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Back to School
Transcript

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Prologue.

Ira Glass

I was a reporter for years in the Chicago Public schools, covering all the different ways that people tried to fix and improve those schools. And one of the big debates-- not just among the parents and politicians, but inside the schools as well-- was how much could we expect teachers to actually accomplish? Like, how much could they do, really, with the students they were given?

Some teachers definitely were the heroic we-can-do-better types. We need to try everything. They were trying all kinds of reforms and fixes to make their schools improve. Others shrugged.

This population of kids, they would tell you, arrives with such deficits-- no books at home, violent neighborhoods, the kind of family problems that would distract anybody from school. These teachers would say, we're doing as well with them as anybody could. You know, if dozens of kids show up in your classroom each year with terrible reading ability and in need of remedial writing instruction, how exactly are you supposed to bring them up to grade level on the state standardized tests in the one year you have with them?

One of the things that's been interesting about the teacher's strike in the Chicago schools is that it's actually gotten people talking about some very basic things in education, and things like these. Like for instance, one of the big issues is standardized testing. How much should teachers be evaluated on the test scores of their students? Where you stand on that one pretty much comes down to whether you think that teachers have a lot of power to raise those scores or not.

There's an essay that's being published this Sunday in the *New York Times* by Alex Kotlowitz, a reporter who writes a lot about kids and poverty in Chicago. And he points out how much we expect from teachers, especially teachers in a school system like Chicago's where 87% of the students come from low income families. He writes that he's been reporting in a high school lately where the staff has transformed and improved the school in lots of ways.

"And yet each day I spend there," he writes, "I witness one heartbreaking scene after another. A young girl who yells at one of the school's social workers, 'This is no way to live,' and then breaks down in tears. Because of problems at home, she's had to move in with a friend's family, and there's not enough food to go around. A young man has retreated into his shell having witnessed a murder over the summer.

The stories are all too familiar. And yet somehow, we've come to believe that with really good teachers and longer school days and rigorous testing, we can transform their lives. We've imagined teachers as lazy, excuse-making quasi-professionals or, alternately, as lifesavers. But the truth, of course, is more complicated."

I bring all this up here today because there is a new way to look at all this, a new body of science that's just starting to get discussed in a widespread way. It looks at what a difficult home life can do to the brain of a school kid-- literally to the biology of the brain-- and how it makes it difficult to learn.

And this science suggests all kinds of things that schools could be doing that could improve teaching, get through to huge numbers of kids that teachers have a hard time getting through to today.

As school starts up again, we thought here at the radio show that it would be nice to turn away from the political questions and the union questions and the money questions and all the regular stuff that people argue about when they argue about schools all the time and turn instead today for the beginning of school to something more optimistic and forward-looking, something that feels big and Earth-shaking and, I have to say, kind of exciting. That is what we're going to be talking about today.

From WBEZ Chicago, it's *This American Life,* distributed by Public Radio International. Stay with us.

Act One. No These Things Will Not Be on the Final Exam

Ira Glass

Act One-- No, These Things Will Not Be on the Final Exam. OK, so let's start with the most basic question, a question that is so big, it is almost embarrassing to ask out loud. What should kids be learning at school?

You know, people argue about this. Schools are established pushing this approach or that one about the best way to teach. And I learned about this shift in the way that people are answering this question, this whole new set of theories and ideas that are in the air right now from this new book, this book that came out this month that is trying to document that shift and explain what these ideas are about.

Some of these ideas have been around for years but are now backed up by new data and tied to research about what goes on in kids' brains. Some are new, based on new research.

Paul Tough

There are educators involved in this, psychologists, economists, neuroscientists. They're not all working together. But they're starting to make connections. And I feel like they're coming to a similar conclusion.

Ira Glass

This is Paul Tough. He's a reporter who writes about new approaches to educating children. He's been on our program now and then in the past. And he's the one who wrote this new book.

He says that to understand this shift in thinking, you have to first understand where things were before the shift. Up until now, what's been emphasised in most schools is something called-- and jargon word here, but there's no way around this-- something they call cognitive development.

And what "cognitive development" means is smarts the way that you think about smarts in school-- the stuff that gets measured on IQ tests and standardized math and reading achievement tests that kids take most places. And it's not like that stuff isn't important.

Paul Tough

Well, I'm definitely not saying that none of that stuff matters at all. I'm saying that we have put way too much emphasis on it, and especially in the early years. I think it's especially parents of very young kids who get really anxious that their kids need all of these skills and all of this information really early on. I think--

Ira Glass

There's a whole industry that came out of that.

Paul Tough

Exactly. I think it's part of these preschool classes, Junior Kumon, all of these flash cards and brain building toys and the right kind of videos and DVDs from early on to try to boost their cognitive skills at an earlier and earlier age.

Ira Glass

So that's the old way of looking at this. What's our new understanding?

Paul Tough

Where I think they're heading is this idea that what matters most in a child's success is not just cognitive skill. It's not just reading and math and IQ. It is this very different set of qualities.

Ira Glass

And you write that the guy who's kind of at the heart of this way of thinking is an economist named Heckman, right?

Paul Tough

Yeah, James Heckman. He's a Nobel Prize winning economist at the University of Chicago. If there's any one figure who is trying to pull together all of this research, it's him. He puts together these conferences where he invites psychologists and neuroscientists and economists, people who don't usually have much connection, to get together and talk about some of these ideas and some of these issues.

The thing that really got Heckman started down this path was a study that he did about the GED.

Ira Glass

The GED, of course, is the high school equivalency exam. If you didn't graduate from high school, you can take the GED. And if you pass, it counts the same as if you graduated.

James Heckman

Well, I'll give you-- it's a personal anecdote. This was in the early 1990s.

