

Beth Rosenberg

>> MIZUTANI: Hello, everyone. Welcome to "Disability, INC.," INCLUDEnyc's podcast series. My name is Jean Mizutani and I'm the Senior Education Specialist here at INCLUDEnyc.

Today we have the privilege of speaking with Beth Rosenberg, a tech educator who envisioned, long before the iPad was known, a future where neurodiverse youth would advance from digital consumers to digital innovators; a future where their potential is realized, and they become the driver of the development of technology that will finally be truly accessible to all.

I know everyone is eager to hear more about how this has already begun. Without further ado, it is my pleasure to introduce you to Beth Rosenberg, who, with a little inspiration by her son, founded Tech Kids Unlimited, known as TKU. Welcome, Beth.

>> ROSENBERG: So glad to be here, and thanks to INCLUDEnyc for having me.

>> MIZUTANI: It's a real joy. Your background is so unique. Tell us about yourself and your background in education, technology, and disability.

>> ROSENBERG: Well, I'm a Brooklyn-born educator who spent the first part of my career in New York City museums, ten years at the Guggenheim Museum in the education department. And what happened was, the personal becomes political, and I accidentally founded TKU, really with my son, who's been my inspiration, because he is a neurodiverse individual. And as a parent, I've been on the special needs journey for over 20 years.

What I did was I basically took my interest in the arts and my knowledge of technology, and I went ahead, and sort of by accident started Tech Kids Unlimited in 2009. And in the very beginning, it was just a place for students to come, make some stop-motion animations, and have some fun.

>> MIZUTANI: Thinking about the last two years, and how immersed we've all been in virtual learning, what are the advantages and the disadvantages?

>> ROSENBERG: This is the hot topic of education pedagogy today, because surely COVID has really burst the lid off of traditional educational ideas. It's complicated.

So for our specific constituency, or neurodiverse students -- and when I say neurodiverse students, the students what we work with at TKU are students who have autism, Asperger's (or we say autism spectrum disorder these days), students who have ADHD, lots of learning disabilities; things like anxiety, executive processing, sensory integration disorder, central auditory processing disorder, all of those different things. So for us, there are definite advantage and disadvantages of learning.

What we have seen is that the advantage for our students, especially our teens, is that they like to learn on their own. And that the pressure of the social is so enormous, that by just doing things virtually, it really takes the pressure off of them. But of course, then they suffer in terms of the social. So it's very complicated.

Disadvantages in terms of teaching and learning is that you can't really see a person's body or watch how they're reacting to information that is being given to them. There's a lot of absence of peer learning. And of course, we all know the computer is the king of distraction for young people. Young people know and enjoy having multiple windows open on their computer at once. So you never know if they're really doing the lesson or they're watching YouTube.

>> MIZUTANI: That is difficult. I really like the concept of using tech to teach. So why is technology such an effective tool for teaching students with disabilities?

>> ROSENBERG: Well, I want to say that the simple answer is TikTok. Students today have grown up with tech as a source of communication. It's storytelling, it's about leisure, it's about play, and the idea of using more and more technology when you teach is really just about meeting the student where they're at.

It's really about having them relax, having them feel like we as educators can focus on what they are interested in and get more participation from them. Get more buy-in from them.

And then in turn, the student is more focused, they're happier, and it's just like a better scenario at the end of the day. I think every single subject can be taught using technology.

>> MIZUTANI: That's amazing. I've heard you describe tech as being sticky for students with disabilities. How so?

>> ROSENBERG: When you put a computer or an iPad, a tablet, or even videogame controllers, in the hands of a student, there's just something magical that happens. And maybe it's like the serotonin in the brain just starts bubbling over with excitement. But technology speaks to students. And at the end of the day, technology is really about self-expression.

And students want to understand their lives. They want to tell the stories of their lives through media. And that is what they're doing all day long. They're looking at video. They're looking at animation. And at the end of the day, technology is the basic platform of the 21st century.

It's hard for students to even realize that people like you and me did not grow up with an iPhone. They just don't get it. And it's sort of funny and interesting the progression of technology as a tool -- certainly for good and for bad. We've seen reports and there is evidence that Instagram is bad. Instagram is bad for mental health, especially for girls. And the "New York Times" just had a whole gigantic section on the mental health of teens today, because we are really in a crisis.

