

Supporting Online Initiatives: From MOOCs to For-Credit Offerings

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Abstract. When the Massive Open Online Course (MOOC) revolution erupted in 2012 there was a vision of bringing the world of first-class research and exceptional teaching to the broadest possible audience. The University of Pennsylvania embraced MOOCs with the spirit of innovation and experimentation and is currently building on this initial foray to advance our leadership role into the online space by creating new for-credit courses

and degrees. This paper describes the administrative infrastructure that was put in place to support open online learning in its early days and explains how changing goals are bringing about reassessment of the administrative role of the online unit. This case study could inform other institutions as they explore using MOOCs towards a for-credit program by suggesting a method of incorporating a transformative technology into a traditional research and residential based teaching institution.

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In 2011 at the launch of the first MOOCs by Stanford's Daphne Koller and Andrew Ng, it was understood that the endpoint of this transformation was yet unknown. The University of Pennsylvania (Penn) was nonetheless eager to push the limits of what could be done through this medium and was one of the first sets of universities to partner with Coursera in spring 2012. Penn also became an equity investor in the company. In fall 2012 Edward Rock, then a faculty member in the Law School, was appointed Senior Adviser to the President and Provost and Director of Open Course Initiatives. Rock was responsible for the implementation of Penn's partnership with Coursera, which was then seen as exclusively providing open-access non-credit courses. He led the development of an administrative structure to support this initiative, heading the newly formed Open Learning Initiative under the Office of the Provost. This was an unusual format for the university that has a diffuse financial structure: innovation at the department or school level is normally encouraged through a school-based financing model, with the university as whole setting priorities through a broad

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strategic plan. Interestingly, this initiative was not placed in the existing technology focused units: neither under general computer or information systems nor under the library, the unit that is responsible for the learning management systems.

One of the first steps for OLI was the creation of policies for faculty compensation and the iteration of the existing intellectual property policies and their applicability to the online environment. A structure was put in place not only for the production of MOOCs, but maybe more importantly, for approving and financing them. A call for proposals was made in the University's Almanac, its internal journal of record, explaining that faculty would get a small stipend for development of a MOOC and have the potential for earning small royalties if the courses were financially sustainable. Costs would be shared between the faculty member's school and the Provost's office. The small royalty reflected the understanding that the intellectual contribution of the faculty is a resource valued by the university and that the faculty own the content of the course and license it to the university, whereby the university owns the expression of the course (e. g. the videos).

A Faculty Advisory Committee was formed to review these proposals, MOOC-related policies, and to discuss potential impact of this innovation on the university at-large. The faculty advisory committee was an astute mechanism of including faculty in the process. By design, it included members who had an interest and openness to the new medium, thereby allowing for these path breakers to influence the more tentative.

From the start there was an understanding that individual faculty members would need help in adjusting their teaching methodology to this new environment, and Penn's Center for Teaching and Learning offered workshops to introduce MOOCs to faculty and consulted with those who wanted to try this new medium.

Over time there have been adjustments to this centralized approach, with schools now having the option of taking on a bigger burden of the financing and production of MOOCs and being able to do so with greater autonomy. A number of our schools, including The Wharton School and Penn Engineering now have robust online units of their own. At this time, Penn's online initiatives encompass all 12 Penn schools, with MOOC enrollments nearing seven million around the world.

Penn's culture embraces a focus on research and intellectual activity as well as an understanding of the need to develop practical skills and applied knowledge. It is with this openness to the needs of learners that Penn offers a variety of MOOCs from courses such as Single Variable Calculus and Greek and Roman Mythology to courses that build particular skills such as How to Apply to College and English for Media Literacy. In addition, Penn offers non-credit certificates, such as the Business Foundations Specialization through the Wharton School on the Coursera platform, and a MicroMasters® in Robotics

from Penn Engineering on the edX platform. This practical side of the institution also ensures that the experimentation with MOOCs pushes the frontier of teaching and learning in a financially sustainable way.

Innovation in the MOOC space helps faculty rethink face-to-face teaching by incorporating effective practices and supports innovations such as the flipped learning and enhanced use of peer and group projects. It has also been an opportunity to introduce faculty to the potential of transforming students' lives from afar through online teaching. This, in turn, created an openness for new exploration in the online space that resulted in the development of fully-online degree programs. Though there have been online classes at the Penn for over a decade, these were stand-alone courses mostly given over the summer months in our College of Liberal and Professional Studies that historically served nontraditional, older, students. Bringing MOOCs into Penn introduced faculty to the potential of a global reach and impact through online teaching. It is not a coincidence that one of the first Penn professors to teach a MOOC, Penn's Vice Provost for Global Initiatives, Ezekiel Emanuel, also sparked the development of the first asynchronous online degree at Penn, the Master of Health Care Innovation which resides in the Department of Medical Ethics & Health Policy at the Perelman School of Medicine. Other successful MOOCs from Penn Engineering led to the development of their Robotics MicroMasters® hosted on edX and to the Master of Computer and Information Technology, the first fully online Ivy League degree to be hosted on Coursera, announced in July 2018.

