

It Isn't Just About Online Learning: Broadening the Post-Coronavirus Discussion on Teaching in Higher Education

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Abstract: *The coronavirus crisis forced academic institutions around the world into distance learning virtually overnight. One of the good things that came out of it is, we proved that given strong motivation, major change is possible. This has created a real opportunity to take a close look at what we are teaching our college students, why we are teaching it and how we are teaching it. Instead of focusing on whether digital learning should be incorporated into our long-term curricula and in what way, we should focus on altering curricula, pedagogy and evaluation methods so that they are relevant to updated learning outcomes and the new generation of students. If we don't – academic institutions are in danger of becoming irrelevant.*

We live in a time where various technologies are advancing at an exponential rate. This accelerated progress is influencing all aspects of our lives, and inevitably, has a profound impact on the job market. Surveys conducted among employers show that, although knowledge is important, a greater emphasis is being put on skills – specifically “soft” skills, more than ever before.

For example, the desired attributes of a modern engineer, as reflected by the industry, go beyond the ability to apply knowledge in mathematics, science and engineering. Knowledge is constantly changing – making skills such as self-learning, critical thinking and problem solving vital for professional success. An even larger emphasis is placed on skills like teamwork and effective communication. An engineer simply cannot succeed without the ability to collaborate with others and within multidisciplinary teams. This includes succinctly and coherently introducing a new concept or idea and persuading others to believe in it.

On the other end, today's students are different from the past – they are digital natives who have been exposed to the internet, social networks and mobile systems from a young age. The skill set this generation has developed has its benefits – they consume a vast amount of various types of data from a range of sources, are familiar and comfortable with technology and they multitask as a way of life. This makes traditional styles of learning less appropriate for them. Furthermore, they are motivated by the desire, not only to make a living, but to innovate and succeed quickly.

To put it in engineering terms, this means that the “input” into the higher education system (i.e. high school graduates) has changed, and the desired “output” of the system (i.e. college graduates entering the workforce) has also changed. So how is it that we still educating college students in the same way? The “process” of education must also change, otherwise it may become irrelevant.

It has been clear for many years, that these changes must affect how academic institutions educate students. A recent report published by MIT – “The global state of the art in Engineering Education” – compared the 10 academic institutions that will lead the next generation of global engineering education to the current leaders. The “emerging leaders” are mainly new institutions, or institutions that underwent a significant strategic change while realizing a holistic educational vision. This kind of systemic overhaul is excruciatingly difficult to undertake – and generally requires a clearly defined mission and tactical roadmap, as well as the cooperation of management, faculty, staff and students.

Crisis, however, is a catalyst for change. Although the efficacy of traditional frontal instruction has been in question for quite some time, most academic institutes have avoided making major changes. As the coronavirus crisis unfolded, academic institutes around the globe were forced to

instantaneously launch full distant teaching curricula. This is a fundamental change that occurred under threat – there was no choice but to go online, otherwise we would not be able to teach and would lose the semester – with all that entails.

What actually happened is that we proved that major change is possible given strong enough motivation.

With that said, the type of distant teaching that took place during the coronavirus threat does not necessarily provide a quality pedagogical solution to online learning – in many cases, it simply mirrored classroom instruction, albeit arguably less effectively and enjoyably for students and faculty alike.

Online learning should not consist of hours of viewing frontal lectures. It should be part of a blended approach that combines synchronous and asynchronous learning, as well as frontal and online learning – all of which should encourage interactive discussion and self-learning.

I truly believe that our physical campuses play a crucial role in the education of our students. The campus provides a platform where students can develop essential skills like teamwork, creative thinking, and problem-solving through experiential learning and extracurricular activities. And just as crucial, they provide a place to meet and interact and experience student-life to its fullest.

This will require us to take a closer look at what we are teaching our students, why we are teaching it, and how we are teaching it. Finding the best way to instruct each topic will require much more creativity and innovation than clicking and uploading an online tool.

If we do not learn from this experience and do just that, the question of the relevance of academic studies will be hurled at us at a greater speed than it has been in the past – now is the time to make the necessary changes and preserve the relevance of higher education by taking full advantage of the disruptive change the coronavirus crisis brought upon. This should include updating our curricula, pedagogy and evaluation methods in a way that incorporates effective, motivating and inspiring teaching, which can be partially on-line and blended with a vibrant campus atmosphere that will have students wanting to come to meet, interact, participate and learn.