

PROVOSTIAL-SENATE MOOCs TASKFORCE REPORT



Stony Brook University
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I. GLOSSARY

- Canvas:** For profit online content provider. It is a rapidly growing startup with an industry-pushing platform, 200+ talented employees and millions of passionate students and teachers.
- Coursera:** An education company that partners with the top universities and organizations in the world to offer courses online for anyone to take, –free of charge. Its technology enables its partners to teach millions of students rather than hundreds.
- DOD:** Department of Defense
- DOE:** Department of Education
- Educause:** A nonprofit association and the foremost community of IT leaders and professionals committed to advancing higher education.
- EdX:** A not for profit online content provider. The edX platform will be available as an open source. By conducting and publishing significant research on how students learn, their goal is to empower and inspire educators around the world and promote success in learning. edX aims to become a leading resource for learners and learning worldwide by staying focused on the goals and principles set forth at its founding. edX is based in Cambridge, Massachusetts and is governed by MIT and Harvard.
- FERPA:** Family Educational Rights and Privacy Act
- LMS:** Learning Management System
- MOOCs:** Massive Open Online Courses
- NIH:** National Institutes of Health
- NSF:** National Science Foundation
- OPEN SUNY:** An online content initiative and provider. The State University of New York Board of Trustees implemented Open SUNY, which will bring all online courses offered at each of the system’s 64 campuses onto a shared and comprehensive online environment, making them accessible to all of the system’s 468,000 students and 88,000 faculty.
- RCR:** Responsible Conduct of Research
- Teach ACT:** The **Technology, Education and Copyright Harmonization Act** of 2002, known as the **TEACH Act**, is an [Act](#) of the [United States Congress](#). The importance of the TEACH Act stems from the previous copyright laws that allow educators to copy documents or use copyrighted materials in a face-to-face classroom setting. Because of the growth of [distance education](#) that does not contain a face-to-face classroom setting, revisions to these laws, particularly sections 110(2) and 112(f) of the U.S. Copyright Act, needed to be made.
- UDACITY:** A for profit online content provider. As is noted in the company’s website: Udacity was born out of a Stanford University experiment in which Sebastian Thrun and Peter Norvig offered their MOOC, "Introduction to Artificial Intelligence," free of charge. Over 160,000 students in more than 190 countries enrolled and, not much later, Udacity was born. Now they are a

growing team of educators and engineers on a mission to change the future of education. By making high-quality classes affordable and accessible for students across the globe, Udacity's goal is to democratize education." Udacity is one of the main contenders in the MOOCs environment.

II. ACKNOWLEDGEMENTS

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III. PREAMBLE

"Massive Open Online Courses" (MOOCs) are a recent development within online education. MOOCs may be considered a metonym for online education tout court. MOOCs themselves are a rapidly evolving species. As media technology changes, the ability to create ever more sophisticated and versatile MOOCs increases. Thus, MOOCs cannot only be considered as a seismograph of the impact of technology on education, but also as a bellwether for the future directions of online education. It is for this reason that *The New York Times* named 2012 the year of the MOOC. Earlier this year, SUNY Chancellor Nancy L. Zimpher launched a SUNY initiative, Open SUNY, with the goal of creating the largest online education system in the country. Open SUNY, which will start next year, will offer 10 online bachelor's degree programs and will enroll up to 100,000 students within three years. As in the past, technology will open up the gates of public education to new horizons, as well as to new types of students. Also, as in the past, these emergent technologies can lay the ground for new types of teachers and new types of classrooms.

Furthermore, MOOCs, as one component of a larger set of online offerings, can be used to address some of the challenges that Stony Brook University faces (limited classroom space, growing class sizes, the challenge of serving an increasingly diverse student body) and may help to facilitate the attainment of immediate goals (improved graduation rates, decreased graduation time, and the increased ability to gather outcome data). As part of a larger online education strategy, MOOCs can align with the University's mission of offering a 21st century education, in which creativity, critical thinking, communication, and collaboration are brought together to catalyze a new Stony Brook

University learning experience. As part of a forward looking online education plan, MOOCs can contribute to a renaissance in innovative education at Stony Brook that capitalizes on the technological knowhow of new generations of students who have grown up in a world saturated by online content and media devices. In this way, MOOCs, as one component of a Stony Brook University online strategy, can contribute to the implementation of the Chancellor's Open SUNY and systemness visions. By the term "systemness," at least for purposes of this report, we understand the ability of online educational offerings, programs, degrees, certificates, to enhance the ability of SUNY as a state wide educational institution, with global reach, to provide as much transparency, fluidity, and transferability as it is possible, among its many campuses and institutions. "Systemness" is the genus of the species of any module or self-standing system that allows it to 'interface' seamlessly with other systems that are related or cognate with it. In other words, MOOCs are *not* a zero-sum investment, but rather are a win-win approach that would benefit the university community as a whole. It is evident that MOOCs can be part of the global face of Stony Brook University, and they can help us secure and expand our 'cyber foot-print.' MOOCs can contribute to the development, maintenance and expansion of Stony Brook University as a global brand. As part of a comprehensive online education policy, MOOCs can further position Stony Brook University as a pioneer in education research. MOOCs are free, but their impact is priceless.

To efficiently and effectively address the charges, as outlined by Provost Assanis, the twenty-eight members of the MOOC taskforce divided into eight subcommittees: Inventory, Finance, Legal, Structure, Platform, Impact, Branding, and Assessment. Subsequently, we noted we needed to address "Faculty Involvement," for which the "Impact" subcommittee was responsible, and drafted a corresponding report. In the appendix, memberships of the subcommittees and their charges are listed. The taskforce and subcommittees met on a weekly basis for about eight weeks alternating between the general taskforce meeting and subcommittee meetings. During these deliberations, a plan of action with a two-phase implementation sequence was proposed. One of the most important and immediately actionable recommendations of the task force is that a permanent committee for online education be established to develop an online education mission statement that is in accordance with Stony Brook University's educational mission, as well as to draft policies and procedures for the ongoing development and implementation of the two-phase plan. This permanent committee would be charged with In the next section, we present an executive summary, which highlights the most important and actionable recommendations that emerged from the different subcommittees. After this section, we present the outline of a two-phase plan. In subsequent sections, summaries, findings and recommendations from each of the subcommittee are included.

IV. EXECUTIVE SUMMARY

The task force recommends, based on the finding and recommendations of the subcommittees:

1. That a permanent university-wide standing committee be established to develop an online education vision statement and strategy that are consistent with the University's educational, research and service missions
2. That this committee be comprised of administrators, faculty, staff and students with representation from the different sectors of the university, members of university governance, as well as external groups, such as alumni, local industry, high school and other regional educators.
3. That this standing committee establish appropriate policies and formal relationships with relevant administrators, students, educators and governance representatives to develop an online education curriculum policy that will make sure that online offerings fit holistically and synergistically with the new Stony Brook Education Curriculum
4. That this standing committee immediately set out to implement the two-phase plan proposed in this report
5. That this standing committee identify five courses that could be transformed into MOOCs in Phase I of implementation
6. That this standing committee be provided with the funding to immediately undertake the two phases proposed
7. That this standing committee draft a mission statement for the Stony Brook University online brand, as well as begin the drafting of policies and procedures for the development of online content and Stony Brook University MOOCs
8. That this standing committee immediately explore the creation of both a Stony Brook Online Brand and/or logo in accord with the SBU mission, and that we secure an SB online copyright.

V. THE PLAN (TWO PHASES)

Based on the recommendations of the various subcommittees, we propose a specific Plan that focuses on diversifications and assessments. As indicated in the findings of the Inventory and Structure Subcommittees, the external field of MOOCs is largely chaotic with inherent positive possibilities. However, it is too early to identify a specific "winning" structure or success areas for MOOCs. Therefore, the taskforce recommends diversifying the content areas/structure of offerings to minimize risk, and to use assessment as an informed feedback loop to learn from our experiences with initial offerings. Specifically, the taskforce recommends a two-phase approach. The following provides more detailed descriptions of each phase.

Phase I

The goal of Phase I is to "test the waters" with diversified offerings with respect to content area and structure. Based on the investigation of the Inventory Subcommittee and feedback from our West Town Hall Meeting on February 13, 2013, the following were identified as our potential first offerings. Additionally, after deliberations within the Task Force, it was concluded that these initial samplings are representative of the different

dimensions and strengths of Stony Brook University (science, art, East Campus, student services), and are, or will soon be, technologically ready to be either transitioned or ‘flipped’,--contingent on faculty and committee’s recommendations and consultation--into the MOOC environment. Any courses ultimately offered in Phase I, as well as any courses offered in Phase II, would undergo a rigorous vetting process, yet to be developed.

