

Ronnie Mendoza

DCIM Capstone Final Report

Crossroads of HigherEd

As we further delve into this era of expanding innovation, we can see how technology has revolutionized almost all facets of society. Technology has changed the way we communicate through social network sites and new forms of digital media, such as the blog or podcast. We have evolved from using horse-drawn carriages to self-driving autonomous vehicles. Cutting edge breakthroughs in healthcare technology have basically eradicated some disease. Every part of society has seen dramatic changes through disruptive innovation... except for education. If you go into a typical classroom now, you still have a teacher lecturing in front of a group of 30-40 students who all learn in different manners. We may be using smart boards instead of chalkboards, but the way most professors teach hasn't veered far from the traditional pedagogical approach. It has been long understood that the most effective teaching methods involve unique, individualized learning plans, but this is a difficult notion to explore when most classroom sizes are growing exponentially and teachers are being underpaid. Students are being thrown into these large lecture halls at universities with about more than 200 other students. There is little to no opportunity for active engagement in these environments. In a 2013 Gallup/Lumina Foundation Business Leaders Poll on Higher Education, the survey revealed that 96% of university leadership in the U.S. believes that their institutions are effective in

preparing students for the workforce. At the same time, 6% of business leaders believe that their employees enter positions with the requisite skills (2013). There is clearly a discrepancy in the quality of the education we are receiving and teaching. As educators and students, we have reached the crossroads of learning where we can either follow the path of outdated pedagogical methods, or we can allow technology to individualize our learning for a more enriching experience.

In order to get students to play a more proactive role in their education, and to help educators facilitate this process, I plan on making a long-term documentary that highlights where education has been and where it's heading with the assistance of educational technology. The documentary will serve as a call to action for all stakeholders to challenge the status quo on pedagogical methods and strive for innovation to engage students. At a Philly EdTech Meetup on April 28, 2016, Barbara Kurshan spoke about the changes she expects to see in the future of educational technology. Dr. Kurshan is the Executive Director of Academic Innovation at the University of Pennsylvania Graduate School of Education, and the creator of the Virtual Online Teaching (VOLT) certificate program that aims to teach educators how they can incorporate technology into their classrooms. She prefaced her talk with one of the toughest challenges educators faced in improving pedagogy. She explains, "It is hard to innovate in an old knowledge space... That's a linear knowledge space. We start on page one, get to page 360, we read the book, we take the test, and we 'learn' that

information. But all learners today are working in this new random knowledge space...” (2016). We expect to see growth in a field that is bound by traditional governance that makes innovative teaching strategies hard to achieve. In order to make a more effective argument in disrupting the status quo, I plan on interviewing all relevant stakeholders and subject-matter-experts. These will include everyone from students to professors and everyone in between. I'm trying to keep the content simple enough to engage viewers of all demographics, but thorough enough to lead discussions. The documents will include all of the components I learned as a digital storyteller to create a more compelling film. Besides interviews, the documentary will incorporate b-roll footage and establishing shots to guide the film and transition from one section to the next. I will re-enact/reproduce narration and information into visual representations to better clarify some concepts. For example, I can incorporate a scene of 6 professionally dressed CEOs nodding in approval of their employees who came straight out of college. After prefacing my documentary with the challenges we face above, I will continue with the following rough sequence written in the form I plan to narrate it in.

In order to get a better understanding of where students stand in term of their education at a higher education institution, I went around the Rutgers campus and asked them a very general question about what they learned in college to allow the discussion to go in any direction. Hanifa at the Mason Gross School of Arts described how the resources the school provided were more

useful than the actual instruction. Issac, an English major explained how the same information he learned in class can be found on SparkNotes. Roberto told me, “ I took an online course [MOOC] which was CS50: Intro to CS in edX, it's the best course I've ever taken and helped me so much... technically there is no need to go to college to get into the field...” After learning similar stories from about 11 students, the consensus was clear: people were using outside resources and digital info/learning platforms to supplement their learning. It's clear how easily accessible information is outside of traditional instruction, so what is the solution, especially for the majority of students who are unaware or uncaring about the open resources available to them?

One of the most powerful platforms that was mentioned a few times were MOOCs. The Massive Open Online Course has been growing in popularity and effectiveness over the past decade as a way to learn literally almost anything. All the information we need has the potential to be reached by multiple audiences in a matter of seconds because of its ability to be replicated, mobile, and interactive. Malcolm Gladwell references this “sticky” information and proposes “there is a simple way to package information that, under the right circumstances, can make it irresistible...” (2013). When it comes to the future of education, Massive Open Online Courses have achieved just that. Learning any subject of one’s choice has never been easier with MOOCs. MOOC’s main perk is the ability to offer self-guided learning that adapts to the user. Students can start and continue a course of their choice whenever they have time. They achieve milestones by completing

