

# CHAPTER 1

## Rethinking the Education Mission: teaching & learning in the next decade

*Jean Chambaz*

### UNIVERSITIES ARE OBSOLETE? NOT SO FAST!

**S**ome experts argue that the university model, if it exists, is out of date. It no longer responds to the needs of society or the economy. They say it is obsolete and must be put aside for the new opportunities to access, transmit and participate in the information available through digital technologies.

Facing an increasing flood of students coming to universities, we hear that the institutional capability to accommodate these students is past the breaking point. Our critics emphasize that universities can no longer guarantee that students will successfully complete their degrees nor that they will find a job when they go out into the world.

These same critics also claim that the diplomas we offer are losing their value — often too specialized, too restrictive in scope. Alternative methods of teaching and learning are springing up around us that will be much faster, more effective and less expensive! MOOCs and “fast-food” learning institutions will replace universities! Our institutions move slowly, while the digital revolution is accelerating the pace every day.

Their position is reinforced by the fact that the general public no longer feels restricted to receiving education and knowledge from the traditional providers, while part of the academic community with a nostalgic view of the golden age (which never existed) complains about the constant decline in students’ capabilities.

---

In short, universities are an old-world construction that are doomed to extinction. Much has been said. But I believe this deserves at least some discussion.

## IT'S TRUE, THE WORLD IS CHANGING

The world is undergoing a profound societal change. Globalization, as the word indicates, has affected every part of the globe. It has shifted economies and industries toward new sectors and new continents, putting societies in crisis, which must now learn to adapt.

Time seems to move faster. The digital revolution is transforming all activities and processes, including how individuals relate to each other. This represents a true change in civilization. Never before have so many people had access to such an overwhelming quantity of information.

These changes are also transforming professions in the span of a single lifetime. There are new demands on our professions, which are being overhauled and change the way we work. The relationships between generations, particularly in the professional environment, have brought about a reorganization of work, a shift in the norms of networking and a complete integration of an international outlook.

Globalization means enormous challenges; our very successes place a great burden on the wellbeing of our planet in terms of global warming and the scarcity of water and energy resources. This transformation spreads as a market-led organization of the world whose benefits are unevenly distributed in terms of wealth, health and access to knowledge for some, and hunger, poverty and infectious diseases for others.

As a result, globalization is today perceived by populations as more of a threat than an opportunity. It has brought about a loss of confidence in technology and science, and in the role of the “elites” in society. This is a far cry from the world’s faith in science and in the relentless technological progress which were the hallmarks of the 1950s, 60s and 70s. The world is now messy and unstable, its cohesion and that of our societies are jeopardized.

The digital revolution has also shaken society, offering an avalanche of information to each individual to deal with in their own way. Our news cycles give the public at most 24 hours to process events happening all around the world; in parallel, social media are very quickly disseminating information to comfort a pre-established vision of the world; we have the ability to “individualize” the information that we receive, so we only hear the ideas that agree with our personal world view.

This new situation raises a critical question to an unprecedented level of importance: how can we verify, evaluate and make sense of the overwhelming mass of information that is available, in a world focused on immediacy and where everything happens so quickly?

## THE POST-FACTUAL WORLD

In addition, it is not only the sheer volume of information that is problematic in this post-factual world in which we find ourselves today. As the public tries to inform itself, conflicting information from diverse sources is offered, but without confirmation of the reliability or veracity of each source. How else can we explain the debate on whether mankind has caused climate change when there is 97% consensus on the research among climate scientists? In a survey conducted in 2007-2008, barely half of the US population believed that climate change is caused by human activity (Gallup, 2009). In France, it was 63%, while in Japan, it was more than 90%. Why have some countries been more effective in informing their populations than others? Another example is the proper use of vaccines. Today, more and more people believe that vaccines are unsafe and this compromises the efficiency of public health policies against epidemics. More generally, what will this mean for the introduction of new treatments for diseases, or the ability of the public to intelligently discuss the endorsement or rejection of these policies?

The rise of fake news sites, and particularly the recent meddling in the US, German and French elections — and prominent leaders proposing “alternative facts” — have brought to the forefront the essential need for citizens to have the ability to evaluate and verify that their media sources are trustworthy and independent. Our fellow citizens cruelly lack the tools to sort out this onslaught of false or misleading news. They urgently need to be effectively equipped with the autonomous capacity for analysis.