1. **Orientation Course** for “Distance Enrolled Population” (online offering in summer 2013) with the eventual development of an internal student service MOOC for all incoming 2,000+ students. Currently, distance enrolled freshmen students do not receive much orientation content during the summer months. The proposed Orientation course will cover academic policy, SOLAR tutorial, commuter/housing services, and student life. We intend to first offer the course to about 60 distance enrolled students in summer 2013. This particular course may be adapted for other student populations, specifically HSC Students, SUNY Korea students, and distance learners. Learning outcomes of, and student satisfaction with, the course will be used to design the eventual offering of a “flip-format” orientation course for all incoming 2,000+ students annually. In this scenario, new SBU students will “take” the course prior to arriving on campus for opening weekend. Presently, this second part of orientation spends significant time on state mandated content, when the time spent on campus could be more effectively used to explore campus resources, connect with campus communities, and engage students in academic and social activities.
2. **Undergraduate Biology Course** (MOOC offering via Coursera with a planned roll out in Nov/Dec 2013). Currently, “BIO 358: Biology and Human Social and Sexual Behavior” is a popular upper-division biology elective and a DEC H course (implication of science). This course has grown in popularity and enrollment. In 2005, faculty developing this course implemented a large online component that now also brings in students from other institutions. The recent enrollment is about 1000 students. The course is of strong interest to a global general public as well as to students as it begins by building a strong foundation in evolution by natural selection. Though evolution is a hot scientific topic within the United States and abroad, many people do not have a firm grasp of the scientific issues involved; therefore, misunderstanding of the science is a serious concern. In view of its unique properties (arguably, no other course like it is given at any major university) and strong intellectual appeal, we expect a MOOC version of this course to build a very substantial global audience. This course is also readily transferrable as a MOOC because many well-honed online assets and course modules have been built since 2005. Furthermore, the MOOC version of this course is also expected to increase exposure and enrollment for our current Undergraduate Biology Online program—all in the tuition generating, locally delivered, online format.
3. **Graduate Ethics Course** (MOOC offering via Coursera with a planned roll out in Nov/Dec 2013)
The National Science Foundation (NSF) and the National Institutes of Health (NIH) have mandated that all undergraduate and graduate students, as well as

postdoctoral fellows receiving funding support, receive instruction in “Responsible Conduct of Research” (RCR). To satisfy the NIH requirement, an online ethics course can be used to supplement face-to-face, on-campus, instruction, although it is also required that each participant receive at least eight hours of face-to-face instruction. Again, the proposed graduate ethics course can be used in a “flipped” format for students to acquire the exposure and awareness of materials before receiving face-to-face instruction. The course has the potential to reach thousands of students and postdocs affected by the NSF/NIH requirements. We also envision that this course can be used by graduate programs nation-wide, as the delivery of such a course is difficult and burdensome for the vast majority of graduate programs, nationally. The course can be readily developed as a MOOC because a similar course was delivered on campus a couple of years ago. We expect this MOOC offering to increase Stony Brook’s visibility and institutional commitment to ethical behavior in research, and to further solidify Stony Brook’s institutional quality in a number of domains, including research and online instruction.

4. **Nursing/Nutrition Course** (MOOC offering via Coursera with a planned roll out in Nov/Dec 2013)

The School of Nursing at SBU has offered graduate programs in Nursing Education via distance education with an on-site requirement for more than 10 years. Furthermore, the Family Medicine department has recently launched a graduate online program in Nutrition. Both the Nursing and the Nutrition programs will collaborate to offer a MOOC course or module on “Women’s Health and Nutrition.” The exposure of the MOOC on Coursera is expected to help increase the online enrollments of the Nursing and Nutrition programs.

5. **Digital Arts Course** (MOOC offering via Coursera with a planned roll out in Sept 2013)

ARS/MUS/THR 208 (Soon to be CDT 208): Introduction to Media Technology is currently a popular course with a maximum enrollment of 88 students. It is a survey and hands-on introduction course to digital media and, therefore, easily adapted to an online format. Students are introduced to the practical, conceptual, and historical use of computers and related programming, imaging, and sound-making tools in the arts. Under the current on-campus offering, students learn to develop strategies for combining image, text and sound and are required to distribute these works on the web. Developers of this course will create three MOOC modules: one on programming (Processing), one on image manipulation (Photoshop) and one on sound (Logic). These MOOCs will be an integral component of the on-campus course, enabling us to flip the classroom and have more interaction with the students.

In summary, the offerings of Phase I spans disciplines from Student Services, Science, the Humanities, Arts, and Health Sciences. These suggested first offerings include both undergraduate and graduate MOOCs, as well as both traditional course offerings and flipped or transitioned format offerings. We believe that through assessments of this wide spectrum of first offerings, we can gain valuable insight for the development of Phase II.

Phase II:

The goal of Phase II is to “expand the horizon” with unique Stony Brook University MOOC offerings that have great potential for pedagogical transformation in the areas of both online learning and traditional large lecture hall settings. We envision that some of these MOOC offerings can be expanded or modified as online course offerings that are credit-bearing. In particular, the taskforce has identified the following as possible niches that are unique and distinct to Stony Brook University:

1. **Courses with “Star Instructors”:** We propose to take advantage of famed Stony Brook faculty members such as Alan Alda, Robert Crease, Alfred Goldhaber, Richard Leaky, etc. MOOCs by these star instructors will enrich the SB brand.
2. **Courses with Peer Evaluations for Large Enrollment:** Many MOOCs with thousands of students must rely on peer-evaluations. In addition, the process of peer evaluations can be considered a significant “learning experience” for participants. It is possible that, during such peer evaluations, students can achieve cognitive breakthroughs and mastering of the subject matter. However, little is known on the best practice for peer evaluations. Establishment of best practices in this area can have large pedagogical impact which can even be transferred to on-campus courses with large enrollments.
3. **Courses (Modules) for Exam Review:** In fall 2011 and fall 2012, there were 1,205 and 1,252 retake course enrollments respectively, with most of the retake courses in the areas of Physics (PHY 121-PHY 131, PHY 122-PHY 132), Chemistry (CHE 129-141 and CHE 132), and Mathematics (AMS 151-MAT 131). We propose to develop specific learning modules for Physics, Chemistry, and Mathematics for Stony Brook students’ internal use to prepare for exams with the goal of improving understanding of challenging concepts, thus reducing the number of retakes, improving students’ learning experience and reducing graduation time. This option is also considered as a “flip” format in which students use MOOCs-appropriate materials to review the concepts prior to on-campus review sections.
4. **Courses with Personalized Learning:** One of the advantages of online learning, in general, is that “a computer is infinitely patient” and students’ learning experience can be personalized according to their backgrounds and aptitudes. Online courses and MOOCs can atomize student needs, as well as student skills. One student may need more examples in one module to grasp the concept, while others may find the concept easily understandable. Through individualized online learning, instructors are no longer required to “teach in the middle,” but instead, teaching materials can be designed with different branches and depth, based on students’ performance. MOOC modules with personalized learning capability can precede and help inform the development of personalized online courses. Thus, the free MOOC serves as a data collection warehouse for potentially pedagogically transformative personalized online learning.

5. **Courses with Hands-On Components:** Currently, MOOCs with a hands-on component are not common. We envision that NOT all hands-on activities can be transferred into MOOCs or online courses. Indeed, certain activities are more suitable for online development than others. For example, electrical and computer engineering labs are easily transferable to an online format, as students can purchase the electrical components with minimum safety concerns. The development of MOOCs with hands-on components can put SBU in the pioneering elite group.
6. **Courses for Open SUNY:** As part of the Chancellor's vision of systemness and the Open SUNY initiative, we propose to collaborate with other SUNY campuses to identify courses that can be shared online as MOOCs and online offerings.
7. **MOOCs on Languages:** The campus community has suggested developing MOOCs for languages, as language learning is a good candidate for online learning, especially when coupled with personalized learning.

In summary, our proposed plan emphasizes diversification and assessment of both online and MOOC offerings. In Phase I, by offering courses via Coursera, we gain experience and insight into teaching large numbers of diverse students. By introducing orientation materials to the distance enrolled, and eventually offering an orientation course to all freshmen students prior to their arrival on campus, we can use MOOCs to improve student services and students' overall Stony Brook experiences. In Phase II, the emphasis is on expanding the horizon with the goal of introducing MOOCs that have the potential for a large pedagogical impact on both classroom and online learning.

Our vision is that, by increasing SBU's cyber footprints and online presence via MOOCs, we enhance the SB brand. In addition, by using the MOOC offering experience to make informed pedagogical transformation to online teaching and flip format teaching, student learning outcomes and learning experiences are expected to improve.

VI. INVENTORY

Executive Summary

Any planning related to MOOCs at Stony Brook must be framed within the context of the external and internal environments. This necessitates having an overview of the available typologies of MOOCs, as well as identifying the institutions of higher education that are already involved in MOOCs.

From an internal standpoint, we need to have a picture of our current course offerings that may be adaptable into a MOOC format. This would include courses that are already successful in delivering online content for part or all of the existing course. The scalability of current online course offerings is another relevant issue given the potential need for near infinite expansion of student numbers in a MOOC. Additional considerations

are the types of learners who would be targeted by a Stony Brook MOOC and the potential number of individuals who may wish to take a MOOC on a particular topic.

Our inventories of external MOOC courses and internal online and distance learning courses show an expanding number of available MOOCs elsewhere. Nevertheless, there are still substantial gaps in the focus and content of existing offerings, creating clear opportunities for Stony Brook to enter the MOOC arena. A number of our existing courses already have a strong framework for building a MOOC course. Other courses are already using online approaches for supplemental pedagogy, an area that seems ripe for expansion, particularly in undergraduate education.