Ira Glass

When I invited Heckman into the studio to chat, he told me how blown away he was when he first encountered the GED. It was the early 1990s, like he said. He was in Texas doing a study about something else.

James Heckman

And they pointed to this classroom and said, "You realize that these people will be studying for their GEDs. And in a few weeks, maybe a few months, you can convert essentially high school dropouts, people who were even intermediate school dropouts, into high school graduates." And I said, "That's amazing."

So I'm an economist. And that really started to surprise me. And as a result--

Ira Glass

Wait, why was that surprising if what they were testing was just you've learned this information?

James Heckman

Well, it was surprising, you know, in a few months, you could actually teach people the knowledge that they would acquire in four years of high school.

Ira Glass

Oh, I see.

James Heckman

Maybe a couple more. So it seemed to me-- really, the average preparation time for a GED is like 32 hours. And the average amount of study time for a student in high school is around 1,000 hours per year. And you say, "Well, wait, that's like 3,000, 4,000 hours versus 32." And from an economic standpoint, if that were true, it would be a real miracle. And it would be very cost effective. All eighth graders should take the GEDs.

Ira Glass

Instead of going to high school?

James Heckman

Instead of going to high school.

Ira Glass

We would save ourselves a lot of money.

James Heckman

Save ourselves a lot of money. Save ourselves a lot of time.

Ira Glass

So Heckman kept thinking about this. If it were true, should we even have high school? It raised some questions. Which led him to wonder, well, is it really true that the GED was equivalent to graduating from high school? Did the GED students really go on to do as well as the graduating high school students in life?

So he devised a study that looked at what happened over time to people with GEDs versus people who graduated from high school.

James Heckman

And so when we follow these people into adult life, follow them many years, what we found was consistently GEDs are performing slightly better than dropouts who didn't go on and take the GED, people who really dropped out of high school, but nowhere near as well as high school graduates. And that was in terms of performance in earnings, performance in occupation.

We find that they consistently fail, whether it's going on in college. The success rates in college are very low. The success rates in the military are very low. The success rates in marriage are very low. They get married, but they drop out of marriage. These people drop out of virtually everything they start.

Ira Glass

Now, if you think about it, this shouldn't be so surprising. If you can't manage to follow the rules and do what's assigned and keep your ass in a chair for four years of high school, of course you might be somebody who has trouble applying yourself later in life. Of course, you might be different from a high school grad.

But what struck Heckman is that this didn't show up in the test results. Our entire education system is organized around the idea that testing and the kind of smarts that you can measure on a test, are the most important information we could have about a student. That's how we evaluate whether a school is well-run. There are kids who do better on standardized tests. That's at the heart of huge policy initiatives, like No Child Left Behind.

But here was a test, the GED, that said that millions of people were just as smart as high school graduates. If they passed the GED, it proved that their cognitive skills were just as good. But these people were failing, which led Heckman to conclude--

James Heckman

That these test scores explain only a tiny fraction of the variability among individuals-- who's successful and who's not-- and that other factors are out there that aren't measured that aren't even accounted for in public policy that make a big difference. And so I said, "Hm, something's missing."

And now, the first impulse is you appeal to astrophysics and you say, ah dark matter. There's something out there in the universe that we're missing. And that dark matter, what could it be?

Ira Glass

What were the skills that the GED students lacked that the high school graduates had? Specifically, what was this unnamed dark matter, and how could you measure it? Heckman started calling these mystery skills that he was looking for non-cognitive skills to distinguish them from the stuff that educators normally focused on, which of course were cognitive skills.

But it must be a drag saying the phrase "non-cognitive skills" all the time because when you talk to Heckman, over the course of a conversation, he jumps around to all kinds of other words to describe the same thing.

James Heckman

Soft skills.

Ira Glass

Or a moment later.

James Heckman

Social skills.

Ira Glass

Or here's another.

James Heckman

Personality traits.

Ira Glass

You know what you guys need is you need a better word for this.

James Heckman

Better word? "Non-cognitive" is not good, you mean?

Ira Glass

No. The phrase "non-cognitive skills," it just feels a little confusing or clumsy.

James Heckman

I agree with you. It's lousy. It sounds like a very negative terminology.

Ira Glass

Well, it's funny talking to you about it. Because even as you talk about, I hear you run through all the different terms, because none seems to suit.

James Heckman

Correct.

Ira Glass

Because you guys haven't come up with a term yet.

James Heckman

Well, no, we have-- character. Character. The trouble is "character" sounds very moralistic. It sounds like we're running a Sunday School. See, I think the proper word is probably personality and social skills.

Ira Glass

Listen to you! You're changing from minute to minute.

James Heckman

I agree, I agree. We go all over it.

Ira Glass

Heckman says it's not like educators never considered character before this-- or should I say non-cognitive skills? The history of American schools is a pendulum that swings between emphasizing character on the one hand and intelligence on the other. Everything from classical boarding schools to progressive schools to modern private schools have endeavored to teach character, not just the ABCs.

And public schools once taught character-- conduct, deportment. Those are the words they used, which Heckman would call non-cognitive skills. But over the course of the 20th century, testing-- standardized testing of math and reading and other cognitive skills-- grew and it grew until it dominated American education.

James Heckman

What happened-- and this is just the logic of testing, how tests have a life of their own. But literally what happened was it became very easy to mark reading, writing tests much harder to judge deportment, to judge all these other traits. It's hard as hell to measure those.

Ira Glass

And so most schools gradually organized themselves around teaching stuff that you can measure, stuff you can quantify in test results, which are the cognitive skills. All this other stuff went by the wayside.

Now, Heckman wanted to take a look at it anew. And specifically, he was interested in finding skills that he could prove, empirically prove, help kids succeed-- and succeed in the ways that an economist measure success. Things like how much money do you earn, and do you end up in prison, and are you on welfare? And he then wanted to try to understand how these things could be taught.