This cannot happen by sitting alone in front of a screen, with no guidance in how to judge, sort and verify information from disparate sources. Learning this critical approach takes time, and must be reinforced throughout education cycles, from primary school to higher education. It is the underlying requirement for any quality learning and an essential role of universities.

## THE VERY HEART OF THE UNIVERSITY EDUCATION MISSION

More than ever, the responsibility of universities is to educate the population to become informed and concerned citizens, as well as experts and leaders for society. In this post-factual world, there is a greater need to offer higher education to a much broader public. However, the resulting diversification of students of all ages and backgrounds (particularly in countries where the selective recruiting of students at the entry of university is not allowed), makes our work more difficult and questionably worthwhile. At the same time, this is a fantastic opportunity to disseminate rational thinking in larger sectors of the society.

Of course, we have to adapt to changes in society and transform our vision of teaching and learning. But we must not compromise on the essence of

academic education, that which makes our distinctive contribution essential and also explains the longevity of these institutions and their successes when they are adapted to their time.

While the exponential development of different sciences during the 20th century yielded to hyper-specialization, and sometimes education in silos, today we need to encourage a comprehensive approach to complex issues on a global scale. At the same time, we have to contribute to building a framework of confidence, openness, creativity and responsibility that is necessary for a successful transition.

In research, a university's responsibility is to ensure a critical mass and a critical diversity to confront the evolving challenges, to build transdisciplinary teams of top-notch researchers in their disciplines, and to create an innovation-friendly ecosystem to facilitate the transfer of knowledge when appropriate.

In education, the priority is to equip graduates with conceptual skills and processes, rigorous methodologically-based foundations in disciplines, experience of real-life problems through a research-based approach in a broader interdisciplinary context and the mastery of generic skills in practice rather than through specific courses on "transferable skills".

While this educational role must be reinvented for the current context, it remains vital for the future of our society that universities focus on developing critical thinking and creativity in our students today and in future generations.

The permanence of this essential mission encourages certain sectors of the university — a conservative group, as mentioned above — to resist any changes to the established processes of knowledge transmission. However, there are also large sectors that are engaged in this transformation.

The Bologna process, these last 20 years, has been the occasion for European universities to re-focus on their education mission. While we can ask ourselves whether the European system hasn't become even more heterogeneous over this same period, the Bologna process has accomplished two major successes: the facilitation of student mobility; and the dissemination of the three-cycle degree structure accompanied by the subsequent work on the bulk of knowledge and competences corresponding to each cycle. Rather than slicing up each degree program into credits, which sometimes becomes too bureaucratic, the most promising trend is the reassessment of teaching and learning methods to enable the acquisition of knowledge and competences.

## FACING THE CHALLENGES

The most difficult question that universities are facing is how to accommodate masses of students while still ensuring the development of critical thinking.

From 1999 to 2005, enrolment in higher education worldwide increased by 45 million students to 138 million (Britannica, n.d.) (and the share of the student-age population at university went from 14% to 32% in the two decades to 2012 [Economist, 2015]). How can we successfully tackle this challenge of a massive increase in students combined with a regularly reduced governmental investment in universities?

Obviously, in the age of the knowledge society, the Humboldt model — which was conceived for small, privileged classes of students — is still inspiring, but meeting the needs of society requires contemporary solutions.

This massive increase in demand is also accompanied by a large diversification of student populations and their various backgrounds, which in turn implies a larger number of students that need personal mentoring.

## **ARE DIGITAL COURSES THE MIRACLE SOLUTION?**

The rise of MOOCs has been hailed as the education of the future and the demise of universities. Who needs classrooms when we can all take classes from the comfort of our homes? Beyond their initial, impressive success, their business model has so far proven to be questionable. MOOCs have also been known to have very low completion rates, in part because many of the people who sign up for them do not necessarily plan to finish the course. For undergraduates, MOOCs have not been particularly successful, since most students are still at the beginning of their academic journey. At this part of the educational cycle, students usually need more personal interaction and support.

But there have been a number of benefits from MOOCs. Some small, self-selected and therefore homogenous colleges have benefitted from having the participation of international students and others from very different backgrounds because they bring a new perspective to an otherwise fairly closed system. Well-structured students, and particularly graduate students, sometimes use MOOCs produced at other institutions to add content and another teaching point of view to the coursework at their home institution. They are also used by educated adults to complement or update their skill set, making MOOCs a good addition to lifelong learning programs.

