What Skills Do Google, Pinterest, and Twitter Employees Think Kids Need To Succeed?

By Mary Jo Madda Jun 21, 2017

Here's the start to an interesting story: a Google program manager, a Twitter engineer, and a Pinterest employee walk into a bar. What are they there to discuss? The skills that K-12 and higher education students should know.

But in reality, it's not a bar. It's the EdSurge podcast.

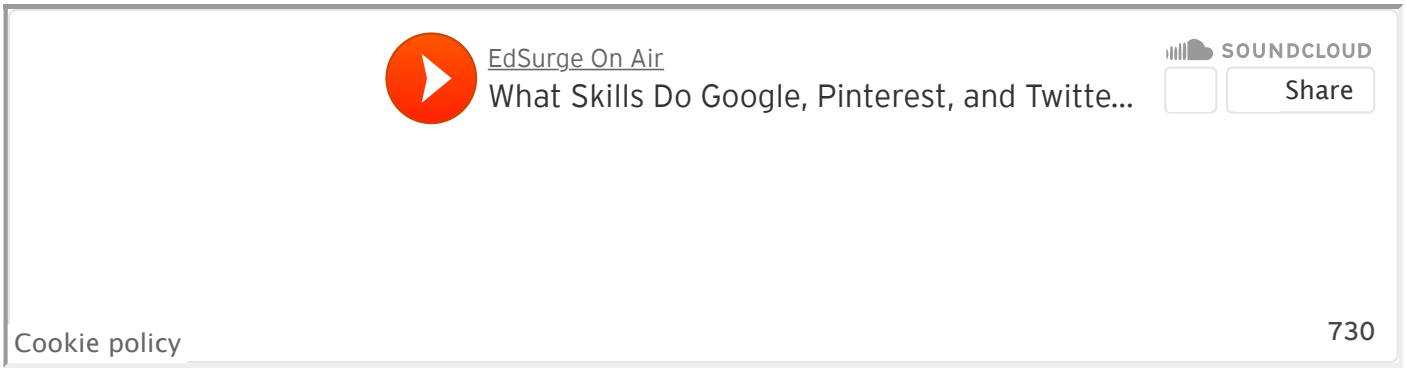
In today's day and age, Google, Twitter and Pinterest are three of the largest employers in the United States and internationally. Are students gaining the skills that one might need to eventually apply to one of those tech giants, if they chose to do so? In the year 2017, what hard and soft skills should students be developing in order to succeed in the 21st century workplace? What about in the year 2020? 2050?

Let's stick with the "now," for a moment. In a recent interview, EdSurge

explored which skill sets lead to career success for students—but we didn't talk to anyone in K-12 or higher education. In fact, we interviewed three individuals—Alexandrea Alphonso, Ryan Greenberg, and Trisha Quan—from each of those aforementioned tech companies.

While the thoughts and feelings of each of the folks we interviewed do not represent the opinions of their employers, each of these technology leaders offered their thoughts in this exclusive Q&A on equity and access, areas that formal education didn't prepare them for, and their advice for teachers working to prepare students for an ever-changing workplace.

Check out the podcast here, or take a look at the Q&A below.



EdSurge: First up, give us some quick background. Who are you, and what do you do?

Alexandrea (Drea) Alphonso: I'm a Program Manager on the Google for Education team, responsible for bringing Google solutions, products, and programs to K-12 school districts.

Ryan Greenberg: I'm currently a software engineer at Twitter, where I work on building Twitter's tweet infrastructure (really). Before that, I studied philosophy at the University of Notre Dame and spent two years in Chile as a volunteer. I have a master's from UC Berkeley's School of Information… which does not impress my two-year-old daughter in the least.

Trisha Quan: I received a Bachelor's degree in Computer Science from Carnegie Mellon University in 2010. Over the past seven years, I've worked as a software engineer at Salesforce, Twitter and Pinterest (most recently there). My recent work on the Hillary for America campaign inspired my current transition to the civic technology space.

You all have been doing this work for quite awhile. Let's talk about how your formal education did—or didn't—adequately prepare you for the workplace. How did you feel those experiences went for you?

Drea Alphonso: Just for a little bit of background on my education, I went to Loyola Marymount where I studied Biology and African American studies... Then, fast forward to after college, where I actually worked on the Obama campaign as a field organizer, and I got first hand experience on using Google tools and technology—and I was able to see how technology transformed how campaigns were run and entered communities across the world.

> ***You don't necessarily need a technical education to get into the tech industry, because there are so many different avenues.***
>
> *Drea Alphonso, Google Program Manager*

For me, what I chose to study through my formal education wasn't necessarily a tech background or a tech-focus type of discipline, but I think that my later experiences really brought a different perspective to the table. You don't necessarily need a technical education to get into the tech industry, because there are so many different avenues.

Ryan Greenberg: I completely agree. In terms of what we're teaching in our education system, a lot of what I know about programming is self-taught, but I think that we could do a better job of making programming accessible. You need different things to work professionally in software—being aware of how computers work and what they're capable of and what's possible. I don't think that everybody needs a degree, but I think we could do a better job of offering ways for people to become more technically competent.

Trisha Quan: I definitely have worked with a lot of people who didn't do the formal four-year computer science program route, so I definitely agree that there are a lot of different ways to get into the tech industry. For just a different perspective, I did do a four year CS program at Carnegie Mellon. I feel like it did a really great job of preparing me... it was just a lot of practice in coding and a lot of theory in algorithms. But I think in particular, the areas where I didn't feel particularly adequately prepared were around the softer skills of working in the industry—growth mindset, and things that are more related to how you approach working.