For such a prominent academic, a Nobel Prize winner, to tackle all this and tackle all this in this way was new. Nobody set out on a mission like the one that Heckman now embarked on, pulling in and connecting people who were already working on pieces of the puzzle. Again, Paul Tough.

Paul Tough

And that's what he's been doing for the last 10 years.

Ira Glass

And so as the research has gone on, what kinds of things have people found are these non-cognitive skills? Like, what are they?

Paul Tough

Well, there's not sort of a master list of non-cognitive skills right now. The ones that Heckman would refer to and that I think are most important, some of them have to do with self-control. There's a number of different terms-- things like self-regulation skills, self-control, conscientiousness. So that, I think, is one set of things. Just the ability to delay gratification, to resist impulse. When you're about to make a bad decision, to think twice about it. To keep your temper. All of those things, I think, matter a lot.

Ira Glass

And I feel like when you say that, it makes me think of studies that I think a lot of us have read about where they'll put a kid into a room. And they have to resist eating a cookie, something like that.

Paul Tough

Yeah, this is called the marshmallow test. And this is a famous test that was done starting back in the 1960s by a psychology professor then at Stanford named Walter Mischel. And he took a bunch of four-year-olds into a room, said, "Here is a marshmallow or a cookie. I'm going to leave the room. If you want, you can just ring this bell, and I'll come back, and I'll give you one of this treat. But if you can wait until I come back on my own, then you get two." And so this was like psychological torture for these kids.

Ira Glass

They were four.

Paul Tough

Exactly. And so they would sit there and try to resist ringing this bell.

Ira Glass

And squirm.

Paul Tough

Exactly. It was very painful for them.

Theo

[WAILS] It's so long!

Ira Glass

This is such a well-known study that on YouTube, you can see videos that various parents have made administering this test to their own kids in their own homes.

Theo

10 minutes. 10 minutes! 10 minutes! 10 minutes!

Ira Glass

This little boy named Theo has obviously been told that he's going to get his second treat if he can just wait 10 minutes. And he sits there.

Theo

10 minutes! 10 minutes! 10 minutes! 10 minutes! 10 minutes! Aw, 10 minutes!

Ira Glass

So anyway, back to Walter Mischel.

Paul Tough

He was actually doing this study to try to figure out how kids resisted temptation. And it was only like 10 and 15 and 20 years down the road when he started looking these kids up again, and he wanted to find out how well they were doing.

And he found there were these huge correlations between how long these kids had been able to wait for the treat and how well they did on their SATs, how much money they were making, all sorts of indicators of how well they were doing in life.

Ira Glass

Now, for James Heckman, and for writer Paul Tough for that matter, what is most exciting about the power of these non-cognitive skills is the possibility they would give kids the skills they need to get out of poverty and the skills they need in the short run to counter-act the effects of poverty on children in school.

It's well-documented that poor children do worse on tests and worse in school than better-off ones. This is the so-called achievement gap.

What this new science seems to indicate is that what is holding these children back is not poverty. It's not the lack of money or resources in their homes. It's stress. If you grew up in a poor household, it is more likely to be a household the just stresses you out in ways that kids in better-off homes are not stressed out. And that stress prevents you from developing these non-cognitive skills.

Nadine Burke Harris

What was stumping me was how does this work.

Ira Glass

Let me introduce you to somebody else that Paul Tough writes about in his book. This is Dr. Nadine Burke Harris. In 2007, she set up a clinic for children in Bayview-Hunters Point in San Francisco. And she set it up there because poor, minority communities like that one are often less healthy than other communities. She was an idealistic, young, black doctor. And she wanted to do something about that. She also had a master's degree in public health. But stress and its effects on kids wasn't on her radar yet.

Nadine Burke Harris

I thought that if we kind of did the basic stuff-- if we worked on asthma, hospitalization rates and immunization rates and obesity treatment-- those would be the big public health things that we would need to do to make a difference in this community.

And what I found in my daily practice was that a lot of folks were sending me kids and saying, you know, "Oh, Dr. Burke, Bobby's got ADHD. Can you put him on Ritalin? Or can you put him on some kind of medication?"

But when I did my job and did an actual history and physical, which is what doctors are supposed to do, what I found was most of these kids really didn't have ADHD. And most of these kids had issues associated with trauma.

Ira Glass

Let me ask you to talk a little bit about the kind of trauma you're talking about. What was going on in their lives?

Nadine Burke Harris

Yeah, so as a pediatrician, I feel like I had the opportunity to hear some of the real story. But we're talking about kids who are witnessing violence on a daily basis. And some of it was domestic violence. Just domestic violence like you wouldn't believe.

I had a family-- you know, sometimes it's almost mundane things, a family who leave the house, and they are boarding up their own windows because they're afraid that their neighbors will come in and rob them. I had a family where, not only did their neighbors rob them, they took everything, including the food in the fridge and the toilet paper off the roll. Right?

Ira Glass

Wow.

Nadine Burke Harris

Someone really robs you when they take your toilet paper.

Ira Glass

She started to believe that there was some connection between the terrible situations these kids were living through and the symptoms they showed up with-- headaches, abdominal pain, difficulty with digestion. One girl's hair started falling out. Some little kids had a medical condition called failure to thrive where they didn't grow well.

But nothing in her medical training or her public health training explained this. So she researched till she found this big, authoritative study that followed over 17,000 patients from San Diego HMO that showed that people who had adverse childhood experiences when they were little ended up with worse health that continued into adulthood.