As the provisions in the MOOC space changed so did the name of the office that supports them, now called the Online Learning Initiative, suggesting support of *all* types of online programs, not only open ones.

The move from open learning to using these new technologies in for-credit courses was an opportunity for Penn to rethink its priorities and strategies for the online space. This was the task put forward to Peter Decherney, the current Faculty Director of the Online Learning Initiative, and Rebecca Stein, the new Executive Director, in fall 2017, beginning with thinking through the opportunities and challenges of this transition. The first opportunity seems almost too obvious to state: in the online space Penn can reach more students, not only in terms of numbers but in terms of a broader student base. Many online students are either unable to travel to Philadelphia for Penn's residential programs or to take time off in their lives to participate in a full-time, year-round program. Bringing programs online allows Penn to fulfill its mission of inclusiveness. A second opportunity arises from the openness of online platforms and programs to explore and innovate through the creation of stackable forms of degrees. This comes naturally from a world where "massive" and "open" are core concepts. There is an understanding that students want a low-stakes environment to find their areas of strength and establish an appropriate level of interest before

making a long-term and significant financial commitment to a full degree. The creation of smaller credentials such as certificates and MicroMasters® is an opportunity to meet students where they are intellectually as well as geographically. A third opportunity is building lifelong relationships with students. Institutionalized education is no longer something that ends with an undergraduate degree. Throughout their lives, individuals in the workplace need to learn new skills and re-skill to keep up with an ever-changing environment. As an institution that is always on the frontier of knowledge-creation, Penn should be ready to share new information with our graduates. Taking learning online makes this a viable mechanism.

Of course there are also concerns and challenges surrounding the use of MOOCs as part of degree programs. Without the barrier of distance, the online world is flat. Any one online program competes with all of the programs offered by other institutions. For example, some of the largest online programs in the United States were either nonexistent in the residential market (e. g. University of Phoenix, Western Governors University) or had only a regional appeal before they took their offerings online (e. g., Southern New Hampshire University). The fear is that this competition will be centered on the program's price, at the expense of other attributes such as quality of instruction or potential impact on career. To combat this threat, Penn needed to create programs that leverage the unique strengths of the institution and create a product that is differentiated. The university then sought to create unique offerings with clear branding and messaging that stands out among search engine results. At the University of Pennsylvania, this implies creating programs that leverage our outstanding research-oriented faculty, our multidisciplinary approach, and our global orientation. Other institutions have their own distinguishing features; to be successful, they must focus on what makes them different and, therefore, special.

As Penn explored the opportunities and challenges of online learning, it also reviewed the institutional structure necessary to support exceptional online education. What is the optimal the organizational relationship between individual programs and the rest of the institution's academic offerings? In many universities, online programs are corralled into a separate unit within the institution and framed as part of executive education or an extension branch. In a few cases, online programs are the main driving force of the institution as a whole so that the whole strategy of the university is focused on what is happening in the online environment. Both approaches would be inappropriate for Penn. Placing these programs into a separate unit would create a "second class" degree, working against the premise that one of Penn's core strengths is our faculty. Above all, our faculty must be inherently linked with online offerings. To do so, online degrees must be integrated within the departments and units where faculty are involved with research and teaching residential students. Similarly, online edu-

cation could not determine the strategy of the overall institution, since Penn is committed to residential education and has research as part of its core mission. This implies that the online programs should have the same governance structure as any other program and, as with residential programs, sit within the specific faculties that teach them. Nonetheless, there is an understanding that online teaching requires unique investments in infrastructure. Faculty must develop new skills and capabilities in terms of course design. Without the support of the university center, individual schools and faculties would not succeed.

It is within this tension that the Online Learning Initiative is taking shape and defining our role. OLI is putting in place a system that allows new degrees and programs to flourish by balancing central support and academic independence. OLI is part of the Office of the Provost, supporting online programs across the twelve schools in for-credit degree programs and courses as well as free open courses, professional certificates, and other non-credit initiatives. OLI is headed by a Faculty Director and a staff Executive Director, who both report to the Vice Provost for Education. A series of committees connect the central office to the wider community: the Faculty Advisory Committee is still in place to include the faculty perspective; an Online Programs Working Group is comprised of key administrative members whose input is vital in starting new programs and integrating into the existing information and compliance frameworks; a new Online Directors Group brings the key staff member responsible for producing and supporting online units from each of the twelve schools together and, finally, an Instructional Design Working Group gathers staff members from across the university who work with faculty to bring learner-focused pedagogy online using educational technology.