## **TAKING THE DIGITAL AND DATA REVOLUTION FULLY INTO ACCOUNT**

Universities are now dealing with generations that have been raised with information technology. This brings its own paradoxes. On the one hand, today's students — and those of the future — consider it a given to have access to an almost infinite amount of information. So they are therefore

accustomed to looking for their own answers. University professors now find themselves challenged with competing ideas drawn from the Internet by their students. The ivory tower is open to all winds and universities must now function in the context of a much broader information base.

Much more than a technology shift, the digital and data revolution changes the student's relationship to knowledge, since while it is easy to get, it is difficult to master. The irruption of massive data sets has profoundly transformed research practices in most scientific fields and calls for new ways of teaching & learning. Teaching is no longer the transmission of the state-of-art of knowledge, and learning is no longer just a thorough exploration of a single discipline. The accumulated waves of new knowledge will quickly reshape the state of art, and, at the same time, unverified non-scientific information will challenge this knowledge. In this context, the major function of higher education becomes teaching how to learn and discern.

This requires a re-examination of the learning process. The challenge now is to make our students build their own overall capacity of critical thinking that they will exert throughout their professional and civic life. They need to learn how to label, sort, search, evaluate and analyse data.

The digital world has also brought students the capability to access much more information within the university structure, to review videos of lectures and receive documentation electronically. This change affects how we think and express ourselves, and how we structure information and integrate ideas.

The educational innovation needed is much more than just the integration of digital technology. We must reimagine the role of the professor, one-on-one tutoring, classroom interaction and the best way to support each student using whichever tools they are most comfortable with. This means redesigned teaching methods to give more space to the development of skills and creativity that are in line with a methodological acquisition of knowledge. This would ensure student autonomy. An appropriate balance of distance learning options, learning through case studies, personal or collective research projects, as well as direct teaching and mentoring, are needed to accompany student growth and maturity.

Overall, e-learning technologies bring additional flexibility and alternate learning behaviour. Currently they are more often seen as a supplement rather than a replacement of classes, and e-learning is currently run at the faculty level, offering students blended-learning opportunities. While these programs take time and money to put in place, universities have generally found that they not only change students' approach to learning, but it also can improve the quality of knowledge acquisition. The possibilities offered to personalize the learning experience and to measure performance through e-learning analytics indicate that these tools will see a broader implementation in the future.

## MEETING THE NEEDS OF THE SOCIETY

This expected transformation of teaching and learning consumes considerable time and resources, and yet still does not solve the dilemma of how to accommodate the massive increase in the number of students, given their extremely varied backgrounds.

In addition, the job market is constantly changing and there are high unemployment levels for young adults, which puts into question the efficiency of the education system. The demand for skills is continually evolving and the population must therefore adapt to career paths that incorporate changing companies and changing the job types several times during one's life. The job market for executives now functions at a global level, as companies and graduates are automatically referencing an international context.

Encouraging a much larger proportion of the population to attend higher education is as much the current demand of society as an attempt by governments to mask the large numbers of unemployed youth. In France, the recent rise in the number of students at universities is mostly due to a constant increase in the number of students that have passed their vocational and technological baccalaureate (the final exam of secondary schools). Nevertheless, due to the lack of places in higher education vocational curricula, these students enter university to attend general bachelor's programs, for which they do not have the prerequisite skills. This is an important contributor to the high attrition and low success rates found at the bachelor's level in France.

Perhaps we should not be surprised to find that many economic actors now favour "practical" education programs so that graduates are immediately productive in their job. But there are serious drawbacks to market-based educational programs. While it has always been important for universities to prepare students with the knowledge and skills needed for employment, the constantly evolving job market means that the most effective graduates will be those who can adapt.

There is now another stakeholder in higher education that is taking a market-based approach, and strangely enough, it's the students themselves, particularly in countries where the rising costs of higher education have transformed their perspective from student to consumers who are buying a "service". A recent study that surveyed 608 undergraduates in England showed that this consumer orientation was associated with lower academic performance (Bunce, 2016).

A global answer to youth unemployment is to offer more vocational higher education curricula and to fully embed the initial university education into a broader approach of lifelong learning. The degrees earned in initial education are just the first phase of an individual's career path. The Bologna structure of higher education is an opportunity to articulate the acquisition of blocks

of knowledge and competences along with professional experience during the span of a career. It facilitates the ability of individuals to return to higher education throughout their lives, at the same institution or a different one — even in another country.

