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Accelerated transformation: designing global online higher education

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ABSTRACT

Studying higher education in 2020 has confirmed the difficulty of foresight analysis and need for courageous redesign of education fundamentals. This paper discusses the shift made by Tsinghua University into full online provision and considers broader implications for higher education. It articulates the emergence of global online higher education, and the capabilities underpinning this transformation. Drawing from the study of contemporary developments in China and the world, the paper concludes that now is the time for bold education experiments, informed by major useful university design.

Clarifying higher education design

We have become convinced, from studying higher education in 2020, of the need for courageous redesign of education fundamentals. We have felt pandemic-induced health and economic shocks rupture universities worldwide. We have watched major institutional and academic fissures erupt along fault lines that have been cracking for decades. We've observed a flourishing of novel forays into feasible, fanciful, and formidable futures, each underpinned by 'theoretical framings', 'robust evidence' and 'decades of experience'. We have puzzled as seemingly major universities have, after only a few months of fiscal turbulence, been caught swimming naked. A moment has arisen, it seems, to design the shape of things to come.

A shock for higher education

In late January 2020, after appraising the growing viral epidemic, Tsinghua University's leaders decided to move all coursework online. In early February, they gave the 'initial class' to around 5,000 faculty and 50,000 students spread across every time zone and continent (THU, 2020a). Over the next few weeks, scholars like us adjusted home studios, polished dust from web cams, obsessed briefly about online teaching tactics, and dived into the new era of global online higher education. In the following semester, over 4,000 courses were taught online by around 2,700 faculty to 25,000 students spanning every time zone and dozens of countries (THU, 2020b).

These formative experiences conveyed that higher education is one of our most precious resources. In times of uncertainty and fear, education and research are more important than ever. Through their early action, Tsinghua University's leaders conveyed that we should not panic, but instead study and discover. For those of us engaged in higher education research and development, this meant launching a university-wide programme of evaluation and design (Liu et al., 2020). It will take years to decode the ramifications of this shock, but it was seen as really important to start making quick sense of the situation and future implications.

Charting accelerated transformations

Within weeks, we each played our small part in helping Tsinghua University transform itself into the world's first fully online prestigious university. Technical issues were the largest obstacles at first. For instance, in-house platforms and software crashed from the load. Such problems were addressed, and across the semester, platforms were bolstered to support over 500,000 lectures at Tsinghua and 100 syndicated universities across China. To upskill faculty, Tsinghua trained 2,000 faculty in online teaching skills (THU, 2020c) and the XuetangX MOOC platform provided free online workshops to over 300,000 university teachers. Our research revealed that teaching fully online for the first time has led faculty to engage with substantial levels of teaching professional development.

More complex institutional and educational problems arose as the semester progressed. One important issue was how to carry out fair and effective assessment online, not only within single courses, but also in high-stakes situations like enrolment interviews, doctoral certification, and thesis defences. Faculty were given substantial autonomy to adapt education practices and experiment with new approaches. Working through such problems mainstreamed typically niche discussion about the nature of assessment, security, and validity, and ushered in substantial experimentation with education technologies and reconfigurations. During the mid-term period, for instance, certain faculty used screen sharing and camera surveillance for online examinations, while others required students to retain draft papers to prove authenticity (THU, 2020d). Overall, this cemented the need for substantial innovation of student learning assessment.

Another issue coalesced around the need for a virtual community to provide greater and more differentiated forms of student support. For instance, our university-wide census of students and faculty revealed that faculty were providing substantially greater student support but that students felt less supported academically, personally, and administratively. Graduate students reported a decline in class concentration and satisfaction compared with previous semesters. Learning alone at home is challenging to many people, particularly when they have spent the last dozen years in highly structured, institutional environments. We drew on these research insights, and on our own teaching experiences, to recommend the creation of new support roles and personnel. We collated research into the nature and efficacy of online learning communities to connect students and teachers.

As our study continued, it was clear that the 2020 pandemic shock was hastening other important transformations. Blocking students and scholars from international travel

renewed debates about the core role universities play in building national communities as well as local industries. Massive budget shocks and frightening forward-estimates forced universities to cap their isomorphic ivy-aspirations and divert focus towards more grounded local achievements. Ubiquitous experience with productive and safe online learning helped cautious governments across Asia embrace blended education. Thousands of free online for-credit and non-credit courses further blurred boundaries between universities and society. Though shrouded by much panic, uncertainty, and anxiety, it appears 2020 has in many respects accelerated the shape of things to come.

