

## Have You Heard #20: Put the 'i' in School – Personalized Learning and the Disruption of Public Education.

- Jennifer: Welcome to Have You Heard. I'm Jennifer Berkshire.
- Jack: I'm Jack Schneider.
- Jennifer: Jack, as an education historian, you know that the long history of efforts to finally fix our public schools is littered with evidence of failure, tombstones of failure.
- Jack: There's a lot of technology scattered along the side of that highway as well.
- Jennifer: Well I have great news. We finally figured it out and the answer is something called personalized learning.
- Jack: Does it involve computers?
- Jennifer: It certainly does and I'm encouraging you to get in now because this is the thing that's going to do it.
- Jack: Oh, as a ground floor investor you mean.
- Jennifer: Well it's probably mezzanine.
- Jack: We call it "loge" in Los Angeles where I'm from.
- Jennifer: We started working on this podcast a couple of weeks ago and even in just that short amount of time, you can really feel the debate about personalized learning heating up. Even more big investors have announced that they're getting in and I think people are starting to get a sense of the speed with which technology is moving into the classroom and how it's going to transform not just the way that kids learn, but the way that teachers teach and I for one am wondering if maybe we need a few more skeptical voices.
- Jack: Yeah, it's been really interesting to see Silicon Valley circle the wagons around personalized learning and other kinds of tech oriented interventions.
- Jennifer: By wagon you mean driverless car.
- Jack: Circle the Ubers, excuse me, around technological interventions. So I think I have two observations here. One is about the long history of failed efforts to use technology to transform American education. So if you go back to the advent of radio, there was discussion about how radio was going to really transform public education and of course when film becomes available, there's an equal amount of chatter about how the use of film strips is going to totally revolutionize teaching and learning and in this

case, many prognostications, that are not so different from some of the thinking today around the way computers will transform teaching and learning.

So when film became available and this became amplified even further when television could enter the classroom, there was talk about possibly eliminating a large chunk of the teacher labor force, of de-professionalizing teaching, of making teachers into something akin to instructional aides who would handle the film clips or who would roll the televisions in and out and then conduct some Sal Kahn style flipped classroom work with students and of course, this is all quite laughable now that we are in the Digital Age, but we seem to be immune to the lessons of history in this case when it comes to zeros and ones.

The other observation that I was going to make was about the interesting timing here with regard to the rise of American public education, the maturation of the public education system and then the work of industrialists and capitalists outside of the system who are interested in school reform. So for much of the history of American public education, the work of improving public schools was actually very straightforward. It was to build a system and so from the 1850s through the end of that century, the work was simply to build more schools, to build school buildings that were large enough to serve students in the community, to begin collecting enough tax dollars to actually hire professional teachers, perhaps to ensure that teachers are getting a professional education

From 1900 to about mid-century, the work was expanding access, getting all students into and through high school and continuing to open up higher education. As the system has reached maturity of course, these simple problems have been solved and we have been left with a lot of dilemmas that by definition are unsolvable. The tech billionaires who are so interested today in school reform, however, tend to see most of those dilemmas. Dilemmas around questions like how can we promote more student learning in the classroom when there are 20 students in the class and only one teacher? This is something that is dictated not only by the scale of our system, but also by the limits on funding due to the tax funded nature of public education in the United States and they've approached this as a simple problem, as a technical problem that can be solved through creative thinking, a willingness to disrupt and enough dollars committed to the enterprise.

So there is actually something really different this time than in previous generations where wealthy and politically connected school reformers had a desire to "disrupt" public education. In fact, the word was not disrupt because the work with school reform was actually to build a system and now that we have a system, the idea of disrupting is one that is fairly new and that promises to surprise, surprise, be quite disruptive.

Jennifer:

We have a special guest who understands this topic very well who is going to join us in just a moment, but first I want to play a [clip](#) of a Silicon Valley disrupter. This is Facebook CEO Mark Zuckerberg who recently announced that he's making a big bet on personalized learning. Here he is a couple months ago explaining why.