Accordingly, we recommend identifying perhaps 5 courses that would provide a mix of content and that would be compelling to students at the undergraduate and graduate levels in fulfilling a number of different educational goals and requirements. These offerings, as well as future ones, should be part of long-term policy that will position Stony Brook as a nexus that links high schools, community colleges, area universities and professional institutions that can develop and provide educational and informational modules that aim to solve local challenges that may have global impact.

Findings

The external MOOC environment is evolving rapidly. *Coursera* is the dominant force, with 221 courses and 33 university partners, respectively (as of 02/07/13). The breadth of available courses is also greatest through *Coursera* and includes humanities, social sciences, life sciences, engineering, computing and mathematics. Other MOOC companies include *Udacity*, *edX*, and *Canvas* with a number of universities (such as Carnegie Mellon) having their own sites for MOOCs. Most universities are offering MOOCs through a single company, although Stanford has MOOCs available through three different companies. Only a handful of universities offer more than 10 MOOCs, with most participating universities offering five or fewer MOOCs and many offering only a single MOOC. Among MOOC courses, the possibility of receiving actual course credit is infrequent and occurs in only about one-tenth of courses. More often, students are able to receive documentation that they have taken the course or achieved some degree of knowledge of the subject matter. Examples of such documentation include certificates of completion or mastery, and certificates or statements of accomplishment. About half of courses offer a Certificate of Completion. In contrast, about one-fifth of courses do not offer learners any documentation of course participation. Existing MOOCs seem targeted primarily to individuals who are seeking certificates to add to their resumes, skills to assist with career advancement, or information to fulfill curiosity and support life-long learning.

Internally, our landscape includes a substantial number of courses that are already being taught in an online format. Indeed, a search of the database for the East Campus and West Campus offerings of distance learning and online courses yielded 1,145 number of course sections between AY 11-12 and AY 12-13 including all sessions (Fall, Spring, Summer and Winter). Many of these courses are listed in the database according to individual faculty who would be supervising independent study or formal projects. However, there is still a sizeable number of existing courses that would be fertile ground for the initial growth of Stony Brook MOOCs. Offerings in the Biological Sciences, Electrical Engineering and the School of Nursing are the best developed, and some of these online courses are already being taken

by large numbers of students. As such, they have already confronted many of the challenges that must be addressed in scaling online courses for a MOOC setting.

Selecting potential MOOC courses from among this wealth of possibilities requires consideration of the course characteristics, but also of the characteristics of our target audiences, both outside and within the university. In addition to the educational roles of MOOCs that are described above, some Stony Brook courses, such as Physics, are already using online approaches as a form of supplemental pedagogy. Using MOOCs for such an approach could have considerable value for students. For example, students could use MOOCs to remediate gaps in their background, explore skills and interest in a topic before investing time in a particular major, to achieve real-time synthesis and consolidation of learning in preparation for an examination, or to satisfy pre-requisites without needing to squeeze credit coursework into the schedule. For students who are not matriculated at Stony Brook, a MOOC could help them gauge whether to enroll at Stony Brook in the future.

Recommendations

First, the subcommittee recommends that Stony Brook should make a serious investment into the world of online education, including MOOCs, and more importantly a for-pay and for-credit online presence. The MOOCs offerings should begin with a handful of courses that are selected, composed, and vetted to ensure that only the highest quality in production and pedagogical value are introduced into the broad market.

Second, that accredited offerings should only be available to students who pay for the value they receive. Although models exist for handling this issue in a MOOCs environment (e.g., following a MOOC with a for-pay high stakes professionally proctored exam), the broadest scope of online education will require offerings hosted in a for-pay environment.

Third, that in the longer term, as one component of its work in online education, it should establish one or more partnerships with an external, either for-profit or non-profit company." As detailed in subsequent sections, the existence of the external company gives us both the authority to drive the offerings via the best pedagogy, and also a sounder legal stance with regard to various consumer and copyright issues.

VII. FINANCE

Executive Summary

Part of the comprehensive technology fee for the university is allocated to cover the costs of online degree programs but, unfortunately, the amount is insufficient to cover all costs. The current SUNY environment regarding approval of new fees means that the development of a fee (separate from the Technology Fee) in support of the costs of online courses is unlikely in the short term. Potentially, we could develop a testing fee, but could only recover the costs of the testing--not costs of MOOC production, systems maintenance, or instructional costs.

MOOCs course content and delivery are still evolving. Therefore, revenue sharing rules are also in an emerging phase, and it has yet to be determined whether academia (colleges and universities), the business world (corporate) or some partnership of the two will be the drivers in crafting the monetization process. The question is whether or not we should wait to join with SUNY or begin independent of SUNY, and whether we should lead this effort.

Waiting until all of this is sorted out seems to be missing the positive possibilities inherent in the chaos. By exploring the MOOC landscape in a controlled way, and introducing the world to Stony Brook University quality online offerings, we can continue to evaluate the revenue-generating potential of MOOCs, and pursue a path that most coincides with Stony Brook's strategic plan.

Based on these assumptions/uncertainties, we recommend the following multi-phase strategy:

- 1) Enter the market with a few quality courses via an established Learning Management System (LMS)
 - a) Some existing, popular online courses converted to MOOCs-friendly format
 - b) Some with "star power"
- 2) Produce training/supplementary MOOCs for SB students
 - a) High failure/retake courses (intro science, math)
 - b) Function-based activities, such as Orientation
- 3) Develop our own SBU LMS MOOC platform, perhaps in partnership with a local software company
- 4) Begin with a few quality courses via an established Learning Management System (LMS)

First, the subcommittee recommends Stony Brook University partner with *Coursera* versus *edX* or *Udacity* —the two other mainstream choices—because it is the lowest cost, quickest way to enter the market, as our peers are demonstrating. It is free for institutions to join and we own the content, but we are required to maintain fresh content on the site for the specified period of the contract. Starting with a limited number of quality course offerings lets us move quickly; we benefit from the PR opportunities, and are able to implement a learning environment for faculty and staff.

What is the right mix of courses?

- a) One to three existing, popular online courses, compressed to a MOOCs-friendly format
- b) One to three with "star power"

Second, since Stony Brook University has existing, successful online courses, with fairly low cost modification, MOOC versions could serve as advertisements for the full versions. Future possibilities may include offering credit after successful completion of exam, or linking MOOCs to accreditation, which involves fees. Creating a few MOOCs that highlight Stony Brook's connection to "stars" like Richard Leakey, Scott McLennan, Alan Alda, or Carl Safina will draw a large online population into Stony Brook's community. The

challenge will be to make these courses more than public relations, and brand enhancement opportunities, as these courses will be more costly to develop and produce than the MOOCs modified from our existing online courses.

Third, that we produce training/supplementary MOOCs for SB students. Although a big market for MOOCs is the worldwide online community, developing specialized MOOCs in the following categories for our own student population may also be a way to better serve our students, while reducing costs:

- a) Tutoring/training courses for math or science courses with high failure/re-take rates
- b) Function-based “courses” for orientation, other non-credit student services

Fourth, we recommend that we fully exploit the benefits of successful pre-science or math courses, as they reduce the number of students needing to re-take these courses, thus reducing time to graduation and the costs associated with additional sections of these courses. We can use these courses to experiment with an in-house learning platform, and a general enough course prep can be housed in *Coursera*. Although the costs may be anywhere from \$15-20K per MOOC, the potential reduction in course costs makes this a viable option.

Fifth, that by creating MOOCs for Orientation (which could be included in the orientation fee) for information that does not require significant face time to convey, we will free resources to improve the overall orientation experience. The MOOCs may also be used to connect more successfully with students’ parents.

Sixth, that we develop our own SBU LMS MOOC platform in partnership with a local software company in order to capitalize on recent tax and educational incentives announced by Governor Cuomo.

Although the models are changing daily, all roads seem to lead to the development of our own MOOC platform to maintain control of the revenue and course content, as well as maintain consistency with other Stony Brook University online offerings. Potentially, the platform we create could become a model for other SUNYs and local colleges to launch their own online offerings for which we could offer a subscription service. We should not miss the opportunity to position Stony Brook University as the SUNY-wide leader of online education and a pioneer of state-of-the-art, innovative MOOCs.

Seventh, that we pursue different revenue stream options, such as:

- a) iTunes model of charging \$1.99 per course or unit or a \$5.00 processing fee, depending on how the MOOC product cycle has evolved by then.
- b) Revenue sharing model for physical and digital supplements for each course.
- c) Charging for certificates of completion for industry, or for an exam to receive a certificate, or as part of entrance into a degree program.

VIII. LEGAL

Executive Summary

Hand in hand with the pedagogical and economic advantages seen by many in MOOCs, are a myriad of legal and policy issues that will challenge, and perhaps frustrate, institutions that choose to venture into this new educational medium. First and foremost in most peoples' minds are the intellectual property issues that swirl around the advent of MOOCs. "How do we ensure, or at least be comfortable, that our MOOC courses do not infringe upon another's copyrights?" and, equally significant, "Who will own the content of the MOOC?" In addition to intellectual property concerns, other legal issues include trade marking of the University's specific "brand" of MOOC, student issues such as accessibility and safety, export control and state authorization requirements. Depending on the delivery method chosen for the MOOC, negotiations with platform providers may also raise legal issues. Each of these legal and policy issues will require cooperation and collaboration among a wide spectrum of stakeholders.

