Ben:

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Maria:

Talking about likely scenarios for learning in both the near and distant future. Our guests for this series include both UP faculty and guest academics and futurists from across the United States.

Ben:

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Welcome to a special episode of the UP Tech Talk podcast. This is Ben Kahn, the academic technology specialist and trainer at the University of Portland. Joining me today is my co-host and friend Maria Erb. Hello, Maria.

Maria:

Hey Ben.

Ben:

Today we are very excited to have with us a professional futurist to give us a glimpse into the future as part of our ongoing series about the future of higher education. I'm excited to have with us today, Lee Shoop.

Lee:

Hey guys.

Ben:

Thanks so much for joining us.

Lee:

You're welcome, my pleasure.

Maria:

Lee, we're really just thrilled to have you, and Ben and I both loved your Ted Talk. It just fascinating, and we're both so curious about how you got your job title of futurist. Please tell us, how does somebody get that job title?

Lee:

Sure. Most people that I know that became professional futurists came into it sideways, and it attracts a certain kind of person, somebody who is rabidly curious, good at pattern recognition, interested in everything, and really cross-disciplinary.

I came out of the University of Houston futurist program, which is one of only two academic programs in the country. The other one's at the University of Hawaii, and the University of Hawaii program is part of a political science PhD, so it's more focused on normative futures, where the University of Houston program is more focused on business consulting and business futures, so that's the program that I chose. I've been doing foresight in some form for almost 20 years now.

Ben:

Wow. Can you walk us through a typical day on the job? I'm sure there's no such thing as a typical day probably, but if you were to imagine a typical day for our listeners, what would that look like?

Lee:

Sure. Well, let me preface that by saying there's a lot of different flavors of futurists, so let me give you a sense of the flavors, and I can tell you which one I am. There tends to be academic futurists, think tank futurists, business futurists, of which I am one, and government futurists. There's actually several governments that are getting serious about foresight, Singapore being at the front of the pack, Canada and Australia right behind, the US woefully behind.

As a business futurist, what I try to do is to understand how technology and people are changing and how they can interact better in the future. While most researchers think about what people are doing right now, I tend to think about what people are doing three or five or ten years in the future and what needs they'll have and how those needs can be filled by my clients.

Maria:

Wow. I just can't get over that there's a program in futurism that you can major in that. Can you just tell us a little bit about the course work that you did?

Lee:

Sure. It's a two year master's of science degree, and there's several different aspects to it. Qualitative research and quantitative research, systems thinking, which is really important in foresight. Systems thinking, to quickly summarize, is different than the way we normally think in western cultures. We're trained through scientific thinking to be reductionists, to take things down to their smallest elements and look at the pieces of a system.

What systems thinking does is looks at the interaction of those elements within a system, so it's really the system behavior that we're studying, rather than trying to get to specific parts of the system, because what we find is that small changes in one part of a system can cause big changes in other parts of a system. Beyond that, we study theories of social change, visioning, and forecasting.

Maria:

Sorry, Lee. I'm typing here.

Lee:

Taking notes.

Maria:

Yes, taking notes here just to get some of what you were saying. You said your area of specialty is business forecasting, and you've been doing this for 20 years or so. As Ben I think mentioned to you in an e-mail, with our guests, we like to find out what they predicted in the past, what were some of their best predictions, what actually came true and what didn't, where they got it right, where they got it wrong. Can you share a couple of those things with us?

Lee:

Sure. In retrospect, they're going to look like really easy calls because in hindsight, it always looks really grey when you look back. I correctly predicted the internet would be a huge thing. That's what I wrote my master's thesis on before I entered the futurist program, actually. Saw that smart phones would be a big deal and a big productivity device.

We were doing ethnography with people. Business guys were driving around in their cars with their whole office sitting on the front seat, so it wasn't hard to figure out that the printer and the notebook and the calender and all the stuff that we saw in the front seat was going to go into a small technology device that people were going to carry around.