She says that for her, it was like that scene in *The Matrix* when Neo suddenly understands everything about the world. And as we talked, she was actually able to rattle off their findings from memory. She said, if you had enough difficult childhood experiences--

Nadine Burke Harris

You were two and a half times as likely to develop chronic obstructive pulmonary disease in adulthood, twice as likely to have heart disease, two and a half times as likely to have hepatitis, four and a half times as likely to be depressed, 12 times as likely to attempt suicide.

Ira Glass

But in addition to all the bad things that are likely to happen to them as adults, there's also the effect that long-term stress has on them when they're still kids, especially on their brains and their ability to learn.

Nadine Burke Harris

If you look on the molecular level, you're walking through the forest and you see a bear, right? So you can either fight the bear or run from the bear. That's kind of your fight or flight system. Right?

Ira Glass

Right.

Nadine Burke Harris

And your body releases a ton of adrenalin, right? Which is your short-term stress hormone, and something else called cortisol, which tends to be more of a long-term stress hormone. And this dilates your pupils, gets your heart beating fast. Your skin gets cold and clammy. That's because you're shunting blood from anywhere that isn't absolutely necessary to the muscles that you need to be able to run from that bear.

The other thing that it does-- now, you can imagine that if you're about to fight a bear, you need some gumption to fight that bear, right? So it kind of shuts off the thinking portion of your brain, right? That executive function cognitive part. And it turns on the real primal

aggression and the things that you need to be able to think that you're going to go into a fight with a bear and come out on the winning side.

Ira Glass

Yeah.

Nadine Burke Harris

And that's really good if you're in a forest and there's a bear. The problem is when that bear comes home from the bar every night. Right? And for a lot of these kids, what happens is that this system, this fight or flight response, which is an emergency response in your body, it's activated over and over and over again. And so that's what we were seeing in the kids that I was caring for.

Ira Glass

When the brain does something over and over and over again, it creates pathways that get more and more ingrained. So this kind of repeated stress affects the development of these kids' brains. And especially affected in this situation is a specific part of the brain that's called the prefrontal cortex, which is where a lot of these non-cognitive skills happen-- self-control and impulse control, certain kinds of memory and reasoning. Skills they call executive functions.

If you're in a constant state of emergency, that part of your brain just doesn't develop the same. Doctors can see the differences on brain scans. Dr. Burke Harris says that for these kids, the bear basically never goes away. They still feel its effects even when they're just trying to sit there quietly in English class.

Nadine Burke Harris

And if right at that moment someone asks you, "Oh, could you please diagram this sentence? Or could you please divide two complex numbers?" You'd be like, what are you talking about? And so that's what we were seeing in the kids that I was caring for, is that a lot of them had a terrible time paying attention. They have a hard time sitting still.

Ira Glass

And you hear about this in lots of schools. Head Start teachers in one survey said that over a fourth of their low income students had serious self-control and behavior problems. Nadine Burke Harris says that it's true for her patients, the ones with adverse childhood experiences like neglect, domestic violence, a parent with mental illness or substance abuse.

Nadine Burke Harris

For our kids, if they had four or more adverse childhood experiences, their odds of having learning or behavior problems in school was 32 times as high as kids who had no adverse childhood experiences.

Ira Glass

Paul Tough writes about a number of teenagers and how this plays out for them. One of them is a girl who he met when she was 17, Kewauna Lerma.

Paul Tough

She had a really chaotic childhood. Her parents split up. She moved around a lot. She was homeless for a while. Just all the bad things that happen to poor kids were happening to her.

Kewauna Lerma

The first 10 years of my life was really messed up.

Ira Glass

This is Kewauna. She came into the studio for this radio story to talk with me and Paul.

Kewauna Lerma

Because it was like my mom, for five years, she was going to place to place, sleeping wherever she could sleep at, you know. And when I was born, my mom and my father, they really couldn't take care of another child or whatever.

It's so many different incidents I remember. It's hard to state on one.

Ira Glass

When you think back on those times, do you think of that as like, you were mostly happy most of the time? What was it like for you?

Kewauna Lerma

No, I was never happy. I was never happy, because I was just an angry child. And I really don't understand what I was angry about. I can't even remember what I was angry about.

Paul Tough

And so she had trouble in all kinds of ways. And the two biggest ways that she had trouble were ones that, I think anyway, had a lot to do with her brain development. One is that she had a really bad temper, bad impulse control. She would just kind of shut down. And she couldn't see anything. And she would just go into these rages. And that was a real problem, especially in school.

Kewauna Lerma

I can't even remember this particular incident when we was in that classroom.

Ira Glass

Kewauna got into lots of fights. For instance, with one girl at school who got to her, Kewauna told me, "like a bug crawling under your sweater."

Kewauna Lerma

One time I did that, she just made me so mad, I just started screaming everything I could in class. I just got up like I was a terminator or something. And I was about to attack her. And I was like screaming. And I just like stopped the whole classroom or whatever. And Mr. Coleman--

Ira Glass

This is the dean of her high school, Mr. Coleman.

Kewauna Lerma

He told me, "Miss Lerma, stop cussing." But when I blank out, I'm not thinking about nobody that's right here in front of me. I see him in front of me just doing this. And he told me about that. He was like, you blanked out. It was like you didn't see me. He was like, I was saying, "Miss Lerma, stop cussing. And you just kept on cussing." And I was like, I don't know. I blank out.

Ira Glass

She was one of those kids who was always fighting with teachers, talking back--

Paul Tough

She told me that, I think, in her sixth grade year, she got 72 referrals, meaning she was sent to the principal 72 times. And as a result, she was sent into the slow class. She was put into this class where all the kids do poorly.

Ira Glass

It was called the Wings program?

Paul Tough

Exactly, the Wings program. And she still talks about how it was kind of devastating for her emotionally to be put in that class.

Kewauna Lerma

So I got put in this program called Wings, and I was embarrassed.

