ONLINE EDUCATION - ACADEMIC CONSIDERATIONS

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The Discussion Paper Series consists of short papers on academic issues prepared by Academic Colleagues. Although each paper is discussed by the Colleagues and by Council, the final version of the paper represents the opinions of the author or authors. The papers as finalized do not represent COU policy. They are a mechanism for investigating and opening discussion on matters of interest to the Colleagues and Council.

ONLINE EDUCATION – MORE THAN MEETS THE EYE

In the Throne Speech of March 2010, the Province of Ontario announced its intention to encourage online education as part of its overall plan to reach out to any student who wishes to complete a college or university degree. It was hoped that the online environment could provide opportunities to meet the growing demand for space within universities, while also providing a higher level of flexibility for students, and greater access to students across Ontario and from other jurisdictions (including international students). But as with any plan or solution, there are also constraints and the need to select the best possible model for the proposed Ontario Online Institute further complicates the issue. The Council of Ontario Universities has embraced online education, underlining its benefits and offering a plan for its implementation (http://www.cou.on.ca/Issues-Resources/Student-Resources/Government-Submissions/PDFs/COU-OnlinelnstituteSubmission.aspx). As Ontario prepares itself to meet the challenges of promoting life-long learning goals through the use of online learning technologies, the objective of this discussion paper is to raise issues related to these delivery systems from an academic perspective.

THE ENVIRONMENT

There is no question that Ontario universities are once again on the brink of a transformation. Students are increasingly busy with part-time jobs, volunteer work or other interests, more mature students are returning to school, large amounts of information are available to anyone at the click of a mouse, and more mobile students and professors make up an increasingly culturally diverse educational environment. Despite this, many university courses are still largely based on traditional modes of delivery, where face-to-face lectures are routinely offered and where the “sage on the stage” transmits knowledge to a more or less passive audience. Having grown to expect fast access to information, and with multiple distractions and increasing demands on their time, students today are seeking quicker and more flexible ways to learn.

Background

As postsecondary educators, we have identified a number of excellent examples where online education, sometimes referred to as distance education, e-learning or tele-education, has worked well in various modes of delivery: synchronous (real-time), asynchronous (often text-based or less time-sensitive), web-based, video-conferencing and combinations of these alternatives. We have also found examples leading some to believe that the online solution is sub-par in comparison to what can be provided face-to-face. Yet can we say that in-class environments are always optimal? Is it optimal to crowd hundreds of students into a classroom?

Distance education is too often thought of as it used to be: a mode of delivery relying on self-study units and print material. It is now clear that online or distance learning is not the same as taking a “correspondence course.” There is a continuum of quality for online delivery that some would argue makes face-to-face learning sub-optimal to many online practices. Some current best practices minimize the challenges of online courses by combining the older paper-based modes with the use of new networking tools to encourage discussions, develop student skills and offer a better group environment.

Certainly there are many different methods being used for distance education as evidenced by a recent survey conducted by the Council of Ontario Universities. For example:

- All universities have access to learning management systems that add some online component to their courses (e.g. Blackboard), and many professors and students use these systems for communication and discussion of course material outside of the traditional classroom.
Other universities have gone as far as to offer entire degrees online, both at the undergraduate and graduate levels, in fields such as Administration, Nursing or Education. Students in these environments are invited to work in groups on weekly assignments, using discussion boards and/or teleconferencing systems. Online videos can be used to explain key concepts and some instructors utilize Skype, or other teleconferencing solutions, to hold discussions with their class.

Still others, such as Carleton University, offer courses through a television system (CUTV), where classes are tape-recorded live and aired on a local television cable system.

Ontario universities have already started partnering to allow students to take courses at several institutions online, and some are offered across university and college boundaries.

As the Government of Ontario moves forward, there will be a need for clarity as to what the Ontario Online Institute will offer. While there are many methods for delivering online courses, universities need to monitor the quality of these offerings to students.

**THE QUEST FOR QUALITY ONLINE EDUCATION**

There is a breadth of evidence indicating that students who pursue online courses succeed and obtain comparable marks to students who enroll in face-to-face courses (Lehmann & Chamberlin, 2009; Means et al., 2009; Russell, 2001). But education is more than obtaining marks.