Mark Zuckerberg: There's this new trend towards more personalized learning. All right, so now that we have the internet and different tools to learn, some kids learn better by watching videos, some learn better by reading. Some learn better by practice problems. Some learn better by collaborating with other people or learning independently. Having the ability to learn using the method that matters the most to you is going to help every child get ahead. Being able to focus more time on the things that are challenging and fun for you will help you get ahead, right? So some concepts you might just get immediately and others might be hard, but in today's education system, you need to spend the same amount of time on everything.

Jennifer: I want to welcome as a guest to the podcast Bill Fitzgerald who directs the Privacy Evaluation Initiative for Common Sense Media. Bill, I just played a clip of Mark Zuckerberg extolling the power of personalized learning. But as you point out, a better way to describe what he's talking about might be algorithmically mediated learning. What is that exactly?

Bill Fitzgerald: I think if you put five people in a room and ask them for a definition of personalized learning, you'll probably get seven different definitions.

Jennifer: That's because their definitions are personalized.

Bill: Yeah, so I mean I think that there is not a single definition of personalized learning that satisfies everybody who actually works in education technology. When we talk about algorithmically mediated learning, we're talking about a very specific type of interaction, which even though it's actually called personalized learning, actually cuts people out of the project, cuts people out of the equation. So we have the semantics of the term, which actually sound very human, but in some implementations, not all, but in some, we actually have a process where what we call personalized learning is actually less personal and less human.

Jennifer: One of the things that's so confusing about this debate is that personalized learning can mean so many different things. Just in the last few days, I've seen it used to refer to both project based learning and the kind of my teacher is an algorithm approach that you're talking about.

Bill: One version of what could be called personalized learning would actually look a lot like portfolio based assessment, where you have students designing their learning experience, commenting on their learning experience, doing it, researching topics, doing work on topics that they've chosen and having actually direct hand in shaping their assessments. That's actually a form of what we could call personalized learning, but what often happens is something which is on the opposite end of the spectrum where there's a piece of software with a set of predetermined paths and outcomes. You can get there different ways, but the roads you're going to travel are already built. You just have a choice about whether you turn right or left, but not ultimately about where you go.

Jennifer: Walk us through what that actually looks like. Use a particular subject area, because we're talking about loops, we're talking about algorithms, but what's it like when

you're on the receiving end of content that's being delivered this way and how does it move along? Make it real.

Bill: One of the most visible examples of this is something like Khan Academy and I think there are probably people within a personalized learning world who would say that Kahn is not a good example of personalized learning, but within Khan Academy, you have some of the basic mechanisms that a lot of the systems build on. You have lessons that a learner can choose from. You have a recommended path. You have recommendations about what question or what tutorials might be most helpful, if and when it spots problems that a learner is having with content.

So I think really it's going to vary. It's going to vary student to student. I mean, I think there are some students that will benefit from the ability to actually go through something at their own pace. There will be other students who really actually won't be able to get it without a human interaction. I think the other piece of personalized learning is that we often don't talk about how much of the day should actually be devoted to computerized instruction or algorithmically mediated instruction.

What makes sense there? Should that be five minutes? Should that be 20 minutes? Should that be two hours? I think these are all areas where I think to be generous, the research base is very incomplete. So there are things that we just don't know and I think to claim otherwise is to get a little bit out of ourselves.

Jack: I think one of the things that's really interesting here about the loose definition of personalized learning is that it allows for a bait and switch. I was listening to you at the tail end of your comment there say that the research is inconclusive or hasn't yet been done and advocates of personalized learning sometimes do like to point to research that has been done in order to say, personalized learning gets results and then you dig into it and you see that there are two very different sets of research that have almost nothing to do with each other.

One is related to the Ben Bloom mastery learning style work done back in the 70s and 80s on using tutors or instructional aides to do a one off with students in classrooms where students are able to pursue their own authentic questions and to have materials provided for them that align with the things that they're interested in and where their skills are. Which of course, that is not what's happening when students are sitting in front of computer terminals and then there's this very different body of research on what happens to students' standardized test scores when they sit in front of their algorithmically mediated learning devices.

Jennifer: Very good, Jack.

Jack: Thank you.

Jennifer: I'm going to go ahead and give Jack approval to move on to the next level.

