

Networks for Lifelong Learning: A Tale of Two Students

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We are in the midst of a historic transition in education, in which we are providing more options and flexibility in creating learning cultures that significantly raise the expectations of what our students can accomplish. We now can effectively support students who traditionally have not succeeded. You have heard it before; learning can be available anywhere, securely on any device, in any format, and potentially connected to anybody 24x7.

So, what does this really mean for leaders who are responsible for setting the vision for their campuses? We now can rethink the allocation of physical space and how courses are scheduled to support various students' learning styles. What is really exciting is the sense of student empowerment that can emerge from a highly flexible learning design, enabled by a robust digital campus. For example, we can tap the natural behavior of young people who we know are social with powerful community-based and collaborative tools that can create a deeper sense of shared learning. Traditional boundaries, such as the end of the semester, are giving way to continuous social interaction and support of lifelong learning. It is an exciting time to be in education.

Where to begin in leading this shift? There are many possible first steps. This article focuses on two broad areas of digital design that can provide the foundation for an empowered culture of learning:

- Multimedia content
- Online communities of social interaction with classmates and professors

I have experienced this transformative shift of expanding the boundaries of learning with my own college-age children. My daughter, Jessica, graduated from university in 2010 and my son, Dan, will graduate in 2017. They both will earn equivalent grades at two different but highly competitive universities. How they studied, how they were supported in their

learning, and how they interacted with classmates and professors represent two different worlds. Both of my children are convinced that Dan, the younger sibling, will be much better prepared for the world of work because of this transformation.

Access to Content

My daughter had a textbook for every class, often written by the professor as many as ten years earlier. At that time, these expensive books cost \$160. Multiply that by 32, the number of courses she had to take to graduate, and you're talking about more than \$5,000 in additional expenses.

Danny, on the other hand, will not buy a single textbook in four years. Essentially, all of the learning resources he has needed were accessed online. The biggest change is that his professors have organized resources from all over the world, whether they created the content themselves or not. One of Danny's professors shared with me that one of the biggest mistakes he made when he first created his online community was to only include his "stuff."

"I realized that I did not have to invent everything for my students as I used to do," this professor told me. "Indeed, I can be a model for how my students can access resources from around the world."

In many ways, Danny will be better prepared for the world of work, because he was required to develop individual criteria to evaluate information from multiple perspectives. The difference between his experience and Jessica's is *not* in learning how to manage content in the digital age, but in the different opportunities he has had to develop empathy and judgment. As Jessica reflects, "Whereas I was handed a singular viewpoint from lectures based on one professor's ideas, my brother had to learn to integrate many perspectives in considering how to solve a problem." Danny added: "I was taught to find the best possible resources. I still do that now that I'm no longer in the class."

One simple advantage for Danny was the rewind button that Jessica never got to use. Watching online videos became a routine for Danny, as many of his classes had a full library of video lectures, tutorials, and explanations of assignments. He would review lectures and check his notes after he attended class. Re-watching the recorded lectures from his classes

proved extremely helpful when he was doing his homework or preparing for an exam. The full-text search capability built into the videos, from solutions such as VBrick, allowed Danny to zoom immediately to the sections he needed to review. He said he came to rely on the video library, noting: "I just missed so much when I was taking notes in class."

When I asked him to compare university to his middle and high school experience, Danny reflected, "When I was in school, if you could not follow the textbook, you were in trouble. Textbooks often were not engaging, and they did not provide the kind of support that I needed. Now, I have multiple resources from around the world. One of my professors explains why he has so many different resources this way on his website: *This particular set of resources is how I understand best. You might not learn in the same way as I do. That is why I am pointing you to many resources from around the world. You will have to choose what works best for you.*" He sums up: "I was taught how to learn how to learn."

In comparison, some of Jessica's professors handed her printouts of PowerPoint lectures. According to my daughter, they thought they were ahead of the curve. Her university also had a policy whereby you could sign up for notes transcribed by a classmate if you had a learning disability. In Danny's classes, any student could control the speed of the video playback for the entire lecture. Given the agility of the technology, video playback was available immediately after each class. Compare the special services for a few on Jessica's campus to the total control of all class content by every student on Danny's campus. Moreover, Danny had access through all three of his devices: phone, laptop, and iPad. He often would play back the video on his phone while he rode the bus home.

In his more sophisticated classes, video also was used to help Danny and his classmates understand the requirements of an assignment. The content would include videos explaining, "This is what we are looking for. You should be thinking about this. We are not looking for this." Clarity of expectations can take pressure off of the professor, who no longer has to answer the same questions over and over again: "What do I need to do to get an A?"

