



The Career College Information Source

Technology is the Future of Higher Education

*With Rob Curtin, Chief Applications Officer
Microsoft–U.S. Education*

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The following interview was conducted at the Pearson Learning Summit in Chicago, August 17–19, 2011.

Tell me about where you come from in education.

I am the product of a fairly elite New England prep school called Buckingham Browne & Nichols. It's an old sort of Cantabrigian feeder school, a place Harvard people send their kids to. My father was a physical education teacher at Northeastern University. So my college education was very much a kind of steel-toed-parent's kid going on to college.

The different element at Northeastern was cooperative education. My time at Northeastern was spent working at IBM, which is where I was introduced to technology. I was a business major. I had very much a meat-and-potatoes college experience. The four years of elite prep school education quite frankly gave me a wonderful competitive advantage. When I entered college, I already knew how to study and I knew how to do homework, which a lot of kids didn't. Without question, that education gave me an advantage through my early years at Northeastern, and then that momentum carried through, because success breeds more success—you're more motivated.

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It's important that we get more people exposed to education. My job at IBM was putting classroom networks in the Boston public schools. When you see what public school kids in the lower-income neighborhoods of Boston are facing—that's when I sort of knew what I wanted to do. I saw that technology could improve access, could improve opportunities for those students. That's really where I've been—promoting technology in education to give students more opportunities.

What does Microsoft pay you to do?

Microsoft pays me to do three things. First, I have to sell our software. I work for the Microsoft U.S. Sales and Marketing organization. I'm part of our education sales leadership team. So that is what I am paid to do, to make sure that our software is used. I say "used" and not "sold," because Microsoft discounts our software to education 80 percent off the top. As an accredited education institution, buying one unit or buying the largest volume, you get an 80 percent discount. It doesn't matter if it's for-profit or not-for-profit; it's based on accreditation. So sales are very important to us.

Second, I have to drive usage scenarios. Usage scenarios are working

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with our partners and our customers to identify and then ultimately build the plumbing that Microsoft provides

and what it becomes when put in the hands of great educators, great administrations and students. I would say I spend the vast majority of my time on this, which is defining the students' success solutions, the teacher effectiveness solutions, the institutional efficiency solutions that take our core plumbing and, if you want to extend the plumbing analogy, turn it into beautiful kitchens and bathrooms. There's a difference between connecting to city sewer pipes, which is plumbing, and designing a great kitchen. I work with our partners to help them design great and better kitchens, based on the capabilities of the plumbing that we provide.

My third job is to ensure that Microsoft has the appropriate mindshare and industry presence in education, which quite frankly we don't get enough credit for. Our presence and our investments

in education are really unrivaled. There are other people who I think have some better brands in being good for education, but when you stack up head counts, investments, resources—our Partners in Learning program, for instance—we spent over \$50 million worldwide in the past 10 years that we don't get credit for. We've funded a whole bunch of teacher training programs. We make resources like Microsoft Education Learning and IT Academy. We had a great event in July called the Innovative Teachers forum. We have an Imagine cup, which is focused on student competition to generate STEM activity, which is the largest worldwide student competition of its kind.

We want to ensure that people are aware of our presence and our thought



ROB CURTIN is the chief applications officer for Microsoft-U.S. Education. He is responsible for connecting Microsoft's ecosystem of Campus, Cloud, and Consumer solutions to improve student success. He works with partners and effective institutions to give teachers 21st century tools

to purposefully manage student success.

Rob has been deploying technology to help education for over 20 years. Beginning with IBM in 1988 he implemented the first classroom networks in the Boston Public School System, and first joined Microsoft in 1991—before Excel had the AutoSum button. Rob then spent close to a decade building advanced student information and relationship management solutions for higher education as a member of the original team that delivered Exeter Student Suite, continuing with Sungard SCT as general manager of SCT Matrix. Returning to Microsoft in 2004, Rob has led Microsoft's Higher Education Advisory Group and Institutional Effectiveness initiatives.

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leadership, not just in getting the next generation of developers or information workers to use our tools, but what we do on the tough stuff, the policy and process. We invested in the Philadelphia School of the Future. We refused to give them any software, but instead we gave them human capital. We said if you were to design a new school, let us apply the operational models, the infrastructure procedures and the engagement models. We've been there now for almost 10 years, helping to manage the school. We're in the sort of breakaway phase so they will become self-sustaining. But it was not about, here's some money, here's the technology, now you go do it. It was true partnership in exploring what the next generation in education looks like.