Students need to be assured of the quality of their online choice of courses, and programs through review processes that are held to the same quality standards and go through the same evaluation processes as do face-to-face courses and programs offered by Ontario postsecondary institutions. In addition, the development of these courses should be guided by pedagogical experts and implemented in discipline-specific ways. Strategies need to be devised to ensure proper design, development and implementation. Students who complete online courses must have appropriate feedback mechanisms for providing an evaluation of the course and the instructor. Even a well-designed course can have an ineffective instructor. Course/program administrators should have an opportunity to evaluate the successes and challenges of each course, so that pedagogy or systems can be amended to improve delivery. Faculty members need this feedback in order to gauge how well their pedagogical approaches are meeting students’ learning needs.

In April 2010, the Council of Ontario Universities approved the Ontario Universities Quality Assurance Framework, which is being used to approve all university programs, both undergraduate and graduate. The following discussion uses each of the criteria from this framework to explore the challenges and opportunities of online education:

a) **Depth and breadth of knowledge**: In Ontario, undergraduate and graduate programs are expected to offer students access to a large body of information, as well as the necessary skills to analyse, synthesize and criticize this information. At the graduate level, students must also learn to identify what is at the forefront of knowledge in their disciplines. Online education offers unparalleled opportunities for access to knowledge around the world. Since online activities can attract students of all ages who need flexibility in course delivery, this may stimulate greater critical discussions, as well as opportunities for analyses and syntheses.

b) **Knowledge of methodologies/ Research and scholarship**: Students in undergraduate programs are expected to be able to identify and evaluate the appropriateness of methodological techniques used in their respective disciplines, and graduate students are further expected to devise original applications of these methodologies. Online education uses multi-modal approaches, such as video, online conferences and webinars to introduce students to the available methodologies and their importance in particular fields of study. Communities of practice can be developed where graduate students can reflect on their choice of methodologies, present their
rationale to users and fine-tune their research designs.

c) **Application of knowledge:** In-depth knowledge of a discipline and its methodologies are not enough. Students from Ontario universities (especially graduate students) are also expected to be able to apply this knowledge and contribute to the development of new methodologies. A well-designed online course which enables exchanges with other communities of practice, such as frontline workers, industry, policy makers, other students and other researchers, is an excellent model to help students understand how knowledge and different methodologies can be applied. Access to a larger student body and an international forum will also help students apply these methodologies within a more multi-national and multicultural context.

An important caveat is the limited ability of online courses to offer opportunities for learning laboratory techniques commonly used in the sciences, and to provide the hands-on experience available through internships, practicums and the like. At best, online courses in certain fields will have to offer a blended method of delivery, where students would be required to practice their skills on-site in a supervised environment.

d) **Communication skills:** All undergraduate students graduating from Ontario universities are expected to be able to communicate orally and in writing to a range of audiences. Graduate students must also be able to communicate complex and nuanced ideas clearly and defend these in public. Since much of the communication online is done through writing, there is an opportunity to help students develop their writing skills, although this will add to the complexity of offering courses and programs online. Oral communication may also prove to be difficult in online education. Although video conferencing (and inexpensive public options such as Skype) is clearly an option, it does not give instructors the same level of feedback from the students that a face-to-face communication might offer. It is more difficult to manage a classroom with dozens of students online and the technology may not give the quality needed (especially in using VoIP). The student cannot be evaluated on his/her abilities in managing habitual interruptions and the give-and-take of live conversations. With large classes, oral communication is de-emphasized and as a result, it is difficult to measure the comparative impact of a largely text-based online system. If online class sizes are kept small and the mediums varied, this could allow for a more interactive and satisfying experience for students.

e) **Awareness of limits of knowledge:** Undergraduate students are expected to understand how the limits of their own knowledge might influence their interpretation of general and disciplinary knowledge, while graduate students need to additionally know how their own contributions add to this complexity. Nowhere than on the Internet is it more obvious just how much information actually exists, and students must learn how to filter this information for quality. Since students taking online courses are required to interact with each other, this offers additional options for learning about one’s own limits to knowledge. In disciplines where critiquing is required at the undergraduate level from day one (for example, Humanities), sufficient face-to-face opportunities for dialogue may be difficult to create and shared in an online environment. There may be some hurdles in online learning that necessitate some major pedagogical changes. Whether these changes are positive remains to be seen.

f) **Autonomy and professional capacity:** While undergraduate students should show evidence of social responsibility and an ability to work well with others, graduate students should, in addition, be capable of making scholarly decisions, and of behaving ethically in research. At the doctoral level, students should show independence in research. Online courses inherently require students to be more autonomous than face-to-face classes. Blogs, wikis, simulations and podcasts can all be used to foster active learning (Lehmann & Chamberlin, 2009).
Scaffolding for learning from less complex tasks to tasks requiring more autonomy and complexity can be done more systematically online. Students can work at their own pace in an asynchronous model of delivery and take time to reflect on their responses.