OLI has three central roles. The first role is in the creation, implementation, and management of Penn's virtual campus, the technological infrastructure needed for online programing. This includes consideration of third-party platforms (e. g., Coursera for degree programs) and the prospect of building an internal platform to be our virtual campus. Second, OLI builds communication across the twelve independent schools to share best practices, fulfill compliance and accreditation requirements, and coordinate shared investments. OLI's third role is to build capacity for new programs through the creation of a toolkit that supports new programs from the initial stage of market analysis and budget proposals, through faculty training and instructional design, to marketing know-how and program evaluation. Samples and resources for each step of the process of creating a program or a degree are centrally located within a timeline that links them together. With guidance from OLI, the goal is that a program manager at any of the schools can utilize specific tools at each step of the way.

I would like to share three observations from my first year as the Executive Director of this central office that supports online learning. First is a pleasant recognition that the spirit of sharing information and

knowledge is inherently part of research institutions. This spirit transfers to mutual support and sharing of best practices among the administrators across and between universities. Despite the fact that universities could see one another as competitors in the online educational marketplace, the common mission of supporting students' educational needs and furthering knowledge takes over, allowing institutions to collaborate and share best practices in ways that could not be recognized or understood in any other industry. Coursera and edX supported this collaboration from the start by running annual conferences that allow for sharing of best practices and for networking. When Penn evaluated policies for awarding academic credit to matriculating students who completed a MicroMasters®, it was easy to call administrators at other institutions that accept these credentials and find the appropriate terminology and processes. Georgia Tech is an exemplar of cross-institutional support by creating an annual conference dedicated to educating other institutions on how to create successful at scale degrees based on a MOOC framework. A number of institutions (Georgia Tech, U of Illinois, Western Governors and University of Washington) ran a series of sessions on this subject at a recent Summit for Online Leadership and Administration + Roundtable session hosted by the University Professional and Continuing Education Association (UPCEA SOLA+R). This meeting included practical takeaways such as a template for a business plan for a MOOC based program. Both online and physical meetups and visits across school are common and invaluable. My recommendation, therefore, is that administrators not be shy of asking for help and resources from their peer institutions. Not only is Penn/OLI open to sharing, but this is an integral process of self-reflection and review of our practices.

The second is the challenge of managing the distinct paces at which higher education and technology work. I sometimes think of our office as a car that has one set of wheels spinning at the quick pace of Silicon Valley and another set of wheels that move at the leisurely pace of a 250 year-old institution. As the metaphor suggests, sometimes OLI feels like a car spinning around in circles. Coursera's practice of frequently changing revenue models—first limiting the meaning of “open,” then adding subscriptions to specializations and, for a while, creating platform-wide subscriptions—has run into existing commitments that some of our courses remain free and escalated tension with internal branding. OLI created an Online Directors group comprised of staff program directors across Penn's schools and programs in part to assist with communication about the most recent platform experiments. The group allows schools and programs to have a clear line of communication to the external platforms through OLI. Over time, patience and communication can continue to bridge these two extremes.

Similar to the point above, a third reflection is on the complexity of supporting disparate programs through a central office. OLI needs

to be a source of information and assistance that allows programs to move at a quick pace while retaining a focus on the institution's overall brand and mission. An example is the process of adapting student services structure to support online students. Creating an internal set of recommendations entailed input and consultation with more than 20 offices and units across campus (including programmatic units, finance, computer and student information systems, career services, institutional research, learning support, library, and crisis intervention). Moving from a set of recommendations to an action plan is one of the major objectives for our unit for the next year.

There is no doubt that new technologies will continue to transform higher education and that higher education institutions around the globe are just at the start of this process. With that in mind, the range of questions future conferences should address is overwhelming. Topics include understanding the nature of competition between schools and across programs in the online environment; evaluation of various teaching methodologies and practices; and the assessment of the impact of online programs to the financial security of higher education. To explore these topics further, OLI encourage future discussion and research on the following three areas:

How do universities build the lifelong relationships with the students supported by online programs? What is the role of third-party platforms with this long run relationship in mind?

How can institutions measure success in online programs? Besides learning outcomes and financial sustainability, what other considerations should be front and center?

What is the role of a research-focused university in an educational marketplace focused on reskilling the workforce?

As our online programs grow, the role of the central office that supports them will change. Once the infrastructure is in place, the policies are set and there are established units across all twelve schools producing and creating online degrees, Penn may find less need for OLI's type of central support. I look forward to that time and to re-writing our vision for the next cycle of technological breakthrough that is sure to arrive.