Jack: The next level, and I couldn't help but think of, since we're talking about something that someday will be AI, I could help but think of-

Jennifer: AI meaning artificial intelligence.

Jack: Yes, exactly, I could help but think of a somewhat similarly acronym program DI, direct instruction, which is actually not delivered by computers. It's delivered by teachers. It's scripted instruction and the results on direct instruction over the years have been very consistent and very positive with regard to student standardized test scores and teachers hate it and students generally don't really like it very much and parents, when they figure out what's going on are extremely divided over it because essentially what it does to students is turns them into sponges acquiring content rather than autonomous agents of their own futures.

Bill: One of the things that I see rooted underneath a lot of the conversations about personalized learning, direct instruction and really different methods of teaching and different methods of schooling and different structures of schooling is some strong disagreements about what assessment should be. This is where, I mean, I would be curious to look at the connections between people who place a lot of value in a standardized test score or in a series of standardized test scores and how that aligns or doesn't align with people who are strongly supportive of personalized learning in more or less scripted systems and then see how that compares to things like project based learning or portfolio based assessment because those are very different ways of actually measuring student growth and actually looking at student growth.

In all of this conversation actually we haven't even touched the issue of student voice. I mean, this is something within any of these personalized learning systems, one of the things I always look for when I'm actually assessing a system is what mechanisms are in place to allow students to comment on their own process and to allow students to correct the impressions that the software is giving. That's something that's not present in many places. We often, and this is a problem that exists across the board in education period, is we are often hesitant to step aside and make room for students who really are the experts in their own experience to share that expertise with us.

This is, from a learning system place, that's a design flaw, but from a systems place, I think that's something where the adults in the room actually we need to step aside. We need to make room for voices that are not our own and for voices that actually might disagree with things that we feel strongly about.

Jack: Listening to you there, Bill, it was resonating with me how many different strands are bound together in this personalized learning rope and often producing strange bedfellows as a result.

Bill: Yup.

Jack: Folks who are advocating for portfolio assessment, for instance are often very much opposed to algorithmically mediated learning. Folks who are turning to standardized test scores for evidence of student learning are not often in favor of teacher rated performance assessments. People who are big advocates of student voice and self-

directed learning are often not big supporters of scripted instruction and yet all these folks end up bound together under the loose heading of personalized learning.

Jennifer: I want to add one more bedfellow to that mix, advocates of religious education including our very own Secretary of Education Betsy DeVos are big fans of personalized learning and they like it because these closed learning systems that Bill has been describing, make it easier to control the content of what kids are learning.

Bill: Well, so this is less a personalized learning thing and more an algorithmically mediated approach to what content people get type issue, but these decisions are made with content filters all the time and in public school settings, the two reasons that are most commonly used for this are [inaudible 00:18:25] compliance and online bullying protection. So the general argument that's used is we need to look after student safety, but it's not uncommon. When I say not uncommon, I mean the ACLU has sued several school districts about this, to have content filtering that limits access to LGBTQ resources for kids, that they would flag some mental health searches about suicide.

So as things that are off limits, information about breast cancer or female reproductive health, things that actually kids need to have access to and for whatever reason might not feel comfortable getting it in the home setting or someplace else, but instead of actually allowing cleaner access to really basic resources that kids need, we use technology to place barrier in some instances and that's not really a personalized learning example, but certainly an example of technology being used to circumscribe what kids have access to and doing so on adult terms, not kids terms and it does get down to controlling who can access what and what resources might be put into allowing or controlling what people can access.

Jennifer: I want to ask you to step back and talk a little bit more about what's driving all of this stuff. We have an education historian here. Jack has spent his career chronicling the obsession throughout history with what ails our schools and you can really feel a consensus emerging that the problem has been that we just expect kids to all learn in the same way and at the same time and if we just do that differently and personalized learning is the way to do that, finally-

Jack: We'll be at Finland.

Jennifer: We're going to be at Finland, right? Do the Fins even have words for personalized learning? We'll ask Pasi Sahlberg that. I don't think that they do, but talk a little bit about that. The idea that on the one hand, you have this insistence about making learning more self-directed and then as you've just talked about, the solution to that is these closed systems where there doesn't seem to be a lot of room for student voice.

