



## Stanford eCorner

### Seeking the Full Potential of Education [Entire Talk]

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Jennifer Carolan, managing director of the NewSchools Seed Fund, talks about the opportunities for technology companies interested in contributing to the changing landscape of education. In conversation with Stanford Engineering Consulting Associate Professor Steve Blank, Carolan discusses common mistakes of ed-tech founders and the need for engineers and consumer technologists in creating innovation in education.



#### Transcript

So, Jennifer, we met a long time ago and I thought maybe we'd start by you maybe telling everybody how high were we when we met? Oh I won't go there. What kind of question is that? Do you remember how high we were? We were at 11,000 feet. We were at 11,000 feet. Make sure you note that to your parents. Okay. Where were we and when was it? I actually don't remember the year but it was in Yosemite backcountry High Sierra Camps. Yeah, it was. We were hiking across the High Sierra Camps and I just would like everybody in our audience to know Jennifer was the first person ever to see, drawn in the sand, the beginnings of the Lean Startup when I was trying to explain it to anybody who had passed by, including these random people I didn't know. I was drawing it in the dirt with a stick, and in fact, it was you and your husband who, in fact, renamed it from market development to customer development. So we've known each other for a while.

But you've had a really interesting career. You were a teacher for seven years, right? And then you came back to Stanford and got your M.A. in teacher and curriculum development and then you went off and joined a Seed Fund for education. What was that connection? How does an MA end up as a venture capitalist... Yeah. So on that, just a note on where we met in Yosemite. I am pretty certain that I wouldn't be doing this job today if we hadn't literally crossed paths in the backcountry of Yosemite and you were on your mules. You and - he had his two daughters with him and they were like - you guys literally were on mules. Right. And we were hiking in the backcountry...

Because people have called me an ass before. So it was a very appropriate event. And it was my first kind of real exposure to the concepts of customer developments and entrepreneurship. So it really sparked something in me in that experience. But to your question about how I ended up here, yeah, a lot of people ask how does a teacher end up running a venture philanthropy fund. And I had taught for seven years, loved teaching but felt I had plateaued and really wasn't meeting the needs of my students very well. What were you teaching? I was teaching U.S. history and in my last year I actually taught teachers differentiated instruction. And for what age groups? Middle school and high school. Okay.

So I felt like I had plateaued a bit, decided to go to grad school, came to Stanford, got my masters in curriculum and teacher development and I started hanging out a little bit at the business school and I saw Kim Smith speak and she was the founder of NewSchools Venture Fund and she talked about this idea of hybrid teams bringing educators together with MBAs and entrepreneurial people and people that had more of a business and technical background. And I was really taken with her vision of - there is a place for me in this world of entrepreneurship, so begged her for a job. She hired me on as a part-time research assistant and I worked there for - I have been there, this is my ninth year actually. And so after my - so I really kind of learned how to do this job by shadowing -- basically apprenticeship shadowing the partners at the time, I had great mentors and then three years - three years ago, my friend and I, we actually launched this seed fund to formalize the structure of ed-

tech investing at new schools. So let's back up, you've raised some really interesting questions. One is this idea of Kim Smith had, what, 9, 10 years ago or even further, that was something unique. I mean what was the unique insight and what were people doing before and what changed after NewSchools Venture Fund. Sure. She had this - so she founded NewSchools with Brook Byers venture capitalist and John Doerr, another venture capitalist, and they came together and they thought can we bring the venture model into education and can we bring the kind of rigor and discipline of investing in early stage entrepreneurs and support them. But the difference between our model and a traditional venture fund is that we prioritize impact.

So we are looking for sustainable, scalable, strong businesses, companies but we are, above all else, prioritizing impact. So that was the first difference. So what does impact mean? Are you doing charter schools or software or teacher training? Yeah. So we had this belief that there is sort of no silver bullet for education. So the answer is not charters or ed-tech or teacher development, that it's really a complex system that requires entrepreneurial energy across all of these different sectors. So we do invest - grant money to non-profit charter schools. We have close to 400 charter schools in our portfolio. Wow. Yeah. And we invest in teacher training programs and then I focus on education technology investing through the seed fund.

So really the idea of the fund covers all these ways... Yeah. ... to change education and what you're focusing on is tech. Is that ed-tech? Exactly. So... And so what's in ed-tech? So we started investing in ed-tech when - so NewSchools was founded 16 years ago and we started - our first investment was actually GreatSchools which is still around - a really great company and we have always invested in ed-tech. But we started - about three, four years ago, we started seeing some kind of differences out there in the funding environment. There was a lot more angel investing. And our schools were absorbing technology like never before.