Social media was pretty easy to predict. That's been really huge. I think the surprise for me with social media has been that it hasn't specialized faster. Facebook is still really the dominant form of social media that we're now starting to see more different flavors of it, but by now I expected to see a lot more flavors than Snapchat and Twitter and Instagram and that stuff. I think it will become even more specialized. Probably the big miss that I've had is I've been really surprised that the millennial generation isn't more pissed off about the environment than they are.

Maria:

Yes. I'm surprised about that, too, Lee. I share that with you.

Lee:

I feel like action on the environment has been really deferred, particular by my generation, and that it's limiting the choices that your generation is going to have, which is really unfair.

Maria:

Yes.

Ben:

Yes. As a technically tail end millennial, I definitely can agree with that sentiment. I'm surprised when I see so much passion and so much anger and discussion and arguments online on social media that more of it isn't focused around environmental issues, because it's just one of those not meta, but mega issues, where everything else is kind of dependent on that working out in a lot of ways.

Lee:

Exactly, and it's kind of a case study for how poor humans are at thinking about the future. We're really good at making decisions at visceral and immediate effects. We're really good at crises, particularly in America, because we're extremely short-term focused here, but we have a lot of trouble planning for stuff that we can't see immediate tangible results from the decisions we're making.

Ben:

Yes.

Lee:

Things that are long-term and abstract are really hard for humans to plan for, and especially Americans.

Ben:

What is it about Americans do you think that makes us so focused on the present?

Lee:

I think part of it is that we're still a relatively young culture compared to the rest of the world. You can't really think of another country whose history really goes back 300 or 500 years. That's extremely young by global standards. I think that we've been a country of really rapid change, and a country that has not had to deal with limits for a long time, where you look at within Europe, people have lived within the same land mass for thousands of years, we've expanded westward and the whole idea that there may be limits to the environment or limits to resources is a really new idea for us, because we've been used to this world of infinite possibilities, and that's a huge mental change for us.

Ben:

Yes. I'd say also, too, our culture is so based on individual rights and individual pursuit of happiness, and a lot of times that's hard to reconcile with what are the consequences of my actions for my grandchildren.

Lee:

Yes, the tragedy of the commons, that's called in futures.

Maria:

Well, think about how ironic it is that the Native Americans have the whole concept to the seventh generation. Everything you do now has an impact seven generations down the road. I think it's just really ironic that Americans today don't have any concept of that, when the natives did.

Lee:

Yes. It's a concept widely discussed in futures.

Ben:

That's a nice kind of broad thought of pessimism about the future.

Maria:

Well, not necessarily.

Ben:

No, not necessarily, but we do want to get into some more specifics. For our podcast series, we're looking at the future through the lens of how will it impact higher education. More and more, we do come to the conclusion that higher ed is just one institution in a national and global system or set of systems. We have to view it in that context, but looking into the future in the near term, into one to five years, how is the world of a university or higher ed going to change just given the changing nature of work and work preparation and as occupations change? I don't know, Maria, if you want to expand on that, but we're interested.

Maria:

Yes. Lee, since you just brought up the point that Americans especially are really bad at looking at even just the near term of the future, just wondering, as we look at our students here and how they're preparing for their future entrance into the world of work, what do you think some of the immediate impacts that they're going to feel in the next, say, five years are going to be based on just being in a changing environment for the first time, like work?

Lee:

That's a great question. I've been teaching foresight at CCA, the California College of the Arts, and I find that my students are very future-focused, much more than a lot of the folks that I'm talking to in business, ironically.

Let me start with a couple of the tensions that I think are happening within higher education that are driving change, and then I'll talk about the change itself. I think tensions are always a really interesting place to start, because they're almost like the tectonic plates that are pressing against each other and causing future change.

