COVID-19: The Business of Education Needs to Change

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What is the future of formal education as the COVID-19 pandemic exacerbates the divide between education as a business and education as a philosophy? Educational institutions are faced with increasingly business-like budgeting pressures, and technology is being seen as a way to continue the current business in spite of the pandemic constraints.

The future of formal (post-secondary) education is dependent on how well educational institutions can meet the expectations of both society and individuals. All educational institutions, regardless of size, public/private charter, or funding source, are faced with increasingly business-like budgeting pressures and can be viewed in the same way we would look at any other business. An educational institution has a number of product offerings, revenue sources, potential markets, etc. and must understand what it is selling, to whom it is selling it, and what cost is acceptable to the students. The pandemic exacerbates the divide between education as a philosophy and education as a business. Revenue is impacted as schools stop in-person activities. Most noticeable is the loss of revenue from room and board and sporting events, but other sources are also impacted. States have less tax income to share, endowment investment yields may suffer, and students are demanding tuition reductions because they feel the education quality is greatly reduced by remote learning.

The exponential growth in computer technology has changed almost every aspect of our daily lives. We expect to be connected to a vast wealth of information 24/7 and to have it delivered to us on our computer, on our tablet and on our smartphone for free. We can already carry hundreds, or even thousands, of books on our e-readers or smartphones. The value of going to a formal educational institution to "get" an education seemed to be a losing proposition before COVID-19 and the pandemic has further reduced that value because of limited on-campus activities. Educational institutions need to take a serious look at the value they provide and refocus their products to deliver that value.

THE FOUR EDUCATIONAL ASPECTS

The dictionary definition of *education* as "the action or process of teaching someone especially in a school, college, or university" is adequate for the *word* but falls short when thinking about the *concept*. The solution is to separate the different aspects of education, changing the business model while improving the students' experience. It is important to understand that formal education (colleges and universities) differs from informal education (for-fee training classes) and self-education (independent study). The four Educational Aspects are:,

Content Delivery: All of the activities related to imparting new knowledge to students. While traditionally thought of as classroom or lecture activities, computer technology has already expanded the idea of Content Delivery to include many remote and distance learning activities, which more and more are seen as a way to address social distancing requirements.

Structured Learning: All of the activities used by the instructor and other educational institution staff related to helping students actually learn a subject. Traditionally Structured Learning and Content Delivery have been seen as a single classroom activity where the instructor or professor intermixes the presentation of new material with other activities designed to stimulate students' interest, understanding and retention. However, computer technology has allowed the development of more purely Content Delivery focused methodologies, especially in support of remote and distance learning, so that Structured Learning activities can be separated from Content Delivery. This shift towards the separation of Content Delivery and Structured Learning can be seen in many on-line courses where assignments take the form of reading in the textbook and/or watching a re-recorded lecture (Content Delivery) and then posting responses to discussion board topics and/or participating in on-line chat sessions (Structured Learning). For the most part, both students and professors see Structured Learning as the most valuable aspect of the educational experience, but also, the most difficult to implement remotely. The reduction in Structured Learning activities is one of the main reasons students are upset about paying full price for only part of the educational experience.

Student Assessment: All of the activities that are centered on quantitatively measuring how well students have absorbed and retained the new knowledge. Traditionally, Student Assessment has been accomplished mostly by written and oral examinations, and computer technology has provided tools, such as standardized tests, automatic grading and test question databases, which allow more robust assessment without overly burdening instructors or institutions. In-person Student Assessment is very implementable under COVID-19 conditions, although it may be more costly.

Institutional Accreditation: A formal recognition that an institution has met official requirements of academic excellence, including curriculum development, the facilities provided to students, the quality of faculty, and institutional procedures for Content Delivery, Structured Learning and Student Assessment. The impact of computer technology on Institutional Accreditation has been similar to the impact in other industries

and is seen in improvements in communications, record keeping, information repositories, and documentation. Institutional Accreditation is mostly a record keeping function little impacted by the pandemic.

