Finding the Third Horizon of Innovation in Higher Education

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> *These are powerful times, in which the world we have created has outstripped our capacity to understand it. The scale of interconnectivity and interdependence has resulted in a step change in where complex human systems now operate within other complex systems, often with modes of thinking and practice that were developed in simpler days. …This is a conceptual emergency. O'Hara and Leicester, Ten Things to do in a Conceptual Emergency (2009).*

Forty years ago the US was a culture in turmoil, much of it centered on the university campuses. Civil rights, feminism, sit-ins, environmentalism, psychedelic drugs, polarized politics and above all the war in Vietnam perfused college life, challenging its core assumptions and tossing the whole of academia into confusion. But despite the seeming chaos, as in all periods when basic assumptions are re-examined, those turbulent times were also fertile ground educational innovations. In the fluid circumstances of a world turning itself inside out, new ideas in pedagogy and curriculum, delivery models and institutional structures arose that changed the educational landscape. National University was born in this era. When it was first opened, the one course per month, career oriented programs, evening classes held in facilities with state of the art technology designed for working adult professionals was a game changing innovation in higher education. Over the years it has flourished and now serves as an example of a successful innovation.

But the world changes. Forty years later it is again in turmoil, threatened by financial collapse, high unemployment, exponential advances in technology, population migrations, geopolitics in Europe, the rise of China and India, globalization, and hanging over all, the threats posed by global climate change. These are powerful times when entire cultures-- from the individual behavior of citizens to the processes of society-- must adapt to an altogether different world. So once again education is being challenged to respond with new ideas, new forms of teaching and learning, and new curriculum content adequate to the cultural tasks before us.

At the 2010 Academic Resources Conference (ARC) of the Western Association of Schools and Colleges (WASC) in Long Beach, Graham Leicester of the International Futures Forum (IFF), gave the closing address entitled, "Redesigning the plane whilst flying it". The talk was remarkable for two reasons. The first, which was not planned, was that due to the eruption of Eyjafjallajökull volcano, in IcelandLeicester could not attend in person and delivered the speech via SKYPE. The technology had a few bugs but it was impossible not to be impressed by a live video feed from half a world away, over a lap top computer. The other reason the talk was surprising (and inspiring in that setting) were the severe doubts Leicester expressed about the capacity of today's educational institutions to meet the needs of tomorrow on its current path and without a new round of game changing innovations so radical as to

substantially alter the educational institutions we work in today. In support of this view he cited, among many recent reports on the future of higher education, the conclusion of the Organization for Economic Co-operation and Development (OECD) that the measurements, standardization and quality assurance methods ubiquitous in education today cannot deliver the capacities needed for tomorrow. The OECD identifies four key constellations of competencies that in their view must be developed in students for the 21st century: perceptive competencies, normative competencies, cooperative competencies and narrative competencies. But they insist that none of these will be of any use nor can they actually be cultivated unless they are accompanied by a further capacity, "to handle higher levels of complexity and uncertainty than we are used to". The task ahead is not only to redesign the plane but to steer it in a new direction that we cannot—and may never-- clearly see. Instead of a strategy of clearly identifying desired goals, measuring the gap between the ideal state and the present reality and defining the success path to close the gap—a logic that has been at the core of Western industrial thought for centuries- an uncertain future requires a different more creative stance. It requires that we be willing to challenge our legacy assumptions about what we are here for, and be open to multiple emergent possibilities.

Leicester and I have been working for the past ten years on projects that involve looking for innovations that can lead to large scale changes in social systems (2009). Collaborating with a team of experts from various disciplines, our work involves partnering with local groups faced with messy complex challenges that seem impervious to old solutions and existing ways of thinking--what we have called, "conceptual emergencies". Clients have included Scottish cities looking to reinvent themselves for the future, national public health services buckling under rising health care costs, arts communities seeking to change the culture of a region, a British government nuclear waste management agency charged with minding nuclear waste for the next 100,000 years, Indian civil society organizations, the Scottish education inspectorate (accreditors), and US universities. What these projects have in common is that people find themselves working ever harder to improve their institutions using the usual measurement, standards, and quality assurance methods, but with ever decreasing returns. Health care costs keep rising, children continue to drop out of school, minority graduation rates fail to rise, and corruption still siphons off aid, and so on. The forward thinking people in these organizations are keenly aware that in the first decade of the 21st century the world is changing so fast and so radically that business as usual is no longer an adequate response to anything. They too must redesign the plane whist flying it.