So we thought the time is right, let's formalize this fund now. We moved our headquarter to -- our office to Palo Alto and we started investing in seed stage ed-tech. And I think ed-tech is like a catch-all for this intersection of education and technology companies and it can be companies that are focused on students, that are focused on teachers, most of our investing actually is targeted at teachers. And you said, though, that one of the goals of NewSchools was impact. Is that still true for the ed-tech investing you make? Yeah, absolutely. Is it the impact or is it profit or is it these non-profits or...? Yeah. So we have - so we are agnostic if it's non-profit or for profit. Okay. So NewSchools will say, what is the best way to get at the impact goals? Wait a minute. Your venture fund - it would fund the non-profit? I have sat on boards where I have decided they were non-profits but that was by accident, not on purpose.

So you actually fund them on purpose? We have some of those in our portfolio. But at least you could say, oh, we meant you guys to be a non-profit. No, no. We actually have some for profits that are closer to non-profits. But you can make the decision on day one as a fund that these are something that's worth funding in any case? Yeah, yeah. And I think that's what's unique about this space is that we have amazing nonprofits in this space: Khan Academy, CK-12, ReadWorks that are strong, scalable, sustainable nonprofits but we have them side by side top-tier venture backed ed-tech companies that we co-invest with. So we are - again, it goes back to this idea that there is like no one single solution, it's a complex system that requires like we need hardware in the schools but we also need software that teachers can use and the students can use and these things work together and we kind of see -- That's what I think is really unique about NewSchools is that we see this whole system, we touch all different parts of it and we can see where the needs are. So our fund is really need-driven, thesis-driven. So we ask our teachers, we ask our school leaders what's preventing you from - what's preventing your students from reaching high levels of student achievement. And then they will tell us, this is what we need, we need a better way for teachers to share lesson plans, we need a better way for students, for teachers to be trained on the spot and we will go out looking for those solutions.

So before we go through some of those solutions which I want to hear about... Yeah. ...you said something earlier that I thought was really interesting is that the adoption of new technologies has accelerated in the last couple of years in schools. Is that true? Absolutely, yeah. And what is - what's driving that or is it legislation, is it iPads, is it something, is it it's now time where the students have more tech than the schools have. I mean... Yeah. There is quite a few factors. I think one is that, I would say, this ed-tech revolution has been led by the teachers and they are the ones adopting these solutions, bringing them into their classrooms and using them. That's a big idea.

Why do you think that is? Well, 40% of U.S. teachers and there is 4 million U.S. teachers... Wow. ...are under the age of 30. So they are young. They have grown up with technology. I see. And this is the way -- they are banking online, they are shopping online, they come to school and they get - in most schools, this is what you get your file cabinet, your textbook and your paper grater and they are saying, no way, we want technology tools that are as good as our consumer technology tools. So that's a big change, right? Yeah, yeah.

So teacher driven because the outside world for them is computerized and they are going back into something that looks like the Little House on the Prairie schoolhouse right, is that...? Yeah. And what else, and any impact of legislation or No Child Left Behind or is that all orthogonal to what's driving this? No, it's not - you know what, actually, this is - so three years ago, we started this fund what was really a driver of the change was the budget cuts, actually. And the severity of the budget cuts and

they were faced with, do I - one of our schools that we funded, KIPP LA, do we not open the school or do we open it with more technology and a greater student/teacher ratio. So that was - that's been one driver of getting the technology into the schools. And then there is a lot more devices, right, like there is 9 million iPads in U.S. K-12 schools. Wow. We have 2,000 schools are one-to-one now and we expect that number to be - close to 100% of schools to be one-to-one which is... What does that mean? Sorry, fall into the education lingo. One device per child.

Oh really? I mean they assign somebody an iPad? Yes. So when you register with school, you get your textbook, you get your iPad, you get your... And who pays for those devices? It varies. So sometimes the schools pay, sometimes the parents pay, some of the funding for this is being covered by Title I funding for low income schools. That's really interesting. And have the entrepreneurs changed in the 16 years, or are they the same? Their motivations or their technology or their goals or are they the same... Yeah, thankfully, they have changed a lot. So I think that technology used to come to -- come into schools, innovation came in a car. So the salesperson would drive up and have some CD-ROMs and show the IT specialist Organ Trail or whatever the software was and the IT specialist would purchase that technology with - often without talking to teachers and without having any data on the efficacy of this product and then they would roll it out to the teachers, kind of top-down, force teachers to use it and that's the way technology was - came to our schools in the 1990s. But now, thankfully, the way it's happening is that these teachers are adopting the technology into their classroom, they are using it, they are understanding how it works with their students, they are getting efficacy data doing kind of mini research in their own classrooms and then they will kind of pitch their school leader to purchase the software license.

