Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns

A transcript of a podcast hosted by Paul Miller, director of global initiatives at NAIS, with guests Michael Horn, coauthor of Disrupting Class, and Patrick F. Bassett, president of NAIS

MILLER:
This podcast came about because of the success of some social media efforts during and after the 2010 NAIS Annual Conference in San Francisco. We had some live dialogue via text messaging during a session led by Horn and Bassett.

One of the largest Tweeted about comments was made by Bassett: "The death of education as we know it may be the prelude to learning as we need it."

BASSETT:
Many people have made the same observation in one form or another. The old way of thinking about education, as we've experienced it for a very long time, tends to be teacher centered, top-down, textbook driven, mainly one directional – teacher to student, emphasizing left brain skills of analysis and linear, logical thinking. Technology tends to be seen as just a tool, as an updated blackboard. Assessment is either teacher created or standardized, normative in direction; one-size-fits-all of both delivery and assessment of student outcomes.

What I mean by all of that being up for grabs is let's look at a new way of teaching. A prelude to learning. The latter suggests to me a very different world that is student centered, more bottom up instead of top down, more problem-solving focused in a real world context, and multi-directional. More team based with teacher as the “co-constructivist” of learning with the students. We see technology as becoming something very different, much more than just a tool, much more the medium in which learning occurs. All of this allows for a much more differentiated delivery and assessment system.

HORN:
That's how I see it as well. Much more student centered – and even student-directed to the point that students are driving the way that they consume and master different learning projects and modules and so forth. I think we’re starting to see really exciting steps into this direction that will largely be driven by technology as a platform for that learning. And that's what I think goes to the heart of what Pat just said, that technology will no longer be that tool that's just an add-on on top of the model. Instead it becomes the basis for which a lot of these experiences and interactions begin to happen. And indeed many of these interactions may happen offline, but it's just that the online will be the platform that allows for that customization for each student.

MILLER:
One of our online contributors suggested that technology would become the environment, not just a tool. If that’s the case, how do you use technology to redefine education, using it to do something that couldn't be done before instead of simply being a substitute for the old way?
HORN:
I think that’s the big challenge in front of us right now because I think the online learning movement, broadly speaking, that we see growing everywhere is not going to go away any time soon. It’s going to gain more and more market share, but the danger is that we replicate the factory model teaching system – merely online. I think that’s the real challenge that we face right now, when what we really want to do to make sure it’s transformational is put the student at the center, not the teacher. Moving toward policies that are more around competency based, make time the variable, and things like that will naturally aid that transformation and evolution.

BASSETT:
Michael, your book *Disrupting Class* was prescient in many ways, not the least of which was pointing out that other disruptive innovations take on an inevitability to them. Now that’s very different than choices. My sense is that the wave is very large: we’re either going to ride it to the benefit of schools and kids or be inundated by it. The way I think about it is that until the invention of the Internet, I believe power and riches were attached to the restriction of access to information. From the days of the scribes and the holy men, all the way through the 20th century where professionals would restrict knowledge to medical information or engineering information or accounting information or whatever. But with this invention of the web, it has created this condition that has fostered this sense of inevitability because now everyone has access to *everything*. It changes the role of the holy man or woman and those of us who have felt we hold the keys to the kingdom. Everyone holds the keys; it’s a matter of which kingdom and how to make sense of the kingdom. That suggests a very different kind of role for educators.

HORN:
Yes, knowledge is no longer the scarce thing so our assumptions driving our whole educational model have changed. The point about the web being the driving force – not just in learning, but really everywhere – that changes our access to information. We do mass customization now in tons of fields; this isn’t a problem we’ve had trouble solving. And so if we really open up a lot of our restrictions and ideas of what we think education means and what it looks like, and get away from thinking about it in a tight, time-restriction, in four walls in the classroom – I think mass customization for each student is something we can solve in education as well, and make it look very different.

MILLER:
Is it something that existing educational institutions can solve? What I’m thinking here is that in your book you make it very plain that in a lot of the most powerful conventional technology people got hit by a bus they never saw coming when somebody was able to come up with a disruptive technology. Can our schools, for example, just make a transition over to a disruptive technology or are they going to get wiped out?

HORN:
Well, I’ll speak at the 30,000-foot level and then, Pat; it would be great if you chimed in with some examples.

BASSETT:
Sure.