We use a model for thinking about redesign that recognizes three horizons for innovation. Horizon 1—the original innovative idea that started the enterprise, Horizon 2 which represents innovations that improve on the original idea often introduced as the shine begins to come off, and Horizon 3 which are those off-the-wall game changing innovations that come seemingly out of nowhere.

All businesses eventually need to innovate to stay competitive so they spend energy and resources on improvements and H2 innovations. But eventually H2 innovations begin to run out of steam too, leading to what Clayton Christiansen calls the "innovator's dilemma". Leadership must then decide how much of its resources to invest shoring up the legacy system to compete more effectively with others now in the niche or just to keep a business going, and how much to invest in more radical and as yet untried H3

innovations that might lead to a new game altogether, like the move from ice houses to refrigerators and render the legacy business obsolete. Always a hard call and one that requires a willingness to take a leap most leaders of H2 systems would rather not. Christensen suggests that it is often the most successful leaders, those whose H1 idea and its H2 innovations appear to be doing well, who are blind sided by H3 innovations. As Christiansen's research has shown, disruptive innovations, those inventions that ultimately requires legacy systems to be wound down, rarely originate within the system. Redesigning the plane while flying it is never easy. Sunk costs and more importantly the personal stakes of current personnel, as are on the side of keeping the legacy system going. Rather than taking the plunge while they are still successful, most institutions try to stay in the familiar game by improving the efficiency of H2 –increased bureaucracy, automation, economies of scale, cost cutting, quality monitoring, new locations, tightened employee performance rules, to squeeze the last drop out of business as usual and keep it from collapsing. But paradoxically, this only makes H2 less efficient as these additions make it much less nimble, creative systems rigidify and innovations fizzle out. Those rare companies, institutions and industries that succeed in redesigning the plane are those which understand the dynamics of disruptive and transformative innovation and actually seek it out. Apple and Google are prime examples. These are the ones that are far sighted enough to constantly scan the horizon— whether it is across the globe or under their noses in their creative heretics—to seek out and encourage those Horizon 3 ideas that are always bubbling away and are often based on entirely different assumptions and business models.

Nowhere is the innovators dilemma more in evidence than in education.
Anyone who has been involved in education in the past few decades is surely aware that the established academic culture of 2010 has come to be preoccupied by the increasing demands for accountability. Assessment of performance such as No Child Left Behind, regional accreditation standards, elaborate assessment procedures inside institutions, consumes huge amounts of academic time, energy and money. On campuses everywhere there are training workshops in "best practices", armies of assessment consultants, monographs, manuals, rubrics, data management systems, data mining, industry wide benchmarking and standardized testing, that when taken together form a pervasive compliance culture that by what it chooses to measure defines academic quality and directs methods of improvement. As one assessment guru said to me recently, without a trace of irony, "In the 21$_{st}$ century education assessment".

All this emphasis on assessment and monitoring is part of the H2 strategy to keep the current system going. The upside of this focus on accountability is that now we have a clearer picture of how we are succeeding and how we are not. We can look at graduation rates, attrition rates, the achievement of measureable outcomes and assessment of whether students achieve the outcomes we have identified in advance as indicators of effectiveness. Faculty and administrators can look at the data and get a shared sense of where they need to invest resources for improvement, and schools can assure students, parents and taxpayers that what is promised is what is delivered and their investment in education is paying off.

But there is darker side to this focus on accountability. I am referring to the dampening effect on innovation and creativity of loading up complex human systems with demands for data that can be tabulated and manipulated by computers. Cybernetics can regulate performance in pipelines and circuits, even land a man on the moon, but they rarely deliver game changing innovations in situations where human originality, values and meaning are involved. As one of the fathers of systems thinking in organizations Sir Geoffrey Vickers said some years ago, this is because "human systems are different". Time and again Quality Management strategies fail to deliver innovation because they focus on improving the current system, not looking for innovations that will supplant it.