Wow. That's a real shift. It's huge. It's like the difference between PCs entering the corporation versus mainframes being controlled by a single department and a CIO. Yeah, same ideas like consumerization of IT, right, like... That's a great insight. And - but have the entrepreneurs themselves changed, I mean do they all have the same vision that they had in the 1990s or are they more savvy, less savvy, same problems, different problems? So yeah, you saw two of them up there - I am biased, of course, but I think they are amazing like these entrepreneurs are - we have more entrepreneurs coming from engineering and from the consumer tech sector coming into education. So the first guy that you saw... You mean women, you don't stop them at the door and send them away? So if there's some engineering students and some tech entrepreneurs, you will let them actually go pitching? No, we welcome them with open arms, we love them in education, love them. So the Krishna he has students -- he has children, that are in school and he wanted his kids to be able to learn coding, computer science early on.

So that's why he had built Tynker but he had two successful companies in consumer tech prior. And he then decided to go into ed-tech because he had kids. Yeah. Is that something - some motivation for... Absolutely, yeah. And roughly, across our portfolio, we have 46 edtech companies in our portfolio and 45% of them have been founded by teachers. Interesting. So tell me about the portfolio and tell me about the types of deals you see and in fact, let me ask the canonical question. How many deals do you look at or get pitched or get thrown over the transom a week in ed-tech. Yeah.

So - I think, we are really lucky because NewSchools has been around for 16 years and has a name and presence in the space. So we get 20 to 30 companies coming in our pipeline per week. A week. A week, yeah. That's about 1,000 to 1,500 a year? Do you read them all? No, not anymore. I used to. So what's the - first, give me the characteristic for anybody watching or here, what it is kind of a good first order pass for an ed-tech deal to be looked at for you and NewSchools? So like the space or the... Both the space and the entrepreneur and how do they - then, we will ask what's your email address so they could email you personally but... no we won't do that. My email's on LinkedIn, it is open.

It's out there. But first of all, the space, what do you currently look at and how do you kind of sort through these 1,000 to 1,500 as a venture capitalist but a venture capitalist in a very specialized niche. Yeah. What's should people be watching or listening think about when they are thinking about pitching a deal? Sure. So we focus on K-12 first. So education market covers pre-K through higher ed. We focus on K-12. And then we are thesis-driven. So we have identified some of these problems which I mentioned earlier. What are they again? Yeah.

So these are problems mostly identified by our schools that we are investing around, but I also want to say that we are not dogmatic about following our investment areas because I am continually surprised by our -- the entrepreneurs that come through our doors. Right. And show us what they are doing with technology. And that is - so we're open to breakthrough innovations that entrepreneurs bring us. But what are the theses again? Okay. So the theses are - I think first is that we focus on underserved populations. So we are looking at companies that are going to service special education students, English language learning students, first-generation college going students, so these are areas that have been terribly underserved in the past. So the tools that teachers have in these areas which are heavily compliance-driven are just terrible. So we are looking for innovation in those sectors. Give us some examples.

Okay. So our first investment out of the Seed Fund was a company called Goalbook and this guy is amazing, Daniel Yoo and he was a Oracle coder - developer and then he became a special education teacher in Ravenswood. So he had this really unique mix of engineer and teacher and so he had coded up a solution for teachers to create individualized education plan goals for their students. So if you are a special education child, you have these IEP goals and they are... Which means what?

...which are goals that the teachers and the parents and all the people that are supporting that child are working towards. So every one is on the same page. And so you automated the process? Exactly. So he automated that process. But he also brought great research into it. So he infused this research coming out of Boston into the goal making.

So that's an example. One thesis, the special education underserved community. Yeah. Next thesis? So another thesis is tools to help teachers differentiate learning. What does that mean? Boy, that sounds like an education phrase. Yeah. So differentiation is actually the number one topic of professional development requested by teachers and has been since the early 1990s. So basically, the idea is that our school system is one-size-fits-all, that we are in a mass production school system, where we kind of batch kids through our school system which worked really well when we were preparing kids for factories during the industrial age. But now, we have demands of a very high skilled economy and that does not work anymore. So the idea is we are moving closer to personalized learning and differentiation is a set of strategies that a teacher would use to help personalize instruction for children.

So instead of breaking them in separate classes, it's how does one teacher actually personalize the content for a mixed class... Exactly, exactly. ...of mixed learners. So just to give you a real quick example on that one. There is a company we funded called Newsela and they bring current events into the classrooms so they have partnerships with New York Times and Washington Post and they bring great journalism into the classroom but they level it, five different Lexile reading levels for students. You lost me, they do what? So they level the articles. So there is an article that you're getting from New York Times... They kind of ranked the complexity of the article. Exactly. So there is actually a standard Lexile, let's call it.

Okay. And you can level any text for different reading abilities. I see. So the idea is that all students in the class can engage in the same ... Same article. ...article whereas before, they would split kids up and then you'd have names like this is the bluebird group and they are reading like really interesting text and then you have the buzzards that are reading, C Spot Run because they are struggling readers and it's very stigmatizing to kids. And the idea now is that you can engage in the same article and then they can have a discussion around it. So that's another thesis? Yeah, okay. Yeah. So that's a differentiating instruction.