Because technology is ever-present, and there are very little rules around using technology. Like, parents don't really sit down and say, "Okay, you've got to turn your privacy settings off. Or do you know what a cookie is? Or you shouldn't be talking to that person on Discord that you don't know." Students are just sort of, like, raising themselves around technology. And that's good, but it's also bad.

>> MIZUTANI: It's a little bit frightening, isn't it?

>> ROSENBERG: Yes.

>> MIZUTANI: I mean, you can't teach what you don't know, and not every parent is as adept at this topic as you are. So I do wonder about that part of it.

>> ROSENBERG: What I find is that certainly parents who are working in technology are very adept. But for every adept parent out there who understands it, there's another one that does not maybe use it in their practice. And they give unnecessary limits to their children. Like, "No TV, or only 15 minutes of the computer a day." And I find that really silly, because it's not practical. And the thing is, they're just going to go over to their friend's house and watch TV or get on the computer.

It's like, if you want something and you don't get it, you just want it even more. So why not have students be given the technology, but have it be a shared exploratory space with the family?

>> MIZUTANI: That sounds fantastic, actually. So I'd love to turn my attention for a while to your not-for-profit, Tech Kids Unlimited, TKU. It is just amazing, because you mentioned TikTok -- all of this happened way before TikTok. So what made you want to teach students with disabilities through tech? And what made you think it would work?

>> ROSENBERG: Great question. I want to say it was a little bit of circumstance and also really the love of my child. Because as a parent, you really want to do anything possible for your child.

From 1997 to 2005, I was lucky enough to be immersed in the very beginning of the web -- pre-ethernet, just when laptops were becoming the norm -- at a non-profit that still exists today called Eyebeam. And there I saw the power of working with neurotypical youth, teaching them how to build websites, how to make small videos.

And while I was doing that, I started thinking, "Wait a second, these are neurotypical youth. Can't we do the same thing for my son and all of his friends? All of these neurodiverse kids in special needs schools with IEPs? Couldn't we do the same thing?"

So I started out very, very small by just sort of saying, in 2009, "I want to put a group of neurodiverse students together, and I want to hire some teachers, and let's teach them stop-motion animation." And it worked. And so, that was really the beginning of TKU, from 2009 to about 2012.

What happened was that the parents wanted more. It was the parents who contacted me and said, "Oh my gosh, my student really loved this. Oh my gosh, my child really loved this. And when are you doing the next workshop? Because I want to sign them up." And then I started thinking, okay, we have all these different breaks. Parents are working. We have two-income families. And sure, let's throw these students into an educational experience where they're learning and having fun.

And from 2009 to 2013, I kind of ran all over New York City with wonderful partners, like the JCC Manhattan, and the Seidenberg School of Computer Science at Pace University, to offer workshops to our students. And then we started expanding our offerings along the way. So not only teaching stop-motion animation. We started to get into the meat of STEM, which is really computer science principles and computer science thinking, along with technology skills.

And we went from youth programs, to teen programs, and now we're even doing a program where we're placing our students in real internships at real jobs -- but only because they've been working on their tech skills for the past three to five years. You have to have real skills in order to work.

>> MIZUTANI: That's the truth. Well, the need was clearly there. I'm amazed that you were the first one to recognize. And I guess there were so many experiments -- let's try this, let's try that -- and you just ran from there. It's truly an amazing story.

I know that TKU had already been humming along for years before COVID redirected both the learning and the socializing to remote platforms. What happened during COVID?

>> ROSENBERG: First, I want to go back to something that you said. I don't want to take credit

for being the first one who thought of this idea, because I have lots of colleagues around the United States who have done and have been doing wonderful programs. There's a wonderful program out in L.A. called Exceptional Minds that was also started by a parent, probably a couple of years before I started TKU, who also saw the need. And because they're located out in L.A., they do things like special effects and modeling and really are tied into the film and movie industry.

So I guess I started realizing that society wasn't going to come along and give our kids opportunities, and that for us as parents, that we had to become activists, and that we had to change the world -- because we needed to change the world for our child, and in turn, our activism and our child would lead to us helping to change the world for other students like them.