What does the next generation in education look like?

The next generation of education comes down to personalized success plans. There are a number of ways to get to a personalized success plan, and there are a number of different infrastructure components that all have to work together. How do we use data to dynamically assign learning resources, which could be content, people or activities, to an individual to purposefully progress them on their own personalized success plan? There's a lot that has to happen. You need to know a lot. Your information has to be correct. Your information has to be role-based to the user. We need to involve an ecosystem of people—teachers most notably—in that. This is not about putting technology between the teacher and the student. It's about giving the educators better tools to interact with their students and further personalize those interactions.

So when I say resources, it's not about just digital content and streaming media to a kid via a browser. The best scenario that I see is teachers who are able to walk into a room of students and they're able to differentiate their instruction to a room of 30-plus students, and have real-time info on the five students that most need their attention, either because they're getting bored because they're so far ahead, or they're getting frustrated because they've fallen behind on a particular topic.

Also, that recommended resources are presented to that educator very quickly, so there's a combination of system-generated options and professional judgment of an educator who can textually add value.

Obviously, there will be times when just basic suggestions occur either through a Web browser or through a home device. But to agree that we can capture professional judgment and mix that with automated models, to me that's the Holy Grail.

It's also that each student progresses through what I call a personalized success plan. There will be standards against which each individual needs to move, but, ultimately, we should be able to allow people to choose their own path and change that along the way to achieve the competencies and not just the requirements that they need to be successful in that path.

How do we get there?

The next generation of education comes down to personalized success plans. There are a number of ways to get to a personalized success plan, and there are a number of different infrastructure components that all have to work together. This is not about putting technology between the teacher and the student. It's about giving the educators better tools to interact with their students and further personalize those interactions.

I think the first step is to stop thinking about student information systems and content management systems. Those are all cataloging systems and they are dated in really the late 1980s, early '90s from an architecture and original design system. They're all about information capture, management, categorization,

Success management systems have a number of traits. They're individualized, in that they focus on an individual and his specific needs.

and, with limited ability, extraction. We need to start getting to what I'll call our student success systems.

A success system taps into that final

phase, which is the purposeful orchestration of resources.

Success management systems have a number of traits. I'll focus on the "Is." They're individualized, in that they focus on an individual and his specific needs. There's lots of profile data that you need to capture about a student as well as what I'll call cohort level information for comparative benchmarks. You can then take that student and map him against the multiple cohort groups, such as age or geography, and glean some information about his progress. So **individualization** is one.

Interoperability is key. The ERP models and the student information systems have always been about one integrated system. Interoperability is very different from integration. Interoperability assumes that there are multiple other systems within the ecosystem. Some on the cloud, some on campus, some are potentially right on my own laptop next door. The success management system is actually a hub of all the other transactional systems or syndicated resource-feeding systems. So as you start thinking about success management, you've got to take

the individual and you've got to take interoperability, whether it's moving assessment items over standards like QTI or moving results into a student's electronic education portfolio that they maintain through their lives and sort of "direct deposit" credits into. Interoperability then becomes key.

The final "I" is **information and data**, and being able to take all the information from those multiple systems that they're interoperable with, and that are tied to the person, and make that contextually actionable, both for the learner and the educator. So, they are taking the identity, the interoperability and then the data and really making that actionable in information.

I have some great examples of what's happening in other countries where they do have countrywide data sets. They have standards of progression and they're putting together the same quality dashboards for education that we're seeing in industry. Financial services guys are using data-mining algorithms to predict where stocks go and they're getting feeds that are interoperable. They're not working with data sets; they're getting real-time feeds, and we aren't applying that same level of personalization and relevant information to an individual in real time.