Okay. Then, we're really focused on STEM, science, technology, engineering and math. So we're trying to build the STEM pipeline... For K through 12? Yeah. And examples? Tynker was one of them. They are coding... Got it. They are coding - we have three coding companies in our portfolio. Tynker, CodeHS and CodeNow, which is a nonprofit. Got it.

Another thesis or is that... So then we have - underserved, STEM. We do a lot of digital - big data. Big data is actually a really important one. So this is basically tools that extract data from student learning and provide a really nice visual dashboard for teachers or decision-makers that are making decisions about a child's placement or even like what they're going to learn tomorrow and we have four, five companies in our portfolio. So this is a decision management for... Exactly, exactly. ...administrators and teachers to be more effective about utilization of teaching resources and... Yeah. Okay.

Got it. And so were those kind of the general... Yeah. So how many companies a year do you fund? So we fund 12 to 14 companies. So let's see, let me do the math. That's about 100 to 1. Yeah. Right? For every 100 plans you see, you fund one? Yeah. Alright. So I see somebody in the back writing up 100 plans right now, right? So, and what's the filter? How do you kind of decide? I mean how do they get, is it personal introductions or what's the best way for your fund to connect to an entrepreneur? Yeah.

So there is - there is easy ways to reach anyone at NewSchools. You can - we do have - my email is on LinkedIn and available and people do email us directly. I get at least one or two per day from those. Do you ever fund any of those? We have funded one. One? Okay. We have funded one of them. So what's the more effective way? Other than spamming you. Actually, it was a really awesome company, BrightBytes, the MIT guys ... So you'd never met before, it was a cold email? It was just a cold email, yeah. So one out of a couple hundred? Alright.

But what's the other way that they should get hold of your fund? So usually, they come in through warm introduction, through - so entrepreneurs are great pipeline of referrals of companies. So they should be spamming your portfolio, right? That is... Right? For an intro, is that what you're suggesting, is they should be meeting the CEOs of...? That is one way, yes. Yes. And so - but that's just a natural way that venture capitalist tend to filter... Yeah. I mean it's not that different, I guess. Right. It's that - if someone vouches for someone and says this is an interesting company or this is a great entrepreneur, is that... Yeah.

You listen up, yeah. Exactly. I mean we really do try to be open because we believe that especially in education, some of these great ideas are coming from teachers that are toiling away in their classrooms and building solutions. Yeah. And they may not be connected to anyone in Silicon Valley. So we want to find them too. So the standard model for -- certainly here at Stanford and if somebody's watching online or listening to the podcast is everything needs to be a billion dollar company. Is that the goal of these ed-tech companies - do they need to come in and prove to you that they are going to get 20 million students in year one and then - or is there a different model for what you fund? Yeah. Actually, yeah - no, they don't. Because

we prioritize impact.

We're not looking for... So say that part again. Because we prioritize impact. Big deal. So you're not looking for the little graph that looks exponential like Facebook, though you wouldn't throw them out. Right, right. Because there is some - there is a reason why that data is going up and to the right and so we want to understand why. But I actually looked this up just today that there has been 11 ed-tech companies since, I think, it was 1998 that are considered like Ed-Tech Unicorns -- billion dollar valuations. But that's not what you're looking for. It's a small number, yeah.

And so what do you look for when they talk about scale and business... Yeah. ...or whatever. So besides a great idea and you think it's interesting, what are the other things you're kind of filtering out? Yeah, I think that this is one of the things that we have gotten - we make a lot of mistakes too, I should say, that like we - I don't feel like I have some magic, see into the future that all these companies are going to be successful because... Are you sure you're a venture capitalist? We're coming at the earliest stages when they are - these ideas are raw like many times they are just a feature, they are an idea, they are... Because it's a seed fund? Yeah, because we're at the top of the funnel. It's a seed fund. So we're doing a lot. So I think like the most important thing that we're looking for is authenticity. So is this person authentically driven to solve a problem and that authenticity could look lots of different ways, right? Like it could be a teacher that was like Daniel that was - faced a problem in his classroom and so he built a solution for it.

We have a great company called NoRedInk. This is - this teacher in Chicago actually. He was at a Chicago public high school and he was tired of grading papers and so he found a developer on Craigslist and he actually created this solution, NoRedInk. So he was very authentic like he was a guy that's just driven to solve a problem. So we are looking for what is driving them to start this company, is it authentic? And then we're looking for courage too like starting a company is, as you know, Steve, intimately that it takes a lot of courage and... Or stupidity, whatever, too, right? You're looking for the big courage side of that spectrum. So... I never would have gotten funded. And so courage, authenticity and then impact on the specific field... Yeah, kind of aligned to one of those themes that we're focused on.