So what happened with Tech Kids Unlimited is that we were a 350-person outfit at my partner, NYU Tandon School of Engineering. In specific, I want to mention my colleagues in the Integrated Digital Media program and the Ability Project at 370 J Street in downtown Brooklyn, which is a beautiful, wonderful, college space that Tech Kids Unlimited is lucky enough to partner with, and which the students love coming to this clean college space, and they feel good, and it boosts them. They're on a college campus. And of course, I am lucky enough to get a lot of my staff from NYU Tandon.

So the silver lining of the pandemic for us was that we went immediately virtual, which was easy for us to do, because we're a technology organization. And we went ahead and we just started doing our offerings online. And the program started increasing.

It was almost like the universe had opened up, and parents during the pandemic, were thinking, "Oh my gosh, my kid is at home all this time. What are they going to do?" And they literally did SEO searches -- technology and autism, special needs technology programs, et

cetera. Or maybe they moved out of New York, and they brought the program with them, which I know definitely happened. And then they told their friends, too.

So now Tech Kids Unlimited has a smattering of students in 25 different states. And we are going to be building that as we increase our online programming. And we will also be back in person in the fall of 2022 at NYU Tandon, and so we'll have a hybrid program. But in some way, the pandemic forced us and made it easier for us to push our offerings out virtually.

>> MIZUTANI: Perfect storm, but it really worked for you. You've mentioned a social component in your programs before. You also mentioned a transition program. Can you tell us a little about that?

>> ROSENBERG: So the way that we teach at TKU is, I would say, not rocket science. It's just good education. And the way that we teach at TKU is, first of all, we have a lot of teachers in the classroom. We have a master tech teacher, an assistant teacher, a social worker, and for every three students, there's what we call a counselor. So in a class of no more than about 18 to 20 students, there could be like 9 adults in the class, which is an incredible ratio.

But also, in terms of our pedagogy, we are using things like explicit instruction, repetition, visual schedules. We are using universal design for learning, which puts the burden of learning not on the student, but on the way that you teach. We could have a whole podcast about universal design for learning. But if anyone is interested in it, they should just go to the website [CAST.org](https://www.cast.org).

And we use the idea of social/emotional learning. We always used it, mostly, really because I watched my son get five years of therapy -- ABA, OT/PT, see it, speech -- in my house. And I saw that when he was in a good place emotionally, he could learn more. When we took breaks, when he had sensory things, like gum and lollipops, that he could focus more.

So having the social worker in Tech Kids Unlimited workshops is a great way to alleviate the anxiety that happens with students around learning new things, even before their anxiety

hits the roof where they may tantrum dun. And so, all that combined is the special sauce of TKU.

>> MIZUTANI: Sounds beautiful. Are these programs affordable to families? And where else can families look for this kind of program?

>> ROSENBERG: Well, everyone should come to TKU, because we're totally online, okay?

>> MIZUTANI: Love that.

>> ROSENBERG: And also, if you're New York City-based, our outfit right now is in downtown Brooklyn, although we're always looking for new partnerships in other states.

So we have financial aid. We never turn anyone away. Our programs, on the whole, are pretty cheap compared to any technology program out there. And we also have free programs. We have a free after-school program on Wednesdays.

And then, what I really love that we just started doing about two years ago, is we have a really amazing suite of work-based learning programs that we call Career Ladder. And in many of those programs, we actually pay the student to come to us and learn. And they are working on real projects, like logos and websites and video editing and animations and brochures, and social media content, and they're getting paid weekly. So you can find a little bit more about that program if you go to TKUagency.com, because it has its own little special website.

And the other thing is is that we take self-direction funds. We are very up on everything out there in terms of government funding for families. So we not only take self-direction funds, but in our free parent program, we teach families how to get self-direction funds. We've had many, many talks about it. I'm a big proponent of OPWDD, self-direction, as well as access VR, as well as supplemental security income.

And because I went through all of these systems myself, I know how important they are. And I always urge parents that they have to take advantage of these systems, because we're not going to live forever. And we've got to set up our kids for success for the rest of their lives.

And many times, these funds can definitely help them.

