

## An Apprentice's Story: Episode 2

### START

**Isa Brady**

So I actually just bought a house in January, January 15. Woo-hoo! And it was really kind of special because I'm 23 and I was able to buy the house by myself. It was a fixer upper, I'm not gonna lie.

**Rhoda Metcalfe**

Isa Brady is in a pretty unusual situation for someone her age. Just five years out of high school and she's already highly trained in a very sought-after field, has several years of work experience under her belt... And instead of college debt, she had enough savings to put a down payment on a house. Albeit, one that needs some work. So how did she do it? Well, when most of her friends went down one road, Isa wasn't afraid to go down a different one.

**Isa**

Coming to the end of my high school, all my friends were at colleges, I would go and tour the four-year colleges with them. And I just never felt like right about it or a connection. And everyone was doing it, so you just you feel like you should be doing it too. But I just had no ambition to do that. I didn't have a problem with school. And I always liked to try to get good grades, and everything like that. But I did have a problem with the idea when I started going to the colleges with my friends, when they would talk about all the classes you had to take. It was just crazy to me that you have to take 10, 15, 20 classes that really don't mean that much to you. To spend so much money and so much time on things that really don't pertain to your future.

**Rhoda**

In high school, Isa had also discovered another interest. She was one of very few girls that went into it, but she didn't care. It was a class in welding.

**Isa**

That was something that I loved to do. I felt very passionate about it. I thought I was like decent, pretty good at it. And so I decided at the end of my senior year that I was going to go to a tech school for welding.

**Rhoda**

And then Isa had a stroke of luck.

**Isa**

I was at my friend's house for dinner and his mom just happened to work for Buhler.

**Rhoda**

So Buhler is this big international manufacturing company. And their US headquarters are on the outskirts of Minneapolis, very close to where Isa lives. So at dinner that night, Isa was talking to her friend's mom about her plan to become a welder.

**Isa**

And she was like, you should try this apprenticeship program that they started two years before. So they had only had two groups of apprentices before I had started. But in Switzerland, where the company is based and headquartered, they've had 8000 apprentices over time. And so I went to Buhler, toured, looked at the apprenticeship, signed up, did the interview and everything.

And once they explained it to me, my mom was sitting there like... "I don't know, I don't know, it might be too good to be true. Might be kind of tough." Obviously, I was the only female in my room of like 20 men applying for it and so, it was a little nerve wracking. But I remember getting in the car and telling her, if I get accepted, that's what I'm doing. Like no question about it.

**Rhoda**

I'm Rhoda Metcalfe. And this is An Apprentice's Story -- a podcast about young people in America who choose a different pathway to learn and launch their career.

In this episode, we also look at how apprenticeships are becoming popular in certain corners of America, despite the obstacles that stand in the way.

**Rhoda**

Isa's apprenticeship with Buhler threw her into the world of high tech machinery. The company produces a huge range of machines that clean and mill and process a lot of the food we eat.

**Isa**

Anything from chocolate to coffee, brewing, milling, any of the chips that you eat. I think Buhler basically has a saying that you cannot go a day in your life without coming in contact with something that was processed on a Buhler machine.

**Rhoda**

When she started the apprenticeship, Isa was a bit of an odd one out. Physically, she's not a big person. In fact, she's quite petite. And at first, Isa was very self-conscious about it.

**Isa**

And the first thing we had to do was try to pull this big metal bearing off of a pipe and you use this special compressor to pull it off and you have to have a lot of strength. And everyone looked at me and thought like, she's not gonna be able to pull it off and I couldn't. The guy next to me is 200 pounds of muscle and I'm like 110 pounds of nothing.

But I did also notice that there are a lot of small things that I can do that other people might not be able to do. Like I could always unscrew the tiny bolts or I could get under the machines or I could fit my arms in places that other people couldn't. And it's just you have to do the give and take. Not everyone's going to be the same physically but like, if you can work around this situation, if you can think outside the box, that's what really matters.

**Rhoda**

The apprentices had to learn how the machines work, how to fix them, how to program them. They also learned the science behind the machinery. Several days a week, they went to a technical school - Dunwoody College of Technology - paid for by the company. And they had classes in mechanics and robotics.