As we enter the second decade of the 21st century we are witnessing an explosion of inventions that are destabilizing the entire educational landscape. The development of technologies that can be used in education has been staggering. Web 1.0 , now 2.0 , cell phones, smart phones, IPHONES, MP3, IPADS,VOIP, simulations, interactive games, virtual labs, collaboration tools, software, hardware, firmware and wetware advance daily. Open courseware is available for free download from some of the world's premier universities. E-Learning and M-Learning and the number of online classes offered grow exponentially in terms of both numbers and range of disciplines. At the present time over 2 million students take online classes and this number is expected to grow.

At the same time, institutional structures also proliferate as traditional bricks and mortar academies offering four year and graduate degrees share now the education space with virtual institutions, publically traded companies with hundreds of thousands of students, schools offering significantly accelerated programs to working adults. There are hundreds if not thousands of entrepreneurial start-ups delivering new content packages though new delivery platforms. There are partnerships between publisher's and schools, NGOs, trade unions, churches, the military, offering custom certificates and degrees in partnership with accredited schools. Classes are meeting on Facebook and Google groups. And the innovations keep on coming. Though eavesdropping today on a meeting of administrators or faculty at most existing universities you might not discern it, whether they know it yet or not, today's education institutions are in the midst of their own conceptual emergency. The knowledge society no longer belongs to the universities but has burst out into virtual Cloud computing spaces that link services, providers and students in multiple ways through the internet. Savvy innovators are at work looking for ways to tap into the world's vast knowledge base and link it to literally billions potential students seeking to succeed in a new world.

For the last few hundred years advanced education came in authorized packages --the bachelors, masters and doctoral degrees. Universities were the generators, transmitters and legitimizers of "official" knowledge. But now there is a growing tension between the demands of an accountability culture—with its focus on staying within the lines of accreditation "standards" and improving the tried and true-- and exploring the possibilities for H3 innovations.

Today anyone with a smart phone can access a universe of information about anything instantly and can download entire degree programs for free from MIT, Yale, the Commonwealth of Learning or universities in Australia and New Zealand. The implications of these possibilities are beginning to register on

investors, philanthropists, content developers and potential employers and signal the start of another era in higher education, with different games and different rules. In 2009 the United Nations Global Alliance for ICT and Development (UNDESA-GAID) and University of the People (UoPeople) announced the world's first tuition-free online university. Funded by philanthropists and venture capital it opened its doors with one hundred seventy-eight students from across the globe. Students enrolled were in 49 countries, ranged in age from 16 to 61 and were pursuing degrees in Business Administration and Computer Sciences. Though the administration admits accreditation may be a problem not because of their programs but because the business model does not fit most regional accreditation expectations, they are going ahead anyway.

In Fall of 2010 Ralph Wolff, the President of WASC, gave a presentation at the World Future Society in which he outlined what he saw as the main trends that would change higher education. Towards the end of his talk he said, , " we are responsible for preparing our students to address problems we cannot foresee with knowledge that has not yet been developed using technology not yet invented." He told the group of futurists that radical transformations were occurring globally in how we understand knowledge, where we seek it, how it is structured and what our relationship to it is. The coming changes in the wake of this will represent a disruptive innovation in today's institutions.

I want to end with a true story. It is of a young woman in a developing community who must travel two and a half hours from her village to work and back at night. She is enrolled in a college program which holds its classes one a week at night. After work she is usually too tired to pay much attention to the teacher—who is often absent in any case due to the hundred and one things that can interfere with his getting to class. In the past these barriers would have deterred her from going further with her education. But thanks to philanthropic funding the college provides her with well produced lectures on MP3 files which she listens to on her smart phone as she travels to work in the morning while she is fresh. She can download chapters from the text books and she can also take quizzes on her phone. Also available to here are multimedia interactive applications on the core technical information she needs to learn. This is a young woman—like literally millions more for whom college education is now available—who is taking advantage of a new wave of educational innovation

The H3 revolution is already well underway.