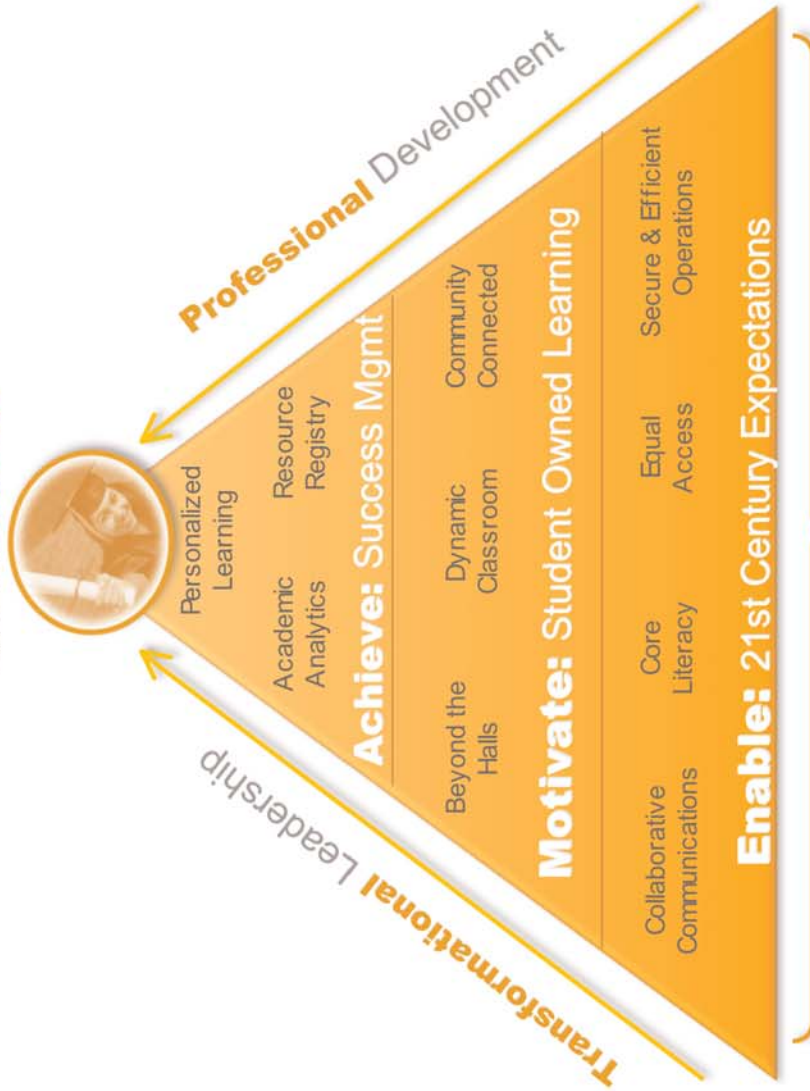
In an era of budget cuts, that sounds expensive and too hard to do.

That's a fair statement. It is hard to do. But the good news is the cost of this is actually around the process definition and not the infrastructure. The infrastructure is moving increasingly to the consumer infrastructure, whether that is personal network storage of data or personal services. The consumer model is picking that up. Once upon a time, schools assumed that they had to own everything, from the hardware all the

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way back to the data. I think they should be purely in the experience right now and they should identify information and process and that's it. The consumer infrastructure is going to give them the landing pad that they need in the home, on the go or in the classroom.

The backend components, which everyone is collectively just calling "the cloud" today, are frankly a heck of a lot

We can start to see greater efficiencies as people start to move those transactional systems to the cloud. The real value is what I'll call the integrated information infrastructure, where it's your data, identity, content and process. Those are definitions that you can start to store locally, register and implement and there's really no cost.

less expensive than adopting those new models. They're certainly not free, but there's a lot of room for efficiency compared to the models that we have today. That efficiency will also be accompanied by substantially more quality. Maintaining the people and the staff and the

resources within a school district or within a university is very difficult. So by moving that to professional service providers who get incredible economy of scale for a very complex backend, the good news is that there are system aggregators that are establishing that infrastructure and that scale is giving the entity—the institution in this case—tremendous value options. The costs come way down as far as system acquisition, and training goes away. No one gets trained on Facebook. But what happens is that we have to actually define the process models, and that's the really hard stuff. There are a number of factors that keep us from redefining how the experience flow is going to go.

This is beyond a paradigm shift; this is like blowing up the legacy system and starting over.

We know that's not going to happen, right? So there are ways where you can couple the legacy system and you can extend it without putting in a whole new system. What we learned from 1995 to 2006, basically, was let's replace our old system with one single integrated system that costs millions if not tens of millions of dollars for some institutions. No one has one integrated system today. They thought they were buying one and the primary reason they bought one was "to get better information out of it." Yet the number one thing that's been purchased in education over the past few years is new tools for business information data warehousing and business intelligence. So, clearly, they didn't get that from the transactional system.

Moving forward, I believe we can keep the equity that we have in our transactional systems. We can start to see greater efficiencies as people start to move those transactional systems to the cloud. The real value is what I'll call the integrated information infrastructure, where it's your data, identity, content and process. Those are definitions that you can start to store locally, register and implement and there's really no cost. You put a commercial here on the Microsoft side and most schools already own that. They already own something called Active Directory for identity. They have SQL servers running those transactional systems that have massive analytic capabilities that are not lit up. They have content management in presentation and process management tools that they own today. Most schools already own it.