And do you give them some examples or is there stuff on your website they should look at or... We have a link to Steveblank.com that we ... I was thinking about -- is a list of your portfolio companies up there? Yeah, yeah. Right. And so what mistakes do the people you fund in ed-tech, not just the ones to get into you but the ones that actually are funded. Do you see some common mistakes of entrepreneurs? Yeah. Yeah, we do. This is an interesting one because I think it's two sides of the same coin. We see companies that don't think of themselves as technology companies. So they think of themselves as an education company, they have a lot of great former teachers that are starting this company.

But then I say, where is your tech team, where is your developers and they say, we outsource that to wherever, and we built our product. And now, we're going to sell it. And that is sort of a red flag to us because that harkens back to the technology of - ed-tech of the 1990s where they build this product and then they just blow up this huge sales force and just go sell it to schools. And then the product... And what's wrong with that? Well, the product wouldn't have -- literally it like would go 10 years and not be changed... I see. ...and not be improved and they can't respond to user needs, they can't -- they are not getting out of the building and talking to their teachers. So you want to see a whole team both... So I want to see a hybrid team of educators and technologists, yeah. Okay.

What other mistakes do you see in ed-tech? Yeah, so on the flip side to that is sometimes we see heavy technology teams that don't have any educators in the leadership team. And I see those are problematic too because I think it is really beneficial to have somebody that understands schools and education deeply to be helping guide the company. And then I'd say like maybe one other big, big mistake companies make is that they - because there are so many teachers adopting these products and they are the ones that are really driving the traction, that they build this product for the teacher but then forget that the payer is the administrator and that there is a whole different set of processes and needs that administrators have. So... So that's interesting. So you mean they kind of confuse that there might be a multi-sided market in dealing with users and payers, right? Yeah. And that they might actually know that the users are passionate but they might as well be a nonprofit because the payers don't care, is that... Yeah, I would characterize it like that. Yeah, they - there is a lot of companies that have figured this out and have done a really amazing job of capitalizing on this like user base... Right.

...and actually using these teachers to kind of up-sell to principals and administrators. I think Wikispaces has done a really good job. But is your point that that should be a strategy, not an accident? Yes. Yeah, exactly. Interesting. And without naming names, are there some spectacular failures that you now kind of think back to and I don't know -- everybody likes to bury their dead and leave them dead but that you wish you knew what you now know about I should have seen these happen and that are... Yeah. ...kind of education specific? Yeah, there is - definitely I have got some of those in our, I was going to say, in our portfolio. But there is one that I think that really frustrates me that I - we invest in this company because this is one of those - as I mentioned, like you learn this job by doing, you learn it by making mistakes and you learn it by seeing lots of companies and by actually doing the work. And this one company that we invested in, this is early on, their cap tables.

I sort of didn't look at closely enough. Cap table is... The capitalization table that basically says who owns the company. Okay. Or how the shares are divided. And what I didn't realize is that the founder, his share of the company was actually like super small and he'd come out of this incubator, this accelerator that owned most of the equity of the company. So he basically felt like hired help to run this company. And it played out that way. So... So what would you do different now or what do you do different? I look very closely at the Cap table.

I try to understand who all those people are and cousins and uncles on the Cap table and then -- I think it goes back to like data, like pattern recognition that you get better at looking for that authenticity in the entrepreneur. So you want the founder engaged and the ability to... Yeah. Like this has got to be his - he or she, they are going to create this company with or without us no matter what. They feel strong conviction for this company. So that's what - it's one of those important things that we look for. Okay. And any other lessons that were expensive or interesting? They are ongoing so many. Yeah, I think there's another one that I learned that is that I sort of projected my vision for a company onto this company. And I was so excited about this vision and it was really like when I think about it, it was my vision, it was not this founder's vision and so we just sort of had - there was a lot of friction there in...

Interesting. ...in the direction the company should go. And let me just kind of close this with trying to understand the context of your fund in the funding ecosystem. You're a seed fund, right? And that implies what and for additional funding, where do you fit and what happens in a successful path for a... Yeah. So we're a very active ed-tech seed fund, so we were the number one most active ed-tech funder the last two years. So what does seed mean? So for - generally, it means first money in, sometimes it's after an accelerator and incubator. So we are pre-series A investor. And is that like \$5,000 or \$500,000 or...? So our ticket size is usually like 150,000 to 200,000. Ticket size, is that VC speak for something, is that...

Investment. Investment is how much? 150,000 to 200,000. Great. So that is a seed round enough to get you started and what do you expect them to do with money? But we co-invest with other angels. Actually, so how much is the total? So this is interesting. So when we first started the seed fund, average seed rounds were about 750,000... Okay. ...in ed-tech and now they are about 1.5 million. And what do you expect a startup to do with the 1.5 million seed round? So our companies - we bucket them into three categories. One is you're going to get to sustainability on your seed round alone.

