Technology Strategy and Management

MOOCs Revisited, With Some Policy Suggestions

Assessing the rapidly evolving realm of massive open online courses.

It is approximately one year since I wrote a column on massive open online courses (see "Are the Costs of ‘Free’ Too High in Online Education?" Communications, April 2013). Since then, we have seen many more analyses on the subject. I also received several responses to my column, from positive to negative, and served this past year on an MIT task force examining the future of education (see http://future.mit.edu/).

Probably the most disturbing response to my column came from a professor in the U.S. who had decided to teach his course on one of the major MOOC platforms. He thought MOOCs would be the future and did not want to be left behind. Yet, he confessed regret that he might be contributing to the "tragedy of the commons": He feared his individual decision would not be good in the long run for his university or for the education profession. The image that came immediately to my mind was of the natives on Easter Island who cut down the last tree. They got fuel for another day but eventually their civilization collapsed. Did they know what they were doing?

I expressed two main concerns in my April 2013 column:

- Free online courses might set a threshold price of "zero" for college education and seriously undermine the economic models of private colleges and universities that rely on tuition. The scenario in my mind was what happened to other industries affected by platform dynamics and the Internet, such as newspapers, magazines, books, music, video, and software products. These digital goods have close to a marginal cost of zero for reproduction and distribution but this does not mean that they have a zero cost of production or zero value.

- Many colleges and universities would offer online courses but eventually find it difficult to subsidize free education, as MIT has already experienced with Open Courseware. Then, we might be left with only a few wealthy universities and MOOC platforms dominating the online education industry.

With regard to my first concern—threats to the economics of tuition-dependent educational institutions—it
is still much too early to gauge the impact of MOOCs or digital technologies more broadly. Nonetheless, university administrators seem to understand the economic challenges very clearly and are already making some adaptations to the free MOOCs model. For example, MIT and Harvard jointly launched EdX in 2012 after providing $60 million in funding. The courses currently remain free, though some courses charge a fee for an ID-certified certificate. EdX in the future is likely to charge for credentials such as certificates of completion. Some of these courses may be eligible for degree credit at some institutions, though EdX does not at present offer transcripts. EdX is also licensing some materials for a fee to other institutions. Coursera is heading down a similar path, that is, to charge for credentials or grading. Udacity already charges for grading. In other words, a business model is emerging.

A business model is critical because education always costs something to produce. In the residential world, the most elite institutions, which include MOOC pioneers such as MIT, Harvard, Stanford, Princeton, and the University of Pennsylvania, set the price for tuition. Today this is over $50,000 per year. These prices are then copied by other institutions. However, only the elite schools have large enough endowments and diverse sources of revenue that allow them to give significant financial aid to needy students as well as to subsidize experiments such as free MOOCs. The average MIT student, for example, pays only half the nominal tuition rate. Moreover, net tuition has not exceeded more than 15% of MIT’s revenues in recent decades; we rely much more heavily on research funding as well as endowment income. Another economic challenge is that MOOCs are more expensive to create and produce. They resemble movie productions far more than traditional college classes, especially if they require small armies of teaching assistants to be effective.

With regard to my second concern—that a few Web platforms, led by the most elite institutions, would dominate the MOOCs movement—this does seem to have occurred. Again, however, we see some adaptations. There are three main MOOC platforms: EdX, which is non-profit, as well as the for-profit Coursera (founded by two Stanford professors in 2012, with $85 million in venture capital) and the for-profit Udacity (established in 2012 by Sebastian Thrun, a formerly tenured professor at Stanford and Google Fellow, and two other partners, with substantial venture funding). However, many universities and colleges now contribute content to the two main platforms. As of early 2014, EdX counted 27 institutions among its members and Coursera 108 (see https://www.edx.org/ and https://www.coursera.org/). Enthusiasm for MOOCs one year later also seems dimmer because data so far suggests they are unlikely to replace in-person education anytime soon. For State in small classes of 100 students, found the online students did much more poorly than regular students, even with teaching assistants. (EdX also did an experiment with San Jose State and got somewhat better results, supporting the argument that MOOCs can work well when combined with live instruction in a “blended” education model.) Udacity is now trying to work with companies to offer vocational training rather than college classes. In particular, it has partnered with AT&T and Georgia Tech to offer a three-semester master's degree in computer science for $6,600—one-seventh the tuition rate for out-of-state students.

The breadth of MOOC offerings is growing but also leaves considerable room for traditional university education. The first MOOCs were based on large undergraduate introductory lectures. Putting these types of courses online has many advantages: Students can learn at their own pace, there is no need to keep giving the same lectures year after year, students can view the lectures from different locations or times.

_email comment by Sanjay Sarma, MIT professor of mechanical engineering and director of digital learning, January 11, 2014._
institutions, among other benefits. Yet having access to live instructors also helps students learn, as the San Jose State experiments suggest. It is possible to have interactive Web classes (the online and for-profit University of Phoenix has done this for years), but these become increasingly difficult as the number of students rise. In addition, many advanced classes and seminars do not adapt well to the MOOCs format.

In short, we have made considerable progress finding ways to balance laudable educational goals and technological progress with economic and pedagogical realities. Nonetheless, there remain several questions we still need to resolve. I have been taking notes the past year and consulting with my task force colleagues, and this is my current list:

- Should MOOCs aimed at general education remain free? I think this is possible and desirable. They will require subsidies to produce and deliver, and salaries for the faculty and teaching assistants. However, the high-traffic MOOC platforms can generate indirect revenue to offset some costs, such as by selling ads or lists of CVs, or licensing content. Wealthy universities and colleges as well as foundations and governments also can contribute some funding. Venture capitalists are involved as well, though it is anyone’s guess whether their investments will pay off.

- Should MOOCs with a credential, grade, or credit toward a college degree be free? I think not because I still believe “free” in the long run will damage the economic model of the many non-profit educational institutions that rely on tuition. There is another purpose as well to setting a price on these courses. If there are even very modest charges, it is likely the number of students who register for MOOCs will drop dramatically. However, the number of students who complete the courses should also rise dramatically. We need to run more experiments. I would try to set the price of a credentialed or graded MOOC to balance these two goals—providing education to people who cannot come to a college campus versus making enough money to cover costs plus some excess to invest (such as in new course development or infrastructure).

- What about institutions or individual faculty that want to emphasize MOOCs’ philanthropic potential? Surely, we can still offer education for free or at very low cost to many students around the world through scholarships or tuition waivers, just as we already do for traditional students.

- How should institutions treat MOOCs in terms of degree credit, apart from tuition charges? Some schools recognize courses taken at other schools in order to waive requirements but not to accelerate completion of a degree; other schools accept transfer credit toward a degree but with some limits. I would treat internal MOOCs as regular classes and external MOOCs from accredited institutions, as long as they come with grades and credit, like any other college classes where a student applies for transfer credit.