In conclusion, online education can potentially offer some very stimulating opportunities and, if properly designed, online degrees can address the criteria for quality education in Ontario. There remain, however, some reservations about students' abilities to learn the methodologies specific to science labs, teaching, nursing and other skills learned in practicums, internships and other on-site placements. There are also questions about how students will develop real-time oral communication skills in an online environment.

The standardization that occurs with many online courses can help to ensure that the learning approaches are appropriate to the desired learning outcomes. Nonetheless, it is important that there be some leeway for professors (or teams of designers) to create courses which more fully challenge their students. Standardization of courses offered online may come at the expense of innovation. Rather, a set of guiding principles would help to ensure quality across institutions without standardizing courses. It would be difficult to benchmark a standard across disciplines or courses and it would not be welcomed by independent institutions.

THE ADVANTAGE - THE STUDENTS

By far the greatest advantage of online education for students is flexibility. Online courses allow students to undertake a program of study regardless of location, providing accessibility to individuals where there are no local universities and a greater variety when programs of study are not available locally. Asynchronous courses allow working students, and students who are parents, much needed flexibility in their schedules.

If enough online courses exist to give breadth of choice to students and if agreements are in place for institutions to recognize each other's courses more easily (credit transfer), there is more potential and choice for students in an online environment. The "pooling" of academic resources from different institutions will offer more options to meet students' learning needs. In an online environment, the approach can be personalized with different technologies catering to different learning styles (for example, video, audio, written or visual), giving students more control over when and how they learn. For example, pre-recorded videos of a lecture can be made available via a private network, or placed online through services such as YouTube. Students who use these tools tend to like them because they can view videos over and over again.

There are, however, some disadvantages of online learning for students, including feelings of being physically disconnected from instructors and other learners. Furthermore, the anonymity of online learning may also mean that cultural differences may not be recognized in course design. The reduced face-to-face interactions can be partially addressed through synchronous meeting times, where students and professors meet online using video or audio conferencing technologies. When students are spread out across Canada or the world, however, synchronous meetings may be difficult to arrange, requiring some students and faculty to take time away from work or attend meetings late at night.

A poorly designed online course can be disastrous – for instance, when an online course does not consider participatory approaches to learning, is devised with few networking opportunities or is scheduled too loosely. In these circumstances, the student can feel disconnected and procrastinate in completing assignments, which leads to attrition. It is crucial that online courses be designed with a focus on good principles of teaching and learning adapted to the learners, the discipline, and the online mode of delivery. Creating learning communities through online courses can be achieved through proper course design, well supported and trained faculty and availability of appropriate technology.

Younger students

Some academics believe that younger students, new to the university experience, tend to be less self-motivated and, therefore, would not thrive in an online environment. Self-discipline and independent learning are key to the success of students in online courses, and these attributes are less likely to be
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dominant in younger age groups. Strategies around retention are as applicable online as they are in-class. A first-year online introductory course should be student-centered, requiring some independent work, but mainly focused on engaging and stimulating activities. Students must be provided with weekly goals/objectives to make sure that they keep up with the course and need constant feedback and support.

It may be necessary to make provisions for regular face-to-face meetings at regional centres or on-campus for students who need tutoring, more face-to-face interactions, or to encourage student commitment. Some universities have provided the services of teaching assistants to off-site students on a scheduled basis, in order to provide more personalized contact. The development of study guides, strategies and best practices may be developed as reference tools for younger students, as well as for instructors who are new to the online teaching environment.

Plagiarism may be more difficult to control online and this may affect the appeal of online courses for earlier years of study, where class sizes and the types of knowledge disseminated may be more prone to abuse.