Findings

Use of Copyrighted Material in Teaching

Most, if not all, faculty make use of copyrighted images and/or text in the face-to-face classroom environment and feel relatively confident that such use falls within at least one of the exceptions to copyright protections. Section 110(1) of the Copyright Act (the "Act") creates an exception for the display or performance of a work in a face-to-face classroom setting. Section 107 of the Act uses a four-part 'fair use' test to assess whether the use will fall within its parameters, the first and most significant factor being the purpose of the use, with non-profit educational uses typically viewed more favorably than commercial. Also significant when considering the purpose or character of the use is whether the user has transformed the original work to create something new, and not just copied the original work verbatim. In addition to use of copyright exceptions, some of the materials used in the traditional classroom environment are made available through licenses which provide specific parameters for the materials' use.

The very nature of MOOCs—the facts that they are not offered in traditional face-to-face classroom settings, and that many MOOC providers are for-profit corporations rather than not-for-profit education institutions—calls into question the applicability of Section 110(1), and to a lesser extent, Section 107 of the Act. Existing licensing agreements are also called into question since they typically provide for use by a smaller number of users than would be the case with a MOOC. Section 110(2) of the Copyright Act known as the TEACH Act was created to allow the use of copyrighted materials in distance learning and, at first blush, would seem the most adaptable to MOOC delivery, but the Teach Act requires satisfaction of a multi-prong test which makes its use in a MOOC setting unwieldy at best. By default, Universities will rely heavily on Section 107 of the Act (fair use) to enable use of copyright protected material, with the transformative nature of the use playing a vital role in the determination.

Use of Copyrighted Material in Assigned Reading

Equally challenging are the copyright issues that arise in the context of assigned reading materials. In the traditional classroom environment, assigned reading materials take a variety of forms including textbooks, licensed library resources, electronic reserve materials and/or course packs. Textbooks do not lend themselves well to the ‘free to all’ MOOC model. The University’s current, licensed library resources would not be available to non-Stony Brook MOOC students because (1) access to licensed resources from off campus requires authentication based on PeopleSoft records; and (2) the licenses themselves do not allow for the volume use that MOOCs would demand. Access to electronic reserve materials would be similarly limited, and use of course packs in a MOOC environment also seems impractical. Evidently, these challenges and costs can be met and offset by the implicit economies of scale entailed by MOOCs.

One solution to the problem presented by assigned reading may be as straightforward (although potentially costly) as renegotiating University’s licenses to permit the high volume use of a MOOC. Another may be found in the use of open access materials such as Flat World Knowledge textbooks or material covered by Creative Commons licenses or other open access models. Fair use would allow the copying and distribution of material for assigned reading provided that it satisfied the elements of the four-prong test. A faculty member at a well-known University had another solution to this problem when, knowing that the use he sought far exceeded the boundaries of fair use, he appealed to the textbook publisher’s marketing department and argued that MOOC exposure could exponentially increase the visibility of their textbook. If they granted permission for him to assign a large portion of their text as required reading in his MOOC (with a link to enable purchase of the whole work), the text would reach thousands of potential purchasers. The publisher gave him permission to use the text. In one article published on the topic of MOOCs, the author stated that he had witnessed a number of instances in which a professor recommended a book and sales of that book subsequently spiked.

Copyright Ownership

The State University of New York’s copyright policy has remained relatively unchanged since its introduction in 1954. In anticipation of Open SUNY, a series of copyright policy FAQs were developed to address anticipated concerns regarding copyright ownership issues. The FAQs explain that “under current SUNY copyright policy, faculty retain ownership of works produced in the scope of employment, including works produced for online instruction unless there is a written agreement between the University and the faculty member to the contrary.” If a separate agreement between the University and the faculty member were negotiated, the agreement itself would dictate the rights of the parties.

These FAQs may be found at:

www.suny.edu/provost/academic_affairs/FacultyownershipFAQ.cfm

If the University were to partner with a third party platform provider, that agreement could also impact the use, and possibly the ownership, of the intellectual property.

Trademark of Brand

The final intellectual property issue identified is the protection of the brand that the University develops for its MOOC. Once the design of the University's MOOC interface is settled, steps will have to be taken to protect that brand via trademark registration, placement of appropriate trademark notifications on the MOOC, and vetting of new MOOCs for quality control purposes.

Additional Legal Issues

Some additional legal issues will need to be addressed at the outset, such as ensuring that all MOOCs are accessible to all students regardless of disability, and that they are compliant with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act and that they fit into the Department of Education's program integrity regulations regarding state authorization requirements. Legal concerns related to export control, FERPA, and possible student safety issues in MOOCs that include a 'lab' or other hands-on components are expected to be ongoing and may be addressed as set forth in the recommendations below.

Recommendations

First, that we develop faculty guidelines to assist in determining fair use of copyrighted materials and provide resources to assist faculty in locating other sources of material (e.g., public domain, open access, licenses, permission) when fair use is not an option. Second, that we seek trademark protection for a Stony Brook University brand MOOC. Third, that we establish a standing committee or other mechanism to assist in managing the ongoing issues that will arise (disability access, export control, FERPA, safety, and possibly 'quality assurance' for branding purposes). Fourth, that we resolve applicable state authorization requirements.

IX. STRUCTURE

Executive Summary

The structure of MOOCs is as varied as education itself. MOOCs can be taken simply for the sake of learning, can be taken for credit, or can prepare students for an exam. MOOCs have captured the public's imagination in part because of their variety and pedagogical potential. Yet, while there is promise in these massive open online courses, we think the real revolution will happen in online education more generally. Stony Brook needs to create a standing committee to assess, promote, and advance online education. A support system for faculty to create MOOCs also will create a "rising tide that lifts all boats" and will help SBU stay competitive in a broader online educational environment.

Findings

There is a perhaps misleading myth about the first iteration of MOOCs, which proclaims that they were developed in order to offer unfettered access to higher education, without regard for quality or without proper vetting. This myth was further endorsed by the attribution of altruistic motives to the creators and providers that knowledge should be unbounded by geographic limitations or admission requirements, which sometimes veil class, racial, gender, and national inequities. MOOCs do aim to accommodate thousands of learners in a course by providing access to alleged quality lecture material, and by fostering peer-to-peer interaction as opposed to faculty-student interaction. MOOCs are not online education in the traditional meaning of the term. While world-class universities offer MOOCs online, at this time there is no complete course of study (online degree program) via MOOCs. By definition, MOOCs do not charge tuition (however, some MOOCs providers charge a fee to verify successful course completion), and do not have any admissions requirements. Analysis of Duke University's first MOOC enrollment found the following characteristics of learners: two-thirds of the learners were from the U.S. and Europe, one-third of the learners had bachelor's degree, two-thirds were 25 years of age or older with 20% over 45 years old. Duke found the vast majority of the learners registered in a MOOC did not complete it.

MOOCs provision has evolved rapidly into venture capital projects that serve a variety of purposes. For example, the Gates Foundation supports MOOC development in English remediation with the goal of increasing student success. Other venture capital goals are the development of viable for-profit or not-for-profit MOOC business models.

MOOCs are a disruptive technology: as such the discussion has shifted to include the potential disruption to change/evolve traditional brick and mortar and online higher education. *Educause* documented that some institutions of higher education have begun to accept MOOCs as credit used towards a degree program. At this time, MOOCs are a microscopic subset of the courses offered by an institution. Negative disruptions to higher education include potential loss in revenue if MOOCs are used as substitutes for credit-bearing courses. MOOCs have the potential to reduce the costs of higher education, by offering on-demand remediation courses or on-demand review sessions for high failure rate courses, and they offer potential students the opportunity to experience course offerings at a specific university prior to enrolling at the institution.

Recommendations

It is this committee's recommendations that:

First, SBU embrace online courses, not simply as MOOC offerings but as an integral, perhaps dominant, part of the university's educational offerings.

Second, since the MOOC market is volatile, with no clearly established business model or pedagogical structure, it is this committee's recommendation that the Stony Brook initially offer 5–10 strategically selected undergraduate courses as MOOCs that represent the broad areas of excellence at Stony Brook. SBU's MOOC contributions should reflect the best the university has to offer, as these courses function as the public face of the institution. As the university ventures into the MOOC market, the offering should be non-

credit, open-access (free) courses or segments of credit-bearing courses (e.g., online modules of a larger course). The MOOC should offer a non-credit bearing certificate of completion in MOOCs that establish and assess learning outcomes.

Third, that we explore niche MOOC areas that would supplement SBU's educational agenda. For example, one subset of MOOCs offerings could be a series of exam reviews (e.g., Prof. Tom Hemmick's Introduction to Physics Cram for Exam series) that could allow SBU students to improve their grade in a high demand courses, and could offer students enrolled at other universities access to high-quality exam review. The university should explore developing remediation MOOCs and other Cram for the Exam MOOCs for high demand courses, or courses with high W, D, F, NC rates. The university should explore the viability of offering MOOCs to targeted industries or developing a niche in the continuing professional (CPE) or continuing medical education (CME) sector.