HORN:
That is the big challenge. We wrote the book from the perspective that existing schools could do it. I do think that is a question, however, but I think you see some evidence that even in the broader worlds of which we talked about disruptive innovation, from computing to department stores to airplanes and so forth, we’ve actually seen a lot of examples of companies being able to...
manage disruptive innovation and be the leaders in the first world, if you will, and then in the second iteration as well. They’ve done so by creating these autonomous spaces where they’re allowed to change the assumptions of how their model works and be freed from the restraints that the old model has put around what the new one might look like. So you’ve seen IBM do it; you’ve seen Dayton Hudson do it; you’ve seen Cisco do it; you’ve seen Intel do it. We have lots of examples now of people being able to do it, but it’s extremely hard and there are still tons of organizations in the business world that have not been able to do it. It’s going to be tough for schools, but there are some good guideposts that they can use to be the masters of it as well. Pat, I’d be curious to know what you think about that.

BASSETT:
I have to tell you that an NAIS theme, Schools of the Future, has been getting so much traction from our membership, which tells me there’s great interest in how to become the 21st century iteration of school. What we have working for us in the independent school world is our independence. No one dictates to us how to teach or what to teach, or actually what to test, so we have this great liberating freedom. The only question is whether or not we’ll capitalize upon it.

The very good news is that we’re collecting examples of schools doing experimental things in terms of how to deliver knowledge and skills. What we’re finding is that one of the strategies that works for schools is to be experimental, not to assume that everyone has to adopt a new approach right at the same time, but rather to bet on the fast horses. The early adopters on the faculty are eager to try a new delivery system and new ways of teaching and learning. Lots of examples of that, most of them using one form of technology or another to help bring about new outcomes. A lot of it is project based. NAIS is facilitating that kind of learning through a project we call Challenge 20/20, where we match U.S.-based schools with international schools to solve a global problem. Of course, we need to use the Internet and related technologies to do that.

HORN:
I think that goes to the heart of how learning might look very different. With the Internet we no longer have to think about boundaries in the strictest ways and students can solve real problems across boundaries in the same way that they’ll have to attack them when they go out into the real world. So they can solve problems with people from other countries, with people from other states, and so on, to bring learning to a new level where you’re actually really doing something and engaging with it. Working across boundaries and contexts and breaking down stereotypes in the process, which will be crucial in this globalized world that we’re increasingly coming into.

BASSETT:
If I might add one other notion here because this question is so central to the idea of school. I believe that for young people at the K-12 level, place-based education will always be essential, for virtually all kids. Kids and learning are essentially social. Kids need to learn from mentors, role models – adult role models who actually have a physical and social presence in their lives. So we see a hybrid model as the immediate future because of the needs that kids have. We think adults don’t have that same need; they’re fully formed in a lot of ways so distance learning exclusively may work for adults. But not so well for kids.

HORN:
Yes, I’ll jump in there with one more thing before we move on because I think this is a big point: There’s some evidence to suggest that’s exactly right. In the book Disrupting Class we have as “S” curve projection of when online learning will hit different market penetrations. We predict that by 2019, 50 percent of all high school courses will be online.
We also did a projection on the home-school growth, which has been growing from roughly 800,000 ten years ago to about 2 million today. It actually flattens out at 5 million students, which is just under 10 percent of the K-12 school population. This says that 90+ percent of students are going to need a physical place to learn. Some of it is for very practical, custodial reasons, but a lot of it is because they hire school to fill a job in their lives, which is to have fun with friends. We know that relationship piece is crucial to learning. So there is a lot of evidence to suggest that hybrid really is the direction it’s going to go. That projection of 50 percent online by 2019, the vast majority of it will be in hybrid situations.

MILLER:
I’m very glad to hear you talk about that because I know that that was one of the doubts that was raised by folks both during and after the Annual Conference. They were afraid that distance learning was going to have a truly disruptive effect on children’s education if they were no longer in a bricks and mortar environment. Clearly you don’t believe that that’s going to happen, but how would you see it playing out in terms of a hybrid model? Kids obviously come together; they spend time together in a school environment. Do they have teachers there? Or are their teachers online? How does it work?

HORN:
I think you’re going to see a lot of different set-ups of this. I don’t think there’s going to be just one model, which I think is the entire point – we want a diversity of models for a diverse set of circumstances. It’s hard to predict, but I can tell you that the hybrid models we tend to see so far have taken on a big range of it.

There’s one that’s a dropout/recovery model that will have some wider applicability where students have a much freer schedule to go and come as it makes sense for them. They do some work at home. They do a lot of work in learning labs, in shopping malls, in other bricks and mortar facilities. There are in-person mentors and teachers and other supports around.

You’re also seeing some arrangements of schooling where it’s similar in nature, where different targets groups, sometimes it’s middle school or high school, learn from content experts from anywhere in the world. The people who are in the room take on the mentor or coach or problem-solver role. You’re going to see a lot of different things. Maybe some team teaching. I think the notion that will go away is this idea of “classroom.” That’ll really get broken down in the process of this as we picture an environment with lots of adult figures in there for lots of students taking on very different team teaching roles, even specialization of roles maybe. It’s too early to say definitively one way or the other, but I suspect we’re going to see a lot of different arrangements.