**Isa**

A lot of math too. But it's funny at a school like Dunwoody because you're around a lot of people who say, I hate school, I hate school. But they love going to school there because what they're doing every day is like what they do at work or what they want to do at work. It's very hands on, or it's just very intuitive for them, because it's something that they actually see in their future.

**Rhoda**

So after a couple of years of digging into the nuts and bolts, small and large, of the machines, Isa and the other apprentices got to spend time in the other departments of the company -- sales, research, marketing -- to figure out what they're best at.

**Isa**

And then you worked your way into that and spent your last year kind of focused on that. And so I went into what we call applications. And so I do a lot of R&D for equipment, run trials, go on customer sites, kind of just give technical support, anything that I can do on the technical side of our machines.

**Rhoda**

Isa got paid an hourly rate throughout her apprenticeship and for the past two years now, she's been a full time Buhler employee. And she's still fascinated by the machine she gets to work with. Her favorite is the optical sorter...

## **Isabel Brady**

It can actually see colors and things that we can't see with our eyes. I think it's like the coolest thing ever. That's my favorite machine to show, especially because you can just take a product that's so dirty in your hand, send it through and it comes out clean, like what you would want to eat it. It's just crazy what things that it can do.

And it just, it kind of humbles you a little, like you don't know all these things. And it takes you back a step to think how lucky we are that all of this has been developed, so that we can have clean and healthy and good food when it takes maybe 10 or 15 machines to get to that point.

I think it's just crazy and I love it. I love that every day is so different. And I work in so many different fields. It's never the same. I've definitely gotten so lucky.

## **Rhoda Metcalfe**

But thinking about how Isa got to this point in her life, she's actually had several lucky turns on the road along the way. The first came years ago, when she was just a preteen and had a teacher named Mike Hill.

## **Mike Hill**

So we made these little race cars. And they were made out of wood. The kids had to go through the whole design process. They had to research aerodynamics.

And well, Isa came to me and she said So, on these axles. She said, I can use a lubricant, correct? And I said yes. Well, as a seventh grader, most kids have no idea what a lubricant is. So she has her mom out shopping for these really, really slippery oils. And, you know, she's just a little peanut of a kid.

And she would test her car. Then she said, Well, what about symmetry? And she so enjoyed making mistakes, and then figuring out, okay, that's not how I want to do the next one. And I said, this is what's going to take you somewhere, young lady, because this is what industry is looking for. And I said, So when you get to the high school, don't not take some of the industrial arts classes. Whether you're the only girl or not -- you may or may not be -- but don't be afraid of them. "Oh, trust me, Mr. Hill, I won't be." (Chuckles) So yeah, that was my little Isa.

## **Rhoda**

Mike Hill has been following Isa's career like a doting godfather. He was thrilled when she got into the Buhler apprenticeship. And they've stayed close.

## **Isabel**

And he actually had me come back and talk to every single one of his classes and give a presentation on my apprenticeship.

**Mike**

You talk about commanding a room of a bunch of seventh and eighth graders, they were just dead silent. Because here's Isa, who became a role model almost instantly, and for those kids to see what she was working on, I mean, it was mesmerizing for some of them. And they as they always do, they crowd you afterwards. And they've got so many questions.

**Isa**

And after every one, he would probably give a five-minute spiel about just how great apprenticeships are. He would talk about the fact that like I'm earning money, I have no debt. And he's like, you guys don't understand debt because you're kids, you're little, but he's like, one day you will. And he would even kind of say, your parents might not want you to do it, your friends might be doing something else, but why do what everyone else is doing?

**Rhoda**

For those middle school students, Isa was a bit of a superstar. And in truth, she's done some pretty incredible stuff through her apprenticeship.

Her company, Buhler has been advocating for apprenticeships in the US and Isa ended up being a spokesperson. Her mom, Paula Brady was amazed by the opportunities she got

**Paula Brady**

She's kinda like, she's a very good speaker. So she's been invited to speak... she went to Washington DC and spoke about the apprenticeship program. Like she's, you know, she's actually spoken on the floor at Congress.

**Isa**

Suddenly, I got a call from the Swiss embassy because my boss had recommended that I be the speaker for the apprenticeship. And so I actually got to go to DC to talk at the Swiss embassy to presidents of companies, probably like 300 people. And it was probably the best experience I've ever had. And then I got to do that two more times.