Formal education includes all of these Educational Aspects. A student is accepted and enrolls for classes with the expectation not only of getting knowledge, but also of receiving some certification of value showing that he or she has achieved a level of knowledge and/or specific skills. The Content Delivery aspect includes activities such as sitting for lectures, doing required readings, completing other course related activities, and sometimes doing lab work. The Structured Learning aspect, which varies widely by institution and by professor, is probably the most important differentiator, providing much of an educational institution's added value. The Student Assessment aspect is usually met by graded assignments and examinations. The instructor makes the determination of how well the student has met the often poorly defined, and overly general, course objectives. In the end, the student is paying tuition as much for the quality of the certification of completion, based on the educational institution's reputation and level of accreditation, as for the delivery of the content.

As the Content Delivery aspect is driven towards a commodity, because it is freely available on the World Wide Web, then the rationale for the value of the education rests more and more only on the other Educational Aspects. The pandemic has exacerbated an already growing student resentment of education costs. Now institutions are attempting to hold tuition and fees at normal levels while students see much less value because of the missing Structured Learning and other social activities.

TRADITION vs. BUSINESS

Formal education is usually seen from the point-of-view of tradition. An educational institution is very proud of characteristics such as when it was founded, who founded it, the philosophy of its approach, the institution's research subject areas, the credentials of the faculty, the size of the endowment fund, and, of course, its athletic programs. Formal education marketing tends to focus on the total experience of attending a given institution. The value provided by the institution is greatly diminished when in-person activities are reduced or totally eliminated.

Formal education can also be viewed as a business with characteristics such as product line (degrees and certifications offered), return on investment (tax-payer support, tuition, endowments, royalties, and grants realized for the development of courses, degrees, certifications, patents, research, etc.), market share (percentage of the potential student population attending), regulation compliance (accreditation), and, of course, non-product revenue (athletic ticket and merchandise sales). This business view can also be extended to the students' point-of-view where return on investment becomes the value received for the tuition paid.

The Tradition

How is the tradition of an educational institution related to computer technology? While many educational institutions are experimenting with alternate forms of Content Delivery and Structured Learning, the traditional approach is still centered on the classroom or lecture hall. The term lecture was derived from the Latin lēctūra, for a reading. This approach goes back to the Middle Ages where the teacher would read aloud to a room of students, because books that had to be copied by hand were extremely expensive, and students simply could not afford to own an individual copy. The lecturer, or reader, would take the only copy of the text into a room at a given time and read it aloud. This, by its very nature, required advanced planning (i.e., enrollment) so that everyone knew where to be and when to be there. The technology advancement of Gutenberg changed publishing, but not the tradition of Content Delivery in education. In this model Content Delivery was formalized as the lecture with Structured Learning either taking place outside of the lecture hall or interspersed within the lecture. Computer technology has not only changed publishing so that every student can own a textbook, but now students can also own a copy of every other book on the subject and carry many of them around all the time in an e-reader. A public reader is no longer required, but most educational institutions still require students to attend class, physically or virtually. The credit given for a class is still based on the number of contact hours, and instructors are expected to do something productive during class time. This current model merges Structured Learning with Content Delivery in the classroom, but the commoditization of Content Delivery means classroom activities need to be much more Structured Learning focused. An increasingly difficult challenge for instructors is developing classroom activities sufficiently interesting and valuable that students feel compelled to attend.

Most educational institutions tie delivery to accreditation with the notion of taking a course for credit. The assumption is that a student can only get the real information on a subject from the school and only by advanced arrangement (acceptance at the school and enrollment in the course). Prior knowledge of the topic is irrelevant, and the student is required to 'receive' the official version of the knowledge from the school and the instructor. Computer technology has made some changes to this traditional approach by allowing many instructors to encourage students to go beyond the adopted text for a course and read other material. However, this is only a minor improvement. Many students are happy to acquire the knowledge on their own or through alternate channels (such as work, hobby clubs or on-line self-study), but they are still required to participate in the traditional delivery endorsed by the educational institution. As computer technology drives Content Delivery towards commodity, we see increased student resentment over the high cost of receiving something

they already have or can get for free. What makes the situation worse is the disparity between the technology affluent and the technology deprived. Classroom activities that only rehash that free content, without providing any real Structured Learning, or make unrealistic assumptions about access to Internet resources, just exacerbate the resentment. Educational institutions need to break with tradition and adjust their value proposition to focus more on learning activities and accreditation while also assuring that Content Delivery is fair and equitable across the student population.

Separating Structured Learning from Content Delivery is a very real challenge from a traditional education point-of-view because the distinction between the two is often quite fuzzy. When Content Delivery and Structured Learning are intermixed, the instructor has a high degree of confidence that they fit together well.