>> MIZUTANI: Wow, I think that's fantastic. I heard you mention earlier that coding was just the tip of the iceberg, that there's many more opportunities in digital practice. What are they, Beth?

>> ROSENBERG: I think it's really interesting, all of these different coding programs that are out there for neurotypical youth. My fellow executive directors and friends that run all these different programs, which are super wonderful. And really, I would say 90 percent of them concentrate on coding in terms of the back end of a website. And the back end of a website, to be a full stack developer or to be a dev ops person, is very difficult.

You have to have a lot of knowledge of computer software programming. And you have to know a lot of languages. So for us at TKU, we've kind of sidestepped that a little bit, in that we do do coding, but we do languages that are more visual, like processing and JavaScript, and we also do HTML CSS for websites.

But I have to tell you, so many of our students love the art-related side of digital. They love to use Photoshop and Pixlr, and they love to mash up games and collage sounds and they love to make their own films, and they make their own videos. And they just are very, very talented in terms of the artistic direction.

So we have students who just love doing things like creating social media, and that is one of the things that we focus on in our TKU Digital Agency, where we work with real clients. I mean, when we work with real clients and the client comes to us and says, "We need a logo," oh my gosh, these students that are in the Digital Agency are so excited to create a brand-new logo that's going to be used on a business card and a website? It's just amazing.

Our students really love to do things related to websites. If you have an old website -- and you know websites get old very, very quickly, within like two to three years -- you contact

TKU Digital Agency, and for a really small fee that you know is going to the students, you get a facelift for your website.

So this type of real work is what we are pushing our teens to do. And there's so much work in the technology field that is not related to coding. You can work in many, many, many different jobs, and never have to touch code. But you have to know technology skills. You have to know how to edit a film. You have to know how to edit a musical song. And that is the kind of things that we teach.

>> MIZUTANI: It's really exciting. I love hearing about it. It's so exciting. Wow. I know that you're very confident in your belief that the potential of kids with disabilities is unlimited. So I'm going to ask you now, what is the key to unlocking that potential? It's a big question.

>> ROSENBERG: It's a really big question and thank you for asking it. I would say that every kid has potential. And the reason I named Tech Kids Unlimited that name is because I love the word "unlimited." It is a word to me that very simply means that if you are taught well and you're given opportunity, that your possibilities in life will be unlimited.

And so, TKU focuses on a pedagogical practice, just like I mentioned before with universal design for learning and explicit instructions, et cetera, that really takes into account the whole student learner. I really feel like we've got to meet students where they are at. And if they are on Instagram and on TikTok and on YouTube all day long, then we have to use that medium to teach them not only how to create the things they love, but also to teach them about knowledge and the world and society through technology.

One of the things that we just did, which I love, is we have twice-yearly hackathons, where we really focus on social justice-related issues. So we just had a hackathon that was sponsored by one of our funders, Infosys Foundation USA, and it was all about the U.N. Sustainable Goals. And students learned about the U.N. Sustainable Goals, which are plentiful and difficult to digest, and they were able to learn about it, pick a goal. And some students

made podcasts about their goals. And other students made posters, bringing awareness to these goals that can be spread out on social media.

So all of the issues that are facing the world, and definitely students today, we try to tackle them. In the fall, we did a whole hackathon on mental health. What is mental health? As a student, it's okay to say, "I don't feel good today." It's okay to say, "I need a mental health day, or I need a break." And having specific programs that really direct students' attention to very, very important issues in today's time, I think it's a great way to meet students where they are at.

And it also maybe takes a little bit of the seriousness away from these very, very big topics that are sometimes scary and anxiety-producing. And by using technology to create things around these social justice issues, students can really get to understand them a little bit better, using a medium that they identify with -- which is the computer.

>> MIZUTANI: It's the coolest, because at the same time, it prepares them to be competent citizens that can participate in civil discourse. So it's a win/win everywhere you look.

>> ROSENBERG: Yeah, I definitely think so. First, when we were talking about doing the U.N. Sustainable Goals, I was like, "How can we take all of these goals and push them down and have students understand them?"

But you know what, when we introduced them, every single student was really interested in one particular thing. It could have been like climate change spoke to them. Or poverty spoke to them. Or women's rights and education spoke to them. And that was good. That was good, because at the end of the day, they were exposed to a few very big giant issues, and hopefully, in their studies, in their life, they will begin to think about them, and maybe even do more work, more studies about these different types of things.