Ira Glass

You were embarrassed because you just felt like?

Kewauna Lerma

Because we were retarded. That's was we was called. It wasn't like-- I'm not going to beat around a bush. I'm not going to say like, "we were just under-performing." No. We were retarded. That's what we got called. That's what we were seen as. That's what it was.

Paul Tough

And was the idea in Wings that you were supposed to just go there for a while and get your remedial stuff and then get back in your regular class? What were they doing in Wings?

Kewauna Lerma

We wasn't doing nothing. That's what they said we were going to be doing. But most times, we would play video games, eat popcorn. Nobody never did-- we didn't do anything. It was like they were just carrying us to our tables every day. I felt like they treated us like something was wrong with us or something. They were like, "You want to play the video game? Here you go. Let's play a video game." I can't do that in my other class, so why are we doing it here, you know?

Ira Glass

Paul Tough says that what happened to Kewauna happens to kids all the time.

Paul Tough

Where the early stresses and problems that had to do with her family and had to do with how her parents were dealing with life all were creating in her brain a set of problems that, then when she got into the school system, they didn't have a way to deal with it except for putting her into the slow class, except for saying, "You're a problem child."

Ira Glass

Which raises the question, what else could the school system do for a kid like this? What will work?

Well, James Heckman, the economist you heard earlier who's studying these non-cognitive skills, says that one advantage of working with non-cognitive skills is that they can be learned. That's not true for cognitive ability, for intelligence the way we usually think of it, like your intelligence on an IQ test.

James Heckman

Well cognitive, pure IQ tends to be pretty hardened, at least what's called rank stability. If you're a top dog in the distribution at age 10, you're probably going to be top dog at age 30.

Ira Glass

Versus non-cognitive skills, he says.

James Heckman

Social skills, personality traits, the ability to stay on task-- these can be taught. And these can be taught at later ages. And there's a malleability there that actually offers a new perspective on social policy-- how social policy might redirect itself towards those more malleable soft skills.

Ira Glass

And so with that in mind, programs and experiments have sprung up to try to change kids' lives by teaching these non-cognitive skills. And Paul Tough documents a bunch of these in his book. What's striking, Tough says, is how simple some of the interventions are. Many of them basically come down to having a coach for kids to teach them resilience and optimism and grit in certain situations.

Paul Tough

There are some studies where they've taken kids and given them-- taken kids, I think, in middle school and given them a college mentor. And this college mentor would work with these kids not very intensively, like meeting with them a couple of times a year. And the only thing that they would say to them, the only message that they would give to them, is simply this idea that, "You know, scientists have studied intelligence. And they've found that you can improve your intelligence. So you should just think about that as you're going through your day."

Whether or not they're right that they can improve their intelligence, if you think that, especially when you're a kid, when you're a teenager, you do way better at school. It gives you this sort of confidence, this optimism, this ability to try new things, to push yourself harder.

And one of the things that I find most interesting about this study is that it's the kids who have sort of cultural reasons to be anxious about their skills who are most affected by the message.

So especially girls and math-- you know, girls do great on math until they get to middle school. And then they start becoming socially anxious. And they tend to fall apart. When they hear this message, the girls catch up to the boys entirely. They close that gap 100%.

Ira Glass

100%, meaning the girls' average math test scores were the same as the boys' average math test scores. That is a huge result. Another example of huge payback for a small amount of coaching happens in early childhood. And this one is an intervention with the parents, not with the kids.

And to explain this intervention, I'm just going to take a little detour here and tell you about a study that involves rats-- stay with me on this one-- involving rat babies and rat parents. This was done at McGill University Again, here's Paul Tough.

Paul Tough

What they discovered is that there were certain mother rats called dams, who, in their laboratory, tended to lick and groom their pups more, especially in stressful situations. And for a rat pup, the stressful situation in life, if you're in a lab, is getting picked up by a graduate student, by a scientist. And this is really stressful, understandably, for a rat pup.

And when they put the rat pups back in the cage, certain rat moms would do this ritual of kind of licking and grooming and soothing their rat pups. And certain moms wouldn't

Ira Glass

The researchers wanted to understand what this was about. It seemed significant in some way. So they studied the pups when they grew into adulthood. And they found that the rats that had been licked and groomed were very different from the ones that hadn't been.

Paul Tough

They were more confident. They were better at mazes. They were less fearful. They just did better on all of these different measurements. And what was so interesting and weird about it is that the licking and grooming only happened in the first couple of weeks of life. And then they didn't see their parents at all. And there was this huge difference.

So it really demonstrated two things. One is the power of parenting-- for rats, at least. And the other was how what really matters is early on, at least in a rat's childhood.

Ira Glass

Mm-hm.

Paul Tough

And so what this connected with for a lot of scientists who were more interested in human babies than rat babies, was the research that scientists have done about attachment. This idea that certain parents are able, especially in the first year of a child's life, to form what's called a secure attachment relationship.

Ira Glass

And this is something a lot of parents have heard of. Attachment is an idea that's been around since the 1950s and '60s. What scientists mean when they talk about it has to do with responsiveness, a parent who--

Paul Tough

Reacts to how the child is feeling and helps and comforts them, kind of the human equivalent of licking and grooming, helps when the child is stressed out. That tends to create a secure attachment.

Ira Glass

Researchers say that about 2/3 of American kids have a secure attachment, 1/3 don't. And the 2/3 with a secure attachment are more socially competent and confident through their lives. They're better at dealing with other people and making friends. They're better able to deal with setbacks. They're more likely to be engaged in the classroom. They're more likely to graduate high school.