However, when Content Delivery is separated from Structured Learning the challenge becomes trusting that the Content Delivery will be of the required quality and that students will have received the full Content Delivery required for the specific learning activities. In addition, instructors may feel compelled to insert additional material into the Structured Learning activities for various reasons, such as insuring students get more up-to-date information, wanting to include their own point-of-view, or believing the Content Delivery material to be inadequate. The traditional autonomy afforded tenured instructors exacerbates the lack of trust issue between the Structured Learning implementer and the Content Delivery developer. The advantage during the pandemic is that Content Delivery can be totally remote and Structured Learning can be tailored to specific class and/or individual needs.

The Business

What is the business side of Content Delivery? The most obvious is how students are charged for their education; by credit hour, which is still based on the number of contact hours. Also, professors and instructors are still mostly compensated based on the number of contact hours. Even tenured professors are expected to teach a minimum number of credits per semester or quarter, which is based on contact hours, or "buy" their time with research grant funding or administrative responsibilities so a part-time instructor can be hired, who is paid by the number of contact hours. But the business relationship goes deeper. The lecture nature of university courses is usually tied to the adopted textbook model, which ties the interests (i.e., revenue stream) of the university to that of the publisher. De-coupling Content Delivery from Institutional Accreditation means that adequate alternative information sources would be acceptable. It also means breaking the relationship with publishers, resulting in additional resistance to change from bookstore managers, textbook publishers and instructors using publisher-provided resources. This de-coupling is already underway. Computer technology is allowing students to avoid what Michael Fitzgerald, in his 2013 MIT Technology Review article *Free Textbooks Spell Disruption for College Publishers*, calls the "cartel-style" model that requires students to buy high-priced specific books. If anyone doubts how important this is to students, just ask a group of them how many are using used, old, borrowed or bootlegged versions of the required textbook, or how many have had an expensive textbook stolen.

But textbooks are just the beginning. The entire concept of Content Delivery is being disrupted by advances in computer technology in the form of MOOCs (massive open online courses), which allow hundreds or even thousands of students to take a course. MOOCs, as implemented by a number of companies, such as Udacity, Coursera, and edX, address the technology of Content Delivery, just as disruption to higher education in the 1920s was caused by the postal service, which allowed correspondence courses. Yet educational institutions did not fundamentally change their business model; they just grafted a new format into the existing one. Then came distance learning, on-line classes, virtual classrooms, etc. All of these address the technology of Content Delivery but fail to address the business, which explains the initial popularity, and eventual decline, of new Content Delivery technologies. COVID-19 is causing a renewed interest in these technologies but the long-term outcome is likely to be the same, as institutions try to "wait it out" and go back to their traditional business model once the pandemic is over.

The current focus on Content Delivery is really contrary to how institutions see their value. Auditing a course is usually about the same cost as taking it for credit, which is an implicit business model where Student Assessment and Institutional Accreditation have no value. Separating Content Delivery from Structured Learning and Student Assessment would allow schools to use the remote format for Content Delivery and offer more value with personalized learning and assessment activities.

Separating the Educational Aspects would allow institutions to make a better case during the pandemic that reduced Content Delivery (remote vs. in-person) is not a major consideration in the cost because they are really paying for the other Educational Aspects. Once Content Delivery has been decoupled, professors can focus on providing more value to the educational process through Structured Learning, leaving Student Assessment as a separate activity. Structured Learning without assessment is much more implementable remotely because it removes the issues of verifying identify and proctoring exams online. This also solves a problem many universities are facing with COVID-19 where new foreign students cannot travel. Intense remote Content Delivery with flexible Structured Learning activities would allow them to start on time (avoiding a major revenue hit) and still complete rigorous Student Assessment after they can travel.

CHANGES FOR THE FUTURE

Given that computer technology is changing the world around us at an alarmingly increasing rate, what should educational institutions do? The key to the future of formal education is de-coupling Content Delivery from the other Educational Aspects. The hard part is that educational institutions still need to be responsible for the Student Assessment and Institutional Accreditation aspects. This is much more than just allowing students to test out of a small number of courses, either for full credit or to meet prerequisite or degree requirements. Most educational institutions limit the number of transfer and test-out credits because they feel that they cannot certify the quality of the education unless the student has received a majority of the knowledge at that institution. What few educational institutions will admit is that there is also a threat to the business model. Since there is usually no revenue associated with transfer credits, and very little associated with the fees for testing out of a course, an educational institution that allowed significant classroom bypass would face serious revenue shortfall. Therefore, de-coupling Content Delivery requires significant changes to the overall business model in addition to changes to the academic model. The good news is that it doesn't have to be done across the whole institution but can be implemented with a small number of classes or subjects.