Mature students

Mature and/or working students have the most to gain from online education as it enables them to pursue their studies, while balancing work and family. Because they are more often motivated by career advancement, have a greater need to build their network of peers and are more likely to have employer financial support, retention rates tend to be higher than with younger students.

Of course, as with any student population, individual differences and needs exist. As a demographic group, these students might not require weekly goals/objectives but rather ample opportunities for discussion with virtual communities. There may be different or additional strategies needed for mature students who return to school either from high school or completion of a partial degree/diploma many years before.

In conclusion, in order for an online course to be of good quality, it must take into account the needs of the student population. For instance, some students might be sophisticated users of technology, while others might struggle to send an e-mail. There may be differing expectations about what a university education should deliver and the thought of leaving their books behind may be destabilizing to some students. Furthermore, students from different countries will need to deal with time zones and intermittent access to the Internet. Fortunately, there are as many techniques and pedagogical strategies available to help keep students motivated and working online, as there are in the classroom. Tools have been developed to help identify those students who would be most likely to complete online degrees (Holder, 2007; Pillary et al., 2007). As in a face-to-face environment, the student has the choice to be engaged or not and a part of this is outside the control of any instructor. Recognizing these needs and building courses that address them will help to ensure that students successfully complete their online courses and ultimately earn a degree.

THE BUY-IN - THE PROFESSORS

While students will likely have a much easier transition from classroom to online learning due to their daily exposure to technology, the transition can be much more resource-intensive for professors and other instructors.

Success in online education will be impossible without faculty support, but this support is reported to be quite low (Lehmann & Chamberlin, 2009). There is overwhelming evidence that it takes special skills to offer online courses. The success of online education depends to a large extent on the experience and training of the faculty member involved and the course design. Professors must be provided with the right teaching tools and knowledge to facilitate student-centered online courses. It is critical to provide arenas for professors to share their experiences, mentor others and ask questions about online instruction.

In dealing with students in an online course or program, faculty should first and foremost be self-critical, able to adapt, flexible and responsive to the needs of the students. Instructors must be:
Knowledgeable/experts in their field of study

Personable and approachable

Able to communicate efficiently and effectively

Available and able to provide prompt feedback

Able to facilitate online groups

Patient and tactful

Able to provide students with positive reinforcement

Able to resolve conflicts

Achieving quality online education requires appropriate administrative and support staff (such as educational developers and technical support). Staff must be able to provide professors with technical assistance (for example, setting up synchronous sessions), and provide them with the skills and knowledge to develop successful collaborative strategies and use the technology in a pedagogically sound way.

The difficulty here will be that professors are accustomed to designing their own courses with little, if any, outside interference. Team-based course design may best be approached with interested faculty, rather than forcing professors to change their practices. Attendance at yearly showcases (such as the Symposium on Teaching and Technology) may encourage more reticent faculty to engage and over time grow the pool of online instructors.

Time constraints are one of the biggest concerns for many faculty members. The transition to online courses is viewed as requiring a substantial investment of time at the outset. But online instruction also allows professors greater flexibility in scheduling, which allows them to better balance the needs of research and academic travel. While online courses mean professors can log on at any time, anywhere, students often expect instant responses. Professors are worried that this could mean answering e-mails or inquiry boards seven days a week. To avoid this problem, online courses must be well-designed, and boundaries set and backed by clear institutional policies.

The need for sufficient administrative support for online courses serving regionally dispersed students is also a concern. Without appropriate support, the administrative burden of co-ordinating student assignments, grading, changing the structure of examinations, providing support for laboratories, supervising off-campus examination sites and managing the special needs of students who are in different geographical locations, will fall on the professor.

There are added costs involved in providing the extra administrative and technical support needed for faculty teaching online courses. One approach is to have a central body which co-ordinates the off-campus, regionally-dispersed activities associated with online courses, such as examinations, laboratories, tutoring and other face-to-face interactions, thereby decreasing the burden on individual institutions and professors.

In conclusion, faculty will need substantial support in conceptualizing, developing, administering and facilitating online courses. The decision to adopt this approach is one that must be undertaken at an institutional level. Even willing faculty need to be mentored and have the opportunity to share skills and experiences. Faculty learn best when they are paired with a well-respected colleague, or have an opportunity to participate in a forum where they can share their experience and gain knowledge from others in similar circumstances. An online community would be ideal in this case.