And then the third time, I was supposed to sign some memorandum of understanding between the Swiss government and the US government, and got surprised that I was actually going to give a speech at it. And so, I got to do all of these interesting, crazy things like that.

**Rhoda**

In fact, one of the coolest things Isa got to be part of was the American Solar Challenge. Her company teamed up with Dunwoody, her technical college, to build a solar car.

**Isa**

And then we raced it across the US in the American solar car competition. And I was lucky enough to be the driver. So I'd spend about eight days or eight, yeah, I think it was about eight days, and I spend about eight hours driving the solar car across the country. And you'd have like a lead car and a chase car. And then, we actually got second place.

**Paula Brady**

You know, she got to take race car lessons at a race track and then drive, you know, across five states in a solar car and learn all about how to keep it going. And they had to plan, you know, how to use the amount of energy they have, the wind speed, and the train and all those variables.

**Mike**

Of course, the University of Minnesota is there and they've got some of the top engineering students you know, and they're kind of a little bit boastful. And when they beat them, it was crazy. Here's a bunch of Dunwoody kids who, you know, they're not engineers, from a tech school -- it's a fantastic tech school -- and they beat the University of Minnesota's top engineering kids. And what was really disappointing to me is it never made the news.

**Isa**

But the biggest thing was like the experience alone of spending like three or four weeks on the road with all of your coworkers, a lot of apprentices, the guys from Switzerland, there were two girls from Switzerland that came too which was really cool. And then we just would camp every night, work on the car and then drive it across the country.

**Rhoda**

Isa also got to travel through her apprenticeship. She spent several months working at a Buhler plant in Switzerland. She also got involved in a project developing specialized machines for Africa. So she got to spend some time in Ethiopia too.

And travel is something that Buhler offers its apprentices all over the world. Patrick Bolt is Buhler's apprenticeship instructor in the US.

**Patrick Bolt**

I would say that's also a reason why people choose Buhler as - yeah, as an employer, because it's a very global company. And the other thing is we make them experience that as well during the apprenticeship program.

**Rhoda**

In Switzerland and much of Europe, most kids do apprenticeships. When they finish high school, they go directly into an apprenticeship to learn some hands-on technical skills and make some money.

**Patrick Bolt**

They're very popular. Yeah, so two thirds of all students, they go through an apprenticeship program even though they know they want to go to a university or something like that. Our schools also you know, so they prepare them for applying for an apprenticeship program. They provide them time actually to go there because in Switzerland, it's very popular to go to the company that you would want to ...I mean, you apply for a certain apprenticeship program, and the company would invite you for at least one day to go there and to work. So the company had a chance to get to know you. They see your abilities, your talents and also of course the applicant can see if he likes the company. He sees the size of the company for example -- Buhler really big one, usually is an advantage -- but there are some people they feel more comfortable in a little bit more smaller company and they also get to see if they actually like the daily business of whatever they are applying for.

**Rhoda**

So even in the broader world of European style apprenticeships, Isa really stumbled into the creme de la creme experience with Buhler.

But in Isa's hometown, Big Lake, Minnesota, just outside Minneapolis, there's an American version of apprenticeships, that has also really begun to thrive in the last few years. And the person who's made it happen is Mike Hill, Isa's middle school teacher.

**Mike**

We had a School to Work Program, which was basically kids going and stocking shelves. And my idea of an internship is that a kid gets to know an industry from top to bottom, from shipping to receiving to engineering to accounting. And then take their assets, their qualities of a person and decide what they want to do.

**Rhoda**

Mike knew there were interesting, well paid jobs out there in lots of local manufacturing companies. But the kids coming out of high school weren't getting those jobs, because there was no clear path for them to get the technical skills they need. So, Mike started talking to local companies,

**Mike**

They said, we need more mechanical aptitude, we need more specific robotic and automation skills in these kids. And everybody agreed it should start in the middle school.

**Rhoda**

So Mike went back to college himself to update his own knowledge of robotics and automation. And he started introducing these skills to his kids in middle school.

He also connected with a local manufacturing company - that was really on board with his project - and they donated some key equipment.

**Mike**

To do the things that I wanted to do -- a little CNC machine, the computer programs, you know, just all kinds of things.