>> MIZUTANI: They'll build on that knowledge and experience. I mean, apathy is the worst thing, and this is the polar opposite. It's a wonderful way to start.

So, I want to turn our attention to accessibility for a moment, because that is a really hot word, the hottest in the business world. What does this mean for students and others with disabilities?

>> ROSENBERG: Accessibility, accessibility, accessibility. Wow, it's just on everyone's lips all the time. Certainly, it's on the mind of not only software companies, but big corporations. And finally, finally, the world has realized that we need to be better for people who look and think differently. And I think a lot of this happened because of George Floyd, and the incredible horribleness -- which, by the way, was captured with technology, with video.

>> MIZUTANI: Right, right.

>> ROSENBERG: And it changed us. It changed all of us, because it was right there, front and center. And so the idea behind accessibility is really like multi-leveled, because accessibility is about how can you access certain things? I definitely think that the hearing and vision impairment world, people who have those challenges, have been the forerunners of the accessibility movement. Apple's iPad certainly really helped those communities with accessibility goals.

And I also think that companies like Apple and Microsoft are finally getting around to the fact that, guess what? We're all living longer, and we're all going to have some type of disability as we get older -- whether it's macular degeneration and our eyes are going, or we need hearing aids and our ears are going. So that is sort of driving bigger corporations to be, like, "We still need the customer. We don't care that you're 90 years old or you're 25 years old. We still want your business."

But the one thing that I really say that has not been tackled is this idea of cognitive impairment -- autism, autism spectrum disorder. At NYU, we have this wonderful place, The Ability Project, and I have a wonderful colleague Professor Amy Hurst who is a human computer interaction specialist. She's working with her students, and she often sends them to

us at Tech Kids Unlimited for them to watch our students being taught, because she's wanting them to try to think about how can technology and digital products be more accessible to people with cognitive impairment.

And whether that means just putting less buttons on a website, or completely changing the way that you design something for the web. All of that is in a giant large soup that's being mixed up right now. But I would definitely say that there's a lot of work to be done in terms of looking at cognitive impairment, and thinking about digital products.

>> MIZUTANI: We can't do this without individuals with cognitive impairment. I mean, that's the bottom line.

>> ROSENBERG: We really, really need those technology consumers, people with differences, neurodiverse people, to really be the technology drivers. We need them to be more than beta testers. We need them to be creating and making these products. It's sort of like, which came first, the chicken or the egg? If we can't have and employ these people in these big places, then we're not going to have the products that people need.

So one thing that's great is the field is exploding, and one thing that I really love is that community colleges and colleges around the nation are offering wrap-around support services. I want to give a big shout-out to my funder, and the funder of Project Reach at CUNY, which has one community college in every single borough where there is a disability program for students if you want to go to community college.

And so the pathway of having more students enter the field of accessibility to really drive innovation, it will happen, I think, within the next 8 to 15 years, because we'll get more students through community college, through college, and we will hopefully be able to populate the field of technology with not just 100 people at Google with autism, but 5,000 people at Google with autism.

Because we're well aware of all of these different programs that are around. And I do have to say that a lot of corporations that are trying to push people with autism into their corporations are only taking the highest level students. And sometimes, that means a student that graduated a good college, with a degree in engineering or a degree in applied math, and they're not really looking at our community college students, and they're not really looking at our students that have severe learning disabilities and executive processing issues.

Those are the students that I'm really, really concerned about, and those are the students that we really see at TKU.

>> MIZUTANI: So that's what it would take to move students with disabilities from consumers to technology drivers. That's basically what it would take.

>> ROSENBERG: Yes. I think so. Yeah, and also, one important thing is that we've got to stop saying "diversity equity inclusion," and not thinking about accessibility. We have got to add the word "disability." Diversity is disability. And to think that it's just the color of your skin is an absolute 1990's way of thinking about culture. And I think it's very backwards.

And I think that the more students with disabilities can shine and be out there, and try to be advocates -- and when I say students with disabilities, I'm not just talking about the student with a 145-level IQ. I'm talking about students at TKU who are just plain average IQ, maybe even a little below average IQ, if the IQ even means anything anymore. And we've got to change the way that we are thinking about this.

