Could Many Universities Follow Borders Bookstores Into Oblivion?

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By Marc Parry

Atlanta — Higher education’s spin on the Silicon Valley garage. That was the vision laid out in September, when the Georgia Institute of Technology announced a new lab for disruptive ideas, the Center for 21st Century Universities. During a visit to Atlanta last week, I checked in to see how things were going, sitting down with Richard A. DeMillo, the center’s director and Georgia Tech’s former dean of computing, and Paul M.A. Baker, the center’s associate director. We talked about challenges and opportunities facing colleges at a time of economic pain and technological change—among them the chance that many universities might follow Borders bookstores into oblivion.

Q. You recently wrote that universities are “bystanders” at the revolution happening around them, even as they think they’re at the center of it. How so?

Mr. DeMillo: It’s the same idea as the news industry. Local newspapers survived most of the last century on profits from classified ads. And what happened? Craigslist drove profits out of classified ads for local newspapers. If you think that it’s all revolving around you, and you’re going to be able to impose your value system on this train that’s leaving the station, that’s going to lead you to one set of decisions. Think of Carnegie Mellon, with its “Four Courses, Millions of Users” idea [which became the Open Learning Initiative], or Yale with the humanities courses, thinking that what the market really wants is universal access to those four courses at the highest quality. And really what the market is doing is something completely different. The higher-education market is reinventing what a university is, what a course is, what a student is, what the value is. I don’t know why anyone would think that the online revolution is about reproducing the classroom experience.

Q. What are some of the most important changes happening now?

Mr. DeMillo: What you’re seeing, for example, is technology enabling a single master teacher to reach students on an individualized basis on a scale that is unprecedented. So when Sebastian Thrun offers his Intro to Robotics course and gets 150,000 students—that’s a big deal. Why is it a big deal? Well, because people who want to learn robotics want to learn from the master. And there’s something about the medium that he uses that makes that connection intimate. It’s not the same kind of connection that you get by pointing a camera at the front of the room and letting someone write on a whiteboard. Those guys have figured out how to design a way of explaining the material that connects with people at scale. So Stanford all of a sudden becomes a place with a network of stakeholders that’s several orders of magnitude larger than it was 10 years ago. Every one of those students in India that wants to connect to Stanford now—connect to a mentor—now has a way to connect by bypassing their local institutions. Every institution that can’t offer a robotics course now has a way of offering a robotics course.

I think what you see happening now with the massive open courses is going to fundamentally change the business models. It’s going to put the notion of value front and center. Why would I want a credential from this university? Why would I want to pay tuition to this university? It really ups the stakes.

Mr. Baker: There used to be something called Borders, you may remember. Think of Borders, the bookstore, “X, Y, Z University,” the bookstore. If you’ve got Amazon as an analogue for those massively open courses, there is still a model where people actually go into bookstores because sometimes they want to touch, or they like hanging out, or there’s other value offered by that. What it means is that the university needs to rethink what it’s doing, how it’s doing it. And how it innovates in a way of surviving in the face of this. If I can do the Amazon equivalent of this open course, why should I come here? Well, maybe you shouldn’t. And that’s a client that is lost.

Mr. DeMillo: All you have to do is add up the amount of money spent on courses. Just take an introduction to computer science. There are over 150,000 on that course right now. Add up the amount of money that’s spent nationwide on introductory programming courses. It’s a big number, I’ll bet. What is the value received for that spend? If, in fact, there’s a large student population that can be served by a higher-quality course, what’s the argument for spending all that money on 1,000 introduction to programming courses?

Q. You really think that many universities could go the way of Borders?

Mr. DeMillo: Yeah. Well, you can see it already. We lost, in this university system, four institutions this year.

Mr. Baker: The University System of Georgia merged four institutions into other ones that were geographically within 50 miles. The programs essentially were replicated. And in an environment in which you’ve got reduced resources, you can’t afford to have essentially identical programs 50 miles apart.

Q. What sort of learning landscape do you think might emerge?

Mr. DeMillo: One thing that you might see is highly tuned curricula, students being able to select from a range of things that they want to learn and a range of mentors that they want to interact with, whether you think of it as hacking degrees or pulling assessments from a menu of different universities. What does that mean for the individual university? It means that a university has to figure out where its true value sits in that landscape.

Mr. Baker: Another thing we’re looking at is development of a value index to try to calculate, to be vulgar, the return on investment. Our idea is to try to figure out ways of determining what constitutes value for a student, based on four or five personas. For, let’s say, a mom returning at 30 who wants an education—she’s going to value certain things differently than a 17-year-old rocket scientist coming to Tech who wants to get through in three years and knows exactly what she wants to do.

Mr. Demillo: Jeff Selinger wrote a column about this, having one place to go to figure out the economic value of a degree from a university. It’s a great idea, but why focus only on the paycheck as an economic value? There are lots of indicators of value. Do students from this university go to graduate school by a disproportionately large number? Do they get fellowships? Are they people who stay in their profession for a long period of time? You start to build up a picture of what students tell you, of what alumni tell you, was
the value of that education. Can we pull these metrics together and then say something interesting about our institution and by extension others?

Q. What other projects is your center working on right now?

Mr. DeMillo: The Khan Academy—small bursts of knowledge that may or may not be included in a curriculum—was a really interesting idea. Can students generate this kind of material in a way that’s useful for other students? That’s the genesis of our TechBurst competition [in which students create short videos that explain a single topic]. It turns out there’s a lot of interest on the part of the students at Georgia Tech in teaching what they know to their peers. The interesting part of the project is the unexpected things that you get. We had a discussion yesterday about mistakes. This is student-generated stuff, so is it right? Not all the time. Which causes great angst on the part of traditionalists, because now we have Georgia Tech TechBurst video that has errors in it. If those were instructional videos that we were marketing, that would be a very big deal. But they’re not. They’re the start of a thread of conversation among students. There’s one on gerrymandering. So it’s a political-science video, it’s cutely produced, but in some sense it’s not exactly right. And so what you would expect is now other students will come along and annotate that video, and say, well, that’s not exactly what gerrymandering is. And you’ll start to see this students-teaching-students peer-tutoring process taking place in real time.