**Rhoda**

And his middle school kids came to really like industrial arts,

**Mike Hill**

It's very popular. As a matter of fact, every kid in the middle school had to take my class. And I would say about 80%, you know, would go on to the high school and take classes as well.

**Rhoda**

So then, with all that student interest in hands on technology, Mike went out and found local companies willing to offer paid internships to these kids, once they got into 11th and 12th grade. They actually call them internships, but Mike says they're essentially apprenticeships, where the students get mentored and they get to know the whole company.

**Mike**

They go to work each day, I think it usually is 20 hours minimum they have to work. Most actually worked 40, which seems...

**Rhoda**

40 a week?

**Mike**

Yeah, 40 a week. And the kicker that we finally got passed in our state, is they get high school credit. So if they're in accounting for a certain amount of time, they can get an accounting credit. They can get a math credit. So that's huge for kids. So they get a paycheck, they get high school credit. And most if not all, if they stay with that company, they get all their schooling paid. Whether it's college or tech, they get it paid.

**Rhoda**

Now there's more than 35 companies involved. And Mike says getting companies on board was not hard, because they needed a better way to bring in young employees. What was harder was getting the schools to buy into the program, because so many educators thought only the academic subjects had value.



**Mike**

That's the stigma... If you take a shop class, you're a dummy. Even other teachers would have that stigma that Oh, you're just a shop kid. I had to get the community behind me, starting with my school board and my administration. I had to get them behind me. And that was a tough, tough thing to do.

**Rhoda**

But Mike's former students were great advertising. A lot of them went into industry and the trades and ended up like Isa, with fantastic careers.

**Mike**

And so I would have them come back and speak. And then I would invite other teachers in, especially the ones that I know are kind of sticklers, and then they would hear this kid talk. It changed that stigma in our school, in our community, big time.

**Rhoda**

So now in Big Lake, Minnesota, the industrial arts and apprenticeships have become very popular. For kids who do well in school like Isa, this pathway offers a debt-free way to get a great education. And then for kids who struggle academically, it's often the reason they stay in school.

**Paula**

Definitely, that's one thing about the shop, the industrial technology class in the middle school that I see. A lot of those kids, it's what keeps them happy in school and interested in school.

**Rhoda**

Isa's mother Paula is also a teacher at the same middle school in Big Lake. She teaches English but she sees the effect these technology classes have on a lot of her students.

**Paula**

They might not be flourishing in any other part of school, but they have high abilities, you know, that aren't explored in those other classes, but they are in industrial technology. It lets them shine and it lets them see that they have talents and that their talents can actually turn it into something and be a course for them in their life, that can lead to something better, you know.

**Rhoda**

So with everyone on board, the students, the school, the companies, you'd think this local apprenticeship program has nowhere to go but up.

Unfortunately, its future is quite uncertain. Because Mike Hill just retired,

# TRANSCRIPT

**Mike**

They could not find, they didn't get a single applicant for my job. And so, my boss called he said, Mike, I don't know what we're gonna do. I have a feeling we're gonna be dropping the program.

Yeah, and that's, I mean, 1000s and 1000s of dollars we put into it, but they can't find anybody's teaching it because no colleges are preparing young teachers to do what I did. And that's really scary. And it's, it's really sad.

**Rhoda**

And when you think about it, if it hadn't been for that middle school industrial arts class, Isa might never have discovered her mechanical abilities, her love of building things that eventually led to her applying for the fantastic apprenticeship with Buhler.

**Isa**

And it's crazy, because when you're a kid you... like, I try to remember back to how it impacted me. And it's hard to say when it did or how it did. But you know that it did, because obviously I am where I am and it was because of things like that, and people like him, that bring me to the point where I was confident enough as an 18 year old girl to say that I want to do this for my job, and I don't care what everyone else is doing.

**Rhoda**

Apprenticeships are beginning to gain ground in the US. Young people like Isa are discovering the opportunities they offer. And companies, even American companies, are starting to see that mentoring and investing in young people can be a cost-effective way to bring in talented young people with innovative minds.

But there's a weak link. Without trained teachers who can help kids discover their talents in building and designing technology, how many kids will actually choose this pathway -- a pathway that can lead to a great career, with a company that values them.

END

**Rhoda**

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