What is needed for faculty commitment?

- **Support**: Faculty generally resist developing online courses when asked to do this without guarantees of administrative and technical support, new infrastructure and stipends to cover the massive front-end work required.

- **Financial compensation**: Professors who have experience with online education are aware that teaching online is more intensive than teaching face-to-face because of the increased use of communication tools (for example, bulletin board postings and e-mails and student expectation of constant feedback and interaction), as well as the time needed to develop such courses. Teaching
an online course should count towards the regular teaching load of the faculty member (in many institutions, it is termed an “overload option” rather than counted as part of the regular course load). Also, some standards in stipends should be developed, as well as separate contracts for various portions of activities needed (for example, course development, consulting/training other faculty members). Financial rewards and recognition for providing mentoring opportunities to new professors should be made available.

- Development of a sense of community and belonging: as quickly as possible, professors should be included in a community of peers in order to reduce the feeling of isolation.

THE CHALLENGE - OPERATIONAL CONCERNS

The issue of governance and depth of service provision is a complex one and outside the scope of this discussion paper. It does raise, however, a number of questions regarding the academic mission of individual universities. A model where a student would pursue a degree based on the policies and standards of a home institution, with courses taken online at other Ontario institutions, presents numerous fundamental advising, funding and policy problems. Each institution in Ontario is unique with policies and practices regarding prior learning assessment, points of entry (portfolios, marks, letters of intent), transfer of credit, letters of permission, residency requirements and even minimum grade point averages. All this creates challenges that must be considered as we work toward developing a shared online institute.

Of particular concern to the Academic Colleagues is the need for the specialized support mechanisms and services for developing and providing successful online courses. The supports needed include:

- technical support for both students and professors
- a course development/revision team (instructional designer, web developer, peer reviewers)
- support staff for course delivery for both students and faculty (co-ordinators, exam schedulers, assignment clerks, programmers, graphic artists, video production specialists, project management, permissions specialists)
- academic advisors and managers
- mechanisms to monitor student engagement and academic progress
- means of contacting students at key points while enrolled in a course (for example, if assignments have not been submitted)
- mechanisms to minimize plagiarism, safeguard confidentiality and ensure that the enrolled student is the person actually taking the course

The Online Institute will also have to address issues of time zones, accessibility, disabilities, geographical and cultural considerations.

Existing models

There are various examples of operationalization of online education elsewhere in the world, covered in part in the portal by Contact North/elearnetwork.ca - “Ontario Online Learning Portal” - http://www.click4onlinelarning.ca/. In an article written by the editorial board of The Sacramento Bee in July 2010, the board discusses the realistic prospects of a University of California shared-course-based online institute. The goals were to increase student numbers, cut budgets and deliver University of California quality courses without over-burdening university’s facilities. The intention was to save money and increase access to education at the highest level. The courses targeted in the pilot were the ones with the highest enrolments, the ones most in demand by community college students seeking to transfer into a University of California school, the most oversubscribed courses and the ones the liked to teach the least. Pedagogically, these courses became even more clearly “requirements to get out of the way” as online rather than face-to-face courses, according to the editorial board.

In contrast to the university system in Ontario, which is not as standardized, the California online model may work institutionally because the University of California, California State University
and community college system in California are based on historically-practiced systemic course standardization and planned mobility. The California system was designed from the outset to enable institutions to share courses, thus empowering community colleges to meet the same standards of lower level University of California courses. By contrast, the postsecondary education system in Ontario was not designed to facilitate mobility between institutions.

Other examples of recent and similar initiatives, both good and bad, are readily available. The University of Illinois’ “Global Campus” crashed and burned in an attempt to use online education to capture tuition-paying students from around the globe. The University of Texas experienced a failed “Telecampus” project that critics say ended up duplicating what was more efficiently managed locally. The University of Massachusetts’ version of an online campus (“UMassOnline”) has had better success, since it was based on realistic goals and because the academic and fiscal planning for the initiative is based on the simple premise that “not all success is financial.”

In each of these cases the idea that online courses will generate revenue is revealed as a myth. There are significant costs as a result of the added work involved and infrastructure spending. Some institutions utilize online courses merely as a way of staying in touch with alumni and to be active members of a larger community. *The New York Times* provides sample mini-courses from campuses across the United States online with great success. Online education is great, but it is an additional way of offering instruction rather than a profit-making alternative.