Q. What about the massive open online course Georgia Tech will run in the fall?

Mr. DeMillo: The idea of a massive open course is something that people normally apply to introductory courses. What happens when you look at a massive open advanced seminar? A seminar room with 10,000 students, 50,000 students—what does that even mean? We’ve got some people here that have been blogging for quite a while about advanced topics. In fact, one of the blogs—Godel’s Lost Letter, by Professor Dick Lipton of Georgia Tech, and Ken Regan of the University at Buffalo—is about advanced computer theory, so it’s a very mathematical blog. It’s in the top 0.1 percent of WordPress blogs. A typical day is 5,000 to 10,000 page views. A hot day is 100,000. The question is can we take this blogging format and turn it into an online seminar.

Q. How would that work?

Mr. DeMillo: The blog is essentially an expression of a master teacher’s understanding of a field to people that want to learn about it. We think that there are some very simple layers that can be built under the existing blogging format that can essentially turn it into a massive open online seminar. It’s also a way of conducting scientific research. When you think about what happens in this blog, it celebrates the process of scientific discovery. I’ll just give you one example. Last year about this time some industrial scientist claimed that he had solved one of the outstanding problems in this area. In the normal course of events, the scientist would have written up the paper, would have sent it to a conference. It would have been refereed. Nine months later the paper would have been presented at the conference. People would have talked about it. It would have been written up to submit to a journal. Refereeing would have taken a couple of years for that. Well, the paper got submitted to Lipton’s blog. It just caused a flurry of activity. So thousands and thousands of scientists flocked to this paper, and essentially speeded up the refereeing of the paper, shortening the time from five years to a couple of weeks. It turns out that people came to believe that the claim was not valid, and the paper was incorrect. But what an education for future research students. You get to see the process of scientific discovery in action.

This is an interesting bookend to the idea of a massive open course. Because the people that are thinking about the massive open online courses for introductory material have a scientific discovery in action. When you think about what happens in this blog, it celebrates the process of scientific discovery. I’ll just give you one example. Last year about this time some industrial scientist claimed that he had solved one of the outstanding problems in this area. In the normal course of events, the scientist would have written up the paper, would have sent it to a conference. It would have been refereed. Nine months later the paper would have been presented at the conference. People would have talked about it. It would have been written up to submit to a journal. Refereeing would have taken a couple of years for that. Well, the paper got submitted to Lipton’s blog. It just caused a flurry of activity. So thousands and thousands of scientists flocked to this paper, and essentially speeded up the refereeing of the paper, shortening the time from five years to a couple of weeks. It turns out that people came to believe that the claim was not valid, and the paper was incorrect. But what an education for future research students. You get to see the process of scientific discovery in action.

This conversation has been edited and shortened.

This entry was posted in Computer Science, Distance Education, Social Networking, Teaching, Video. Bookmark the permalink.
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Just an observation: this whole conversation occurred without a word being said about either the maintenance of traditions of scholarship, or the development of new higher-level research. The idea seems to be that the future of education involves a small number of "masters" teaching to masses. A brief reference is made to what a blog experiment can teach a "research student," but where that research student might be employed is not described; one presumes industry, however, since there will be many fewer institutions of higher education under this scenario (as there are bookstores).

Now I realize a lot of people don't care about any of that. And I know they have their reasons -- often quite democratic sounding -- for doing so. To be honest, I'm not really interested in debating the morality. But this future posits a world in which universities are redefined not as learning communities that both teach and research, but as rather distribution nodes for "master" content. And since we don't need many nodes, those will go. The result is also a world in which (therefore) the traditional model of teaching being one of the activities by which researchers earn a living will be gone; the link between teaching and research will be broken.

I want to ask: do they not care about research? Do they really think the only function of colleges and universities is to spread "master" content? And do they think such content will remain innovative -- as opposed to being simply the production of beautiful people in beautiful places -- if not backed by a large universe of working, everyday researchers?

Is there a vision of how research will be conducted, how fields of knowledge will be maintained, that accompanies this vision of teaching detached from research? (I know, undoubtedly the model here claims to envision student research as part of learning; and that's great; but nonetheless it is the case that fewer teachers equals fewer researchers who have the time to really think deeply into a subject. And not even Wikipedia can replace that.)

Great insights, especially with regard to St. John's and honors colleges.

There are elements of St. John's College (Annapolis and Santa Fe) to be admired. However, the curriculum is ossified, the faculty are disconnected from the outside world, and the students become proficient in analysis but handicapped in synthesis. It is beautiful in its monasticism, not a model to be duplicated blindly.

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I heartily agree with your points about St. John's and one might add other liberal arts institutions such as
3rdtyrant 1 month ago in reply to jaynicks

Dr_Zachary_Smith 4 weeks ago in reply to 3rdtyrant

shawnmehan 1 month ago in reply to jwr12

stephen_said 1 month ago in reply to shawnmehan

jwr12 1 month ago in reply to stephen_said
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joechill 1 month ago

waratah104 1 month ago in reply to joechill

3rdtyrant 1 month ago in reply to waratah104

michpat 1 month ago

cb_10 1 month ago in reply to michpat

3rdtyrant 1 month ago in reply to michpat

michpat 1 month ago in reply to 3rdtyrant