Fourth, it is recommended that the university establish a standing committee to promote pedagogy innovation, ensure quality, and advance the online teaching infrastructure. A committee of faculty and staff that have expertise in this area will be needed to continuously monitor MOOCs evolution. The committee should set standards for SBU online education and for SBU MOOCs. The committee can serve as a resource for faculty or departments that are moving courses or degree programs to an online environment. Potential areas that require in-depth and continued exploration and policy recommendations include but are not limited to: responding if MOOCs providers offer open-access, free degree programs; monitoring the practice of accepting MOOCs as credit towards a degree-bearing program; assessing the impact of MOOCs on onsite course completion for difficult and repeat courses; and assessing the possibility to test out of pre-requisites, or basic courses.

X. PLATFORM/TECHNOLOGY INFRASTRUCTURE

Executive Summary

Where do MOOCs fit into our institution's e-learning strategy? SBU MOOCs, if carefully designed and delivered, have the potential to transform how we teach our current online and traditional onsite courses, as well as to create new opportunities for online learning throughout SBU.

It is the mechanism by which we deliver high-quality education to the M (Massive number of learners) in MOOCs that presents both a technical challenge and an educational opportunity. Many of the technical tools and teaching strategies we will need to employ to address the massive number of learners in MOOCs can be applied to our online and onsite courses, resulting in the optimization of faculty time devoted to teaching and allowing more time for scholarly activities.

The design of the delivery platform--one that provides technical teaching aids, organizes content into manageable modules, and offers different levels of data access for analysis and research--is critical to our success in the MOOC arena and to our future success in online learning.

Findings

Through our experience, we have found that although our traditional online courses and programs address the problem of providing access to high quality education, they do little to reduce the amount of effort and time needed by faculty to successfully educate our students. In fact, faculty often describe the experience as more resource intensive than their onsite equivalent.

SBU MOOCs can achieve large scale educational impact by helping to reduce individual student-instructor contact. This can be accomplished in a number of ways: 1. Live classroom lectures are transformed into professionally produced, interactive and adaptive, recorded lectures and multimedia productions. Students are able to self-pace the “lecture” by pausing and repeating it as needed before moving on to the next content segment. They respond to specific questions that help them to identify when they have mastered the material and are ready to move on command, or when they need to work through an additional module of content and interactive materials designed for remediation. 2. Faculty are armed with data that assists them in diagnosing an individual student’s gaps in understanding the assigned content. They are provided with an instructor dashboard that graphically presents usable data which enables them to quickly identify which students are struggling and where in the curriculum content they need further guidance. This allows us to move from a measure of student-instructor ratio to a measure of student-valuable time with the instructor ratio.

The SBU MOOCs platform can provide feedback for continuous curriculum refinement based on student success. That is, student driven analytics will help to identify content areas that need improvement rather than us relying primarily on the student’s assessment at the end of the course. In addition, the platform will provide faculty with a mechanism for sorting out content into categories such as static, dynamic, or overlapping--static content being timeless materials that rarely, if ever, need to be changed; dynamic content being content that reflects ongoing changing bodies of knowledge that need to be updated regularly; and overlapping content that is shared among courses and/or programs. The organization of content in this manner will allow for a more efficient use of faculty’s time in keeping curriculum current and relevant.

Recent experience, fortunately someone else’s, has made it clear that when things go wrong for a MOOC, they go wrong on a massive scale. Technical issues are expected to occur and need to be planned for. Support systems and personnel need to be in place that can quickly identify and contain problems as they occur, communicate with everyone impacted by the problem, and bring it to a resolution.

MOOCs, if backed by the collective commitment of faculty and administration, and coupled with the capabilities offered by educational technology, have the potential to strengthen rather than detract from our ongoing teaching efforts.

Recommendations

It is this committee’s recommendation that:

First, SBU view MOOCs as a subset of our online learning efforts and technical investment, and recognize that there is an initial investment needed to ramp up, and an

ongoing investment needed to sustain our network infrastructure to support MOOCs, regardless of whether we develop in-house or outsource the delivery mechanism.

Second, online learning has existed here at our University for many years, in some cases decades, in different forms running on different platforms. Customized learning management systems and course management systems have been developed to meet the needs of students, faculty, administrators, staff, and the accreditation process of the various programs engaged in these activities. Success is dependent on our ability to learn from and build on the knowledge gained by these efforts.

Third, establish a MOOCs platform selection committee charged with developing criteria for evaluating different MOOC/LMS delivery systems.

Fourth, that as we move forward into the MOOCs arena, one of the first things we need to consider is whether or not it is in our best interest to join or possibly partner with an existing group or develop our own platform form. It is important to think of MOOCs as a subset of online learning efforts and recognize that technical investments will benefit our overall understanding of the online learning space.

XI. EDUCATIONAL IMPACT

Executive Summary

MOOCs offer the potential for greater flexibility, access, and quality in education, as well as for new revenue streams and for faculty to affect education in their areas on a wide scale. But MOOCs pose large potential threats: to our university business model, to our quality of education, and to the university faculty ecosystem balance of teaching vs. research. It is, therefore, important to carefully guide the development of MOOCs at SBU to ensure that the educational impact is positive. We recommend a standing SBU committee to guide us. We also recommend that SBU invest an appropriate level of resources and start developing our online capabilities today.

Findings

We first asked: educational impacts on whom? We considered different stakeholders: the world's students, SB students, the world's faculty, SB faculty, and SB University as a separate entity.

MOOCs are currently free. But we will assume here that business models are likely to emerge to allow universities to recoup at least some of the costs, since the driving forces for commercialization appear to be large and investors will be looking for a return.

Potential general positive impacts of MOOCs include: reducing the cost of education; greater access to education, greater flexibility for students and teachers (where and when they learn and teach; students can control the pace of their learning); better teaching (better pedagogy and production values invested per course; an ability to collect statistics on learning; and using online resources to supplement other forms of education), and the fact that flipped classrooms can provide students with more personal attention. They can also free instructors from the need to cover remedial or prerequisite material in class, if

this material can be covered via a MOOC. In addition, MOOCs can give students an opportunity to see what an academic field is about before committing to a major.

Potential general problems with MOOCs include: big investors could drive a race to the bottom (cheap education that is not very good); challenges in grading, evaluation and validating student identity or what students learn ("My bot will take your bot's course", ...); it is not yet clear how to scale teaching assistance and personal attention, a critical part of a quality education; and there is no business model yet by which universities can recoup their costs. A major concern is that modern web and telecommunications technologies have been destroying all business models that involve the sale of information. Another concern is that, so far, only a small fraction of students stay engaged to the end of a MOOC.

Potential positive impacts at Stony Brook include new revenue streams, if done well, and better learning outcomes in SB students (because of improved production and pedagogy, because online courses add a parallel source of learning for students, and because massive MOOC data can drive research towards improved education). For SB faculty, there will be opportunities to affect education on a wider scale than is now possible, and to potentially benefit faculty and departments financially. The development of MOOCs and online content requires research and production time, which has greater benefits and results than are evidenced by the final product. Part of the general charge of the standing committee will be to determine how much time and resources should be allocated to developing these new online and MOOCs courses. Additionally, new technologies offer opportunities to improve our teaching at SB. Potential negative impacts at Stony Brook are that: the drive to reduce our costs could be disruptive to our academic business model; experimenting with MOOCs will cost university resources; and outside investment could drive us toward lower-quality education.

MOOCs have the potential for a transformative change to US research universities, such as SB. Since WWII, US higher education has been powered not only by tuition, fees and state subsidies (and medical-school income), but also by revenue from contract research, mostly from federal government funding agencies such as the NSF, NIH, DOE and DOD. Research funding has engendered an ecosystem of *research superstars*. In this ecosystem, universities enter bidding wars for top researchers who bring in overhead dollars. Correspondingly, faculty promotions can depend strongly on research prowess. In the future, if MOOCs bring income, it could lead to a changed ecosystem in which there would also be *teaching superstars*. MOOCs could resurrect a sometimes moribund enterprise of university research into how to improve higher education. In these ways, MOOCs could alter the balance of the "Haves" and "Have Nots" among the faculty in research universities. It also follows that the universities that are now the world leaders in research are not necessarily the institutions that will win the *teaching wars* that could transpire in the new university ecosystems. University faculty who can combine authoritative content with high production values, outstanding pedagogy, and innovative technology can be big winners.

At this moment, there are great opportunities at all levels, from MOOCs to smaller online efforts, for a broad range of universities.

Recommendations

First, it is critical that SB put together an informed and experienced standing committee that can pay attention to trends, best practices and appropriate technologies, evaluate our opportunities and threats, advise and guide our faculty and administration, and invest our resources strategically and with a long term vision guiding our investments. It is critical that we not limit our focus just to MOOCs. We should have high-level awareness of all aspects of online education including, but not limited to, massive education. This committee should pay attention, and not just to our current market to college-age students seeking degrees that can enable their competency in the workplace. We should also pay attention to the market of individuals who aim for self-education and do not need degrees or high-level credentialing (e.g., high-school students aiming to learn subjects before college, adults in business and technology who aim to expand their skills and knowledge in their fields after they have already been credentialed, and people who simply have some general interest).

Second, SBU should begin now developing our capabilities. We should invest in our production capabilities, through our Center for TLT and the expertise of Dini Ziskin-Zimmerman. We should increase the quality of our pedagogy, through investments in our resources, such as the Center for Communicating Science. SB needs to develop an “inventory” of resources to invest in MOOCs and online education, in general, including in broad and extensive experimentation. SBU should develop Learning Management Systems or partner with others. We should provide resources and encouragement for faculty who have special prominence, special expertise, or special courses to develop the skills and teams they need.