BASSETT:
I think there are a lot of things in flux and in play. For one thing, what we call in academe the “cannon.” What’s the content that is absolutely essential to teach? That’s been a challenge now for generations. I believe it won’t be as important an argument in the future as it has been in the past for many reasons. Not the least of which is that there’s such debate on whose cannon? Whose story?

Related to that is this content-driven, textbook-oriented assumptions that there’s material "to cover." I believe that will be up for grabs as well. What will be central and core to education are skills and values. The content will vary teacher to teacher. In many ways independent schools already do this. We ask teachers to be passionate about something and then the kids get to get passionate about it, as opposed to following a prescribed curriculum in a textbook.
What this leads me to wonder about is the idea of the master teacher, which we venerate in independent schools. I wonder if in a disrupted future if we won't all rely on just a handful of truly genius teachers? In fact, why wouldn't we want Leon Letterman, the Pulitzer-prize-winning physicist from the University of Chicago, to do 20 video lessons on the most difficult concepts in physics? And the most important concepts related the projects we want students to study and learn? If we could commoditize that in some way, wouldn't that be an incentive for the very brightest, most creative teachers at all levels to produce product that could then be globalized and commoditized?

HORN:
I think that's a really brilliant articulation of it on all fronts. I do think that's what you're going to see. Of the thousands of people teaching physics in the world today making interesting lectures – some of them better than others. There are probably a handful of them who will rise to the top. Through four or five of them, we can give a student anywhere in the world access to that. What does that mean to the teacher in the bricks and mortar place with the students? Their role might be helping to guide students to that content when they need it. Their role may be saying, if this lecture won't help you, why don't we conduct a simulation instead and see how that works? Sometimes they may just be there as a caring individual to make sure things are going OK outside of your academic life.

I think that’s really quite right, and would take it a step further. Some of that customization of curriculum or curricular choices won't be driven by the teacher, but rather on a student-by-student or group of students by group of students basis as they follow the things that really turn them on. They may be working on a physics problem and then say, how does this relate to this other problem? They could dive deeper into that – wouldn't that be a great thing? You're right that we're going to want students to have certain skills and knowledge at the core, like how to read, how to do basic arithmetic. We can automate some of those, as well as some problem solving and things like that. But a lot of these fights are going to get obviated in the future as we realized it’s not all one thing or the other – but really both things are occurring in the process of learning.

MILLER:
You're talking about changes in technology, changes in the curriculum, and now you're suggesting there's going to have to be some pretty fundamental changes in teachers and the way they teach. How are we going to be able to implement that sort of thing? How are we going to get educational institutions to train teachers to do this? How are we going to get our teachers to do this?

HORN:
This is a huge piece of the puzzle that has not been talked about enough. On our end we’re just as guilty of that as anyone. The human capital part of it in the labor model is going to have to change significantly for it to be a truly student-centric future, or even student-directed future. It is significant. One of the reasons I advocate a disruptive approach is for this reason, however, which is a disruptive innovation approach is by its nature a gradual change. It’s not, we flip the switch and tomorrow everyone is on an online or hybrid model. It’s instead a humble notion that we don’t know exactly how this is going to work so we’re going to do it piece by piece, starting in these fringe areas and non-consumption, where the alternative is nothing at all and so it looks great, and getting better and better and more into the core over time. This will bring teachers one by one into these new models and allow providers and schools to experiment with different models to see what works and what doesn't and what are the challenges. And start to allow the training organizations for these teachers – and maybe we won’t even call them teachers in the future, but learning mentors and coaches – to start to adapt to that world as it starts to become the reality.
At this point we’re not seeing the education schools dive into that, with a couple of exceptions. That is a big concern if they want to be relevant to the future. You might see a new group of training organizations emerge to fill that void as the disruptive change occurs. I would like to see universities get into this game a lot more because I’m not sure management is going to mean the same thing in an online or hybrid world. It’s going to be very different, particularly if we do it right and students are engaged. That’s not going to be an important skill. Instead working one-on-one with students is going to be a much more valued skill. There are going to be a lot of implications that people at the universities need to take seriously and start to wrestle with.