I'm very proud and excited that TD Bank just gave us a grant for \$50,000, because they see the value of people with disabilities. And they want to see them at all levels of the bank. They want to see them as tellers. They want to see them as corporate. They really want to drive the fact that just because you're a little different, you can still be accepted, and you can still contribute to the world.

>> MIZUTANI: Right. It's very interesting. So the missing piece, going back to big corporations,

they don't really see people with significant disabilities as a prime customer worth fighting to keep. And they also don't see them as employees worth recruiting. So that's really a fascinating, interesting piece, and you're the first person I've heard put her finger right on it. I appreciate that very much.

>> ROSENBERG: I mean, I love the mantra, "Nothing about us without us," right? I love that mantra. And back to what you're saying, I personally think we're literally looking at DEI completely wrong. And we need to really expand that definition. Because people with disabilities, people like my son, have a lot to contribute to the world. And they don't have to sit home on the couch anymore. Gone are those days.

We must be able to employ and make sure that students, if they are able, if they want to, if they can, that they can offer their ideas and they can offer their knowledge to the world.

>> MIZUTANI: Maybe we should just start calling it DEID. We'll just start calling it that, and when people say, "What is that?"

[LAUGHTER]

>> ROSENBERG: I love that, I love it. DEID -- Diversity, equity, inclusion, disability, right, love that. Let's do it, Jean. You just coined a new term.

>> MIZUTANI: We'll do a hash tag, and people will say, "What is that?" We'll have an opportunity to explain. I think that's fantastic.

>> ROSENBERG: I'm doing it today. I'm co-opting it.

[LAUGHTER]

>> MIZUTANI: So the future is ours to make.

>> ROSENBERG: It really is.

>> MIZUTANI: It really is. I mean, the door is wide open, wider now than it's ever been. What advice would you give to educators or families -- you've given some already. I haven't heard you speak too much directly to families. Maybe give them some ideas.

>> ROSENBERG: Sure, well, for educators, like, always teach to the student, listen to them. Teach them using special ed pedagogy. It's great pedagogy. Every single student in school should be learning through universal design for learning.

And in terms of parents, and as a parent myself, and I know this is the hardest job in the world. Don't think that your child's disability will magically disappear. Don't focus on their grades. Like, I don't care how smart they are. I care: Do they have friends? Can they collaborate? Can they take constructive criticism?

That is more important than having a 98 in math, because you've been tutored up the storm. That is more important than getting a 98 because you've been tutored five days a week.

Parents have to be advocates for their children. You have to help them find a job. Don't think that, like, someone is just going to come along, or they're going to go to Indeed.com and find a job. Because maybe they'll find one, and three months later, they'll be fired, because they have no social. But maybe they even went to college or community college. But if you don't have two basic things: Social skills and specific skills, whatever they may be.

Maybe you're an expert knitter, and you know how to knit, and you know how to sew, that is a skill. Maybe you're excellent at trains. And you know everything about trains, the schedules and how they work, et cetera, that is knowledge. That is wonderful knowledge. Take their knowledge, whatever it may be. Take their interests, take their passions, their affinities and skills, and push them. Push them, push them, push them. And foster them by giving them these different educational experiences.

And also, it's exhausting. Okay, let's face it. It's exhausting. We're all exhausting. But what I really like to say, and this chokes me up a little bit when I say it, is you're their best advocate. As long as you're here on earth, do that job. It may not be the job that you signed up for, but you have it. And love them to the point where the world thinks you're crazy. And then love them and advocate for them even more.

>> MIZUTANI: Wow. We're going to end on that note. Thank you so much, Beth. I've enjoyed this so much, and I know our listeners will, too. We really appreciate you partnering with us on this podcast.

>> ROSENBERG: Thank you so much, INCLUDEnyc. And for all of those listeners out there, techkidsunlimited.org. Come to us. We'll work with your kids. We'll get them internships.

>> MIZUTANI: Wow, promises, promises, but it is exciting. Thank you so much, Beth, and thank you, everyone, for joining us. See you next time on "Disability, Inc. "