The first one is that ironically as the value of a bachelor's degree goes up, we're seeing college enrollment go down, and that's really interesting for a variety of reasons. We're looking at graduation rates actually being pretty abysmal in the US. About 60% of students graduate within six years in a bachelor's program, which means 40% are not. Students are now coming out of college with a really heavy debt load, so about seven in ten students now are coming out of college with pretty heavy debt, and if you look at the value of college debt, it's over a trillion dollars, and it actually exceeds consumer credit card debt in the US now, so there's a huge student debt load that's been inflicted largely on millennials.

At the same time, state support and public support for education has gone down, and that's been particularly true in California, where we have property tax laws and whatnot, and I think that's going to spark a conversation about how we support higher education and how we make higher education a lot more efficient and a lot more results-driven. We're also seeing costs rising at the same time in higher education at a time when teacher salaries tend to be small and a lot of teaching is done by students, yet the infrastructure is growing and becoming more bloated at the same time.

In addition to that, we're seeing great inflation. More people are getting As now than ever before, but we're not seeing a corresponding rise in skills, so there's a whole bunch of tensions within the system that suggest that something has to change, and I think we're going to see a lot of change come within higher education. I actually think education and healthcare are the two sectors in the US that are set to have the most change, especially from technology and the internet. Does that make sense?

Maria:

Indeed, it does.

Lee:

Okay. Some of the trends that I'm seeing come out of that that I think will be happening in the one to five year time frame, the first one is really about learning analytics. We're starting to get a lot better at measuring how well students learn, or if they're learning at all. I think that's going to help us get a lot smarter about what's working from a teaching point of view and what's working from a learning point of view.

From that is going to come a second trend, which is really personalized adaptive learning, and that is students being able to learn at their own pace and to be able to learn the style that's really working for them, and now that there are ways of getting software feedback and whatnot and AI systems, that's actually starting to be rolled out in some of the for profit colleges that I've done work for, and I think we'll see it more widely adopted. The idea of being in a class and learning in herd mode is going to be pretty obsolete. A class will be a place where you collaborate and interface with other students, but you really are going to be learning at your own rate, and that's going to lead to the next thing, which is competency based education.

It's going to shift from the time that you spend getting an education to the skills that you're getting in education, so it's almost like the old Boy Scout system of merit badges. You start just picking up competencies and adding those, and then the competencies add up to a degree when you've mastered a course set of competencies that underline a degree.

I think degrees are going to change. I think degrees are going to be broken down into smaller parts, as well. Four to six years is a really long time to be out of the job market, so I think that we'll see degrees being broken up into smaller segments and people taking less time out of the workforce to do that. I think that fits in with a model of lifetime learning a lot better because you don't have to take this huge timeout while you're running up debt and not making money. You can learn in spurts as you realize things you need to learn that you want to do to further your own development or your own career development.

Last, a trend that I think we're already seeing is the idea of the flipped classroom. The classroom used to be a place that you went to go get lectures and you sat in a herd and were spoken to from a professor and then you went home and did homework, and now that's getting flipped where people are doing all the lectures and that individual learning online, and the classroom is being used a lot more for a place for collaboration and interaction and team learning, which more mirrors the business world.

Ben:

Lee, I'm so glad to hear you mention a lot of those things, because it makes me feel like we're on the same page as a futurist in many respects. Definitely some of the things that we're advocating for on our campus is flipping your classroom, doing active learning in the classroom, micro-credentialing, in terms of digital badging and competency based learning.

Actually, the learning management system we use, Moodle, their entire next wave of LMS software is incorporating competency based learning, so I think definitely a lot of these trends are things that we're excited to be moving towards in the next few years.

Lee:

Very cool. We use Moodle at CCA.

Ben:

Mm-hmm (affirmative). Open source.

Lee:

Mm-hmm (affirmative).

Ben:

Definitely a lot to like about it.

Lee:

Yes, yes.

Maria:

Lee, that's how you see education adopting a lot of these trends that have been around for a while and have been talked about for a while, but you're saying a broader adaptation and almost a replacement of a lot of the existing methods will come from that, but how about the world of work? How will that be changing, and then how will that be influencing how colleges have to do things to prepare students?