Wow. So Goalbook is a company that achieved profitability on a million dollars. So sustainability means make more money than you're spending, is that... Yeah, yeah. Okay. That's bucket one. Second bucket would be you're a good candidate for foundation or other type of impact financing for follow-on. So you're not VC profile... Right. ...but there may be impact investors...

Like Gates or ... Yeah. Gates Foundation. Gates, Dell Foundation. Got it. There is a lot of angel investors that are impact. Interested in impact. Yeah. And then the third... And the third is you're getting ready for a VC round of financing.

And VC is you're actually interested in this space? Yeah, very much so. So last year, there was \$452 million invested in K-12 ed-tech. In one company? Across. Across the space. Across a number of different companies. But, yeah, there is like Bessemer and Kleiner Perkins, we've co-invested with Excelis in two of our companies. So yeah, there is quite a few... Great. And so they go then down the traditional venture path? Yes. How interesting.

Yeah. And so what would you tell entrepreneurs who are interested in ed-tech today? What should they do and -- or why should anybody be interested in edtech, those who haven't even given much thought about this area? Yeah. I think that this is such an important sector, such an important area as all of us sitting here at Stanford know that we have - our education system is really suffering right now especially for the low income students. So in our country that if your parents didn't graduate from high school, then the chances are that you will get to -- get to college and get through college are about 5% and in other industrialized countries that's 23%. So education which used to be this amazing escalator of opportunity for people in the United States is -- especially those in lower income people, it's not the case anymore. And yeah, there is lots of stats that I can tell you around that. But I think it's ripe for innovation and the time is now to be building ed-tech companies. So is the way to think about this is if there is more to life than 140 characters, you should be thinking about giving back in ed-tech, I mean there is nothing wrong with social media but this actually affects peoples' lives a little differently than other things you could be doing with your time. And by the way, you mentioned U.S., is that where you are funding is, is the focus on just U.S. ed-tech companies? We're being drawn more and more outside the U.S., so we've invested in two Canadian companies and we are -- across the portfolio about 15% of users that are using the company's products are outside of the U.S.

Will you look at deals outside of the U.S.? Yes, definitely. Definitely, yeah. Interesting. And so you seem to be like committed to this, so is that... Yeah. And why, personally? Yeah. I mean you now have enough like points in the game to kind of go to any venture fund. Why are you doing this one? I think if I were to sort of play armchair psychologist with myself and think why am I drawn to this space, I think it goes back to - I grew up in -- outside of Chicago and I grew up in a suburb Glen Ellyn and it was a western suburban, very middle-class community and my sophomore year, we moved into the city and I went to Chicago Public High School and it was just - just a vastly different experience in the quality of education. Better or worse? A

lot worse, a lot worse. So long-term subs, just the teachers were not high quality, just the opportunity that was offered to the kids is not the same.

So, and then we moved back the following year into the suburbs but I consider that year like a real gift in my life in understanding that opportunity is so important for people and in schools, our education institutions are incredibly important to make that opportunity happen. So I think human potential is everywhere, it's not just in Palo Alto and Silicon Valley and we need to make sure that we have schools that can really tap into people's potential. So it sounds like you are on a mission. You could say that. So is there anything I should have asked you? What questions, do you wish I would have asked? No, no. We can maybe open it up to see what they... Well, but no, no, you are blushing already. So there must be a question you are either happy I didn't ask. Or you wish I did? I think maybe this path may sound like it's been oh, easy, I kind of - I was a teacher that I popped into see Kim Smith and then I went to NewSchools and now I am investing in education and - but it's been a steep and long learning curve for me. And when I came into NewSchools, I was a researcher and I didn't have an MBA and I was surrounded by these Harvard and Stanford MBAs who would talk about leverage and value proposition and Level 5 leadership and all of this fancy MBA talk and I was so intimidated by it.

They didn't know what it meant either so don't worry. But now I use that. Now, you use those words. Now, I use that. I'll drop leverage a couple times a day now. A couple more times this talk. So I think that I was and I did feel when I first started at NewSchools, so this is my ninth year, like very intimidated by that. And I guess like if I could give as you guys don't need advice, but if I could offer something that I took away from this experience is that to value what you bring to the table and value your skills and what your experience and what you have done, because I feel like I undervalued my education experience. I was the only teacher at NewSchools at the time that had taught more than two years that was a non-TFA teacher. And I didn't - I feel like I didn't value that enough in myself.