Once Content Delivery has been decoupled from Student Assessment and Institutional Accreditation, professors can focus on providing more value to the educational process (i.e., Structured Learning). Think about taking an undergraduate philosophy course where the professor provides you a reading list of assignments and in-classroom discussion guidance. That level of Content Delivery could easily be moved to a web-based course or a MOOC. But imagine the lack of feedback provided by the instructor at the end of the course with 25 students turning in final exams and large papers that must be graded in the three or four days between the end of the class and when the institution requires grades to be turned in. Now consider Content Delivery that is provided continually and students attend Structured Learning activities, that focus on teaching and mentoring rather than grading, at whatever time they are available rather than having to schedule a particular class only offered once every one or two years. The professor can then focus on mentoring and teaching during a separate Structured Learning course and schedule Student Assessment courses to receive material to be graded on an ongoing basis. Institutions can then offer courses on an on-going basis and even offer different levels of Student Assessment. For example, there could be one level of assessment course where the student just submits materials and gets a letter grade or even a pass/fail. Another level, for a higher enrollment fee, would involve feedback from the professor on an ongoing mentor basis rather than a 'one shot and you are done' format, providing a significant market differentiation opportunity (and enhanced revenue) for the educational institution. This approach would significantly increase the potential population, or market, for an educational institution, thus allowing for increased enrollment with the same product line, with increased economy-of-scale because of larger or outsourced Content Delivery courses. Specific Structured Learning classes could be available either on-going or on a more traditional schedule using a fee structure commensurate with the resources required. Educational institutions could then focus their differentiation on providing levels of Structured Learning and Student Assessment feedback to help students through the assessment process rather than on the commodity Content Delivery aspect. The overriding problem is that educators see it as a pedagogical problem, and computer scientists see it as a technical problem. Neither side is addressing it as an overall business problem. De-coupling Content Delivery from Structured Learning may be challenging but the pandemic is forcing the issue, just without any thought to the overall business model.

It is important to keep in mind that changes to an internal process do not require changes to the external interface. An educational institution can make significant changes in how students are taught and assessed without changing how that is reported on a transcript. De-coupling Content Delivery and Structured Learning from Student Assessment and Institutional Accreditation means changes to the business and academic models for the institution's internal processes, but not changes to the overall product line. A student would still graduate with the same degree or achieve the same certification, the transcript would still have the same list of courses with associated grades, and the same overall GPA (grade point average). The difference is the way the student completed the courses. The level of achievement that the educational institution certifies would be the same, just that it would be associated with the completion of Student Assessment courses rather than Content Delivery courses.

How an educational institution deals with partial failure of Student Assessment is another area for marketing differentiation. Offering options for greater student-professor interaction, for higher fees, would allow students to pick the type of Student Assessment that they need for each course, or even retake a Student Assessment course at a higher level without repeating the Content Delivery or Structured Learning courses. The result could be better educational efficiency, lower cost to the student, reduced spikes in faculty load, increased student retention, and higher enrollment capability for the educational institution (i.e., more revenue for the same investment). This provides a huge opportunity for the educational institution to leverage computer technology changes to the academic model with equally profound changes to the business model, but still have products that meet expectations of industry and research organizations. Restructuring the business model so that Content Delivery is less costly, which allows more value (i.e., revenue) to be shifted to the other Educational Aspects, will be a major paradigm shift for traditional educational institution administrators. The pandemic may be providing the external motivation that educational institutions need because dealing with changes forced by the pandemic are going to affect the business model, just not for the better if the objective is

maintaining the status quo. Changing the academic model addresses problems caused by the pandemic. Changing the business model allows universities to charge more for Structured Learning that students value most. Together these changes increase enrollment, revenue and student satisfaction.

This article is a summary, with updates for COVID-19, of a paper written for an education conference in 2014. The full version of the original paper, with additional material, recommendations, and references, is available at http://simalytic.com/CompTechInEd/CompTechInEd.pdf.