Bill: Yeah, I mean, I always try to be very careful when talking about the issue of education for a couple reasons. First is, it's far outside my area of expertise. So I am at best a mildly informed layperson in these conversations.

Jennifer: Don't worry about that. Jack is well-informed enough for us all.

Bill: The second detail is that I am the embodiment of who our educational system was designed for and has worked for historically. I am a straight, middle class, white male and now I happen to work in technology and education. I am who our school system was designed to work for and I think when we talk about our school system, we need to break it out and yeah, we've had multiple school systems. Like we've had the school systems that are designed for people like me, which historically have actually done a decent job educating people like me, but then I think to ignore the fact that we've had segregated school and we've had a range of efforts to basically fix inequities in our education system, going back and these efforts to "fix" our education system, some have been more sincere than others, but I don't think any of them have actually worked.

So when we talk about our education system and one size fits all, I think we need to acknowledge that there's a context within which our education system has never worked in an equitable way. So when we talk about one size fits all, I think we need to be very careful about how we're defining all. With that said, I mean there definitely has been a mythology going back over time that if we could actually just get the right input at the right time, we'll fix everything. That's remained remarkably consistent across time and across technology and I would love to hear some unpacking as to why even though our social context has changed and our technology context had changed, our mythology hasn't and yeah, I have no idea what the answer is, but I would love to hear people who actually know more about it come up with one.

Jennifer: Jack is hovering near his microphone and he's got his unpacking face on.

Jack: Yeah, yeah, yeah. I'm ready to go to the next level for unpacking. So I just want to complete this task.

Jennifer: Okay. Go ahead.

Jack: Get my badge. So yeah, I was listening to you Bill and thinking that a part of the allure of technology. I mean, obviously a part of it is that we look around at many facets of our lives and see them transformed by technology and so it's easy to be bad social scientist and overgeneralize and say, well therefore technology ought to revolutionize the way that we engage in teaching and learning inside our schools, but another piece which struck me as I was listening to you was the fact that political problems and moral problems are so much stickier and more challenging to deal with than technical problems and so you mentioned segregated schools.

The challenge of desegregating schools is a political and moral problem, not a technical problem and part of the allure of technology is that it suggests that whatever is holding our schools back in terms of delivering an equally excellent education for all children is simply a matter of a technological fix, that it's not going to require us to make a difficult trade off, that it does not pose a dilemma that is unsolvable and that will require us to collectively make a decision about what we value and for some of us to give things up. It instead suggests that the technological rising tide will lift all boats and that's wishful thinking that has always been in our schools and again, as you mentioned, you said across different kinds of technologies and I'm thinking of a book

by a mentor of mine, Larry Cuban, who wrote a book called *Oversold and Underused* and was about computers in the classroom, but Larry has also written about thinking about how a radio would transform instruction in the early part of the 20th century. Then next it was television that was going to transform.

Jennifer: I have one that's even older. Now I know we're talking about K-12, but if you go back to the late 19th century, the education disruptor of the day was actually correspondence courses and you can find colleges that started getting rid of their on campus programs because everyone just assumed that learning by mail was going to revolutionize everything. So there.

Bill, I want to change directions just a bit and ask you about a story that was in the *New York Times* recently. The story was about how Google has taken over the classroom and you had a great quote about how Silicon Valley disruptors have appropriated the language of equity in a way that mostly benefits them. What did you mean by that?

Bill: Yeah, we have these social and ethical and moral issues and algorithms can effectively embeds those and make them less visible and because it's an automated process, we were trained to think that it's more objective, when the reality is its lack of objectivity just gets done automatically every single time. So I think there's some large scale misunderstanding of actually what algorithms do and how they can invent biases and we have examples of this all over the place.

Some of Julia Angwin's work at ProPublica and in racial bias in some of the software that's used in our justice system is one real clear example of that. I mean, just this week we have Uber rolling out pricing that will shift based on what an individual user is expected to pay or would feel comfortable paying. So I mean that's a great example of a personalized system, which completely actually takes advantage of the person using the system and also cuts labor out because the shift in prices doesn't actually accrue to the driver. It actually goes straight to corporate.