Lee:

I think it's going to influence it a lot. I think one of the other tensions that I probably should have mentioned is that there's a big disconnect from an empower point of view of what students are learning in college and what skills employers want for students to start work. That's being addressed in a couple of different ways.

One of the interesting trends that I'm seeing right now is corporate universities, where Schwab and a lot of other companies, even McDonald's, are doing their own universities and really bringing in students and training them for the skills that they think that they will need on the job.

Maria:

Right, and you can look at the partnership between AT&T and Udacity and some of those other types of things, too.

Lee:

Mm-hmm (affirmative). The middle ground of that is corporations are also trying to influence university learning by partnering with business centers and trying to have donor money enable some influence on what educational outcomes are, as well.

Maria:

Yes. Do you see the world of work transforming radically, or has that already transformed and we're waiting for higher ed to catch up?

Lee:

Both, actually. I think that the world of business changes much faster than the world of education, and because education is slower and more bureaucratic, it just takes a while to catch up. It's not a very nimble feel. I also think that the world of work is going to change a lot. We're just now seeing artificial intelligence really in its infancy, but we're going to see a lot of jobs get replaced by artificial intelligence, and the sweet spot is going to be students that can bring human skills that interface with artificial intelligence so you really get the best of both worlds.

Maria:

What does that look like? I just want to get an idea of how would you bring these human skills to bear on interfaces, like you're talking about?

Lee:

I think humans are going to have to understand what artificial intelligence does really well and what it doesn't do well, and then be able to add intuition and pattern recognition and human thinking to augment artificial intelligence.

Ben:

Right. I think higher education, this is something that one of our other guests brought up, but that higher education needs to ask the question what do humans do well and how do we prepare humans to do what they do best for this new world.

Lee:

Yes, yes. I think there's also some meta skills that are going to be really critical for higher education, and that is learning to learn. I think your first two years in higher education, there should be a lot of stuff on just how do you get smart about learning to learn. Everything on the internet is not true. How do you use critical thinking and how you you filter and act as your own curator for your own learning experience?

When you think about it, education is really a curated information experience, so how can you create that for yourself in the areas that you're interested in and be a critical thinker and be able to evaluate and sift through information, which is an increasingly valuable skill, because it used to be the problem was we didn't have enough information and that's why you went to a university. Now, we have the opposite problem. We have too much information, and 90% of it is crap, so you have to be able to filter and evaluate information, be able to realize which information is true and right and relevant, and ignore all the rest.

Maria:

Doesn't that mean that humans are going to have to have really great skills in data analysis and data mining and all these other things?

Lee:

Some humans will, for sure. I think we're already doing this to some degree. We have to learn how machines think. If you think about just learning a PC or a Mac, they don't actually do things the way that we do things. We actually change our behavior to work with an OS or to relate to an OS. We've learned to do that enough now that we don't really think about it too much. That's just going to be happening at a higher and higher level, I think.

Ben:

That's kind of the next big wave of computing that a lot of the big players are focusing on right now, right, is intelligent language-driven ways that you can interface with their products, right?

Lee:

Mm-hmm (affirmative).

Ben:

Google is making a big AI and chat bot play. Microsoft is. Siri is coming to all the platforms, like all the Macs, and it seems like the future where you're just actually treating your technology more like a human is definitely coming.

Lee:

Mm-hmm (affirmative). The new Amazon device is getting a lot of buzz in Silicon Valley. I haven't played with it yet, but the Amazon Echo.

Ben:

Mm-hmm (affirmative).

Lee:

A lot of people are talking about that, and it has an open API.

Maria:

Let's talk a little bit about a few more years beyond that, the next ten to fifteen years, which I think for most people is going to be really tough to even get any kind of ballpark on. What do you see coming in that time frame?