Current research in generating online courses, using varied forms of social networking combined with disability-focused intentions, is proving to be very useful in addressing current Accessibility of Ontarians with Disabilities Act (AODA) legislation and meeting the demand for inclusive design and universal access to education. The resulting course design is often applicable to all students. Still, many such courses are not fully online, but rather hybrid courses that may include some face-to-face contact and some digitized work and interfacing. Because the goal in creating these courses is not simply fiscal, but pedagogical in nature, there is greater faculty commitment to developing and teaching them as a result.

An exhaustive investigation into the administrative mechanics and contractual agreements with the Open University in the UK, the Erasmus program in Europe and The European Graduate School could produce budgetary and managerial models to work with, and would provide a window into faculty incentives and compensation as well.

Allowing each institution to specialize in a specific subject area to contribute to an online “clearinghouse” of courses is one option for streamlining who does what but, pedagogically, the results would be the elimination of key areas of breadth and depth needed in any comprehensive institution. This could create a bizarre world where disciplines and subject areas would be virtually “owned” by specific campuses and become absent on others.

Universities should be allowed to offer the palette of courses they deem necessary to deliver their university programs. No other institution should have a say as to whether these courses already exist online or not. The resulting potential homogeneity of student bodies and faculty at institutions would create a very bleak postsecondary landscape that would counter much of the work in diversity and inclusiveness that every contemporary university campus strives for in its mission statement. Rather, student bodies and faculty would best be served by a consortium where member universities are permitted to offer and design a comprehensive palette of online courses, which are then centrally shared. This sharing of online courses would pave the way, as recommended by COU, to an effective credit transfer system.

**Financial Considerations**

The cost of developing online courses can be prohibitive if attempted by individual schools, especially since there are no set industry standards for compensation. Some kind of cost sharing and/or agreements to minimize duplication among institutions may make more efficient use of resources. If COU’s recommendations are accepted, and the online institute becomes a “portal” for students to complete online degrees and programs through the use of courses at different institutions,
then government needs to make an investment in the online institute for administrative, research and marketing expenses. This funding would be used to enhance existing courses and technology to enable participating institutions to collaboratively develop courses; remuneration for developers and/or pedagogical experts; as well as finance the ongoing administrative support needed for online courses.

As with face-to-face courses, there is a risk of having to cancel courses at the last minute because of low registration numbers. This is further complicated in an online institute, as not all students are registered at the same university. In fact, they may not be in the same province or country. In order to ensure financial viability, the online institute would need to redirect students to courses where registrations are still being accepted and able to provide recognized credits.

CONCLUSION

An online environment shifts the traditional learning design from teacher-centred and lecture-driven to learner-centred designs that promote engagement, working with others and drawing from past experience. All of these benefits enhance learning outcomes. It will take time to learn how to move from the ‘sage on the stage’ model of teaching and learning to a more supportive model, as well as from the old text-based model of online courses to a more modern dynamic model where communication is orally based. Such a transition has obvious potential.

The following are issues that should be considered as the online institute is developed:

- The obvious advantage of an online education system rests with mature students, who need the flexibility to manage their studies while balancing work and family.

- Online education is becoming increasingly viable for graduate education and may, in fact, be easier to offer than undergraduate education. Despite having the technical skills to follow online courses, younger students may not be as independent and may lack the basic learning skills for autonomous higher education (although it has been argued earlier that first year, large foundation courses, if properly offered, could provide a substantial benefit).

- Online courses should not be placed in opposition to face-to-face models. This mode of delivery is simply an alternative method of education and it may not cater to all learning styles.

- Sustained financial and human resources are absolutely necessary for ensured success, and to support professors and students alike.

- Professors need to be trained, mentored and recognized for the time and effort spent in transforming from a traditional to an online professor.

- Blended, hybrid courses may be the best way of ensuring quality, by addressing concerns around applicability to science labs and the development of oral communication skills.

- The decision to embark on such an initiative as the online institute should not be motivated by a desire to save money. Start-up funds required to set up these courses, and engage students and professors, are costly.

- Professors need to be trained, mentored and recognized for the time and effort spent in transforming from a traditional to an online professor.
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