But on top of all these good things that come from attachment, it also has a profound impact on what we're talking about here today-- on non-cognitive skills. If a kid lives in a stressful, chaotic home-- one of those homes where things are bad enough that it can affect their brain development and they don't learn non-cognitive skills-- if kids in that situation have a secure attachment with an empathetic parent, when researchers measured their allostatic load-- the allostatic load is a medical assessment of the effect on their body of stress. They look at blood pressure. They look at the stress hormones in their system and some other factors. What they find is--

Paul Tough

That the ones who had that sort of licking and grooming style connection, they didn't have all of those biological effects of early stress. They were mostly OK.

Ira Glass

So what does that tell us?

Paul Tough

Well, I think what it tells us is that early stress matters a lot, but that parenting is able to reverse a lot of the effects where they can still be in poverty. They can still be in a pretty stressful environment. But if they have a close relationship with their mother or some other adult, it protects them from the effects of that stuff.

Ira Glass

This, of course, is just science backing up what common sense would tell you anyway. Though there definitely comes a point in reading Paul Tough's book when he's discussing how attachment can protect a kid from the effects of a chaotic home or a bad neighborhood that it is really hard not to think, couldn't somebody just teach this to parents? Parents who don't know how to attach to their kids? Well, it turns out the answer's yes, and people are doing it.

Barbara Mcdonald

We're gonna do some games today.

Aniya Mcdonald

What's this?

Barbara Mcdonald

Those are Ziploc bags.

Aniya Mcdonald

Ziploc bag.

Barbara Mcdonald

Yup

Ira Glass

This is a home visit by Simone Smith, who works in a project funded by an Illinois nonprofit called The Ounce of Prevention Fund. She's at the home of Barbara McDonald, who is 19. Her daughter, Aniya, is three. They both live with Barbara's mom on the South Side of Chicago. Simone's been working with Barbara ever since Aniya was a newborn, teaching her basically how to attach.

Barbara Mcdonald

H is for hand.

Aniya Mcdonald

H for hands.

Ira Glass

On this visit, they made flash cards for the ABCs. Simone showed Barbara what to do, and then Barbara took over.

Barbara Mcdonald

O is for owl.

Aniya Mcdonald

A is for owl.

Barbara Mcdonald

O is for owl.

Aniya Mcdonald

A is for owl.

Barbara Mcdonald

Say O.

Aniya Mcdonald

O.

Barbara Mcdonald

Is owl.

Aniya Mcdonald

Owl.

Simone Smith

We do activities together with the mother and the child so that the mother can begin to see the baby in a different light.

Ira Glass

Simone Smith, Barbara's coach.

Simone Smith

And what I've learned is that when the mother can see what their child can do, even the smallest things, they begin to think like, "Oh my god, that's my baby. You know, I helped my baby do that." And that helps them form a better bond and relationship with their baby.

Ira Glass

Simone's job is to teach the mom how to read what the baby wants, to be more in tuned. To see the infant as somebody you can have a relationship with, which is not how a lot of teenage moms see it as first. They just see their babies as these incomprehensible bundles of need. Barbara says this is definitely how she saw Aniya at first, cutting into her sleep at night.

Barbara Mcdonald

I had to get up several times within an hour. I was just like, she's just being mean to me!

Come here to mom. Let me help you. Come here. Let me help you. You're cutting wrong. Come on over here. And we're going to cut together.

Simone Smith

Barbara, you see how you're all getting along and cooperating? You're always talking about ya'll can't get along?

Barbara Mcdonald

We can't. Look, she wants to take control.

Simone Smith

That's because she wants to learn.

Barbara Mcdonald

Hello, hello. We gotta turn it. We gotta turn the paper.

Simone Smith

She'll get it.

Barbara Mcdonald

You gotta follow the lines, OK?

Simone Smith

In the beginning, if you just looked at Barbara and her daughter, you would think that that was Barbara's sister. So we had to work on Barbara being more motherly. And then, also because the two were so much alike, Barbara and her daughter, they would often clash. So we had to work on that, and just Barbara learning her daughter's temperament and how to follow her baby's cues.

So if Aniya wanted to do something on the floor, then Barbara could just get on the floor and do it with her, as opposed to Barbara just wanting to do it on the couch. And then they both just say, "You know what? Forget it. Let's just not do it."

Barbara Mcdonald

Yep. I came in yesterday with the some food.

Aniya Mcdonald

Mommy, I can do it.

Barbara Mcdonald

She took my french fries and told me they was hers after she took them out of my hand!

Simone Smith

And what--?

Barbara Mcdonald

I just told her I guess they're yours.

Aniya Mcdonald

Mommy, I wanna do it!

Barbara Mcdonald

No, I don't want you to cut yourself. You wanna cut yourself?

Aniya Mcdonald

Yeah.

Barbara Mcdonald

And I'm gonna cry if you cut yourself.

Ira Glass

This small thing, explaining to Aniya why she doesn't want her to use her scissors by herself, Barbara says she had to learn that from Simone. She didn't just know to do it.

Barbara Mcdonald

Just simple things like that, like actually talking to her and giving her reasons why. Because she's at that age now that everything's gotta have a reason. And I had to learn the hard-- not the hard way, but I had to learn to like, because I used to just be just like, "No, don't do this." And she's always like, "Why, Mommy?" And I would just be like, "I don't know. Because I said so." But then, she'd just keep asking, "Why?" I used to just tell her, "Just leave me alone because I said so, and don't ask me no more questions."

Ira Glass

Barbara's gotten close to Aniya. Watching her, she seems like a good mom. And Simone says she's made a lot of progress. If all this works the way it should, even though Aniya might grow up around the stresses and chaos that lots of poor kids grow up with, the attachment she made with Barbara will help protect her. Her allostatic load, the stress on her body and on her brain, will be smaller. And her non-cognitive skills will have a chance to flourish, meaning, theoretically at least, she might do better in school, be more social, more confident.