XII. FACULTY INVOLVEMENT

Executive Summary

MOOCs (which entail massive education) and online education (which need not be massive) comprise major forces that will shape the future of SBU and other universities. Faculty should become informed. SBU will put together resources and information and a standing committee to help. When done right, online technologies already have the potential to help our faculty achieve better student learning outcomes, thus advancing our mission as a major international teaching and research institution. Our faculty can benefit from these new directions.

Findings

Here is a look at MOOCs and online education from a faculty perspective.

(a) As a faculty member, should you consider developing a MOOC?

We first distinguish between a MOOC (which, by definition, is Massive: i.e., aimed at reaching beyond campus, and, say, more than 1,000 students) vs. other forms of Online Ed

(which can be smaller, and can be aimed at SBU students, or off-campus). Note that at the present time, MOOCs are free; there is no general business model for deriving revenue. You are a good candidate for developing a MOOC if:

- You teach a large-enrollment course, and
 - You are a good teacher, or open to help, and
 - You are willing to invest the effort, now and continuing (since the improvements that are needed to be competitive with outside efforts are likely to take multiple upgrade cycles over several years) and
 - You are willing to work with a production team.
-
- Or, if your course is unique, or
 - If you have unique expertise or special prominence.

(b) Why use online education in your courses?

-- You can use a "flipped classroom". "Flipping" means that instead of teaching your traditional classroom lecture first followed by student study, students watch your lecture online before class time, so that class time can then be devoted to more personal attention and better learning outcomes.

-- Putting your lectures online may:

- Increase your efficiency: you make the lectures only once, instead of every year.
 - Increase your impact: other faculty and other universities can use your lectures.
 - Potentially lead to new forms of revenue (although there is not yet a business model).
 - Increase student learning outcomes: (i) by providing additional information beyond just a textbook, and (ii) by allowing the students the flexibility to pace themselves and choose their learning times and locations.
-
- Also of value: you can put associated material online, providing context, examples, worked problems, or background that some students need while others do not, without taking class time.

(c) If you want to know more, what should you do?

SBU will develop a "How To" for MOOCs and online education. It will describe the procedures, the resources available to you, the incentives available to you, and how your proposal will be evaluated. SBU will develop a library of exemplary MOOCs and online education activities on- and off-campus.

SBU will have a standing committee composed of experienced faculty, and of experts in production, TV, LMS, and on resources both inside and outside the university. They will be available to advise you. This same committee will evaluate proposals and do strategic planning for the University.

Recommendations

First, we ask that Stony Brook develop appropriate resources to inform faculty about MOOCs and online education. Second, Stony Brook should assemble an appropriate standing committee of experts. And SBU should provide exemplars of MOOCs and Online Ed, particularly the best ones by which to set our aspirations. Third, we recommend that faculty become familiar with MOOCs and online education. Fourth, we recommend that SBU and our faculty consider experiments aimed at improving or broadening education through online technologies and available resources. We believe that online education offers important opportunities for better learning experiences for our students' on- and off-campus, for improving our teaching skills, and for enhancing the caliber and branding of Stony Brook University. Fifth, we ask that Stony Brook University begin aggressively assembling the resources needed for us to become leaders in online education, including possibly in MOOCs.

XIII. ASSESSMENT

Executive Summary

Stony Brook has the opportunity to experiment with the MOOC model with both long- and short-term intentions. In the short-term, we can experiment in large-scale “splash” MOOCs featuring content unique to Stony Brook, as well as “rock star” faculty and presenters, both being used as a public relations mechanism and having the potential to increase visibility and enrollment to our institution. In the longer term, we should aim to enhance our ability to experiment pedagogically and technologically with MOOCs with the purpose of teaching and reinforcing important knowledge and skills for students at Stony Brook, within SUNY, as well as offering free educational value to the world at large. We recommend that the goals and outcomes of these initiatives undergo the same curriculum, assessment and evaluation process as traditional courses and that there be a quality improvement process to ensure continued quality and rigor in all MOOC offerings.

Ongoing advisory functions should be provided through an online education committee; however, day-to-day operation of MOOCs (and the larger online program component), including course development, design, delivery, faculty and student support and technology infrastructure, should be managed centrally within the institution.

Findings

“MOOCs are facilitated, they are not taught . . . as they rely heavily on the community to support the conversations. In the end it’s through peer learning and peer-to-peer connections that learning occurs in MOOCs, so it’s critical for each participant to reach out and connect with someone.”¹

The statement above summarizes and underscores the assessment challenges inherent in MOOCs. The revolutionary impact of MOOCs capitalizes on self-learning and active rather than passive learning strategies. A first rate MOOC becomes an interactive, structured, critical window through which everything a “student” wishes to know can be

reimagined and mastered. However, most MOOCs have simply been adapted from a traditional campus course designed for a specific student population. This means that many MOOCs fail to take into consideration the unique characteristics of the learners and the unique challenges of assessing student learning outcomes in this environment. For example, enrollment in a single MOOC can number in the thousands and learners can have divergent backgrounds and experience with the subject matter. Unless the course was specifically designed to these realities, by utilizing sophisticated learning architecture that effectively adapts to individual learners, the quality of the learning experience can be as divergent as the enrolled learners.

“Colorado State University’s Global Campus has agreed to provide students full transfer credit toward a CSU bachelor’s degree for an introductory computer science MOOC. They must earn a “certificate of accomplishment” from *Udacity*, the company supporting the course, showing that they passed, and then pay \$89 to take a proctored examination also offered by *Udacity* through a secure, physical testing center.”² Accreditation demands sustained assessment of student learning (knowledge, skills, and competencies) and the use of that data to improve the quality of education. In a typical MOOC, when a student successfully completes the course, the student receives a certificate (completion or completion with distinction) signed by the instructor. Individual instructors set the guidelines to award certificates. However, if college credits are to be awarded, issues of assessing learning outcomes, assessing the quality of the course, assessing the quality of the faculty, verification of identity of the learner, and verification of learning outcomes and competencies are unavoidable. .

Recommendations

First, this sub-committee recommends that SBU invest in courseware and a learning management system that “massively individualizes learning” and enables efficient and effective evaluation of learning outcomes.

Second, that SMART (specific, measurable, achievable, relevant, and time-bound) vision & goals must be articulated, and that appropriate assessment plans and detailed assessment strategies be developed for each MOOC offering. Data driven decisions that utilize appropriate instruments for data gathering must guide this initiative. For example, scheduled benchmark points at which assessment will occur should be standardized across offerings, and data driven decisions regarding at what competence level certificates, awards, or badges will be issued, should be established. Data driven, continuous quality improvement for the MOOCs, and the larger SBU online initiatives, is imperative.

Three, that determining goals and outcomes for the MOOC Initiative be clearly delineated and subject to periodic review, providing yearly reports on the number of MOOCs made available, users, demographics, and brand impact by the permanent online education standing committee. As this project conceptually comes together and task force recommendations are approved by the Provost and Faculty Senate, it is of the utmost importance that clear, articulated goals and outcomes of the online initiative be delineated and made public. An assessment plan that outlines the anticipated outcomes for the project, the level at which success will be determined, how the project will be assessed, by whom and when should be one of the tasks to be delegated to the permanent committee for online education. Decision criteria must be established as to how the project is deemed a

success, and if not, what actions will be taken; there must also be an exit strategy. This will provide accountability to the process by demonstrating that we are aware of the risks and associated costs and will have data upon which to make decisions. There will likely be distinct and separate project outcomes depending on the type of MOOC offered, the target audience and any anticipated revenues or learning outcomes.

Fourth, that we develop explicit design evaluation and delivery standards: While the courses carry no credit, assessment of participant learning and the learning experience is paramount to ensuring quality. As the proposed online education committee works to determine a process and criteria for MOOC course selection, it must also utilize the collective expertise of its members and the MOOC teaching faculty to review the course learning outcomes, assessment methods, and create metrics for determining a successful teaching and learning experience. An iterative assessment process is indispensable and educationally necessary. At the end of each course, the faculty members and assessment staff will review assessment data and any needed changes to curriculum, design or delivery will be made before the course is offered again.

Fifth, that the permanent task force for online learning elaborates explicit lines of accountability to our stakeholders. Given the “grand experiment” that Stony Brook is undertaking in this initiative, the development and assessment process must be made transparent to our constituents within the campus community, particularly if fees are charged or if the student tech fee is used in the development and delivery of these courses. Students and community members may feel that if the student tech fee is being used to deliver these courses “free” to the general public, then there must be oversight and accountability; therefore, the assessment process must be transparent.

Sixth, that quality student support services be maintained and enhanced: Much has been said about developing and supporting the teaching of MOOCs, and we cannot forget that, as an institution, we are also responsible for supporting the students in these courses. With minor adaptations, Stony Brook has the capacity and talent needed to begin supporting traditional online degree programs; however, the discussion needs to include individuals who will be responsible for supporting these students, including TLT instructional support, registrar, admissions, etc.

XIV. BRANDING

Executive Summary

A viable response to the opportunities/challenges of the large new MOOC movement can only be achieved (and have strategic coherence) as part of a larger effort in online education. This document assumes the building of *both* online capacity (delivered directly by Stony Brook on a tuition/fee basis) and contributions (drawn from online repertoire) to the MOOC environment (delivered by private external providers with currently ill-defined and uncertain revenues).