And it turns out you were the only one who actually knew anything and could built it, so I think that is a great way to kind of end the conversation, but I want to thank you for your time and I learned a lot and so thank you, Jennifer. So do you want to take some questions from the audience... Yes, sure. So questions? Do we have a mic or we're going to just do this. If you could repeat the question. In working in the field, how have you seen companies looking towards making their products have a large impact because technology is so expensive. Have there been any innovative ways that they look towards getting this across a wide breadth of people in schools that don't have a private school or charter school funding? Can you repeat the question? Okay. The question was how can you grow your company inexpensively. Is that right? Right. Well, so now, things have changed and there is great ways, there's distribution channels into schools.

So we have the app store which teachers use on the iPad, there's 9 million iPads in our schools. We have the Google Chromebooks, the Google Play for Education Store, there is Edmodo app store. So I think that that is a good first sort of first line of getting your app out there and seeing - getting your feedback and growing from there. I mean I am amazed actually at some of these companies, they put their app up there and they grow like ClassDojo, this is a fantastic company. ClassDojo spends zero dollars on marketing and grew to 45 million students. Just through the app store? Yeah. Having like a - they have a blog and they have some social media presence but mainly through these things. Without salespeople driving round. The other thing is that teachers love to tell each other about great products and they will. And so there is a natural virality in education.

Okay. Thank you. Right there. Do you fund any mental health or emotional health companies? So the question is social emotional learning or social emotional health? Mental health, emotional health, social emotional learning. Yeah. We are looking into that more and more actually. We're doing diligence on a company right now in that space. So I think it's really important and we know that those qualities are predictive of student success in a lot of different ways. So yeah, there is more and more companies out there in the space. Okay.

Next? Yeah. How do you justify to your clients investing in nonprofits and also can you give us some examples of ways you measure your impact? Sure. So the question is how do we justify nonprofits - investment in nonprofits? Yeah. Yeah, it's a good question. So we have invested or granted money, I should say, out of the seed fund to six nonprofits and because we do not return - we do not provide returns back to our limited partners. So the money that comes into us to invest is philanthropic capital, it's donations. So you use the profits to kind of evergreen the fund, meaning you can reinvest in more companies? Exactly. So we have had several exits, some recently: Engrade, we had this year; Wireless Generation; Carnegie Learning; BlendSpace and profits from those returns are recycled back into the fund which we then happily invest in other entrepreneurs. You had a second question? Oh, how do we measure impact? Lots of different ways. So we care about - we collect metrics from our companies every quarter and we care about retention.

Retention is very important for us. Our teachers using these products, we measure net promoter scores of the products. We look at student achievement gains when we can. Okay. Next question? Yeah. Just out of curiosity, I just wondered do you ever take input from different education models in different countries? Yeah. Question. So the question is do we look at other education models in other parts of the world and take that into account when we're thinking about our investments. No, in

general, do you compare? So, yeah, I was in China two years ago visiting schools in Chengdu. So we do look - we should do more of it but we do look at other models and we certainly look at the international rankings of schools, student achievement across the countries.

Okay. Other questions? How come this side of the room hasn't asked anything? Are you guys like all in detention in school or there we go. Alright, this is kind of close to that side. Yes. What things would like to see assuming you had like any power in Congress in terms of education reform based on your own experiences? Yeah, that's a good question. What was the question? The question is if we had an endless bank account to change education or to reform education, what would we do. I think I would want to move us away from this system that is based on essentially seat time, so you kind of move through the system grade by grade, and move it to a mastery based system, so that it's based on your mastering different concepts and you're moving more fluidly through the system. I think it's the system that we have right now based on the seat time is very constraining to schools. Has anybody run that experiment? Yeah. There are schools that are doing mastery based learning.

Where you can spend variable time in the school? Well, you spend - you kind of work through a set of objectives at your own pace, right? Right. And so if you finish it faster out and if you're not that fast, you're still there? Yeah, I am not sure what happens when you finished all of the objectives if you're actually out, but there are schools in Alaska that I know, that are doing a lot of work in that front and there is lots of schools around here too that are more tech-enabled. I think that's a big one. And just the way that teachers are trained and the way that teachers are like I was - I went to the School of Education and if you go into that Cubberley Library, you see that all of these like research journals, hundreds of research journals which essentially hold all the secrets to how we best teach kids. And that -- those are inaccessible to teachers that are in the classrooms teaching students. It's just ridiculous in this day and age of technology that teachers are not given access to the latest research on how best to teach students. Sounds like a startup in there. Yes. Right. We'll fund that.

You fund that one right there. Anybody else? Yes. So I was just curious what exactly are your firm's specific goals, you talked about mastery education, what else would you like to see in United States education system? Yes. So there is... The goals are... So he was asking the - what are our firm's goals, what are NewSchools' goals. Our mission is to transform public education through passionate ideas - powerful ideas and passionate entrepreneurs especially for the most underserved kids. And so we are really focused on this achievement gap which has gotten worse and worse over time. So since the 1960s, there has been - the gap between affluent and poor students has grown by 40 points and now it is double that of the achievement gap between black and white. So...