So we see these examples of personalized systems which really create greater inequities or increased inequities and this is where I think it's very easy to talk about the language of automation as a language that eliminates. Really what it does is it minimizes the possibility for human interference in the process as it's happening, but it downplays the reality that algorithms are a completely human controlled process and even though there are times where the more complicated ones require a team of people to actually understand them, they're still a creation that we put out into the world and we humans have a say and we downplay that at our peril.

I think there's a tendency in some of the more marketing focused conversations about personalized learning to downplay the role that humans have in creating these systems in an attempt to make it seem like these things actually conquer some of these really hard and intractable social issues.

Jennifer: We started off this episode talking about the unbelievable push to remake education through personalized learning. As you know from your work, there are tons of

questions to be asked about this approach, but not too many people who are asking them. I want to give you the mic one last time and ask you what are some of the questions that you think should really be front and center right now?

Bill: We need to ask questions about what technologies are used in what locations and why and we need to ask questions about why does one environment and or one setting or one school in one district make sense whereas another one doesn't. What's the full reason? What are the full range of reasons we are making the technological decisions that we are because these lead us into the uncomfortable conversations that we need to have if we are actually going to do this right. I think there are elements of personalized and even algorithmically mediated learning that can be helpful, but if we're going to roll these out, we need to be really clear about what we're leaving behind and why we're doing it.

I think until we actually have these hard conversations and this is going to make a lot of people uncomfortable and I actually think that's a good thing, about why certain communities get certain tech and what the underlying assumptions are and what the power structures are in place there. We are going to continue to get mired in mistrust and I think continue to live in the same mythologies that we've been looking at about how tech will or won't transform education and we're not going to make any progress.

Jennifer: That was Bill Fitzgerald. He directs the Privacy Evaluation Initiative for Common Sense Media. You can find him on Twitter, @funnymonkey. We'll be right back with some final thoughts.

I'm so often struck by how the language that's used to justify this stuff seems to have so little to do with what's actually happening. So you will often hear people who talk about personalized learning use the word relationship, but the image that you always see is of the child who has a relationship with the tablet and then the teacher hovers nearby in some kind of new assisting role that they're still an adult in the classroom?

Jack: I was going to say, it's really interesting that you use the word teacher, right, because a part of this is the de-professionalization of teaching, which is going to have a tremendous benefit in that it will reduce the cost of education. So roughly 80% of school expenditures are on staff salaries and is going to have a tremendous downside in that we will no longer have qualified educators in the classroom. We will have paraprofessionals with an emphasis on the para and so turning teaching into basically service work where helpers will be standing by ready to move you on to the next level with your device or to take care of any bugs that the tech team hasn't already worked out.

When I think about that, that's troubling to me not only as a former teacher who is married to a teacher. It troubles me because I worry about what's going to happen when this experiment fails, as it inevitably will because once you do this damage to a profession, once you strip it of its prestige and once you strip it of its remunerative qualities, so you lower teacher salary to a point where it becomes politically challenging to raise it again, the question then is who is going to teach and particularly when the work remains as difficult as ever, rewarding, important, but difficult, if the

rhetoric doesn't match that, if the national story is that teaching is easy, that teaching is standing by ready to help a student work with his or her iPad, the question for me is who's going to be in that classroom?

Jennifer: The robots.

Jack: That's right. I hope the robots have earned all of their badges.

Jennifer: Well, Jack, I hate to break it to you, but this partnership just really isn't working out.

Jack: That's all right. I've got a Chromebook.

Jennifer: I've decided to replace you with an algorithm.

Jack: Well, you know-

Jennifer: A lot of people have indicated that they're ready for me to move on to the next level and well ...

Jack: I'd like to take a quick Twitter poll on this if we could. So we'll test this one out when we release the episode.

Jennifer: Speaking of releasing the episode, if you like the personalized content that we've been delivering every two weeks, please give us a good review on iTunes and until next time, I'm Jennifer Berkshire. This is Have You Heard.