- Should a student be able to get a college degree solely through taking MOOCs? I think the answer here is a qualified yes, but I would treat the degrees more like we currently treat extension school degrees—give them a specific designation. It is already possible for students to get regular college and advanced degrees (even Ph.D.’s!) fully online from some institutions, with or without MOOCs. The big question for me is whether a student who only takes, say, EdX or Coursera classes, should get the identical degree as a student who physically attended Harvard, Stanford, MIT, Berkeley, Princeton, Penn, Michigan, or other universities where only a fraction of the applicants are admitted? At present, there is too much variance in the quality of the students and the educational experience is not the same. They should not get the same degrees. Nonetheless, EdX, Coursera, and other MOOC platforms may themselves evolve into degree-granting institutions.

These are brief policy suggestions for some difficult questions. When it comes to education, there are also larger issues at stake, as reflected in another email message I received from a former business school dean. He too worried about the threat MOOCs might have on the business models of tuition-dependent universities. More than this, though, he worried about the need to threaten institutions such as his. He thought the faculty union at his school had grown too powerful over the years and used its influence to resist curriculum innovations as well as to undermine the tenure process by limiting outside evaluations, which focused on research quality. Ultimately, he saw student education as suffering. So, whatever else they may do, MOOCs can be a useful “kick in the pants.” They can persuade complacent professors and institutions to improve their educational product lest we be replaced by online videos and grading software.

My greatest concern at this point is clarity in mission. Should universities and colleges focus on educating their local tuition-paying students or on educating the world? Many professors do both, such as by writing mass-market books and articles, and they do research. But it is very difficult to do everything well. Creating and running a successful MOOC seems to be extraordinarily difficult and time consuming, and not what professors are usually trained to do. So what is the first priority? Too much attention on how to better disseminate existing knowledge may ultimately weaken our ability to create new knowledge. It would indeed be a “tragedy of the commons” if the fascination with online courses diminishes the time and commitment of our best faculty to do world-class research, which we need to create the MOOCs as well as the conventional classes of the future.

References

Michael A. Cusumano (cusumano@mit.edu) is a professor at the MIT Sloan School of Management and School of Engineering and author of Staying Power: Six Enduring Principles for Managing Strategy and Innovation in an Uncertain World (Oxford University Press, 2010).
As the media’s infatuation with massive open online courses (MOOCs) continues unabated, some academics seem to be succumbing to the hand-wringing about whether MOOCs will destroy higher education as we know it (see “Will MOOCs Destroy Academia?” by Moshe Vardi in the November 2012 issue of Communications). Is it a bad thing that we “have let the genie out of the bottle,” as Vardi suggested in his Editor’s Letter? I argue that a close, systematic, and sustained look at how MOOCs are actually being used should persuade the careful observer that tasteful use of MOOC technology can strengthen academia.

Note I do not say “MOOCs will strengthen academia.” They certainly can, but whether they do depends on how they are received and used by academics. Full disclosure: besides being a MOOC instructor myself, I am the recently appointed faculty director of Berkeley’s MOOCLab, which extends Berkeley’s existing online education programs with MOOC research and practice. But I am not cheering for MOOCs because I have this position; rather, I agreed to take the position because I am excited about the possibilities of MOOCs and other online education. In particular, if MOOCs are used as a supplement to classroom teaching rather than being viewed a replacement for it, they can increase instructor leverage, student throughput, student mastery, and student engagement. I call this model the SPOC: small private online course.

To set the context for this discussion, let me use the SPOC idea to offer counterexamples to some “MOOC myths” in recent media coverage. While most myths are based on a kernel of truth and may be true of at least some MOOCs, they are just as often untrue and it is a disservice to interested readers to present them as foregone conclusions.

**Myth:** Universities will use MOOCs to lower costs by firing faculty and teaching assistants, thus sacrificing educational quality. If universities were looking to replace existing courses partially or entirely with MOOCs, this might be true. However, many universities are successfully using MOOC technology quite differently. For example, in a recent pilot program at San José State University in California, students in an analog circuits course used MIT-authored MOOC lectures and homework assignments created by Anant Agarwal.1 The students’ in-classroom time was spent working on lab and design problems with local faculty and teaching assistants. The students in this SPOC scored five percentage points higher on the first exam and 10 points on the second exam than the previous cohort that had used the traditional material. Even more strikingly, the
many aspects of traditional classes, on edx.org.) is available as “BerkeleyX CS169.1x” material covered has changed very little (history) even though the fundamental instructor and course ratings (in fact, nearly fourfold while yielding higher increase the enrollment of the course SPOC model has allowed us to in...

Closer to home, my colleague David Patterson and I created a MOOC based on our upper-division software engineering course at Berkeley, and subsequently used the MOOC material as a SPOC in our on-campus course. A key feature of this course is four different autograders for different types of software engineering assignments. These autograders were created by investing several hundred engineer-hours in repurposing tools used by professional programmers. Students not only get finer-grained feedback than they would get from human teaching assistants, who can spend at most a few minutes per assignment, but now have the opportunity to resubmit homework to improve on their previous score and increase mastery. The autograders test both code completeness and code correctness, and will soon give feedback on code style. As the accompanying figure shows, the SPOC model has allowed us to increase the enrollment of the course nearly fourfold while yielding higher instructor and course ratings (in fact, the highest in the course’s 20-year history) even though the fundamental material covered has changed very little. (The MOOC version of the course is available as “BerkeleyX CS169.1x” on edx.org.)

Myth: MOOCs will fail because many aspects of traditional classes, such as small-group discussions and face-to-face time with instructors, do not work in the MOOC format. This assertion is true, but it implicitly and incorrectly assumes that replicating the classroom experience is the proper goal for an online course. If that were an appropriate goal, then MOOCs would indeed fail to meet it. However, as educators, a better question for us to ask is this: What can be delivered effectively through this medium in a way that helps our on-campus students, and has the valuable side effect of helping the hundreds of thousands who will not have the privilege of attending our universities in person? (Indeed, many of our MOOC students...
course’s open-ended design project. Indeed, at universities on the quarter system, it is common to offer a two-quarter sequence in which the first quarter focuses on well-circumscribed assignments and the second quarter focuses on a design project, since a single quarter cannot cover both. The first course clearly has value despite lacking a design project, and could be offered as either a MOOC or a SPOC. By analogy, MOOCs that do not offer “the same” experience as a complete residential course also have value, and our job as educators is to make judgments about where that value lies and how to combine it with the other education modalities we offer our students.

Myth: MOOCs distract faculty who should be focusing on improving their on-campus pedagogy. Even if using a SPOC in the classroom, faculty can still leverage the scale of an (open) MOOC to enhance their classroom teaching. In fact, the large enrollments of MOOCs offer us new and unprecedented opportunities to improve our on-campus courses using inferential statistics techniques that just do not work at smaller scales, and so were previously available only to large-enrollment “high stakes” exams such as the GRE or SAT. For example, exploratory factor analysis allows us to identify questions that test comparable concepts, giving instructors a way to vary exam content. Item response theory allows us to discover which questions are more difficult (in the statistical sense that higher-performing students are more likely to get them right). A/B testing gives us a controlled way to evaluate which approaches have better effects on learning outcomes, just as high-volume e-commerce sites evaluate which user experience results in more purchases. None of these techniques works on classroom-sized cohorts (say, 200 or fewer students), but we are applying all of them to our current MOOC. Indeed, not all instructors will be eager to receive the avalanche of MOOC data telling us what is not working in our courses and how we can improve them, but our sense at Berkeley is that MOOCs may well raise the bar for acceptable teaching on campus, as well as improve the recognition of good teaching, perhaps finally bringing to a close the era of recycled PowerPoint slides.

