“By now, I lost hope of educating my senior colleagues”, I joked after a lengthy debate about the educational implications of COVID-19 at a recent faculty meeting online. “Oh, stop it”, they protested. But the truth is that I do have hope. It rests squarely on the shoulders of the younger generation, which lacks a baggage of prejudice, scars from past wounds, or an entrenched agenda. Our junior colleagues are unbiased enough to carry the torch of innovation, they are energetic and fearless enough to shape reality as if it was clay, and they are innocent enough to believe that the future can be better than the past.

Hiring freezes in universities, triggered by COVID-19 finances, endanger this future. The reduction in job opportunities threatens the careers of postdoctoral fellows and junior faculty. Some faculty searches that were supposed to converge in March 2020, were cancelled without offers and new searches were not issued as of yet.

If the current financial austerity will persist for a few more years, it may force a cohort of early career scientists to leave academia. This would inflict an irreversible blow to science. The lesson learned after many scientists left the Soviet Union during glasnost, was that it is difficult to resurrect an academic system following an abrupt dilution of its talent pool.

In the coming year, funding agencies like NSF, NASA, DOE or private foundations must extend emergency support to junior researchers who are in need of another year or two of bridge funding. This will literally constitute a “bridge over troubled water” to our future in science and technology.

But the challenge to academia extends beyond post-graduate jobs to pre-graduate education. Will the education system bounce back to in-person classes after a vaccine will hopefully suppress the pandemic or will students prefer to attend online classes from a location of their choice at a lower cost? The answer will depend on the supply and demand economics of online education in the coming years. Fundamentally, the underlying question is whether learning is mostly about transfer of information or also about personal and social interactions. One could argue both ways, and a compromise might emerge in which the social interactions take place at a different location than the source of the online classes. Already now, many students have rented shared apartments in their favorite location, be it on the beaches of Hawaii or the suburbia of their favorite city, while attending the upcoming school year online. Beyond this academic year, online teaching will advance partnerships between universities and internet companies to expand enrollment dramatically by offering a more affordable hybrid of online and offline degrees.

COVID-19 forced a transition to enhanced household duties, including childcare and eldercare, which took an inescapable toll on the research productivity of many scientists.
The impact was particularly acute for laboratory research in which physical presence is essential. To some, the confinement at home increased mental health needs. To many others, the pandemic enhanced financial inequalities and threatened gender equity with women bearing a greater burden of the extra work load in many homes. All of these factors must be addressed by academic planning committees that will adjust the promotion and tenure policies of colleges in order to ensure that diversity and equity will endure.

But the past months also offered a menu of minor benefits from online communications. For example, online conferences save on travel time and expenses. To engage the audience, the format of online conferences is shifting to debates and dialogues with recorded lecture videos serving the supporting role of background materials. Long before Zoom, question and answer sessions were advocated by the wise philosopher Socrates as the best method for learning and for stimulating critical thinking. In addition to the benefits at conferences, boring administrative meetings are no longer a waste of time since passive participants can pursue other activities on their computers via email or the internet, while staying in a listening mode. More generally, the lack of interruptions by unanticipated visitors to my work space allowed me, for the first time, to reach a state of internal tranquility, ataraxia, recommended more than two millennia ago by the ancient Greek philosophers Pyrrho and Epicurus. With this aim in mind, I advocated social distancing long before it became trendy.

One way or another, academic life is likely to be forever changed. The damage caused by COVID-19 can be viewed optimistically as a fertile ground for establishing a better reality. A seismic change of this magnitude offers an opportunity to reboot the education system, aligning it better with our guiding principles and discarding its administrative inefficiencies. Doing so will require the drive and ideas of our younger colleagues, who will also be the primary bearers of the implications. Let’s make sure that they survive the current financial storm and construct a better academia, following the fine tradition of improvements since the initial version of the Platonic academy.

ABOUT THE AUTHOR

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Avi Loeb is the former chair of the astronomy department at Harvard University (2011-2020), founding director of Harvard’s Black Hole Initiative and director of the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics. He also chairs the Board on Physics and Astronomy of the National Academies and the advisory board for the Breakthrough Starshot project, and is a member of the President’s Council of Advisors on Science and Technology. He is the author of “Extraterrestrial: The First Sign of Intelligent Life Beyond Earth”, forthcoming from Houghton Mifflin Harcourt in January 2021.
(Credit: Nick Higgins)