BASSETT:
What we’ll see, I think, in the future, is the physics in a context. Our other skills and knowledge will be contextualized. I can imagine independent schools in Minnesota taking on the challenge of, “What physics do we need to know to figure out why those bridges collapsed?” Also, working with their social studies teachers to figure out, “Is this a failure of just engineering and physics? Or is this a failure of government? Did the government not properly safeguard the public?” How do we address that in a holistic, team-based way? What do we need to do to be able to do as students to challenge our government when it fails us? Then maybe the physics will make more sense to me as a student when I see it’s in a purposeful, meaningful context. As opposed to, “In the remote possibility that I’ll ever really need to use physics in the future, then I’m going to learn it.”

HORN:
That’s an interesting point. Using that as a gateway to the knowledge you would need to future exploration into that subject – it’s great to take it on a real problem that’s facing you or your community and therefore has a teachable moment in which you’re emotionally invested. We know real learning happens when you have that emotional spark. Taking those entry points becomes important. Maybe one of the new roles of teachers will be to ask students to apply what they’ve learned to the context of another problem so you can generalize the concept beyond that situation. That’ll be important if you want to pursue something and find out if you’re really passionate about it. That suggests a new role for teachers, in the job of challenging students on an individualized basis, to help them find those passions and help them follow them and apply them to multiple contexts. Help them see if this is something they want to do for their life. If it’s not, that’s OK because we’ll find where the human potential is for each student.

MILLER:
I want to wrap things up with one final question about the role of the leadership team in schools. As our leaders grapple with these issues, undoubtedly they’re thinking: How am I ever going to sell the faculty on this? How am I ever going to get the parents on board with this? What about colleges; are they going to be accepting that we’re doing things differently?

BASSETT:
In any change dynamic, the first emotion that people experience is fear. That’s very much attached to the second emotion, which is a sense of potential loss. We’ve invited our school leaders and school teams to read Dan and Chip Heath’s book *Switch: How to Change Things When Change Is Hard*, about the leadership dynamic. Part of our work at NAIS and part of the work for school leaders is to be more thoughtful about leading change and know that there’s a lot of emotion attached to the prospect change. How do we align the emotion with the rational knowledge we have that change is not only inevitable, but rightly managed, is preferable?

Stage one is becoming thoughtful about the dynamic of change and how to lead it. Stage two is to realize that everyone doesn’t have to jump on the bandwagon at once. The most interesting experiments that are happening haven’t been mandated by anyone. It’s just been small teams of
teacher and technology directors and students saying, “Let’s try this.” That’s less threatening to anyone and everyone in the school context.

The excuse that schools have historically used, especially independent schools, is we can’t do this – whatever “this” is – because the colleges still require X, Y, or Z. The answer to that we’ve learned, quite remarkably, by an unrelated movement in the independent school world away from AP testing in a handful of courageous schools. There are maybe 30 or 40 schools that have done this now, based on teachers’ sense that the AP curriculum is so rigid now that they can do better without following the prescribed curriculum. Of course parents were very scared about this until the leaders did something very smart. They went to the colleges that they send most of their kids to and asked the deans of admission what they thought about this. What we found was that our schools are so successful in matriculating kids to college, who are well prepared to not only succeed in college, but also graduate, that we’ve been getting blessings from the deans of admission.

Part of it is getting admission from the schools next in the sequence. For experimental elementary schools it would be the secondary schools. For the secondary schools it would be colleges. Once the permission comes in, it alleviates the anxiety.

HORN:
Clark Gilbert, who used to be a faculty member at the Harvard Business School, and worked with Clayton Christensen of disruptive innovation theory, talked about that immediate instinct to frame everything as a threat that looks challenging and unfamiliar – to that very point that you were just talking about. The key is to shift your perspective and say, someone’s going to do it, so how might I see it as an opportunity? Set up a new organization that can view it that way.

This is where leadership is so important. A lot of people will say to me, it looks inevitable so why do leaders matter? This is where leadership really plays a role because you want to set up that small team that has the freedom to try something new and you have to protect it. It does not have to appeal to everyone, but you’ve got to give it the space to try these new things out, see what works, adjust, and so forth. Actually, a lot of a leader’s time will get spent on this new thing that’s so uncertain and important. That’s where the leadership really comes into play: It’s creating it and then knowing how to move it more and more into the mainstream if it’s proving itself. That becomes the critical art and test of leadership.

As for the acceptance of the second level – the end customer from the school perspective – that’s quite right. You’ll see more acceptance than we think – it is a challenge in certain respects, but by the same token, in higher education today 4 million students are taking at least some of their classes online. At some point they’re going to get used to this new world and there are a lot of new institutions coming on board, as well, that are challenging them. I think you’re going to see more acceptance and understanding over time of this. You’re not switching over to a whole new world tomorrow so you’ve got some protection from trying to get it accepted tomorrow, which could be a challenge. There will be some bumps in the road, no doubt about it, there always is in innovation – that’s why it’s innovation and hopefully it’s moving us forward.