In addition, in each of four offerings of our software engineering MOOC totaling over 100,000 enrollees, about 8%, or nearly 32,000 total, identified themselves as instructors, suggesting that MOOCs may be even more effective than traditional textbooks at “teaching the teachers” and getting innovative new pedagogy out to a large audience. In fact, our faculty colleagues who are classroom-testing our unconventional new textbook Engineering Long-Lasting Software: An Agile Approach Using SaaS & Cloud Computing are all doing so in conjunction with our MOOC (EdX CS 169.1x), so they can take advantage of the autograders, screencasts, and other materials.

Myth: MOOCs will reduce diversity in instructors and teaching approaches because economics will favor a “winner takes all” scenario in which one specific MOOC will dominate each course. In her widely cited Tools For Teaching, Davis recommends that lecture styles and teaching strategies should vary depending on the nature of the material and the target audience of students. Even if one or a few MOOCs dominate a particular course, thereby replacing various instructors’ different teaching approaches with the MOOC instructor’s single approach, we can, like Doug Fisher and others, selectively adapt the content for SPOC use in our own on-campus courses, as we have long done with textbooks. Indeed, one could have raised a similar complaint about the printing press: it homogenized book production and eliminated the social rituals associated with acquiring books. Yet it also created vastly more readers, gave voices to authors who would never have had them, and introduced new tools that teachers could use in conjunction with their lecturing. In a similar way, MOOCs will not replace high-quality face-to-face instruction, but we can reach many more learners, leading to a net social and economic benefit, and we can give many great teachers a more prominent voice than they have had since Socrates.

Conclusion

MOOCs represent a new technology opportunity whose potential pedagogical impact needs to be researched. I have argued that MOOCs themselves can yield valuable information because of their scale, and that MOOC materials can be used in a blended small private online course setting to supplement the classroom experience. Both MOOCs and SPOCs are two design points in a wider space in which experiments are possible. To be sure, many bad experiments will be tried—some are probably already under way—and many worthy experiments will fail or have a different outcome than desired. But if failed experiments were an obstacle to doing world-changing research, we academics would probably choose a different job.

References


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ENSEIGNEMENT / De nouvelles interfaces, une pédagogie personnalisée et un contrôle automatisé des connaissances devraient rendre les cours magistraux en ligne encore plus attrayants.

L’éducation face à la révolution des MOOC

Jacques Henno

Imaginez une France où tous les bacheliers pourraient suivre la formation de leur choix : les admissions post-bac se fermaient non plus en fonction des places disponibles, du niveau des élèves ou d’un tirage au sort, mais uniquement selon les vœux des futurs étudiants. Cette révolution est déjà en marche en Californie, où seulement 16 % des étudiants des universités publiques obtiennent une maitrise en quatre ans, en partie faute de place dans les amphithéâtres. Du coup, le Sénat californien a proposé que ces universités valident les cours gratuits suivis en ligne par les étudiants depuis chez eux, devenus célèbres sous le nom de MOOC (« massively open online courses »).


De telles audiences font rêver entrepreneurs et investisseurs. L’un des deux auteurs du cours sur l’intelligence artificielle, Sebastian Thrun, chercheur à Stanford et ingénieur chez Google, a récolté au total 21,5 millions de dollars (16,2 millions d’euros) pour Udacity, la start-up qu’il a créée dans la Silicon Valley début 2012.
Quelques semaines plus tard, deux autres professeurs de Stanford, Andrew Ng et Daphne Koller, lançaient Coursera (65 millions de dollars levés au total). « Les MOOC constituent le dernier service massif proposé sur le Web qui ne soit pas encore organisé, ce qui permet aux précurseurs de se positionner », résume Alain Mille, chargé de mission sur les MOOC au CNRS.

Grâce à cet afflux d’argent, la qualité a beaucoup progressé. Si les premiers MOOC étaient parfois tournés avec des téléphones portables, les nouveaux sont désormais en haute définition. « L’accès aux MOOC est peut-être gratuit, mais ils coûtent de plus en plus cher à réaliser : aux salaires des enseignants s’ajoutent ceux des spécialistes de l’audiovisuel et le coût du matériel », s’inquiète Olivier Ertzscheid, maître de conférences en sciences de l’information à l’université de Nantes.

Controoler l’assiduité

Pour faire face à la concurrence du privé, les universités se regroupent. « Berkeley devrait bientôt proposer sur notre plate-forme des cours de musique et l’EPFL, l’Ecole polytechnique fédérale de Lausanne, des cours de français », détaille Howard Lune, professeur associé en informatique à l’EPFL, qui s’intéresse aux MOOC.

D’abord, en facilitant leur accès dans les pays où la bande passante n’est pas toujours suffisante. Christina Fragouli, professeur associé en informatique à l’EPFL, a par exemple mis au point VideoBee, une application permettant de télécharger des bouts d’une même vidéo sur plusieurs téléphones portables, puis de les mettre en commun. Il faudra ensuite élargir l’éventail des formations. « Nous savons très bien faire des MOOC avec un professeur devant une caméra, mais comment enseigner la musique ou la chirurgie à distance ? s’interroge Gilles Dowek. C’est plus difficile, mais pas impossible : par exemple en utilisant un boîtier offrant un retour de force. L’enjeu aujourd’hui est de produire de tels boîtiers à un prix abordable pour tous les étudiants. »

Sans oublier la formation des salariés. « Un jour, les machines-outils seront reliés à des MOOC et les techniciens pourront s’entraîner directement dessus », prédit Chris Lawrence, de la fondation Mozilla, l’éditeur de Firefox, qui s’intéresse aux MOOC pour favoriser l’accès du plus grand nombre à l’éducation.

« L’accès aux MOOC est peut-être gratuit, mais ils sont de plus en plus chers à réaliser. » OLIVIER ERTZSCHEID Maître de conférences en sciences de l’information à l’université de Nantes

Enfin, il faudra organiser la pédagogie. « Le défi est de gérer la complexité : encadrer 50 000 étudiants, composer des groupes de quatre élèves qui vont recevoir des instructions différentes, corriger les copies… », énumère Pierre Dillenbourg. La solution viendra des traces laissées par les étudiants eux-mêmes. « Chaque vidéo regardée, chaque clic de souris, chaque discussion est enregistrée et analysée », rappelle Howard Lune. Le système permet, par exemple, de repérer les meilleurs éléments et de leur demander de devenir des tuteurs encourageant des groupes d’élèves moins rapides. Ces tuteurs sont à leur tour encadrés, mais cette fois-ci par un véritable professeur !