Is it an issue of training the people to adopt it?

It's actually a leadership and process problem. Those are the issues

that our Microsoft Partners in Learning program and our partner Ecosystem and workforce models are working on, where we're trying to ask what are the processes you'd like to have done? We can supply the systems, but frankly, everyone already owns them, or they can get them at a cheaper rate than what they have today. But the leadership programs for what I'll call innovative approaches are mired in a very complex web of "we have to continue to do the things we always have been doing." That's why I'm particularly excited about the continuing education workforce development and non-traditional models, because they have some of the freedoms to evaluate the process end to end.

What do you see as the role of the for-profit career colleges in all of this?

There's very little to do with whether you're for-profit or non-profit. I think most every institution I've come across is a revenue-aware institution. Whether it's appropriate to classify schools by their 501(c)3 charter or not, I think, is really the wrong question to be asking. The question to be asking is, are you providing to the American taxpayer and America's future the services that we expect to receive from your institution for the significant cost both in time and dollars that we're going to give you? I believe there's not enough transparency in that value equation. There's not enough transparency to protect the American consumer and to help all Americans make very informed choices about what they expect to get out of their education.

There are certainly families that expect to get a cultural four-year immersive experience from a traditional school that presents values and

shaping of minds and cultural experiences that transform the student when they're on campus. We have a broad set of those offerings that many

Americans will be fortunate enough to continue to take advantage of. For-profits, or not-for-profits, when it comes to workforce education, have a very different mission and I believe that mission absolutely needs to

be better connected with the workforce. I think there are ways that technology can help align workforce requirements to keep workforce education and those programs a little more dynamic, so that we can actually start to deliver students who are prepared to hit the ground running.

I'm a co-op student, so I'm a huge fan of the service-learning model. If nothing else, it prevents you from pursuing a career you didn't know you were going to hate. But more important, it leaves you with real experience that not only gives you the ability to be employable, but also makes all of your academic experience far more relevant and improves the classroom conversations you have.

So what's the role of workforce education? To prepare our workforce, and I think we can stay better connected to the workforce boards and use some of these tools, particularly all the user-generated content and Web 2.0 models. I like to call it a workforce wiki—a workforce wiki is typically a regional or an industry-specific job board, which gets down to competencies that individuals need and that institutions can help prepare students for.

The question to be asking is, are you providing to the American taxpayer and America's future the services that we expect to receive from your institution for the significant cost both in time and dollars that we're going to give you?

I think gaming gives us a model we can look at. All of the gamer profiles and achievements and capabilities are tracked at a level of detail that's actually superior to what most colleges have today. We could map particular courses and competencies and then the evidence of those competencies and exercises back to the framework, and that would allow a student to then present their work and themselves within the framework of the competencies required by the job board. It's so much more meaningful than "this was my GPA."

So this whole concept of a digital portfolio of demonstrated competencies probably is more useful than fixed degrees.

Certainly. I think you're already beginning to see that. When I talked

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about authentic achievements and authentic badging, a portfolio that is peer reviewed—peer reviewed meaning truly by your peers, not just your elite academic peers—and people know the source of it, then that rating and that achievement score and reputation is absolutely more useful and relevant

to me as an employer than whether you were an honor student.

There's no reason why I couldn't click through a student portfolio and look at the evidence: a video that you recorded; a classroom presentation that you gave; and physical samples of your work tagged and managed in your own cloud-based storage area and presented in a number of different

profiles to employers, future education opportunities and peers. That personal profile is something against which the standards are not there to present, and we need institutions to agree that that's the students' data and not their data. They can still maintain control over it, but the concept of direct deposit into a student's online education portfolio—we've seen that begin to emerge in healthcare. It's certainly been around in financial services forever. I think that model of controlling one's own education data is the one piece where U.S. education isn't making the grade today.

This idea of learning competencies is very appealing to a student. I have a daughter who is an RN and I keep pushing her to get a Master's degree. She doesn't want to ever see school again, but she's been told she needs to be certified in five areas if she wants to work in the ER—not a problem. It's different doors to the same place.

There's also the model of experience-based learning. How do you get certifications and competencies? Purely by taking a test or demonstrating mastery? The apprentice model, which certainly could never scale, is a model where there was a master and an apprentice and over time the master had a very rich qualitative and quantitative assessment of one's skill. Technology today actually allows us to move closer to the apprenticeship model where one's capability or skill is being evaluated not by one master, but by many masters. The evidence of that competency and the certification comes from valid, real-world accomplishments rather than simply a degree that represents a simulated assessment that wasn't necessarily applicable in the real-world mode.