interactive assessments that solidify their understanding of a topic before they can progress. What is one of the main differences between this and a college course? MOOCs utilize one of the best digital media tools to encourage learning at your own pace: videos. Videos give you the freedom to rewind lectures when you missed a certain part and pause lecture so the information can process. In addition, pausing a video lecture can allow a student to go on exploratory tangents to learn more about a given topic. This is not a luxury you get within a traditional classroom setting. MOOCs have essentially fit the model of success as defined by EV Williams, creator of Twitter and other online media platforms. "Take a human desire, preferably one that has been around for a really long time...Identify that desire and use modern technology to take out steps," EV explains (2013). MOOCs have made a quality education easy to obtain by allowing students to follow self-guided curriculums with the assistance of modern technology for free. These MOOCs are typically taught by subject matter experts from all over the world and then driven by peer labs and online discussion forums. Geographic location is no longer a limitation in connecting the most curious students all over the world. These discussions, which persists even after the course ends, are essentially allowing students to be teachers as well. Shared information can be verified through peers through upvotes and downvotes. This global reach aspect of MOOCs is becoming even more essential as they can now bring a quality education to poverty-stricken areas around the world. Siyana Sokolova, a freelance writer for LinkedIn, explains, "MOOCs bring people

together from all over the world and encourage engagement between staff and students of a given university/ institution to interact with the wider public, “ (2014). Regular college courses don't offer close to this level of engagement.

MOOCs are especially useful for to supplement technical fields where most of the learning happens outside of the classroom and application is usually guided by a professor. To learn more about how students in a technical field perceive MOOCs, I led a discussion on the Rutgers Computer Science Facebook forum. Below is a screenshot of the discussion.



Srikar Gudipati Sure, you can learn all, or nearly all, of the skills needed for a CS degree from a MOOC, but I highly doubt you can get the same experience of being surrounded by a community of learners that you can get at college. This community can help tremendously later on in terms of networking for jobs, having a bunch of friends you can fall back on, researching, etc.

Unlike · Reply · 3 · March 26 at 7:39pm



Srikar Gudipati I'm speaking about solely taking MOOCs instead of attending college by the way.

Unlike · Reply · 1 · March 26 at 7:40pm · Edited



Abhishek Saha I'm going to counter with a giant MEH on the community aspect

Unlike · Reply · 1 · March 26 at 7:40pm



Abhishek Saha Like it's cool to chill out in the CAVE and shit, but you definitely can get by without it

Unlike · Reply · 1 · March 26 at 7:41pm



Abhishek Saha This isn't finance or law, you can get by without being a networking champion

Unlike · Reply · 1 · March 26 at 7:41pm



Roberto Arias-Yacupoma I take multiple random MOOCs over the past years that helped me way much more than classes at Rutgers, I'm messaging you my view and opinion on this and if you need someone to give thoughts on your documentary just let me know

Unlike · Reply · 1 · March 26 at 7:54pm · Edited



Ronnie Mendoza replied · 1 Reply



Giang Le MOOCs (in science fields) were more effective for me than going to class. About the "community of learners," the forum on edX helped me a lot while I was taking the intro to CS by MIT.

There's one thing you should go to college for though: Humanities classes! Nowhere else would you find some experts in their fields pushing through their day to read your paper and give you human feedback 😊😊

Unlike · Reply · 3 · March 26 at 8:03pm



Ronnie Mendoza Thanks so much for your input guys! the CS field definitely requires a community of peers to engage in discussion that fosters the growth of ideas, whether you're asking someone for help to debug your code or learning about new web technologies. Like Giang mentioned, you can find a "community of learners" on edX and other MOOCs, to share ideas within their discussion boards (which is no different to what we're doing now). You can even argue that it's easier to solicit advice from experienced users due to social factors brought upon by "faceless" asynchronous communication online (this is a whole other conversation). I remember Piazza being more helpful than any study groups because it connected the whole class together instead of just your group of friends. Now of course, there are some fields where MOOCs in their current state would be infeasible to teach students. For example, health-related professions require a large degree of monitored field experience, but that's where this idea of "blended learning" would work most effectively.

Like · Reply · 1 · March 26 at 11:16pm



Timothy Yong Personally I think that forums are basically like community chat. For learning, even people at the CAVE and elsewhere recommend going to MOOCs and learning. I probably would have never reached where I am right now if it weren't for MOOCs. It is able to... [See More](#)

Unlike · Reply · 2 · March 27 at 1:09am



Timothy Yong Personally I think that forums are basically like community chat. For learning, even people at the CAVE and elsewhere recommend going to MOOCs and learning. I probably would have never reached where I am right now if it weren't for MOOCs. It is able to... [See More](#)

Unlike · Reply · 2 · March 27 at 1:09am



Harrison He College just drives you to really learn stuff to a deeper level than online courses do because you're paying and there's pressure to perform. It's a stupid reason but an important one

Like · Reply · March 27 at 4:43pm



Write a reply...



