COVID-19 pandemic and the digital revolution in academia and higher education

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Abstract: COVID-19 pandemic instigated a digital revolution in academia and higher education. Social distancing, months-long quarantine, as economic shutdown will help the majority of people working in academia and higher education not only to complete their personal transition to the fully functional and operational online tuition, but also to understand that online defences, online entrance and final exams, as well as online academic jobs are as effective and meaningful as those conducted "in real life". Due to the crisis induced by the coronavirus epidemic, innovations in academia and higher education that would have normally taken several years due to the various contradictory administrative regulations are now introduced promptly in a matter of days. This is a clear example of the Schumpeterian 'creative destruction' in making that will forever change the status quo in academia and higher education.

Keywords: academia; higher education; coronavirus pandemic; online tuition; social distancing; COVID-19; digital revolution

1. Introduction

From their very origins in medieval Europe, universities had two main goals: providing the representatives of the powerful political and business elites a place for networking (and making them even more powerful), and preparing the offspring of those elites to take over the family businesses (Strielkowski, 2015).

With regard to the above, Wissema (2009) describes the evolution of universities presenting their three generations: from the medieval ones to the research universities (Humboldt-type universities), and finally to the high-tech, science and technology driven entrepreneurial universities. It appears that nowadays, we are entering into the new phase of the evolution in academia and higher education that is going to create the 4th generation of universities which can be named "online and digital universities" (see Figure 1 that follows). Much of that is because of the COVID-19 pandemic that launched a digital revolution in academia and higher education.
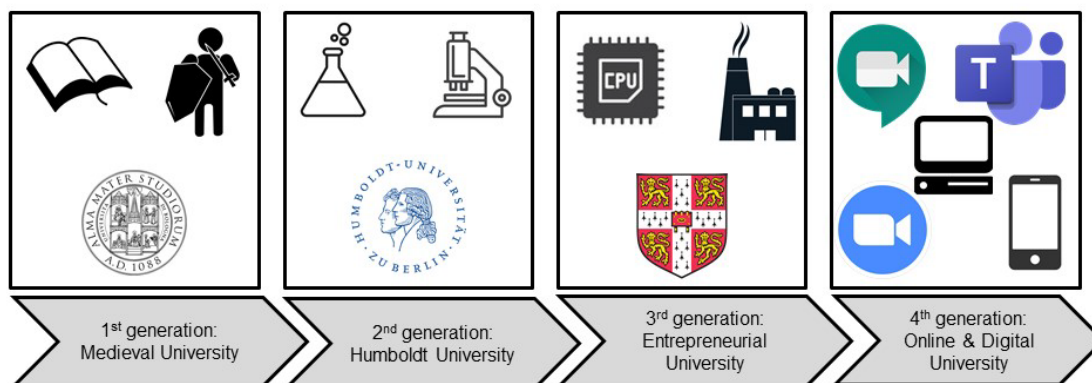

Figure 1. Evolution of academia and higher education
Source: Own results

Current technology finally provided us with all the tools we needed for making higher education fully online and digital. So, why are we reluctant to make this final step? Are we ready for that change?

2. Digital revolution

The coronavirus pandemic of 2020 became a push factor that can help everyone to better understand that all the attributes of higher education such as online defences, online entrance and final exams, as well as online academic jobs are as good as those conducted "in real life. Here are some recent examples:

- On the 18th and 20th of March 2020, Imperial College London conducted the world's first online exams for its 280 six-year medical students (Tapper et al., 2020). The digital "open book" exam was successfully delivered remotely, and many universities in the United Kingdom and worldwide are now likely to follow the Imperial's strategy as a solution for examining students during the COVID-19 pandemic shutdown. According to one of the students who took the exam, this was a good experience because medical school finals measure a higher level of learning then just remembering information. The tests focused on the student's ability to synthesise information to come up with a management, or interpret complex data are skills (see Ali, 2020).

- On the 26th of March 2020, the first online PhD defence took place at the Erasmus School of Economics in Rotterdam, the Netherlands (Eur.nl, 2020). Zhaowen Qian defended her PhD dissertation 'Time-Varying Integration and Portfolio Choices in the European Capital Markets' (Figure 2).

Figure 2. Online PhD defence in the Netherlands
Source: Eur.nl (2020)

- In addition, it also turns out that if the exams and defences can be done online, so can be the graduations. In Japan, despite the fact that spring graduation ceremonies were cancelled because of the coronavirus pandemic, the students at the Business Breakthrough University in Tokyo attended remotely (see Figure 3) by controlling avatar robots from their homes (Reuters, 2020).

Figure 3. Online graduation in Japan
Source: The Guardian (2020)

Digitalization in higher education allows streaming lectures online or enables professors and students to interact in the virtual environments but not everyone is ready for this. Even those young people who do not spend much time in the "real life" and rather prefer playing video games or interacting with others on social network platforms confess that they would have preferred being lectured in real classrooms and in real universities. Sometimes this is just a feature of habit but quite often this can be attributed to the difficulties with personal time management and procrastination when students are left studying online from the comforts of their homes (Strielkowski et al., 2020).

3. Academic types

In general, there are three main types of people in today's academia and higher education (see Blaginin et al. 2020):

- Lecturers: typically engaged in delivering lectures to students (several lectures a week, several days a week). Some lecturers are good public speakers, are popular among their students, and enjoy their work. However, most lecturers lack time for writing and publishing research papers and many of them loath this activity. Most (but not all) lecturers often use the same (often outdated) material (Power Point slides) for many consecutive lecture courses and years.

