterwards and really help you to make sense of what you're reading and looking at once you get those results and the evidence based tools that Neill is talking about.

Mary Miele ([32:27](#)):

So that's been something we've been putting together and our educators are so excited to have that opportunity to give that service. So, well, thanks again, and we'll conclude this podcast. I hope everyone who's listening has a fantastic start to their April, and I hope to see you all in next month.