Lee:

I think the types of jobs are going to be different. I think any routine job that can be replaced by an algorithm is going to be, and that the more complex the job, the longer it will take to write the algorithms, but anybody that's doing a routine job with the same steps over and over needs to start rethinking their career now.

I also think that universities are going to shift from being just places of higher education to being more of a brand, and that they'll start creating a variety of branded experiences that connote the values that the university connotes. You're already seeing that a little bit, like the UC Berkeley extension or Stanford Extended Education, but we'll start seeing things.

The University of Houston futures program has done this, where they've distilled the two year master's program into a one week foresight credentialing course that's available to people that don't have the time or interest to do the full two years. They've actually put more people through the credentialing course than they have through the program, because it's just a more accessible way for people to get into it. It will act as a gateway into the program for people that want to go deeper.

We'll start seeing these different levels of immersion that are different levels of branded experience in the university system, which also means that the universities start having to think more like brands and how they differentiate themselves and what they really stand for.

Ben:

Yes, definitely a different model there.

Maria:

Completely different. We're talking about students just entering the workforce in the next year or two. For them, ten to fifteen years down the road, will they be doing anything even close to what they're doing now a decade and a half later?

Lee:

Probably not. The last time I looked at data for how many jobs a typical American worked, it was eight or ten jobs, and I think that was really skewed by older people in the workplace. I think that people are going to change careers more often, and that's where learning to learn is going to be such a critical skill. I think that's where people that get into a corporate job need to be pretty nimble and look at places that are growing where they can move horizontally within the organization and take new skills and career paths to be a lot more flexible and have more opportunities than they do now.

Maria:

Yes. Ben and I were just talking about that today that that model of taking a job or learning a skill or craft or whatever and honing it over the lifetime of your career is just gone. Nobody gets to do that anymore, really.

Lee:

It gets harder and harder to think of professions that have. Accountants, but that seems like it could be replaced by an algorithm pretty quickly.

Maria:

Yes.

Ben:

Yes. Things like in the education world, TAs, any kind of admin person. Definitely a lot of these traditional human held jobs.

Lee:

Even the lecturer, right, it's like if somebody's doing economics 101, why would you not go get the best economics 101 lecture you can get on the internet and just use that instead of having 500 people giving basically the same lecture at varying degrees of quality?

Maria:

Well, Lee, Ben's laughing because that was my prediction back 15 years ago when I was just starting out in this field, and it never came true for a variety of reasons. I just didn't see a lot of the barriers that were in the way then, but that's exactly what I thought.

Lee:

Yes. Will we see Ted University?

Maria:

Yes. I'm surprised we haven't seen Ted University.

Lee:

Mm-hmm (affirmative).

Maria:

Well, it depends. Maybe if Trump wins the election, we'll see a couple of things like that.

Lee:

As well as the biggest mass immigration of intellectuals in American history.

Ben:

Yes, the Canadian wall.

Lee:

There have been many jokes about the Canadians building a wall and billing us for it.

Ben:

Yes. It would be hard to blame them.

Maria:

Well, Lee, since you can even look further on down the road than that, what would be the most radical change that you can envision for, say, the next 25 years?

Lee:

Education without teachers. AI based education.

Ben:

Probably without students traveling to a centralized location either, right?

Lee:

Mm-hmm (affirmative), especially for more dry, more quantitative fields, or getting the stuff to be an accountant or real estate agent, anything where you learn stuff that you have to play back on an exam. Being a lawyer, because you're basically learning a bunch of information that you just play back on exams. Why can you not write that down and just skills-based learning, do it in modules and do it all within AI?

Ben:

How do you see AR or VR playing a role in that style of learning?

Lee:

I think VR is going to really help learning. It's going to make it a lot more immersive and make it a lot more useful for a lot of the arts that require better and more visual information. I was at a really interesting foresight conference in Florida, where we were looking at some of the VR, and it was very crude VR, that emergency responders were using to train on, and we learned so much that was really interesting.