- Researchers: writing and publishing many research papers and monographs. Researchers know all about the publishing process, bibliometrics and how this system works. Many researchers are terrible public speakers and prefer not to lecture wherever possible (quite often they "buy out" their lecture time with the research papers or grant projects).

- Businessmen: the rarest type of academics. Businessmen are the directors of research centres, professors, deans, and chancellors. They used to be lecturers or researchers before but discovered their leadership skills. Many businessmen are proficient in writing and securing grant proposals and obtaining funding for their institutions.

Ideally, one should exhibit the traits of all three types in order to be very appealing to the potential employers, even though it is very rare in case of the majority of academics. Therefore, one should discover which type of academic she or he is and try to develop one's skills in this particular field. All these three types are likely to be transformed after the digital revolution in academia and higher education but all of them still have their place and importance in the 4th generation of universities.

4. Academia 2.0

Two years ago, I participated in the "NextGen VOICES: A postdoc's purpose" organized by the *Science* journal. We were asked to provide an answer to the following question: **"**What is the purpose of a postdoc? Address this question by writing a job advertisement for the perfect postdoc position". This is what I wrote: "*Approaching 40 and still without a tenured position? Join our Ivy League university and let the Matthew effect boost your career. We are a cronyism-free workplace. You are encouraged to pursue your own research interests. Your publication output is more important for us than any teaching or administrative obligations. Our prestigious location incurs high living costs, but you can work remotely and enjoy more time with your family*" (Strielkowski, 2018). My letter was placed into the "Idealists" section. Back then, such an advert seemed to be unrealistic. Now, only two years later, my job advert for the "ideal postdoc's position" can become a reality.

Many researchers in the academia do not have any obligations to teach and can do most of their work online. Working on research projects, preparing and submitting reports and journal papers, even theses supervision – all of that can be done online. In fact, for the past 5 years or so, I conducted all my academic job interviews online with most interviewers using Skype or WebEx.

There is a plethora of bright and talented researchers who would have greatly contributed to the work of many prominent universities if the salaries paid by those universities were enough to maintain their living. The costs of living in Cambridge or Berkeley, where I used to live and work, are enormous (and this is not to mention that one would not survive there with a family one has to support). Even though your work might be extremely inspiring and rewarding and the people you meet on everyday basis are the world's top of the top in their respective scientific fields, the conditions in which one has to survive are undignified. One has to pay horrendous sums of money for a small dull room with a shared bathroom and commute to work by foot or by bicycle.

Surely, sexagenarian and septuagenarian professors struggle with online lectures and prefer face-to-face meetings. However, today's lectures have to be innovative. Simply showing the same Power Point slides year after year does not work anymore. In order to grasp the students' attention, lecturers need to constantly update their material and to refer to the most recent publications, scientific discoveries, perhaps even to the popular culture. This is the modern way of teaching which is also very fruitful for the lecturers themselves – by explaining the new things to the students they can better understand those things themselves[1].

A reviewer once commented on my paper on the transition of modern education: "*As someone who is teaching at the university since the 1980s and who has taught with blackboards, whiteboards, overhead projectors and power point, I am not really sure if teaching with MS Power Point slides is better for students than to teach with a blackboard, where the students have to write permanently their own notes. In my view, the*

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[1] There is a very old anecdote about lecturers and self-learning: Two professors meet, and one starts complaining to the other: "*This year's class is so dumb! I explained my lecture to them, and they did not understand it. I explained it for the second time and still nothing. I explained it for the third time –I understood it myself finally – and they still did not understand it!*".

students are more attentive in the latter scenario than in the former one, because they assume that they know enough if the presentation slides are in their bags or laptops". This clearly shows that some people are not ready for the digital revolution.

Moreover, the coronavirus pandemic and the social distancing which made us to close most of the universities worldwide can help us to cut the time spent on endless department, faculty, or board meetings. Often, one has to travel for an hour or two just to sign one single form. There is a high percentage of the so-called "bullshit jobs" (Graeber, 2019) in higher education. Endless meetings, colloquia, or discussions without an end – all those things create many obstacles and steal our valuable time. And this is not to mention that scientists are expected to travel frequently but forgoing one transcontinental flight per year would decrease carbon emissions more than driving a hybrid car, buying green energy, or eating vegan food (Kumar et al., 2019).

Clearly, many traditional principles of academic life will have to be reshaped due to our recent experience with the COVID-19 pandemic. While some of us are afraid of moving away from the status quo, others are willing to undertake this path. This 'creative destruction' (see Schumpeter, 1942) is likely to change academia and higher education as we know them forever.

5. Concluding remarks

Nowadays, online tuition is often viewed as "incomplete" and "supplementary". It might be that the coronavirus pandemic will change this perception. The major and the most ubiquitous impact of the COVID-19 pandemic on the academia and higher education is that innovations leading to their digitalisation that would have taken months or perhaps years under the normal circumstances due to the red tape and the administrative and legal regulations were promptly introduced in a matter of weeks or even days. It turned out that academia and higher education already had all the tools necessary for the online lectures, teleconferencing, or digital open books exams, but were reluctant to unleash their full potential, perhaps waiting for some better days to come.

The coronavirus pandemic stroke unexpectedly and forced the academic stakeholders to act fast. It appears that most of them reacted well. However, the intriguing question is whether academia and higher education will return to the 'offline status quo' after the pandemic is resolved. The longer this shutdown is going to last, the smaller is the probability that the 'digital revolution' in academia and higher education will be reversed after the return to normal.

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