Chronologie


2010. Trois MOOC proposés par Stanford dépassent les 100 000 étudiants. Le MIT lance MITx, une plate-forme à but non lucratif.

2012. Trois enseignants de Stanford participent à la création de deux start-up spécialisées dans les MOOC. Coursera et Udacity. La plate-forme MITx, rebaptisée edX, accueille Harvard, Berkeley, Ucla…

2013. En France, l’Inria lance le MOOC Lab
pour créer une plateforme, réaliser des contenus pédagogiques et mener des recherches.

**Le casse-tête de la rentabilité**

« Les MOOC ont une structure de coût qui permettrait de rendre les études plus abordables pour beaucoup de gens », s’enthousiasme Josh Jarrett, directeur adjoint de la Fondation Bill et Melinda Gates, qui, entre autres actions, veut faciliter l’accès à l’enseignement secondaire et supérieur. Reste la grande inconnue : comment ces cours gratuits peuvent-ils gagner de l’argent et se financer ? Plusieurs pistes sont explorées par les start-up et les plate-formes universitaires : faire payer les étudiants qui veulent obtenir un « diplôme » attestant qu’ils ont suivi tel module et qu’ils ont réussi l’examen final ; vendre leurs cours à des universités qui veulent doper leur propre offre de formations ; former les salariés des entreprises ; se financer par la publicité en ligne ; s’associer avec des éditeurs de livres scolaires. Dans ce cas, les éditeurs offriraient des cours gratuits en ligne, mais conseillereraient fortement d’acheter leurs propres ouvrages en complément...
Les MOOCs changent de public cible

Par Tiffany Büsser et Laurent Haug

Considérés comme une innovation majeure, les cours massifs en ligne ne rencontrent pas le succès académique escompté. Ils rebondissent dans la formation professionnelle.

En 2010, les MOOCs prennent le système éducatif – plusieurs fois centenaire – des universités par surprise: plus accessibles, moins chers, touchant des millions de personnes. En 2012, le NY Times parle de «l'année des MOOCs» et s'enthousiasme: «Rien n'a plus de potentiel pour sortir les gens de la pauvreté.»

Malheureusement, éduquer les masses avec internet reste une utopie et les MOOCs sont un exemple des attentes chimériques que l'on place souvent dans les innovations de rupture. Le modèle qu'ils proposent est apparemment largement supérieur, mais les MOOCs se révèlent inadaptés à leur public cible: les jeunes défavorisés. Ils manquent d'interactions, d'éducation, de temps, de motivation... En résultent de pires performances et l'abandon des modules.

Sebastian Thurn, fondateur d'Udacity (un des acteurs majeurs), fait un constat amer: 90% des élèves inscrits à un programme ne le terminent pas et moins de 5% des élèves réussissent l'examen final. Il confie son désenchantement au site www.fastcompany.com: «Alors que nous faisons la une de la presse, je réalise que ce n'est pas ainsi que je souhaite éduquer les gens. Notre produit est pourri.»

La gratuité n'est pas la solution: l'Université de Phoenix, qui fait payer ses cours, obtient de meilleurs résultats, affichant 17% de réussite. Cependant, s'ils découvrent dans les matières académiques, de tels cours se révèlent efficaces lorsqu'ils traitent de compétences professionnelles concrètes ou s'adressent à un public éduqué. En effet, la faible proportion d'étudiants finissant un MOOC avec succès est généralement détentrice d'un diplôme d'études supérieures (84% chez edX). La cible se déplace et certains l'ont bien anticipé.

Sur LearnRev, les experts de McKinsey ou Goldman Sachs enseignent la négociation ou les cours en ligne...
SE REVELENT EFFICACES
LORSQU’ILS TRAITENT
DE COMPÉTENCES
PROFESSIONNELLES
CONCRÈTES
les modèles financiers. Eduson (Russie) et Udemy (USA) se concentrent sur des cours à destination des futurs entrepreneurs.

**Priorité stratégique**

Performants en complément de la pratique, les cours en ligne dessinent désormais l’avenir de la formation des employés. Exemptes des principaux facteurs d’échec, les entreprises se tournent vers le digital pour former et informer à l’interne une cible éduquée, ayant accès aux nouvelles technologies et sans problématique de reconnaissance académique.

Un grand groupe suisse en a fait une priorité stratégique. Au siège, on a mandaté la société leader Cornerstone pour développer une plate-forme centrale des formations — dont une grande part en ligne — uniformisant l’accès et le suivi quels que soient le pays ou la marque pour laquelle travaille l’employé.

Despite the massive media ink spilled over massive open online courses, the ink spilled by MOOCs themselves remains red. MOOCs lose money. Most are free. Universities and venture capitalists subsidize them while searching for the class of the future. This cannot continue but their future, we believe, is bright.

Education is only the latest industry to face digital disruption. Music, movies, news, travel and real estate already traveled this path. Conventional business models—charging customers directly for products and services—are often ineffective online. Media companies painfully discovered that free alternatives such as YouTube videos, news blogs, independent fiction, Wikipedia pages, and the ease of piracy place limits on charging for content. Travel agencies discovered, equally painfully, that free alternatives and consumer ratings place limits on charging for bookings and advice.

After years of trying to replicate old business models online, companies, or their competitors, built platforms that offer free service and information as bait to attract users and their activity. These platforms monetize eyeballs, comments, referrals, and relationships based on two key ideas:

- **Charge for complements**, including analytics and value-adding activities performed by users. Red Hat Linux offers Linux software for free and charges for consulting and technical support.
- **Charge a different group with interdependent demand.** TripAdvisor offers free advice to travelers and charges airlines and hotels. LinkedIn offers many free services to job seekers and charges recruiters. Teaching a man to fish, we can charge fleet captains who hire him.

The first idea defines what one pays for, which can be content or complement; the second idea specifies who pays. We used these ideas to create a matrix of possible business models, shown in the accompanying table, and identified a number of plausible money models for MOOCs. We organize our discussion by who pays.

a We certainly do not claim our current list is complete and we invite readers to populate cells we left blank with interesting new ideas.
viewpoints

States

State Subsidies. Most countries subsidize education as a key state function. The case for subsidizing education based on socially interdependent demand could hardly be stronger. People who complete high school pay more taxes, vote more often, volunteer more often, have higher savings rates that stimulate more investment; commit fewer violent crimes, live longer, use less health care, and consume fewer welfare services.1 MOOCs could be as defensible as Pell grants. This is already happening. Based on San Jose State University’s experiments with edX and Udacity, the state of California plans to expand use of MOOCs to other state campuses.4

Students

Tuition. We believe education is better positioned than media to generate direct revenue from content. In contrast to music, film, and books, piracy is less likely to limit MOOC charging ability. Digital courses are interactive services whose completion often requires live coordination with other students, graders, and server-based staff. One could watch pirated lectures and work through pirated problems, but it takes the participation of others to answer questions, grade assignments, and ultimately verify completion. Each of these represents a control point ensuring the platform receives payment.9 Given pricing power, charges can vary with business and pleasure: degree classes cost more, avocational classes cost less.