In view of our current status, Stony Brook has the opportunity to enter both the online and MOOC spaces with strong branding based on quality in all essential components: content, pedagogy, production values, and technological values and expertise.

First, Stony Brook has a long-standing tradition of scholarly, academic, and pedagogical excellence, strong diversity, exceptional geographic reach, and consistent instructional rigor. More recently, various academic departments have engaged in important innovative research in pedagogy. This foundation and reputation can be moved into the online/MOOC environment with appropriate institutional commitment to comparable excellence.

Second, isolated pockets of high expertise have been developed in the four areas essential to success in the specific online/MOOC environment: content development, online pedagogy, high video production values, and LMS-based online course delivery.

These two sets of assets can be combined to allow Stony Brook to initially enter the online/MOOC space with a few courses “branded” on quality in all facets of the endeavor. Moreover, with relatively modest investments in several areas, two capabilities essential to effective, long-term competition in the online/MOOC space are accessible: the capacity to develop new online/MOOC courses *and* to continuously improve existing online/MOOC courses.

In summary, Stony Brook is well-positioned to “hit the ground running” with a modest number of strong online/MOOC courses and to rapidly build a large repertoire of such courses, branded with the traditionally outstanding qualities of live Stony Brook courses and on the basis of sophisticated online pedagogy and technology.

Findings

Stony Brook’s initial capacity to brand itself positively and effectively in the online and MOOC space arises from two sources. First is our long-standing practice of, and reputation for, high academic excellence, rigorous instruction, strong diversity, and exceptional geographic range (from Southampton to Manhattan, from Long Island to the Turkana Basin, from New York to South Korea) in the post-graduate educational environment. Also, several academic departments have engaged in strong programs of systematic pedagogical research in the synchronous online educational environment, including Undergraduate Biology and Chemistry. These assets represent one vital, valuable foundation for moving into the online and MOOC space with a recognizable institutional brand based on educational quality.

Second are the individual centers of expertise in areas directly necessary to generate high-quality online and MOOC courses in the immediate future. These capabilities include the following.

Elite video production values: Stony Brook possesses a professional TV production studio and multimedia resources that are sufficient for professional production on a formidable scale. Moreover, we possess a professional staff giving us the immediate capacity to expand production significantly. (*Full* utilization of this physical infrastructure will ultimately require some staff expansion.)

Online pedagogy: Several academic departments have individually pursued programs of online education, accumulating very substantial experience. These include especially significant efforts in Biology, Business, Engineering, and Nursing. Of particular importance are the programs in Undergraduate Biology (Biology Online) and the School of Nursing, where online education has been going on for, jointly, for the last 17 years, and where efforts have been made to teach large numbers of undergraduate students online.

Also noteworthy are the significant number courses in Engineering, being offered for all SUNY students, and the development of “live-like” synchronous online teaching in the College of Business. TLT and the Faculty Center currently have five full-time dedicated staff with expertise as instructional designers and technologists in the online learning environment.

Online delivery technology: The private MOOC providers have their own learning management systems (LMSs) into which Stony Brook would deposit its MOOC content. However, if we are to build our own proprietary online program (as we believe we must), we will need one or more LMSs for that purpose. Systems from the private MOOC providers are unavailable or would produce insuperable conflicts of interest. Moreover, older, traditional LMSs (like Blackboard) are not designed for online education and are mounted by large, entrenched, often unresponsive corporate cultures. In view of these limitations, it is noteworthy that two online LMSs have been developed locally.

First, that an LMS has been developed in the School of Nursing, originally designed for teaching graduate/professional students. This system was built with grant funding over 15 years ago and is currently maintained and updated by Stony Brook staff. More recently, this LMS has been deployed to teach nursing courses to classes as large as 170 students.

Second, that an undergraduate-focused online LMS has been developed by a local, USB alumni-owned and operated company (Streaming Tutors). This LMS has been developed over the last twelve years, supported by private capital. The Streaming Tutors LMS has been used to successfully deliver course content to approximately 5000 Stony Brook students over ten years. Moreover, this LMS has been used to teach online classes as large as ca. 200 and these online courses have been explicitly designed to accommodate the essentially unlimited numbers of students’ characteristic of the MOOC environment. The Streaming Tutors LMS is currently in its third software generation, and offers strong capabilities and future development opportunities.

Recommendations

First, Stony Brook should move immediately and aggressively to build its online offerings and capability, treating its MOOC offerings as a strategic component of this larger effort.

Second, Stony Brook should deploy resources to sustain and grow essential online/MOOC support capabilities, including video production in diverse settings and LMS development.

Third, these first two actions will allow Stony Brook to build online/MOOC content branded on the basis of fundamental educational and technical quality (first branding opportunity). This will allow us to brand effectively even in high-demand, fundamental courses whose delivery is competitive with other institutions. One or more MOOC-ready courses currently exists, and others of high-quality could be built over the next 1-2 years.

Fourth, Stony Brook has scholars who have made unique contributions to the knowledge enterprise, as well as celebrity faculty with global visibility. These individuals represent a second branding opportunity to deliver online and/or MOOC courses with Stony Brook-specific content. Several such unique courses either currently exist or could be produced in a timely fashion.

Finally, in support of these goals, Stony Brook should create a permanent task force with the goal of supporting these endeavors and monitoring the quality of online/MOOC education.

XIV. QUESTIONS

Note: These questions came from the Task Force, and the Town Hall meetings on both East and West Campus.

What incentives would encourage faculty or departments to participate in MOOCs/online teaching?

What barriers to participation do you currently see, financial or otherwise?

What administrative support structures are needed?

As a student, in what scenario will you consume/engage with MOOC content?

Is there going to be any help with this for instructors? Will the Task Force be helping instructors turn classroom courses into online courses?

Has there been any thought to certain barriers, like international students who have to take TOEFL? How will we deal with students whose first language is not English?

Will the captions be able to be translated to other languages?

You could take courses for free online and then sit for the certification exam. It is just a matter of thinking strategically. What areas do we see as potential revenue sources?

Has any thought gone into credit allocation for each of the classes and loads for instructors? Will there be a clearinghouse?

“Ten years ago when I was a student and the idea of online courses and MOOCs was first introduced, faculty were resistant because they would have to continually revise and enhance their course content. They’d have to revise their tests every semester. That was a big roadblock years ago, but some were for it. Dean Stein was a big advocate for it 10 years ago. I’m glad this is being investigated now, but wish Stony Brook had been a leader instead of a follower. I wish the committee the best of luck.”

“How will this help us meet our programmatic goals for our undergraduate majors? This might be useful for large enrollment courses, but I am hard-pressed to see how this will necessarily help at the upper levels. In Geosciences, we require a great deal of hands-on learning and research/ lab work. How can this actually be something of programmatic importance and how will we actively try to meet those requirements?”

Follow-up: “We’d need to be careful about providing clinical experience off-site. There’s an assessment issue – how do we validate/prove that the level of education is high?”

Comment from an undergraduate music student currently getting a second degree:
“I studied foreign languages and then taught English in Spain, Mexico, and China. In every place, I spoke to other teachers about using MOOCs or other online platforms to teach languages. I’m currently learning Mandarin using Livemocha. It’s been working out pretty well, but there’s a lot of potential for online learning for languages. If you’re looking for participation from undergraduate students, please call me. I run an organization called **EDUCATION IS MY ADDICTION.**”

“Have any of the professors sitting up on stage had any direct experience with this – working with staff to actually run a MOOC?”

“I have a recommendation. I’ve worked at the University for six years. When looking to make a platform selection, yes, it should be flexible to handle all kinds of multimedia, but it should also be easy to remove or transfer data/content. We should be asking: ‘How can we get the data out?’ We are looking at Orientation for SUNY Korea and also a large number of online students and non-traditional students and so we are very interested in being involved and seeing where this goes.”

“I have a concern. This University has been counting its pennies for the last 5-6 years. What is the tangible return on investment involved in developing MOOCs and an online learning portfolio of programs?”

“How can you make money on something that’s free? We are talking about this as part of a larger online education portfolio. As far as charging for a MOOC, we won’t be doing that, but, there’s a non-tangible, effective PR aspect to this thing. It’s not quantifiable, but it is a benefit that we have to look at. We do the most amazing things here at Stony Brook that people inside and outside the University don’t know about.”