I'm curious—you've got your soft skills, and then there are hard skills like coding... Do each of you think that there's one particular skill that you would hope students master before entering the workplace at Twitter, Google or Pinterest?

Drea Alphonso: For me, I think that public speaking is so important. I think it's being at Google where I really developed that skill... I think that's something we don't put a lot of emphasis on, but it is super important, from my perspective.

Ryan Greenberg: When I was thinking about this, I quickly found that the skill people should master is clear writing—the ability to write well. I think that writing English might seem mundane compared with writing a iPhone

app, but it really gives you a leg up on people who have just the technical skills. Being able to write well is never wasted—it forces you to understand your own thoughts and goals and what you're trying to accomplish, and break them down in a way that actually ends up being parallel to the work that you do in programming computers.

Trisha Quan: Having critical thinking around what you're doing and where it is that you want to go is something I think is really important. I see a lot of engineers. especially at these big companies, who are starting out, just going with the flow—like someone suggested they join a team and they just do the tasks that are presented to them. They don't really think,"Is this the team I want to be on? Are these the skills I want to be learning?" Having a good idea of what it is you want to learn and where you want to go can do a lot to help further your career.

And what about the bigger trends? What are you hear from hiring managers or colleagues, in terms of any particular trends around necessary job skills? When folks apply to Google, Twitter, or Pinterest—whether for a technical or non-technical role—what skill sets do they really need to have in order to excel in those roles?

> ***I quickly found that the skill people should master is clear writing—the ability to write well.***
>
> *Ryan Greenberg, Twitter Software Engineer*

Ryan Greenberg: Today, I hear everybody talking about machine learning. I think the one thing to keep in mind is that it's impossible to say what technical skills people are going to need in 10 or 20 years. If you think about the iPhone, the iPhone is not even

ten years old in terms of apps that people can write for it. Java, which is a really popular language was invented 20 years ago, wasn't popular for a number of years.

We've talked about soft skills, and we've also talked about more traditional liberal arts skills like writing and communication, which are really important. But, I also think we should cultivate being unafraid of technical things. I think it's important to arrive with the skill that you are capable of learning anything—even if it's technical.

Drea Alphonso: To add to that, I think with problem solving, there also comes this notion of resiliency. I know we teach that failure should be embraced, because that way, you uncover more successes... Sometimes in those failures, you reveal your biggest triumphs, too. How do you bounce back from a failure and don't get less confident or you don't feel that you can't move on from that?

Trisha Quan: It comes back to growth mindset for me. I think that really helps you have that resiliency and grow faster. Also, I think something that's just getting better to have—for engineers, being able to work on front-end and back-end with code is a good skill to have.

Something we see a lot of teachers struggle with is how to balance some more of the education around technical skills, like coding, with that of the soft skills, like growth mindset. If you had any advice for the teachers out there that are working to prepare these students for the workplace they're going to enter in a few years, what would be the one piece

of advice you would want to provide them with?

Drea Alphonso: I think it's important that teachers continue to really draw upon what students are excited and interested to learn about. How do things like coding and problem solving and writing tie into that? I write about sports, and while I'm technically not a huge sports junkie, I'm able to combine sports with passion for technology to both my life and my work, and I think is very important.

What are things that students are just curious about? What do they want to learn more about? Figure that out, and then with those soft and not so tangible skills, think about how you can develop those in tandem with those passions that students are excited about.

Trisha Quan: I also think being able to provide access to either coding or professionals in the field, if there's a way to do that.

> ***The areas where I didn't feel particularly, adequately prepared were around the softer skills of working in the industry—growth mindset.***

You mentioned that word "access," Trisha, and it would be remiss if we didn't address one of the big elephants in the room—the fact that a lot of these tech giants are still relatively homogeneous when it comes to the people that work there. When it comes to equity and access, and when it comes to preparing more young girls and students of color to go into these roles—the roles that the three of you serve—what do you think schools could do to

improve the diversity pipeline?

Trisha Quan, Former Pinterest Engineer

Trisha Quan: There are some basic things, like being able to provide classes and having extracurriculars. I know a lot of that is dependent on budget and having the resources to do so... But, I think encouraging students to have side projects or other things would help expose them more to what either hands-on programming is like, or what it's like to be an engineer. It is a basic thing that would be great for schools to have.

Ryan Greenberg: This is something that worries me a lot because when I look at where I've arrived in my career. I realize that one of the reasons I'm here is because I had access to computers when I was really young. It was like water in my life. I was able to use and play around and learn from computers all the time. I think that providing that early access so that kids have that chance to play with computers, figure out what they can be used for, and develop interest early on is really important.

Drea Alphonso: From my experience just being a woman of color in tech right now, I think we have to continue to immerse ourselves in those communities and bring things like computer science, workshops, digital literacy training or coding into those communities. Another thing in tech that we're seeing is this idea of raising awareness on unconscious bias training. I think using this as a framework and bringing this type of curriculum to the classroom would be equally important.

I think it's also about creating content that's relevant to different cultures and communities. For my culture and community, hip hop music is a huge thing. Sports is a huge thing. It's not that you have to be the rapper or the athlete. For music, you can be the musical engineer, the sound engineer. For sports, you can be the broadcaster, you can be the journalist. I think it's just making

content and providing opportunities that are important to the culture and community—understanding what that is and bringing that to the forefront for students.

Mary Jo Madda—@MJMadda—is Manager of Audience Development (previously Senior Editor) at EdSurge, as well as a former STEM middle school teacher and administrator. In 2016, Mary Jo was named to the Forbes "30 Under 30" list in education.