In addition to tuition models, MOOCs can also charge based on a variety of freemium models, meaning a business logic where basic course content is free and students pay for complements as with the following examples:

Certification signals to others that a student has mastered course content. Coursera is already experimenting with the idea of making MOOCs available for free but charging for credentialing. One level could certify completion and another could certify skill. The University of Washington, a Coursera partner, is testing a hybrid model of a free MOOC offered simultaneously with more academically rigorous credit-bearing version that includes a fee. Udacity is partnering with Pearson’s extensive network of testing centers to offer similar, fee-based, certification services.

Diagnostics. MOOC platforms can use rich data generated from online interaction to offer personalized diagnostic analytics that identify student strengths and weaknesses and adjust pace of delivery to match. These capabilities can be offered as value-adding fee-based services or extra-credit practice.

Tutoring and Peer Assistance. When students flounder, the MOOC can offer online “genius bars” staffed by faculty experts and accredited students from previous classes, for a fee.10 Tutors and peers can answer questions while helping push students to higher achievement.

Collaborative Group Learning. MOOCs have atrocious attrition rates. One solution is to charge students for recommended study groups to help find compatible peers. Another option borrows from “Grameen Banking” where people apply for loans as a team (see http://en.wikipedia.org/wiki/Grameen_Bank). MOOC groups could self-organize and commit to learning like the teams that take out loans together. Study groups solve both the adverse selection problem (bad risk loans/uncommitted students) and the moral hazard problem (ex post monitoring/letting your peers down). Pricing in such schemes can be a simple up-front payment with a rebate for completing with one’s peers.

Employers

Recruiting services. To compete on talent, companies can either hire more talented workers or improve the talent they have. MOOC funding models thus have opportunities both pre- and post-employment. To help employers tap into new talent, MOOC analytics can provide information on student qualifications and improve the hiring process. Digital learning platforms generate substantially more detailed insights into prospective employee behaviors than transcripts. Firms can also recruit the best students before they enter the job market.

Udacity has been running a recruiters program using its database of students to identify candidates who would be good matches for openings at partner companies like Google, Amazon, and Facebook among others. The MOOC platform, matching inter-

A framework for organizing MOOC business models.

<table>
<thead>
<tr>
<th>Who pays?</th>
<th>Course Content</th>
<th>Data and Analytics</th>
<th>Platform Activity (Student labor)</th>
<th>Complementary Services</th>
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<td>States</td>
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<td>Students</td>
<td>Tuition</td>
<td>Diagnostics</td>
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<td>Collaborative group learning</td>
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<td>Sponsors</td>
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<td>courses</td>
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<td>Platforms</td>
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<td></td>
<td>courses</td>
<td>Student recruiting services</td>
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</tbody>
</table>

MOOCs could be as defensible as Pell grants.

b Of course, students might acquire skills using pirated materials then obtain credentials from third-party agencies. Pricing decisions must reflect competition in the same manner that iTunes pricing has curbed music piracy. Reputation effects can also make such students unpopular with employers.

c We thank Jeff Jarvis for this idea.
dependent student and employer profiles, can mediate access for a fee.

Custom courses. Despite high youth unemployment, many businesses complain of a skills shortage in key areas and of a mismatch between what companies need and what academic institutions produce. Businesses can commission MOOCs or specific courses tailored to their requirements. These subsidies can serve both marketing and recruiting purposes. For example, Google could commission a “branded” MOOC on software engineering, with very challenging assignments and exams, carrying a promise that top performers automatically receive internships.

Continuing education. Giving existing workers new skills can be cheaper than hiring new workers. Many Fortune 500 companies support workers’ interests in pursuing additional training via matching funds, time off, and tuition rebates. The low cost and scheduling flexibility of MOOCs makes them very strong candidates for support.

Sponsors

Sponsored courses. Having attracted vast numbers of “edsumers,” advertising is an obvious option. Google, Amazon, LinkedIn and professional societies are well positioned to offer or cross-subsidize education. Traditional advertising, however, can distract from learning and classier mechanisms can succeed. Georgia Institute of Technology and AT&T have launched the first online, university certified, degree in computer science. Not only does AT&T gain access to well-trained programmers but online education also increases demand for complementary telecommunications infrastructure. Broadband replaces traditional capital stock.

Access to experts. Inspired by record labels, another complements business model can pursue the lucrative sales associated with star professors. Under “360” or full rights contracts, the big recording labels invest in artist promotion and up-front marketing in exchange for a percentage of artists’ concert and merchandising revenues. Record labels have expanded their view of assets from the content they produce to the star performers they access. Although lecturers have not traditionally behaved like performers, MOOCs have the potential to create global superstars who generate revenue through speaking engagements, expert witness testimony, and consulting. MOOC platforms could thus double as speakers’ bureaus or expert agencies.

Problem-Sponsored Learning. One interesting new idea blends user-generated content with experiential learning, a business model we call Problem-Sponsored Learning. Organizations facing important challenges can sponsor student projects. As with commissioned works in Renaissance art studios, apprentices can solve problems under the guidance of expert mentors. In the context of MOOCs, tutoring can be partially automated and students can learn from each other. At the scale of thousands, the best solutions should be excellent while the inferior solutions are no longer waste but opportunities for learning. One can imagine even non-profit organizations being able to afford code, graphic design, tax preparation, advertising copy, or data analytics at affordable prices. Patronage has historically sponsored art, music, chemistry, poetry, philosophy, and more.

A modern day stepping-stone to this idea is Innocentive, which operates a platform that matches companies who have problems to people who have solutions. Innocentive organizes online contests where the spon-

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Digital learning platforms generate substantially more detailed insights into prospective employee behaviors than transcripts.

Calendar of Events

August 12–16
ACM SIGCOMM 2013 Conference,
Hong Kong, China,
Sponsored: SIGCOMM,
Contact: Jia Wang,
Email: jiawang@research.att.com

August 18–26
Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering,
Saint Petersburg, Russia,
Sponsored: SIGSOFT,
Contact: Bertrand Meyer,
Email: bertrand.meyer@inf.ethz.ch

August 22–23
ACM Symposium on Applied Perception 2013,
Dublin, Ireland,
Sponsored: SIGGRAPH,
Contact: Ludovic Hoyet,
Email: lhoyet@gmail.com

August 25–29
Advances in Social Networks Analysis and Mining 2013,
Niagara, Canada,
Sponsored: SIGKDD,
Contact: Jon Rokne,
Email: rokne@ucalgary.ca

September 9–12
The 2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing,
Zurich, Switzerland,
Sponsored: SIGCHI,
SIGHUMANET,
Contact: Silvia Santini,
Email: santinis@wsn.tudarmstadt.de

September 15–18
20th European MPI Users’ Group Meeting,
Madrid, Spain,
Contact: Jack Dongarra,
Email: dongarra@cs.utk.edu

October 6–9
The ACM International Conference on Interactive Tabletops and Surfaces,
St. Andrews, UK,
Sponsored: SIGCHI,
Contact: Ashley Cozzi,
Email: acozzi@acm.org
We foresee digital course syndication emerging in higher education.

soring company details their problem and offers a reward. The sponsor selects the preferred solutions, the winners receive rewards, and Innocentive receives a commission. Blending the Innocentive model with experiential learning gives students the opportunity to solve concrete problems and learn new and diverse concepts, as they progress toward mastering new skills. Their final output is also socially useful.