Launching an online global era

After a few months' reflection, it seemed obvious that we may be seeing the decline of higher education's 'international era'. Since the mid-1990s, international education has given rise to reasonably well-known information economies, student markets, research ecosystems, and geopolitics. People have become familiar with artefacts like 'rankings', 'international students', fly-in/fly-out teaching, global publishing, bibliometrics, and debates about technology. Increasingly, however, the gloss has been wearing off zero-sum rankings, foreign student tuition has been cast as an odd means for funding research, nationalism has been escalating, and academic worlds have been rebalancing. In 2016, for instance, the OECD estimated that Asia would host two-thirds of higher education students by 2030.

The 2020 shock accelerated the need to start making better sense of the emerging 'online global era'. For instance, little is known about how university managers can support hundreds of globally distributed faculty who are delivering top-end education to globally distributed students. While it spawns 'big data', we know little about the quality of online education. We know even less about how countries, universities and families will distribute time and money across physical, technological, and intercontinental platforms. It remains unclear whether countries will reform to embrace smaller online parcels of learning. Early signs suggest that the online global era will blend campuses, travel, and computers in surprising and innovative ways.

Our academic inquiries surfaced core capabilities which have been maturing to enable this online global era. As our Tsinghua experience affirmed, education technology (EdTech) has solved sufficient software solutions and consolidated in sophisticated ways that add value to higher education. As we worked with academic leaders to plan the next semester, it became clear that universities had become much better at using 'smarter' and more 'connected' campuses, and incorporating technologies that enhance sustainability and productivity. We read about universities striking deals with education service firms to blend accreditation powers with commercial capabilities and boost education speed, reach and quality. We helped governments and universities re-engineer education to engage a much broader range of people in lifelong learning.

In July 2020, Tsinghua University held a nine-day, online, global summer school (GSS 2020), which looked 'Toward a Post-Pandemic World', touching on economics, education, digital transformation, climate sustainability, and global governance. Over 1,000 students from 154 universities spread around the world engaged with keynote speeches, webinars, lectures, workshops, group discussions, enterprise visits, and university tours (THU, 2020e). In China, such summer schools are usually highly residential in

nature. The virtual shift helped to test and affirm the potential of online global higher education. It revealed prospects arising from blending campus and computing resources into novel hybrid education configurations.

In all of this we were able to trace the contours of an emerging global online 'education economy'. Education supply was being substantially reconfigured as universities rescheduled teaching, resources and infrastructure. Demand was growing and diversifying as travel ceased, software synched, and retrenched workers re-enrolled. While slow brewing for several decades, this new education economy was being turbocharged by the 2020 global reliance on online emergency learning to deliver core education services. Systems, experiences, and expectations were being forged quickly, which would almost surely yield widespread and enduring changes. One semester down the track, it appeared that it may not be feasible nor desirable to revert from much that has been experienced. Education fundamentals were being reconsidered.

Designing online global higher education

Combined, our institutional and academic experiences revealed the opportunity and need to invest in higher education design. New perspectives and narratives would be required to help learners, teachers, institutions and governments navigate the emerging economy. There was a need to clarify core aspects of academic work such as faculty roles, learner demographics, and social contributions. There was a need to report academic work to the public in more accessible and engaging ways. With economic headwinds looming, to sustain growth, more must be done to report and affirm higher education's value and contribution. Rather than swoon over bibliometrics, we saw the need to help universities find a way to prove how they add distinctive value by producing talented graduates, promoting innovation, impacting communities, and creating sustainable societies. A huge amount of work would be required to define these frontiers, enchant university presidents, and reform practices.

Studying higher education in 2020 emboldened our sense of the urgency for articulating and advancing research into higher education design. As Coates (2020) articulates, this important design work needs to skip beyond dystopian anxieties that underpin much discourse about higher education, and instead imagine, prototype, and build future higher education. This work must avoid tinkering around delicate scholarly debates and instead advance important innovation frontiers. In times of financial stress there is a need, for instance, to implement more productive teaching and learning arrangements. There is a related but distinct need to reform doctoral education in ways that ensure that graduates are ready for professional academic work. The governance and financing of systems and institutions needs rethinking, shifting into line with new global spaces and flows. Undoubtedly, more attention must be paid to cultivating the next generation of university leaders, and constructing technologically infused learning spaces. It is vital to create and promote integrity and fairness in these digital contexts. Regulations and new norms must be established for online teaching, student assessment, curriculum management, and intellectual property. Guidance and subsidy for infrastructure and technology must be provided to students from disadvantaged backgrounds.

As often seems the way, higher education has been shaken by forces beyond its control. This is not unexpected given the central, though usually quiet, role universities

have grown to play in broader socioeconomic life. As experiences in 2020 have demonstrated, universities can and must direct their futures, for the good of the globe. Universities are for life, not just for money, competitions, papers, and grades. Now is the time for bold education experiments, informed by major useful higher education design.

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