Rob Curtin presenting at the Pearson Learning Summit in Chicago, August 17–19, 2011.

Do we need to wait until the retirement of our current legacy instructors until we get digital natives in charge?

No, we don't, and we can't. I think we need to allow those people who are willing to take a risk and move forward a little bit to have the freedom to do so. We need to let the market decide a little bit. I think that's one of the greatest benefits and challenges of education in general, is that there's a great nostalgia for the history of academia, the traditions of the academy and how one learned, and even parents who want their children to have a school experience similar to theirs. Everyone is an education expert, because they went to school. That experience shapes the type of experience they want for future generations.

I think it's less about letting bad people age out, because I think there are great people and bad people at every age level. It's about creating a cultural model. We need an Al Gore for education. We need a star. We need people to get behind education. We live in a Hollywood world now in the United States. We need to get people to come out for U.S. education the same way they come out for earthquake and hurricane victims.

If we would get behind our own youth with some of the same fervor and enthusiasm that we're getting behind external... I think there are absolute disasters going on in the U.S. in some of our education markets. It's not across the board, but there are disasters that need fixing right here, and the opportunity

is to raise the cultural awareness—therefore the cultural equity—and that will reward the people who want to take a little more of a chance.

For the challenged student who comes from a difficult home life and has no model of success or education, can technology make the difference?

Can it make the difference? No. Can it absolutely change the access challenges? Yes. Can it give them awareness of alternate ways? Yes. But technology applied in and of itself is never the answer.

And this is a guy who works for Microsoft!

The basic insertion of technology into any process for the sake of simply inserting technology will only make that process either highly efficient or expose the awful inefficiencies of the process. Unless you fundamentally define what it is you want to do differently and how that could not have been achieved before because of X, Y and Z, and if technology can allow you to manage the information in such a way that you can change the process, then heck, let's do that.

Technology doesn't just mean computer technology. Streetcars, electricity

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and the radio changed baseball. Baseball became a consumer sport when the working man could come in off the field on public transportation and see the game at night. If they couldn't make it, then they could listen to it on the radio. Baseball was entirely driven by advances in technology. Before that it was not a common man's sport. You had to have the leisure time and you had to live near the ballpark in the city where the wealthy were. The same is true of education. But they also changed the process: They played at night.

So we've got to think about whether it's technology you're going to use on the go, or rich technology from mining data out of massive sets of information, or it's technology for dynamically connecting a person with another

person and another person, so that you can do a peer help group on the fly—that's happening. It's happening all the time today. There are a number of innovative models. There's

www.myedu.com, which is taking all of MIT open courseware and allowing you to basically do your own education, but let others review your work in real time and rate you, and you get a pretty authentic infrastructure with all the rating points and achievements. It's a pretty interesting model. Can technology improve access, provide motivation and engage an individual? Yes. But left all by itself? Technology is not the answer. It's got to be accompanied by a process change.

Given where we are in the country at this point with recession, budget cuts

and all that, are you optimistic about the future that this vision will happen?

I actually think this is the best time to be in education, because change truly is afoot. We're being asked to make some tough decisions right now. Obama put it this way: he said this is our Sputnik moment. The world is different now because of space exploration. Someone put a stake in the ground and said we're going to go to the moon. Not just we're going to invest in space, but we're going to the moon!

The current Administration has allocated some dollars initially within K-12 through Race to the Top and a number of other ongoing grants. We have some amazing foundations: Lumina Foundation, the Bill and Melinda Gates Foundation, the Michael & Susan Dell Foundation. It's an uncomfortable time, but it's an awesome time to be in education, particularly in America where a lot of the labor jobs and the factory jobs are not coming back. We are an information-worker economy. What better time to be on the forefront of what is a massively growing category, and a category for which I think there's going to be a ton of change over the next 10 years?

We can't afford to keep doing it the other way, both from a cost model and a quality and quantity of output. We will see it follow the Clayton M. Christensen model of disruptive innovation, which I think has been well researched. People will realize that intelligent systems to personalize learning and drive adaptive content, while at the same time providing rich data about the learner's experience back to the educator, is a good model.

Can technology improve access, provide motivation and engage an individual? Yes. But left all by itself? Technology is not the answer. It's got to be accompanied by a process change.