**Other Platforms**

*Syndication.* By 1846, the newspaper industry had discovered it makes no sense for every newspaper to write original articles for every newsworthy story. No single newspaper has the resources nor can any newspaper claim to be most qualified on all topics. The Associated Press introduced the practice of syndication as an obvious solution: member newspapers make their original content available to other members for a fee. In such associations, usually the best-qualified member produces content on a topic and everyone else licenses it, saving production costs and resulting in higher quality.

Today’s traditional universities operate like newspapers that insist on producing original articles of variable quality for all stories. In a world of rising costs and global information transparency this is unsustainable. From an economic standpoint, universities will find it too costly to hire professors for every subject students request. From a quality perspective, students will steer clear of substandard local teaching when they know a blockbuster digital course is available.

We foresee digital course syndication emerging in higher education: Universities will form consortia (plat-
"Les étudiants qui travaillent leurs cours en ligne viennent mieux préparés aux sessions d'exercice"

LE MONDE | 29.05.2013 à 15h20 • Mis à jour le 29.05.2013 à 18h06

Propos recueillis par Benoît Floch

Patrick aebischer, président de l'Ecole polytechnique fédérale de Lausanne (EPFL), en Suisse, analyse la révolution des cours ouverts en ligne et massifs, les MOOC (CLOM, pour l'acronyme français), en Europe. A compter de juillet, il mettra ses fonctions entre parenthèses pour réfléchir à cette révolution dans laquelle son établissement est bien engagé.

Lire aussi : Tous diplômés d'Harvard, le fantasme des MOOC

(Économie/article/2013/05/29/tous-diplomes-d-harvard-le-fantasme-des-mooc_1420180_3224.html)

Des étudiants à l'Essec. | ESSEC

Quel enseignement à distance propose l'EPFL ? En 2012, l'Ecole lançait son premier cours en ligne sur la plate-forme américaine Coursera. Depuis, nous avons signé avec la plate-forme EdX d'Harvard et du Massachusetts Institute of Technology. Nous ne voulons pas être dépendants d'une plate-forme et gardons la propriété intellectuelle de nos cours. Notre premier cours, le MOOC de Martin Odersky, inventeur du langage informatique Scala, a attiré plus de 50 000 étudiants, dont plus de 10 000 ont passé les examens finaux ! Depuis, quatre cours ont été mis en place et une dizaine d'autres sont en préparation, notamment pour des cours de science de base. Nous venons de lancer notre Centre pour l'éducation à l'ère digitale et de créer une MOOCs Factory, laboratoire dans lequel nos professeurs peuvent trouver l'encadrement technique et pédagogique pour produire les cours par petites sessions de 5 à 10 minutes, mises en scène devant une caméra. Un travail d'artisan qui demande à l'enseignant l'équivalent en préparation de trois à quatre fois la durée du cours.

Quels changements cela a-t-il déjà produit ? On a encore peu de recul, mais je suis fasciné par l'engouement de nos professeurs. Certains n'ont quasiment pas dormi pendant six mois pour préparer leur MOOC !

A terme, il ne s'agit évidemment pas de transformer nos 1 500 cours en virtuels, mais seulement certains, notamment ceux de première année.
Que pensez-vous de cette révolution ? C'est une révolution qui aura des répercussions multiples très positives pour nos institutions. L'Europe a parfois de bonnes raisons de faire preuve de recul critique, mais, dans ce domaine, je pense qu'elle doit être beaucoup plus motrice.

L'avènement des MOOC n'est pas une révolution pédagogique en tant que telle, c'est une révolution infrastructurelle, rendue possible par la rapidité des réseaux et la maturité des pratiques d'interactions. Elle initiara indirectement des changements pédagogiques. Petit exemple concret : certains de nos enseignants nous ont rapporté que les étudiants suivant la partie théorique de leur cours sur le Web viennent mieux préparés aux sessions d'exercice. Est-ce parce qu'ils peuvent lire et relier plusieurs fois les modules filmés, chose que l'on peut difficilement faire dans un cours ex cathedra ? Est-ce parce qu'ils le font en petits groupes et peuvent interagir entre eux plus directement ? L'avenir le dira.

Les MOOC préfigurent-ils l'université du futur ? J'ai le sentiment que cela ne va pas totalement bouleverser le paysage académique actuel. En revanche, je suis persuadé que cela va modifier la notion même des cursus et nous ouvrir à de nouveaux publics. Les résultats du premier MOOC, donnés par un professeur de Stanford, ont montré que les meilleurs scores n'étaient pas réalisés par des étudiants de Stanford [Californie]. En l'occurrence, c'est une jeune femme mariée avec des enfants qui a fait le meilleur score. Or, elle n'avait jamais fait d'études universitaires.

Cette nouvelle offre permet de suivre des cours le soir, le week-end, et de construire son système de connaissance à sa vitesse et selon ses besoins. Les MOOC représentent également un formidable nouvel instrument pour la formation continue.

Quels nouveaux publics cela permet-il de toucher ? La crise de l'enseignement supérieur a touché très fortement les États-Unis. Les Américains finissent leurs études avec des dettes incroyables. Sur Coursera, seul le certificat de fin de cours coûte environ 40 dollars (31 euros). J'ai évoqué précédemment les exclus sociaux, mais la palette des intérêts et des publics est évidemment infinie : compléments de cours pour nos étudiants, formation continue postuniversitaire, compléments de connaissance pour des curieux. Le monde des seniors est évidemment un public tout naturel.

Je m'intéresse à l'Afrique, et je vais passer une partie de mon congé sabbatique de fin d'année à évaluer sur place les potentiels des MOOC pour l'enseignement supérieur. Avec notre réseau d'excellence des sciences de l'ingénieur et de la francophonie, dont la France est partenaire, nous prévoyons de développer des contenus en français et des supports adaptés aux besoins de certains pays africains, que ce soit en sciences de base ou en ingénierie. Sur le plan des infrastructures, l'accès a tendance à se disséminer ; Google a même mandaté le fournisseur international de service par satellite O3b Networks pour couvrir l'Afrique en satellites d'accès à Internet. Ces défis me motivent.

Benoît Floc'h
L’enseignement français face au défi des cours en ligne

Les MOOC ciblent aussi bien la formation initiale des étudiants de l’enseignement supérieur que la formation continue.

Photo Shutterstock
ÉDUCATION // Face au déferlement des MOOC – « massive open online courses » – dans le monde, écoles de l'enseignement supérieur et universités françaises cherchent à apporter une réponse avec le soutien des pouvoirs publics.