One of the things that was interesting was firemen now, because things have become more fireproof, have far less direct experience with fires, so they have to use virtual reality to understand what colors of smoke mean and what smells mean and all this other stuff because they just don't have as much experience with real fire as they used to. We'll start seeing, I think it's going to be a really powerful training tool and be really, really useful, especially for people that are in very high risk situations that don't happen very often, crisis responders, police, military.

Ben:

When we're at that point where we have advanced AI and advanced robotics, advanced forms or modes of transportation, do we even have human firefighters and police at that point?

Lee:

Probably, because the emotional intelligence required to deal with your perpetrators or victims is something machines will have trouble doing. I think we'll have machines that will go into a burning building with fire extinguishers and that's something that you would see robots doing really easily, but coaxing somebody in a third story window to jump into your net, I think that's a very human skill.

Maria:

Yes, but if the robot could just go up that third story, and grab the person and bring them down. Ben brought up something today that was really interesting and I think spot on, talking about the recent riots and the issues that happened there with the police. What if we had a whole force that didn't have bias, didn't have any sort of racial prejudices or anything like that? That would be an improvement.

Lee:

It would be an improvement, and machines wouldn't have the human emotions that often make cops jumpy or paranoid or whatever.

Maria:

Yes.

Lee:

A lot of times that intuition is correct, but there's times when it's not, too.

Ben:

Right. You brought up the interesting point that we need to think about what AI is good at versus what humans are good at, and I think that's just so poorly understood by most people, and certainly far from an expert in it, but just being around technology, being a technologist, learning the basics of writing some code, they don't do things unless they have a very explicit reason for doing them, if that makes sense. That sense of intuition is missing. I'm wondering, at what point do you see AI passing, what is that called, the touring test? Am I thinking of the right test?

Lee:

You should be thinking about the singularity. Are you familiar with the singularity?

Maria:

[inaudible 00:32:06]

Lee:

I think he just moved his date into 2029. It was in the news that he had moved it in.

Ben:

Can you explain what the singularity is for listeners that might not be familiar with the term?

Lee:

The singularity is defined in different ways by different people, but the general understanding of the singularity is that as artificial intelligence eclipses human brain power, that artificial intelligence will become the dominant life form on the planet, and we will be subservient to it.

Ben:

Yes. I've thought of it as the point of no return, right?

Lee:

Yes, depending on how you think about it, because there's three options, right? Machines dominate, humans remain dominant, or there's some mash up of the two, and this is what a lot of technotopians believe that humans will merge with machines and actually become a new sort of dominant species, if you will.

Ben:

We've heard the term transhuman.

Lee:

I know a fair amount of transhumanists, yes. That really comes down to whether you believe that pure computational power is the same thing as intelligence, and [inaudible 00:33:36] nice graph and it's clear that we're going to have masses of computational power and at some point, that eclipses the computational power of the brain. At some point, that eclipses the computational power of cities, and then countries, and then the planet at some point.

So much of human computational power is distributed and related to how our bodies function in the world and information coming in from our bodies, which if you think about our very highly complex set of sensors, and I think that's pretty hard to emulate. I'm of the camp that thinks there is something about humans that is going to make us be human for a while and make machines have a really hard time being more human than we are.

Maria:

Well, but even if we become a mash up, we could still be humans but have some machine parts, right? It probably won't be too long before we do have a lot of embedded sensors and things under our skin and probably in various organs and things like that. If you need to have a part replaced on you, most likely it's probably going to be a robotic part that goes in there.

Lee:

Already happening, and sign me up for that. If you look at, what is a pacemaker, what is a contact lens? These are all things that we're already putting in our bodies. I think one of the interesting shifts that's been happening, and it's kind of started in the community of paraplegics or people that have lost limbs, is this attitude shift we've seen that if I lose a leg, I don't want a leg that replaces a human leg. I want the best possible leg I can have, whatever it looks like.