From Danny's sense, watching these video walkthroughs was the equivalent of sitting down one-on-one with the professor. He had a crystal-clear sense of exactly how to think about each problem. The teaching assistants who worked with the video crews thought through all of the questions that students might have. Students literally had no excuses for

being confused about the direction of the assignments. Clarity of design did not limit students to a lock-step approach, however. Indeed, the confidence of clarity would empower students to go beyond the expectations of the professor. As one of Danny's professors, Dr. David Malan, commented: "I only know that I have added real value to my students when they are inspired to go beyond my expectations." As his father, I can attest to how "on fire" Danny was to conquer his assignments to the very best of his ability. There are no limits with this kind of learning.

I asked Danny if he thought that video libraries could have helped him in middle and high school. "Sometimes in middle and high school, I would have no idea what the teacher wanted," he replied. "Video access would have saved me from asking embarrassing questions in front of my classmates. Often, the potential for embarrassment would prevent me (and my friends) from asking for help at all."

Social Tools and Online Communities

When Danny's video tools were still not enough to make concepts clear, he had the option of shooting off an email to his online community of peers, his professor, or his section leader for specific help. Many of his courses used the university-sanctioned learning management system, Canvas. Danny was able to access every imaginable learning resource (text, video, documents, slide decks), securely, from every possible device, at all hours of the day and from every imaginable location.

And Learning Management Systems aren't the only way that students communicate today. Online meeting services like WebEx allow students to meet virtually with peers, or the professor. And as a forum for student conversations, sharing content and meeting instantly, services like Spark are growing in popularity.

"That's what helped me get through my classes," he acknowledged. "In fact, in one course, many of the students felt the professor was not providing us what we needed. Students rallied and we built our own online community. It is just automatic and natural for me to engage online with my classmates to support one another."

What really impresses me is Danny's sense of responsibility to help his peers in an online community. Danny matter-of-factly points out: "If I see that classmates are struggling with

something, it is really easy for me to jump in and help out. And I benefit by doing this as well. When I am helping a classmate with a problem, I have to really think through the material in order to write out an explanation or shoot them a screencast.”

Danny often chooses to ask his classmates for help before asking his professor. For many students, this peer-to-peer tutoring can be the most effective way to learn. Why would students choose to ask a classmate for help when they have access to an instructor’s office hours? It is possible that some educators suffer from the “curse of knowledge.” This happens when an expert’s knowledge creates a blind spot in understanding what a new learner is missing in his or her background knowledge to comprehend a lesson. As high school student and award-winning video tutorial pioneer Shilpa Yarlagada observes, “Teachers know the material so well that they sometimes forget how to explain to students who are learning for the very first time. In these cases, I wish I could just turn to a friend who is in the class with me and (who) understood the material. Because they recently learned, they (are) in the very best position to explain it to me.”

Professor Eric Mazur, Dean of Applied Physics at Harvard University and a very early pioneer in building online communities, learned that students would ask more questions in an online community than in a face-to-face class. He had collected thousands of questions online from his Introduction to Physics class. When I asked him if he noticed any pattern from the questions that would be useful to him as an educator, he observed: “In more than 25 years of teaching, I had never heard of 80 percent of them during class. I never realized the extent to which my students were struggling with misconceptions and gaps in their basic knowledge of science.” Professors and teachers certainly know their subject area. What they might not know are their students’ questions.

What fascinates me is that Dan continues to be actively connected to many former classmates and professors across various social media channels. He explains, “A few professors have Twitter, LinkedIn, or Facebook. Many professors will not ‘friend’ students during the semester but will after the course ends. It’s kind of cool when you have access to their thinking without worrying about handing in your assignments. They all have disclaimers that their personal views do not reflect the school view. You definitely get to know them much better, including their interests. One professor is a horror movie fan. Another is a Dungeons and Dragons guy. I’m in touch with one of my former professors via email about design ideas I have for various projects. I have connected with past professors

as a resource for real-world problems. I am also interested in some of my professor's ongoing research—really interesting stuff.”

In some of Dan's classes, the students were required to use Twitter. “I still have the Twitter list with my classmates,” he said. “I continue to follow all of them over Twitter. It is effortless for me to stay in touch. Professor Malan invites all his former students to the CS50 Fair, where students present their final computer science projects. CS50 is notorious for involving past students via social media. One professor reached out to me across social media to invite me for a paid research project based on my prior academic work in her course. It was wonderful.”

Unlike Jessica, Danny will graduate with a vibrant professional network of active classmates and professors. This network is already helping Danny line up job interviews and shared knowledge about how to launch his career. Dan's network will continue to be a living, vibrant, and expanding community of mutual support that will propel his lifelong learning. Jessica will make sure that the next university she chooses for graduate school will provide the same opportunities.

Here are five guidelines for leaders who are planning to maximize the investment in network technologies to improve teaching and learning:

- Provide all students with immediate access to subject content in all formats (full text, video, audio)
- Support a community of learners who can continuously help one another
- Provide educators with insights into how students are thinking in online communities
- Encourage educators to teach students to “learn how to learn”
- Allow students to continue to tap their campus networks as a lifelong resource