Et toi, tu sais quel MOOC ? « De San Francisco à Shanghai en passant par Tokyo ou Abidjan, le « massive open online course » – prononcé « mouc » – est devenu la dernière pratique branchée. Fils d'Internet et des réseaux sociaux, ces cours en ligne gratuits et ouverts à tous, qui mélangent vidéos, exercices et forums de discussion, ont déjà attiré des millions de personnes dans le monde. La vague submerge les États-Unis – outre-Atlantique, Coursera, l'une des principales plates-formes distribuant des MOOC née en avril 2012, a attiré jusqu'à 200.000 inscrits à un cours. Et elle compte désormais plus de 5,5 millions d'adhérents grâce à une offre extrêmement riche : 630 cours proposés dans une douzaine de langues par 108 partenaires (Stanford, Princeton, l'École polytechnique fédérale de Lausanne, l'université chinoise de Hong Kong, etc.). Avec des thèmes aussi variés que l' « introduction aux droits de l'homme », l' « analyse numérique pour ingénieurs » ou l' « beauté de l'opéra kung » – la France ne veut pas être en reste. Les pouvoirs publics, fidèles à leur vieille tradition colbertiste, ont donc décidé de donner une impulsion pour entraîner les universités et les écoles de l'enseignement supérieur dans le mouvement. Face à la déferlante mondiale, la mobilisation française s'est organisée fin 2013. Le ministère de l'Enseignement supérieur et de la Recherche a pris la main, jugeant indispensable d'engager une politique initiative pour les aider à combler le retard français. En octobre dernier, les pouvoirs publics ouvraient ainsi France université numérique (FUN), une plate-forme nationale mise gratuitement à la disposition des acteurs de l'enseignement supérieur pour accueillir leurs futurs MOOC. Une initiative qui a eu des rebonds observateurs présente le double avantage de federer autour d'un site – FUN – l'offre hexagonale de MOOC et de lui donner ainsi une visibilité. « C'est une condition de la réussite française dans les MOOC », estime Jean-Marie Gilliot, maître de conférences à Télécom Bretagne et animateur de la réflexion sur les MOOC à l'Institut Mines-Télécom. Par ailleurs, l'État s'engage à apporter une aide financière aux acteurs qui se lancent dans cette aventure. Quitte à faire du saupoudrage, 12 millions d'euros (prélevés sur les investissements d'avenir) étant prévus pour les MOOC académiques, 8 millions pour ceux orientés vers la formation professionnelle et le financement de studios de tournage.

Dans le sillage d'Écoles d'ingénieurs comme Centrale Lille ou Télécom Bretagne, pionniers dans l'Hexagone, les acteurs de l'enseignement supérieur commencent à s'y mettre. Sur FUN, en début d'année, vingt-cinq cours en ligne avaient fait leur apparition. Et trente autres sont attendus d'ici à la fin 2014. Un mouvement jugé encourageant même s'il n'est pas encore massif.

Attractivité à l'international
Pour les écoles et les universités françaises, produire un module court il est vrai plutôt cher, puisqu'il faut compter autour de 50.000 euros. Mais « c'est un moyen de nous faire connaître du grand public », note Nadia Jacoby, vice-présidente en charge du numérique à l'Université Paris-I Panthéon Sorbonne. Surtout, pour toutes celles qui jouent la carte du rayonnement et de l'attractivité à l'international, en particulier dans les pays francophones, l'investissement dans ce nouvel outil pédagogique devient un élément indispensable de leur stratégie. « Aux États-Unis, les professionnels qui travaillent représentent en moyenne de 60 à 65 % de l'assistance, contre de 15 à 20 % pour les étudiants et 20 % pour les professeurs », note Jean-Marie Gilliot.

En général, beaucoup d'adhérents se perdent en cours de route. Ainsi, sur les 7.300 inscrits au cours virtuel de Dominique Rossin et Benjamin Werner, seuls 350 ou 360 étaient éligibles à la certification, récompensant l'assiduité aux cours et la réussite des exercices et des quiz proposés en accompagnement. « Il est très intéressant de voir dans les forums de discussion que
Les apprenants sont très motivés et s'engagent à aller jusqu'au bout des cours. Ils sont également très demandeurs et très intéressés.

Les MOOC ciblent aussi bien la formation initiale des étudiants de l'enseignement supérieur que la formation continue. L'apparition de ces cours en ligne ouverts à la planète a donné naissance à tout un écosystème de sociétés privées, attirées par le gigantesque potentiel du marché, qu'il s'agisse de MOOC agencies, prêtes à aider universités et écoles à produire leurs cours virtuels, ou d'opérateurs de plateforme. Positionné sur les deux créneaux, OpenClassrooms revendique 60 000 inscrits qui se connectent chaque mois en jouant la carte du MOOC professionnelisant. Le groupe de télécoms Orange a pour sa part choisi de miser sur le MOOC d'entreprise, au modèle économique plus évident, ce qui ne l'empêche pas d'aller aussi sur des sujets grand public comme « le digital vivant ».

Contrainte budgétaire

Pour autant, la politique de soutien menée par les pouvoirs publics français ne fait pas consensus. Ainsi, les start-up issues du monde numérique se plaignent d'avoir mal à trouver leur place. « En se saisissant du sujet, l'Etat a soutenu la dynamique de l'enseignement en ligne. Mais, en développant sa propre plate-forme, il est devenu concurrent des entreprises avec une offre fonctionnellement incomplète, et gratuite, ce qui est doublement discutable », s'insurge Cyril Bedel, fondateur de site Edunao. « La filière industrielle française a beaucoup à apporter pour améliorer l'expérience utilisateur et la richesse des parcours des apprenants. Seul le secteur a la capacité d'innover pour mettre la France au niveau mondial », renchérit Françoise Colatit, déléguée adjointe de Cap Digital. Le ministère de l'Enseignement supérieur se veut toutefois rassurant : « Dans les appels à projet qui seront lancés pour créer des MOOC, les partenariats public-privé seront encouragés », souligne-t-on.

Par ailleurs, tout le monde n'entend pas foncer tête baissée dans la production de MOOC. « Le digital doit être la condition d'un meilleur apprentissage. Je ne veux pas m'embarquer dans cette aventure sans être sûr de maîtriser la qualité », explique Henri Isaac, chargé de mission transformation numérique à Dauphine. Si l'université projette de lancer des MOOC – plutôt de niveau master – elle compte aussi produire des SPOC (« small private online classes ») réservées à sa communauté d'étudiants. « L'idée est que ces SPOC représentent 25 % de leur formation sur trois ans », précise Henri Isaac.