Oscar Pistorius is a South African runner, and there's also a US female runner whose name is escaping me, the same deal that had developed those super fast legs, were winning races where runners with human legs were saying, "Wait, this isn't fair. They have better legs than we do," but I think this idea is coming instead of just replacing a part with the best human part, I want the best part that there is. For instance, with vision, why would I settle for 2020 if I could have better vision than that?

Ben:

Right, or night vision or infrared vision or whatever. I think there's a difference between the cyborg human that's already been happening with existing and old technology, and the idea that my mind is no longer tethered to my body and my intelligence is no longer dependent on the meat of my brain. It's in this network. That's what I always thought of as the transhumanist point of view.

Lee:

I think you're thinking more of the freeze your brain movement. Are you planning to freeze your brain in a quest for immortality? Ray Kurzweil was planning on freezing his, and there's a place in Arizona that has quite a few frozen brains. I think it costs $200,000 or something like that.

Maria:

Wow.

Lee:

Again, that's this model of the brain being a computer that can be detached from the hardware and then reattached, and I think that intelligence is distributed throughout our bodies. There's something like 100 million neurons in your gut.

Maria:

Wow.

Lee:

When you talk about a gut feeling, there are neurons in your gut that are processing, and that's one of the things that's just becoming evident as we learn more about human biology.

Ben:

Wow. That is, I don't want to say food for thought. That's too much of a pun.

Maria:

Well, Lee, what parting words can you leave us with as we try to prepare for this world that we're going to be entering pretty soon here?

Lee:

I think it's often been said, and I think it's true, that we are entering in an age of accelerating change. We're seeing so many domains of science that are at or near breakthroughs that can really change what our experience of the world is, that learning to learn is critical. Having critical thinking when you're drowning in a sea of mostly irrelevant information is critical, and being able to think about the future I think is really critical.

I'm part of the board of the Teach the Future Foundation where we're trying to provide foresight tools for teachers from elementary school all the way up through higher education, and trying to make foresight get the same amount of attention that history does and education. We spend a lot of time thinking about the past, but very little time in education thinking about the future. By sharing some of the tools that we used to think about the future, it would be wonderful to see people get better at thinking about the future and to think about the future more often.

Maria:

What are some of the tools that you use to think about the future?

Lee:

If you go to TeachTheFuture.org, you can see that we're starting to compile a whole bunch of things there. One of the common tools that futurists use is scenarios. We don't believe that you can accurately predict the future. We think that when you think about the future, you have to set aside the things that are known and that are fairly sure. Those would be things like demographics or technology, adoption curves, that you mostly know, against things that you can't know, like is the economy going to be good or bad. Scenarios allow you to look at alternate futures and look at ways that the future might unfold so you can better prepare for a variety of possible futures instead of just assuming that the future will be like the past.

Ben:

Well, Lee, that was fascinating insights that you've given us, and thank you for sharing them with us and with our listeners. Is there anything else you want to plug or anywhere people can catch up with you or follow you that you want to share?

Lee:

Sure. I'm on Twitter @leeshupp, and I can also be found teaching foresight at the California College of the Arts as part of the DMBA program, which is a very unique program in the US, one of the first of its kind. It combines an MBA with design thinking and foresight, which really is developing a different range of business skills for our students.

Ben:

Awesome. Okay, well thanks again so much for joining us, Mr. Lee Shoop, and until next time, this is Ben and Maria signing off.

Lee:

Thanks, you guys. This was a lot of fun. I really enjoyed speaking with you.

Maria:

Thanks for joining us for this special episode on the UP Tech Talk special series on the future of education.

Ben:

Heard something that made you think? Continue the conversation on social media by following us on Twitter @UPTechTalk.

Maria:

Make sure to join us at TechTalk.up.edu, or by searching for UP Tech Talk in iTunes for our regularly scheduled UP Tech Talk episodes, where we explore the use of technology in the classroom one conversation at a time.