Wait a minute. Say that last part again. So class is now important - more important than race? Absolutely. ...in the U.S. educational attainment, really? And the research has been done by... You all ought to think about that for a second. That's a big piece of data. Yeah, and the research has been done by a professor at Stanford, Sean Reardon, and yeah, it is more of... That class is more important than race in the educational success. Predictor of educational success is...

Which also is a predictor of income. ...income level. Yes. And what is scary is that now, 48% of students in our nation's public schools are eligible for free and reduced lunch. So almost half of our kids. And it's majority in some areas of the south are eligible for free and reduced lunch which is a proxy for low income. Race and class are not necessarily mutually exclusive, so... That's right, yeah. ...one can define another one. So does that piece of information tell you anything? Yeah.

I mean you can see that - so there is a great piece in the New York Times about this actually that talks about... The question was... ...was race and income are not mutually exclusive, yes. But they are not completely overlapping either. Right. That's the surprise. Other questions? Ah, from that side, you get to ask two because you're representing the entire side of the auditorium. Yeah. Just building on what you mentioned about goals, would you be supportive of goals that such as like online education replacing physicality in schools altogether. Would you be supportive or would you endorse those schools like you know, I complete my entire high school requirements online or my university requirements online.

Yeah. That save on so much money building physical schools like (51:04) would you be supportive of those schools? Yeah, it's a good question. The question is... So the question is would we be supportive of... Virtual schools. 100%, yeah, 100% online education virtual schools. So it's an area that we are looking into quite a bit now because it's the fastest growing sub-population of schools in the U.S. now and it's growing 11 - the best research that I have tapped into is 11%, it grew last year and it's growing almost twice as fast as charter schools. So it is a very important sector to think about - we have not made many investments in that - any investments actually in that space. We have made investments in blended learning models that are still focused on teachers being the coordinator of learning in the classroom.

But there are a lot of - just to be honest here, there are a lot of bad providers in that virtual learning space. K-12.com is one of them, it's a billion dollar company and we would love to see some disruption of the dominant players in that space. And why are they not optimal? Their results are bad. Their results around helping students learn when you look at student achievement results are not good. Then why are they dominant? I think that they are the market leader and there is so few alternatives right now and kids are opting out of the traditional school system and are going totally online. So it sounds like you're asking for

some business plans in this area. Yeah, yeah, that is... Okay, okay. That would be looked at kindly if people were pitching you those ideas. Yeah.

It's a hard space to get into because you have to create a very comprehensive product. It's not like some of the other products that you can kind of wedge into with a little product, a little MVP, like you actually really need a comprehensive soup to nuts product that you're providing and that's difficult to create. That's, yeah, it's hard. So we have time for one or two best questions. All the way at the back. After you make an investment in a company, what does your relationship with them look like, how long do they remain in your portfolio, how do you continue to support the founders etcetera. Yeah. Good question. The question is once you are in the - once we make the investment, how do we support these companies. So we do - we believe that we have a hands-on role with these companies after we have invested in them.

And so we - they are seed companies, so they don't necessarily have a board, most of them don't have a board. I am on seven boards though of companies that have now grown up and have raised Series A and have invited me to the board. So we actually - we have a set of supports that we provide actually our director of portfolio supports is here, she is in the back, Eva, and we have some kind of scalable support, so we have great strategic partnerships with Google and Apple and Edmodo that we're able to support our companies through - there is a lot of kind of inter-portfolio convenings that we do. We bring a portfolio together, they share best practices with each other, we do a lot of constantly texting and talking with our companies on different problems that they are having. So we support them in very kind of traditional ways that a seed fund would. But I think that we bring an education lens and we have a great network in the education space. And we have almost 400 schools that we are close to. And I have seen this, it's an amazing interaction and support. Yeah, we have it at Steve's house. Alright.

Who has a quick best question? Alright, quick best question. Right there. Pressure. Right there. So where the last few years there's been a lot of concern about the costs of technology in terms of shortening attention spans and distractibility. There is actually an interesting quote... This is not a lecture. What's the question? ... in The New York Times that said... What's the question? Seriously, we're running out of time.

What's the question? What's your opinion on the downside of technology particularly in light of like all school children being... So the question was like what are the downsides of tech. So we have focused our investing on schools, institutions and really focused on teachers. So we haven't, I don't really mean to dodge the question but we haven't really had to deal with the early - the very earliest ages zero through five of children using technology and there is definitely - there is more and more research out there, there is recommendations from the American Pediatric Association about screen time and things like that. But I have three kids of my own and I can tell you that this is really hard like we vacillate between giving our kids iPads so we can get something done to like banning technology for months on end. I think we've really got to get better at figuring out what is the balance of the technology in the classroom. So, Jennifer, thank you very much and thanks for your time. Thank you, Steve.