Enfin, alors qu'en France les acteurs de l'enseignement supérieur souffrent d'un manque de moyens par rapport aux Etats-Unis, la contrainte budgétaire risque, dans certains établissements, de freiner la production de MOOC. « Il est probable qu'un certain nombre d'entre eux ne pourront être réalisés faute d'argent », prédit Hubert Javaux, chargé de mission aux pédagogies numérique à Paris Descartes. À l'écoute, un autre obstacle au développement des MOOC dans l'Hexagone pourrait être le système d'évaluation des enseignants de l'université française, axé sur la recherche et la publication. En réalité, beaucoup de questions restent à trancher, qui conditionneront la réussite des MOOC à la française. Tout d'abord, le choix de la langue. Écoles et universités devront-elles se concentrer sur des cours en français pour accroître le rayonnement de la France en mobilisant la francophonie, ou bien devront-elles aussi développer une offre en anglais, avec en ligne de mire les classements mondiaux ? Par ailleurs, toutes les matières seront-elles « moomable » ? Et, y aura-t-il une « French touch » permettant à l'offre nationale de se distinguer des autres ? Enfin, les Français sauront-ils maîtriser les aspects communautaires inhérents à ce nouvel outil ?

Autre sujet à régler, les MOOC seront-ils intégrés dans le cursus pédagogique voire dans l'évaluation des étudiants, comme l'a décidé Télécom Bretagne ? Dans l'affirmative, faudra-t-il faire payer la certification ?

Les établissements devront trouver le Graal pour rendre le coût des MOOC supportable. Leur reviendra aussi la délicate charge de régler les questions de propriété intellectuelle, avec les professeurs notamment. « Aujourd'hui, nous avons beaucoup plus de questions que de réponses », reconnaît Bernard Ramanantsoa, le directeur général du groupe HEC Paris.
Today’s educators must wear multiple hats—entertainer, personal coach, emergency responder, gizmo wizard, and social media guru—to be judged as informed and effective.

Here are times when I long for the days of yesteryear, when instructors delivered a particular topic verbally as a lecture, using the board occasionally for assistance. In the relatively short time I’ve been in academe, my classes have morphed into a new reality filled with high-level, cutting-edge student interaction, engagement, and learning. Lectures must feature videos filled with well-crafted PowerPoint and other animations to reinforce the topic, and student interactions now extend well beyond class and office hours.

Today’s educators must wear multiple hats—entertainer, personal coach, emergency responder, gizmo wizard, and social media guru—to be judged as informed and effective. But each hat adds several hours of extra work, and educators are still expected to regularly publish research in high-quality, peer-reviewed journals; obtain grant support; and perform university service.

ENTERTAINER

A recent discussion with a fellow Miami University faculty member included the assertion that students needed to be “warmed up” with a personal story at the start of class. I can see how relating my own professional experiences would have relevance, but on further inquiry, I was told that students wanted to hear about my private life. Warming up an audience with such tidbits might be entertaining, but I was skeptical about its contributing to learning the topic of the day.

But this notion of being an entertainer extends throughout the lecture. You’re competing with the online experiences your students are having via their laptops while they take notes in your class. Students are used to three-minute YouTube videos that show one particular skill or even shorter videos on Vine. They crave flashy, short, pithy tidbits of information. You can always fall back on another personal story to garner their attention, but it’s becoming harder to get students to ignore Facebook without resorting to flash animations.

PERSONAL COACH

Whereas a personal coach supports personal achievement, an educator supports personal learning and extends a grade at the end of the course to represent the student’s mastery of the material. With personal achievement, everyone is rewarded for trying, which is quite different from measuring mastery—the latter potentially results in a low grade. Personal coaches are there to remind people how special they are, which might be challenging when issuing a low grade.

A student recently informed me that the instructors in his major give a variety of evaluations, with the results subsequently curved so that no one gets a failing grade, meaning everyone is rewarded independent of personal accomplishments. But what level of learning is represented by these individual course evaluations? Did the students make every effort to overcome weaknesses in mastering
the material—meaning that the final score doesn’t accurately reflect the true situation—or were evaluations ignored, assistance in understanding never sought, and attendance spotty? If no one receives a failing grade under the latter circumstances, then a college is just a diploma mill where you don’t even need to show up. The idea that everyone should pass a course reduces a grade’s meaning to nothing. Such actions hurt the exceptional students most because their excellence is rewarded with only a slightly better grade than someone who wasn’t even perceived to possess a novice’s understanding of the material.

To cater to students’ individual learning styles, instructors often provide a variety of learning venues and assignments: in-class labs, team projects, homework, quizzes, inverted classrooms, studios, and so on. The time investment to generate these lessons and subsequent evaluations differs, but the perceived need to provide this variety forces higher and higher levels of time investment. Another trend is the increase in identifying students with learning disabilities and the resulting formal programs to provide specialized individual accommodations. Not all students achieve peak performance during evaluations in standard college settings. This requires instructors to make accommodations such as doubling the amount of evaluation time, guaranteeing an evaluation setting that’s quiet and devoid of distractions, and arranging access to special assistance devices. It isn’t that such accommodations aren’t necessary, but they do add to the instructor’s workload and aren’t recognized as doing so.

EMERGENCY RESPONDER

It’s surprisingly common for a student to either behave irrationally or drop out of sight for weeks. In such cases, we engage the Dean of Students, who employs an emergency case manager to assess and intervene when necessary. In the past, such situations probably weren’t always acted on, but we now are more attentive to our students’ psychological well-being and their potential to act in a disruptive or dangerous manner.

I not only engage with emergency responders, but my students also consider me to be one. This amazes me because there’s next to nothing urgent about education, yet I’m expected to respond to any student inquiry at any time on any day. I’m regularly chastised by students for not answering an email quickly enough when it was sent at 2 a.m. on a Sunday. I don’t even have such expectations of my colleagues, which may be something I should reconsider.

GIZMO WIZARD

The classroom is flooded with gizmos and gadgets that can help support learning: clickers, Skype, iPads, and smartphones, to name a few. These “toys” involve investments of both money and learning and development time, and the expectation of their use will only increase.

Many colleges provide learning management systems such as Sakai and Blackboard to assist in course delivery, assessment, evaluations, and even student interaction. They support multiple electronic delivery methods, such as prerecorded lectures, distance learning, and massive open online courses, while also supporting student interaction through forums and chat rooms. The learning curve for such systems can be steep, and their constant upkeep requires daily interaction. I’ve found that although learning management systems put all the materials and tests associated with a particular course in an easily accessible central location, students incorrectly assume that just accessing the system gives them the same learning experience as if they physically attended a class, lab, or lecture. That’s simply not the case.

SOCIAL MEDIA GURU

In addition to the other hats I’ve described, I also have to be mindful of and participate in social media. I could choose to ignore it, but I would miss out on what’s being said about me on sites such as RateMyProfessors.com. It’s scary to think about interactions in my classroom ending up in front of the world’s eyes. But on the positive side, I can use Twitter feeds to encourage students to provide feedback anonymously during lectures, which saves them from asking embarrassingly obvious questions.

There are still only 24 hours in my day, despite the insistence of my department chair to the contrary, so something has to give. No one has enough time to satisfy all the additional requirements and still become a respected original research contributor, particularly when educational research isn’t typically considered a research contribution. I would rather do one thing very well than two things satisfactorily. ☐

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