Barbara Mcdonald

Now, I think we got the best mother-daughter relationship, because she just talk to me. Like I will come in from school, and she'll be like, "How was school, Mommy?" And I just can't wait till I can ask her that, like "How was school?"

I love being with her. She just makes my day. Even on a sad day, she would just do something, and I'd just be like, "You are so silly." And she'd be like, "Mommy likes silly?" And I'd be like, "Yes, I like when you be silly. And I love you."

Ira Glass

The University of Minnesota study of this kind of program showed that this kind of intervention, a coach working with parents the way that Simone works with Barbara, can lead to 61% percent of children developing a strong attachment to their parent versus just 2% in the control group that didn't get an intervention.

Well, let's say that nobody put your parents into a program like Ounce of Prevention and you grow up in a stressful home without acquiring these non-cognitive skills. It's affected your brain development. Now, you're a teenager. What can be done for you?

Well, the answer is lots. And like I said earlier, it's amazing how simple some of these interventions are. We will get to them in a minute, from Chicago Public Radio and Public Radio International, when our program continues.

It's *This American Life*. I'm Ira Glass. Today, our Back to School show. We're looking at what children need to learn and talking about this new book by Paul Tough, which makes the case that a whole area of skills called non-cognitive skills are just as important to a child's success as the cognitive skills that our schools are organized around and evaluated on today.

Act Two.

Ira Glass

We've arrived at the second half of our show where we turn back to teenagers and back to Kewauna Lerma who you heard from earlier. Paul Tough actually met Kewauna because she caught a lucky break and ended up in a program that was working with Chicago students and coaching them to learn non-cognitive skills.

But before a program like that could do her much good, there was a much more traditional intervention by her family. It came when she was 15. She got arrested for punching a cop. Yes, punching a cop.

She was shorter than five and a half feet. She was 15 years old. She was so aggressive that he called for backup, and they tased her before throwing her into jail. When she got out, her mom took her to her great grandmother's house for a talk.

Kewauna Lerma

So they sat me down. When my grandmother began to talk, that's what kind of made me a little soft, because I'm really sensitive for my great grandmother, because she was the one you could talk to about anything. It was just the main thing that got to me is when it was like tears in the room and stuff. That when I went "Oh, no." Because I'm not good with people that's crying and stuff.

Ira Glass

They started crying?

Kewauna Lerma

Yeah, my mom. When my mom started crying, she just said, "I don't want you to be like me. I don't want you to go through what I had to go through, the mistakes that I had, the suffering, the home to home, the homeless." Because at a point in my time, we were homeless when my father had left us. He was the income. So we became homeless, and he didn't care.

My mom was just talking about, like, "I don't want you to be like me. And I don't want you to go through this stuff I have to go through with my kids, not being able to support my kids." And she said the main thing she wanted me to do also was to listen, because that's something that she didn't do. She didn't listen to her mother. And now, look.

It was really sincere. It really got through to me, which is the reason why I'm here today.

Ira Glass

The changes didn't happen all at once. But in her sophomore year in high school, Kewauna started doing her homework. She stopped skipping class. She didn't hang out with the same people.

Freshman year before this talk, her GPA was 1.8. Sophomore year, it was 3.4. And then in her sophomore year, she happened to be at a school where she could sign up for a program called One Goal, which works in 23 high schools in Chicago. It's about 1,300 kids. Not in magnet schools or charter programs, these kids are not the cream of the crop. These are average kids in regular schools that do not send many kids to college. Again, Paul Tough.

Paul Tough

And they're very much using the research into non-cognitive skills to figure out an intervention for these kids, to help kids really explicitly develop these non-cognitive skills. The term they use is leadership principles-- ambition, professionalism, resourcefulness, resilience-- that they just spend a couple years talking to these kids about and explaining to them how it's going to be important in college.

Ira Glass

Now, you made some recordings when you were writing your book of the class. And I should say, these weren't broadcast quality. You were just making them to keep them for yourself. But they're good enough that you can actually hear what's happening. So here's one of those.

Michelle Steffel

This is the part where you need to start being resourceful. It can't be, "Mrs. Steffel, can you call?" You are making the phone call. I want to make sure that's clear.

Paul Tough

So what you're hearing is Kewauna's teacher, a woman named Michelle Steffel. There are lots of things that kids are learning in this class. But in some ways, when I would sit in the One Goal classroom, it felt like this kind of ongoing group therapy session. I don't think they would want me to say that, because it sounds too--

Ira Glass

Touchy feely.

Paul Tough

Touchy feely. Yeah. But really, that is what makes a huge difference for these kids is learning these psychological skills. And when they get to college, that's what's going to make a difference.

Michelle Steffel

It's OK to be scared. It's OK to kind of stumble and fall along the way. And you should. It's not going to be easy. It shouldn't be easy. This is your life, OK? It's not going to be a bed of roses. OK?

Ira Glass

One Goal's premise is it's going to be difficult to make up for how far behind these kids are in their cognitive skills, in traditional test scores and all that. When Kewauna first took a practice ACT test for college, she scored an 11, putting her in the bottom one percentile of everyone who took the ACT that year. After months of study, she said she went up one point.

But One Goal could teach her non-cognitive skills-- how to be resourceful, how to rebound from a setback, how to control herself and not get into fights-- plus concrete skills that would be useful, like how to present yourself, how to network. Kewauna never used to ask questions in class. She thought her questions were dumb. So she had to learn how to do that.

She ended up with an ACT score of 15, which, combined with a 4.1 grade point average in her junior and senior years, got her into college-- Western Illinois University in Macomb. She was a freshman last year.