XVI. SUBCOMMITTEE CHAIRS AND MEMBERS

Co-Chairs: Eduardo Mendieta and Wendy Tang

Committees	Charges and Membership (Chair in Bold)
Inventory	<p>Are MOOCS here to stay or will they wither on the vine of tech innovation? What's out there? Which schools use them? Typology of models. What is already at SB? Which schools/courses/departments use them?</p> <p>Members: Laura Fochtman, Barney Grubbs, Tom Hemmick, David Paquette, Joanne Souza</p>
Finance	<p>Models for Revenue Generation - faculty, school, staff, department Models for financing the production of MOOCS</p> <p>Members: Mary Remmler, Joanne Souza, Marsha Pollard, Chuck Powell, Paul Edelson</p>
Legal	<p>What is SUNY's position on MOOCS? Are there copyright issues? Who owns the MOOC? What are the legal policies of other states where universities use MOOCS?</p> <p>Members: Nathan Baum, Laura Fochtman, Chuck Powell, Suzanne Shane</p>
Structure	<p>On and Off Campus/Hybrid Credit and Non-Credit SUNY-wide MOOC synergy - MOOC systemness Certificates, Degrees, Authentication, and Assessment</p> <p>Members: Patricia Aceves, Paul Bingham, Tom Hemmick, Margaret Schedel, Debbie Zelizer</p>
Platform	<p>What is required to produce quality MOOCs? Do we have the infrastructure to produce high-quality MOOCs? What are the best platforms out there? How much would it cost to outsource the production of MOOCs?</p> <p>Members: Keri Hollander, Erez Zadok, Chuck Powell, Tim Vallier, Dean Miller, Harris Papadopoulos</p>
Impact	<p>How will MOOCs positively enhance the SB experience? How will MOOCS affect adversely the SB experience? Hybrid Model - on-campus resident with MOOCs options MOOCs and the SB mission - friend or foe? Can MOOCs solve transfer and pipe problems? Identify those plugs.</p>

	<p>Unique student learning outcomes expected?</p> <p>Members: Nathan Baum, Henry Bokuniewicz, Ken Dill, Lori Scarlatos, Iris Fineberg, Keri Hollander</p>
Branding	<p>Identify educational strengths that could be the foundation for non-duplicate MOOCs</p> <p>Identify what SB has to offer via MOOCs that no other MOOC university can duplicate</p> <p>What would a unique SB MOOC look like?</p> <p>Identify school, departments, programs that could produce high-quality MOOCs relatively quickly.</p> <p>Members: Paul Bingham, Ken Dill, David Paquette, Lori Scarlatos, Dean Miller</p>
Assessment	<p>How will the University regulate MOOCs?</p> <p>Quality control, reputation management, and University branding are major issues</p> <p>Assessment of courses, faculty, students and MOOC providers</p> <p>Who should be assigned responsibility for quality?</p> <p>Members: Patricia Aceves, Henry Bokuniewicz, Margaret Schedel, Debbie Zelizer, Iris Fineberg, Luz Marina-Reyes</p>

XVII. APPENDIXES

Appendix A.

MOOC (Massive Open Online Courses) Taskforce Calendar

Thursday, Jan 24, 2013: 10:15 am – Noon General Task Force Meeting

Agenda:

1. Format and Slides for Town Hall Meetings
2. Website of the Taskforce.

Week of Jan 28, 2013: Provost to E-mail to University community about Taskforce, its website and Town Hall Meetings.

January 31st, 2013: Wendy and Eduardo go to the Undergraduate Student Senate to present the Task Force, explain our charge and invite student input.

Friday, Feb 1st, 2013: Chairs of subcommittees to e-mail Final PPTs for Town Hall meetings to Meg, Chuck, Eduardo and Wendy.

Monday, Feb 4, 2013: Eduardo and Wendy to attend University Senate Meeting (time and location needed); Final PPTs for Town Halls to be sent to Provost for approval.

Monday, Feb 6, 2013: Eduardo and Wendy report to the Chair's Meeting of CAS.

Saturday, Feb 9, 2013: Chairs of subcommittee to e-mail two-page reports to Eduardo and Wendy. Specifics of the report: two-pages, single-spaced, 1,000 words with 3 parts:

1. Summary, 2. Findings, 3. Recommendations.

Monday, Feb 11, 2013: Town Hall Meeting (East Campus)
Date: Monday, Feb 11, 11:30 am - 12:50 pm.
Location: HSC Lecture Hall 6 on Level 3 (capacity 128).

This was postponed to 2/18 due to Snow Storm

Wed, Feb 13, 2013: Town Hall Meeting (West Campus)
Date: Wednesday Feb 13, 1-2:20 pm.
Location: Wang Center Theater.

Refreshments will be served

Thursday, Feb 14, 2013: General Task Force Meeting

Agenda:

1. Feedback from Town Hall meetings
2. Draft of Final Report
3. PPTs for Presentation to Provost

Thursday, Feb 18th: Wendy and Eduardo report to A&S Senate

Thursday, Feb 21, 2013: 8am PPT Presentation to Provost and PAG

Monday, Feb 25, 2013: Complete Draft of Report distributed to members of taskforce for comments.

Thursday, February 28, 2013: Submission of Preliminary Report. Meeting with Provost Assanis to discuss future steps.

Wednesday, April 24th 2013: Provost Assanis Presents on MOOCs to the University Council.

Appendix B:

Proposal by Jan Diskin-Zimmerman

Immediate Plans:

The Provostial-Senate MOOCs task force is aiming to offer 2 online courses immediately:

- 1) Prof. Paul Bingham's biology class BIO 357
- 2) Ethics roundtable of courses, based on 9 ethics lectures (can be seen presently on the Stony Brook doctoral website)

Requirements:

In the near future, we can do 4 courses--possibly starting in the summer but certainly in the fall.

To do this we need to buy one more HD camera for the television studio and a backup switcher. We should have 3 more HD cameras for our fieldwork, so, in total, we need to acquire 4 more HD Cameras.

The television studio would need to have 3 camera people (freelancers) on for each class, Jan Diskin-Zimmerman, and we need at least one full time photographer/editor

Recommendations:

I think the first thing we need to do is lose the fear of the loss of jobs and focus on this as an opportunity for the entire educational enterprise to move forward.

I am focusing this on the new business model that is to look forward and identify the "jobs that need to be done". Students can't find jobs, so let's help them.

There are 2 ways to look at online courses: 1 as very altruistic (everyone should have access to an equal education); or 2) that this is a business. I would prefer that we treat our courses as a business.

Let's get some research on the top 5 or so jobs that employers are looking for. Find out what courses an employer would want to see that applicant having explicit knowledge in and base our initial online courses on that. For instance, Science and Technology writers: biology, ethics in science and technology, cultural anthropology and computer science!

In other words, packaging or bundling much like is done when you buy cable television. It might even be possible to have sponsorship from the private sector looking for skilled workers.

I propose we put a team together for each class to assist the faculty in consolidating their course, both graphically and physically (breaking the course down into appropriately

timed segments for online education). The team would consist of one TA, one undergrad, one technologist (student, much like they hire students for the A.V. office) and a liaison from the TV studio...student as well.... Together the team would supply a production team with the goal in mind of excelling and enhancing an online course. I would encourage the team to spend time curating the course to link to other informed education on the faculty's research.... this could supply the instinct in us to roam and cater to our voyeuristic tendencies, not to mention our diminished attention span. I could begin training in the studio to teach teams how to prepare a show with the existing standard definition equipment but would need an upgrade (switcher and 1 more camera) by the time we decide to begin recording these classes.

I would select a few faculty who would be willing to work alongside a trainer from the Center for Communicating Science and or Jan Diskin-Zimmerman, or both to teach on camera performance.

I would need 3 experienced camera people for the day of the course recording. I (Jan Diskin-Zimmerman) would very much request a permanent position right now, camera person/editor/lighting person to enable us to move forward, as it has been very difficult not having a reliable daily employee.

I would encourage us to work towards top quality performances, better quality versus quantity. As we build new buildings, we should put 2 HD cameras and a switcher with a room built in for the director in every lecture hall, much like the Simons Center. As the quality of robotics gets better, we can look at using them but, for now, we need to hire freelancers as camera operators.

I would encourage our university to put its own educational channel on Cablevision. It would cost us almost nothing as they are looking for content...we have content and they have the distribution system....that puts us directly into our community as well as online globally. (Athletics is presently doing this.) We could sell subscriptions to content. We could think of bundling our unique Stony Brook University classes or Centers and bundle them.

I think every faculty member should have their own webpage attached to their course with a twitter sight for office hours.

We can think about classes in so many different ways...thinking outside of the box though, think about a class as an interview possibility, "Science on Tap" (our show we do in a bar with a scientist for the Center for Communicating Science) or even a game show.

Appendix C:

Projected MOOCs and Online Course Revenue Model

MOOCS AND ON-LINE COURSES REVENUE MODEL

	<u>Year 1</u> 4 Courses + Orientation	<u>Year 2</u> 20 Courses	<u>Year 3</u> 50 Courses	<u>Notes</u>
Revenue				
Fees		100,000	250,000	TBD - Online Fee target is \$100/student/course Testing/certificate fee
Tuition		1,094,700	2,736,750	Assume tuition for 1/2 courses developed, UG, 70/30 NY/OOS, 100 enrollment per course, 3 credit
Cost Reduction		60,000	100,000	863 repeat classes = about 30 sections at cost of~ \$10K per section; reduce by 20% = \$60,000, increase in 2nd year
	-	<u>1,254,700</u>	<u>3,336,750</u>	
Costs				
Faculty course buyout for course development	16,000	100,000	250,000	
Teaching assistance	8,000	80,000	200,000	
Video Production	75,000	320,000	850,000	Includes instruct tools/design/anticipated infrastructure
Adjunct salaries, non credit		50,000	125,000	Assume for half the courses developed
Faculty salaries, credit bearing courses		166,667	416,667	Assume for half the courses developed
	<u>99,000</u>	<u>716,667</u>	<u>1,841,667</u>	
	(99,000)	538,033	1,495,083	

XVIII. REFERENCES

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