Happily, today's students, who have grown up with ubiquitous access to information, are used to being actors in their own knowledge acquisition, either through online classes to improve a skill set, returning to university for an advanced degree, or anything in between. The idea of circulating between education and professional activity would be reassuring to the individual and reduce the demographic pressure that universities are currently experiencing.

The definition and development of each student's professional project are the driving force for their educational orientation. Universities now multiply student experiences to help guide this orientation, through immersive internships in companies, apprenticeships, research-based projects, working in FabLabs, international student exchanges and accrediting non-university learning. The goal is to enable a student in the first step in the direction they choose: becoming a researcher, integrating the workforce, becoming an entrepreneur, or creating a startup.

Naturally, some university programs are designed for graduates to enter the workforce sooner than others, and as noted above, this workforce should also be able to continue lifelong learning to augment or hone their abilities. Other university programs demand longer studies and teach concepts that require high-level abstract thinking. The graduates from these types of programs will require an adaptation period to their work position — but the payoff is bigger. When education is informed by research techniques, associating a deep understanding of a subject and a broader interdisciplinary context, it pushes students to be more curious, creative and to think outside the box. Executives have been trained to adapt, think of the bigger picture and synthesize diverse information, so that in the five to ten years while rising into their positions of management, they are building on their educational base. The experience these executives gain during their career will equip them to respond to a different, future context.

## **BEING AGILE WHILE STANDING BY OUR FUNDAMENTALS**

Knowledge is expanding at such a rate that it has become difficult to define the parameters of an education in just a few years of study. Progress in science and technology is so fast and so disruptive that it will difficult to predict what graduates should know ten years from now. Universities must be in the business of anticipating the future — in the research they do, and in the knowledge they transmit to the next generation.



It is also essential that students be active participants in their educational plan. In addition to identifying their professional project to define their course of study, this and future generations are more flexible in their approach to learning how to learn — and are more ready to come back for courses as needed.

The acceleration in technical advances has also pointed to a growing need for lifelong learning. Universities are already anticipating the need to work closely with the private sector to ensure that the workforce has access to regular courses to update their skills and take on new abilities. This is an essential support for the transformation to a knowledge-based society.

Finally, we anticipate the importance of internationalization to increase in the future. A university education must enable students to have not only a basic understanding of disciplines other than their major area of study, but to be able to think globally and work in multidisciplinary teams. In a society where globalization is now a given, students must be open to other cultures, where the student body includes people from all over the world and where student mobility programs enable every student to experience life in another country, another language and another culture, since upon graduation, they may find themselves working anywhere in the world.

We can no longer afford to have students graduating without having experienced another way of looking at the world. Their increased access to information around the globe must be accompanied by an enrichment from other cultures and other ways of thinking, leading to a wider and deeper understanding of contexts other than their own. This overall need to ensure student diversity through international mobility is a direct contributor to improving the quality of teaching and learning, enhancing international cooperation and increasing international awareness, which will offer new perspectives and ways of viewing the world.

## INFORMATION IS NOT KNOWLEDGE

There is no easy solution, no silver bullet and no magic fix. But for centuries, there has been a reason why our societies have turned to learning centres — to universities — as sources of knowledge and reason. And it is our responsibility to rise to these expectations, to meet today's challenges, and to ensure society's evolution to the benefit of all. Our ability to fulfil our education mission requires regular experimentation, renewal and transformation. However, this can only be accomplished with more openness and the mobilization of our communities, increased university autonomy, the removal of bureaucratic constraints and the sustained support from public sources and other stakeholders.

## REFERENCES

- Britannica* (n.d.). "Global Trends in Education". <https://www.britannica.com/topic/education/Global-trends-in-education>
- Bunce, L. (2016). "The student-as-consumer approach in higher education and its effects on academic performance". *Studies in Higher Education*. Taylor and Francis Online. <http://www.tandfonline.com/doi/full/10.1080/03075079.2015.1127908>
- Gallup* (2009). "Awareness, Opinions About Global Warming Vary Worldwide". <http://www.gallup.com/poll/117772/Awareness-Opinions-Global-Warming-Vary-Worldwide.aspx>
- The Economist* (2015). "The world is going to university". <http://www.economist.com/news/leaders/21647285-more-and-more-money-being-spent-higher-education-too-little-known-about-whether-it-is-worth-it>