



A Revolution and a New Paradigm in Education

Knowledge is the sustenance of civilization and culture. Language is the instrument for mental comprehension and transmission of knowledge. Education is the means by which each generation passes on to the next in a concentrated, systematic manner the cumulative knowledge and wisdom acquired in the past. Of all the technologies developed by humanity, none is as powerful and sophisticated as the means we have fashioned to gather, organize, store, share and transmit knowledge. Education is the instrument of conscious human evolution.

We are on the cusp of a revolution potentially more powerful and important than any technological or political revolution in history. An on-going revolution in Information is generating and transmitting an unprecedented range and depth of data at dazzling speed. A parallel revolution in Knowledge is processing and analyzing that information to forge new fields of study, new perspectives and a greater understanding of the world we live in. Now a revolution in Education is about to transform the way human beings learn and transmit knowledge from one person and one generation to another. After centuries of slow, methodical development, education is evolving today more rapidly than ever before.

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Advances in communication technology are the immediate occasion and means of liberating education from the university classroom and the printed textbook into the boundless, timeless realm of cyberspace, but the Education Revolution involves far more than adaption of new technology, and the significance of what is happening extends far beyond online courses and e-books. For in the process, the barriers that have long isolated and insulated the university from the world around it are breaking down. The knowledge presently encapsulated in the organized curriculum of higher education represents only a tiny fraction of the cumulative knowledge of humanity. It does not fully reflect the vast knowledge of retired teachers, managers, and public officials that is so often lost when they retire, or the expertise acquired by entrepreneurs and businesses that spend hundreds of billions of dollars every year educating their own employees, or the knowledge acquired by the UN system and other international organizations over six decades of grappling with the challenges of global governance, or the knowledge and experience of thousands of NGOs working on issues related to peace, public policy, economy, ecology and social issues. All these will more easily find their way into the virtual classroom of tomorrow than they have into the physical classroom of the past.

Today education is rightly considered the single most important endowment for success in life. Those with higher education find better work opportunities, earn more, achieve greater security, and live longer, healthier, more satisfying lives. Yet, in spite of rising levels of education globally, unemployment is rising at the same time and it is reaching levels that threaten both human security and social stability in some countries. More education by itself is no longer sufficient. In a world that is changing so rapidly, we need an educational system that is far more flexible, adaptive and responsive to the changing needs of society and capable of developing more fully the seemingly unlimited range and depth of our individual and collective human potential, so essential at a time when we are severely overexploiting the earth's natural capital.

The revolution in education now makes it possible to bridge the gulf that presently divides the knowledge taught in universities from the practical knowledge and skills needed for accomplishment in life. Every student of economics learns the principles of micro-economics that would be operative under conditions of perfect competition, yet such conditions rarely, if ever, exist in the real world of the marketplace. Models and constructs are helpful for advancing our conceptual understanding, but mistaking models for the real world is a recipe for disaster. The awarding of Nobel Prizes in economics for the computerized trading models that have destabilized global financial markets is an instance. Controlled experiments in the laboratory are not adequate preparation for the complexity and spontaneity of life in the world outside. Biological models are insufficient to reflect the evolutionary potential of human consciousness.

In the mid-1990s, the city of Napa, California, asked a group of companies to help redesign high school education to better prepare students for career success. The officials were surprised that the most common criticism made by the companies had nothing to do with the content of the curriculum, but rather it related to the way the content was being taught. Students are taught in school to learn by themselves and they are evaluated solely on the basis of their individual performance in competition with their peers, yet, once they enter the world of work almost every task is a group endeavor requiring the capacity to cooperate with others and complement each other's capabilities. Napa established a new high school and adopted a new method of learning in which groups of students learn together and teach one another. The meteoric rise of Khan Academy and the MOOCs in North America is another visible expression of the new spirit of experimentation, entrepreneurship and innovation that is beginning to permeate the field of education at all levels.

Since the dawn of the Industrial Revolution, massification has infiltrated all aspects of modern life – from tract homes and brand name products to political movements and standardized modular education at all levels. The sheer immensity of the task of raising literacy and educational levels of hundreds of millions of people over the past century has necessitated and justified the mass production approach and that task is not complete. In order to raise the entire world to Western standards of higher education, the capacity of the world's colleges and universities would have to be tripled or quadrupled, an achievement that would

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require enormous investment and decades to accomplish. Online education offers the possibility of an alternative or a complementary strategy that can not only extend the reach, but also immensely increase the range and variety of knowledge offered through the educational system. This is essential.

In recent decades, the world has made immense progress in extending minimum rights and opportunities to all, but the challenge of human development does not end with meeting minimum needs. Providing knowledge and skills is not all there is to education. It can also impart the understanding and perspective to relate with others and integrate harmoniously with the world around, as well as the universal values which represent the essential wisdom for self-respect, social accomplishment and personal fulfillment. Humanity has a greater potential and a great destiny in store which can only be reached by releasing the creativity and initiative of every individual. Our future lies in evolving an educational system capable of nurturing and bringing out the full latent potentials of each individual. For as the development of the individual depends on the development of the society in which he lives, the fullest development of society depends on the fullest development of its individual members.

Not all changes are necessarily good and not all will welcome even those changes that bring obvious benefits. Much depends on our point of reference and perspective. Comparing online education with the best of the best traditional college education, it is likely to appear a poor and inadequate substitute. But that is hardly a fair standard for comparison. Even in the world's top universities, the difference between the handful of inspirational instructors and the rest is enormous and the distance between the best college and the national or global average is immense. And for hundreds of millions of youth, lack of access to affordable education represents an enormous gulf separating them from a better future. Some aspects of life may have been more civilized and luxurious for the aristocracies of the past, but those benefits accrued to only a tiny elite representing perhaps a tenth of one percent of the population, like the proverbial 10,000 families in aristocratic England. That is still largely true of quality education today. Imagine instead that the most knowledgeable and inspirational thousand or ten-thousand instructors in the world could be made available to students everywhere, at any time and in any language.

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Revolutions are messy affairs and often destroy as much as they create. But throughout history they have been the seeds of new freedom, fresh ideas and creative energies that liberate humanity from the limitations of the past and usher in unprecedented opportuni-

ties for people in general. Revolutions are what we make of them. Revolutions occur when society resists change and refuses to respond to the compelling call of the future. The good news today is that universities are among the leaders in revolutionizing the field of higher education. By this process they may lose some of the prestige and exclusive power that all traditional institutions acquire over time. But reaching out to collaborate actively with other reservoirs of knowledge and expertise in society, what they lose in exclusive status can be more than compensated by what they gain in richer content of knowledge and the capacity to meet social needs. Then a potentially disruptive revolution may be transformed into a rapid, constructive evolutionary movement the world so deeply needs to cope with the emerging challenges of the 21st century. A new paradigm in education may then become the basis for a new paradigm in human development and social evolution.

**Heitor Gurgulino de Souza, Garry Jacobs, Winston Nagan,
Ivo Šlaus and Alberto Zucconi**