Paul Tough has stayed in touch with her. And he says her training paid off. In fact, he says it's hard to imagine how she would have gotten to college and made it through freshman year without that training. Non-cognitive traits like grit and self-control are even more important in college than in high school.

Paul Tough

And then the other thing that I think has made a huge difference for her at college especially is this resourcefulness, is this sense that she has of like, "I'm starting from behind. I need to do everything. I need to get everything on this campus working for me," which I think is not a way that most kids think when they arrive on campus, and definitely not kids from the South Side of Chicago.

Kewauna Lerma

The first thing I did when I first got to every class, I introduced myself. First-- no, first, I sat in the front. If everybody else was sitting in the back, no. I sat in the front, like right on it. Like I'm nearly touching your desk and let them know, let them see my face, and let them remember it. And then after I go, the first step is to make sure they see your face, like they know who you are. As long as they know who you are.

And I always, like after class or before class, I introduce myself. Ask them about their office hours. And have like a little calendar on my wall and say, "This day." I always did a check-in to see how I was doing.

I will go to a teacher. I will go to a professor and get help. I have no shame in my game no more.

Ira Glass

Kewauna's instructor from One Goal stayed in touch with her and the other students from the class all through their first year of college. This was part of the plan, because it's so common for kids to drop out of college, especially for kids from poor neighborhoods.

This is one the surprising things that Paul Tough says that he learned as he wrote this book. The United States used to have a higher percentage of its young people graduate from college than any other country. Now, we're not even close.

Paul Tough

We're still doing pretty decently in terms of the number-- the percentage of kids, the percentage of say 18-year-olds, who go to college. The problem is--

Ira Glass

Who enroll.

Paul Tough

Who enroll, right. Who just show up there on the first day of school. But we also have the highest dropout rate in the world.

Ira Glass

I'm just going to pause because that seems worth repeating. The United States has the highest college dropout rate in the industrialized world.

Paul Tough

It's an issue that we haven't, even in education policy circles, we haven't paid any attention to before very recently. Nobody was really focusing on it. We're very focused on getting kids to college.

Ira Glass

Of 128 students who signed up for One Goal at the same time as Kewauna, 85% of them have made it through their freshman year and are now back in school this fall as sophomores. Of course, they're still not done. Nationally, only about 58% of kids who start college end up graduating in six years or fewer.

But remember, Kewauna and these other kids in One Goal are average Chicago public high school students. They're not a select group. So the 85% is especially impressive. A University of Chicago study a few years ago showed that only 8% of high school freshman in Chicago will get a four year degree from college-- 8%.

And of course, this is the hope that Heckman and other educators and researchers have for these non-cognitive skills, that programs like One Goal can teach them to kids like Kewauna, making those kids capable of seizing a better future for themselves.

James Heckman

And this, I think, just changes the way we think about poverty and human opportunity and what can we do to open up more possibilities to more people.

Ira Glass

When James Heckman talks about this stuff-- you know, economists can be such a sober, cautious bunch-- he can sound positively Utopian.

James Heckman

I think there's just a general question, which this whole research is about, which is, what are the determinants of human success? How fixed are these determinants? How much can you change them? How much can you bolster them? How much social policy can actually influence those? To me, that's extraordinarily interesting.

Ira Glass

It's so interesting when you talk about this, because I feel like there's this vision of human perfectibility. Like, oh, our goal is we're going to make people so they'll be more successful and happy. Most of us don't even think about that as a possibility, because that goal is so big.

James Heckman

Well, but I think one of the reasons why people don't think it's a possibility is they think these traits are fixed at birth or fixed so early there's not much we can do about it.

Ira Glass

Yeah.

James Heckman

And I think what we've learned is that these human capabilities can be shaped. And as an economist, what I like about it is that it has this possibility of reducing inequality, but not doing it through the standard mechanism of just handing out money and transfers from the rich to the poor. That's ancient.

The idea is you make the poor highly capable. That there really is a possibility of giving people more possibilities. That there really is the chance of improving their capabilities.

And I'm personally very excited by that. And a lot of the evidence comes together, whether it's neuroscience, psychology, economics. It's the confluence of these things. There are these happy times in science and social science and knowledge where different strands come together. And I think we're at such a time.

Ira Glass

James Heckman. Paul Tough's book about all this is called *How Children Succeed*: *Grit, Curiosity*, *and the Hidden Power of Character*.

[MUSIC - "YOU DON'T LEARN THAT IN SCHOOL" BY LOUIS ARMSTRONG]

Credits.

Ira Glass

Well, our program was produced today by Ben Calhoun, Sarah Koenig, and myself with Alex Blumberg, Jonathan Menjivar, Lisa Pollak, Brian Reed, Robyn Semien, Alissa Shipp, and Nancy Updike. Our senior producer's Julie Snyder. Seth Lind is our operations director. Production help from [? Tariq Fudha ?]. Emily Condon and Elise Bergerson do everything else that there is to do around here.

[ACKNOWLEDGEMENTS]

This American Life is distributed by Public Radio International. The film that our radio show made, *Sleepwalk With Me*, expands to over 100 cities this weekend. Details about exactly where to see it at our website, thisamericanlife.org.

WBEZ management oversight for our show by our boss, Mr. Torey Malatia. Oh, hey! Torey, hey. You're here. Listen, I'm just, uh, finishing the show. You can see I'm finishing the show. But we totally have to talk. Let's talk. I'm going to be done here soon. Just give me 10 minutes.

Theo

10 minutes! 10 minutes! Aw, 10 minutes!

Ira Glass

I'm Ira Glass, back next week with more stories of *This American Life*.

Theo

10 minutes! 10 minutes! 10 minutes!

[MUSIC - "BACK TO SCHOOL AGAIN" BY MOROCCO MUZIK MAKERS]

Announcer

PRI, Public Radio International.