Abhishek Saha It's kind of ironic how the few places that will give interviews to people without CS degrees usually are the "best" of the best in terms of CS employers. The vast majority of companies require a degree in CS, a GPA higher than 3.0, and from an establi... [See More](#)

Unlike · Reply · 2 · March 27 at 9:42am



Abhishek Saha I know that Google and Amazon could not give less of a shit about your transcript or where you went to school, but traditional thinking would assert that those companies above all else would treasure degrees. The rest of the industry hasn't caught up to those places in terms of recruitment, and I don't think the nature of their business will allow them to do so

Unlike · Reply · 1 · March 27 at 9:44am



Eric Bronner Google asks for your transcript and will not accept you without a GPA of 3.5 or above without a referral

Unlike · Reply · 4 · March 27 at 10:46am



Abhishek Saha Really? That's unfortunate

Like · Reply · March 27 at 10:47am



Sidharth Ghoshal Yea [Eric Bronner](#) is correct, and historically brand name schools have been their exclusive interests, but that has changed considerably recently. It is good marketing for the companies to seem "modern" and "chill", but the fact is humans like to categorify people using these measures. It's easy

Unlike · Reply · 1 · March 27 at 4:31pm



Write a reply...



As evident by the discussions I had with other students, MOOCs did have their drawbacks, and they weren't minor ones either. Like I mentioned in the Facebook discussions, some fields do require a large degree of monitored field experience before they can practice their profession. For example, doctors spend a certain amount of time in residency programs where they can apply what they learned. Practicing medicine is not like computer science. There are real harmful consequences of malpractice in medicine compared programming. While it is inevitable that MOOCs can't be the most viable solution to every field, MOOCs still are not capable of addressing one fatal flaw in humans, which is finding continued motivation. According to a study done by the University of Warwick, the completion rates for most MOOCs are below 13% (2014). That is 87% of people who start a MOOC, walk away without the complete set of knowledge educators deem crucial in a field. Students just simply don't have the motivation to complete a course from start to finish. There are no guiding forces to push students to work, especially when they don't consider new knowledge as an incentive to learning. There are no professors telling you to try harder or failing grades giving you a wake up call to push you. There is nobody to stop you an individual from cheating or Googling answers either. So once gain we have reached these crossroads in higher education where we can either find a new solution to "fixing" education, or settling with the system we have now.

What if we took the positive aspects of MOOCs and "blended" it with physical, face-to-face instruction to create effective and engaging curriculums?

This is what “blended learning” supporters are trying to implement in institutions. This is easier said than done. What are the best and innovative solutions out there? How do we use them? How do we implement them? How do we promote university-wide support of such a system? The list of questions goes on and on as result of this rapidly growing field of “educational technology” Dr. Kurshan says, “Some educators erroneously believe that blended learning is merely traditional, face-to-face learning that incorporates digital resources. Similarly, many educators mistakenly assume that online learning should mirror classroom learning. These misconceptions do not allow teachers to leverage the benefits of technology for more effective, engaged learning. Since teachers will continue to be expected to develop technology-based approaches for instructional delivery and assessment, the prevalence of these misconceptions makes it essential to offer professional development for teachers to learn how to teach in virtual environments,” (2015). Many educators who grew up accustomed to traditional, technology-less pedagogy may be adverse to these new digital tools. Younger students who grew up in a networked world, inundated by consumable, interactive stimuli, will be harder to engage. That is why there is a strong need to adopt an innovation ecosystem where educators and entrepreneurs work side by side. Technological innovation should not be a novel idea but a requirement.

Fortunately, there are many stakeholders driving growth in the field of educational technology. At the university level, instructional designers are working hard to stay at the forefront of innovation. At Rutgers University, the

Office of Instructional & Research Technology works with professors to create more engaging curriculums and interactive activities based on course content. After interviewing members of the office, I learned how the roles of instructional technologist, instructional designer, and instructional media specialist coordinate their efforts to accomplish this goal. Public officials are even addressing the issue. Obama has created a new initiative to reform education called "ConnectED". The overarching goal of this plan is: 1) Within 5 years, connect 99% of America's students to the digital age through next-gen broadband. 2) Invest in improving the skills of teachers to allow a greater understanding of technology tools to improve student outcomes. 3) Build on private sector innovation and allow students and teachers to take advantage of the latest and cutting edge tools (apps) that far surpass textbooks in their ability to serve engaging material. The last clause is arguably the most important. Entrepreneurs are the ones who discovering and funding new digital tools and learning management systems. Facebook CEO Mark Zuckerberg and his wife Priscilla Chan are now investing more than \$45 billion to find/fund new personalized learning solutions. We are now beginning to see a plethora of stakeholders who are committed to disrupting the education system; a system that has not fundamentally change in over 100 years. By interviewing these stakeholders and compiling them into a fully developed documentary, I hope to accelerate growth in the field by raising awareness and pushing educators and students to understand the potential that lies ahead.

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